

**OCCUPATIONAL RISK MANAGEMENT
IN THE
AUSTRALIAN FILM AND TELEVISION INDUSTRY**

DRAFT NATIONAL SAFETY GUIDELINES

Produced by the Screen Production Safety Review Committee

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1. ABOUT THIS DOCUMENT

The film and television industry is a unique industry and therefore presents unique occupational hazards.

These Safety Guidelines have been developed by the Screen Production Safety Review Committee in consultation with employers, industry practitioners, unions and relevant organisations. The Screen Production Safety Review Committee comprises representatives from the Media Entertainment and Arts Alliance, the Screen Producers' Association of Australia, Fox Studios Australia (representing film studios), the Australian Broadcasting Corporation (representing public broadcasting) and the New South Wales Film and Television Office (representing state funding agencies).

The primary purpose of these Guidelines is to inform industry stakeholders of the measures available for reducing the inherent risks associated with film and television production, thereby enabling everyone associated with the industry to undertake their activities in relative safety.

These Guidelines set out preferred occupational health and safety practice applicable to film, television and video production in Australia and by Australian producers undertaking work overseas. It provides practical guidance to employers and others who have duties under occupational health and safety legislation. For the purposes of these Guidelines, film, television and video production includes all aspects of the pre-production, production and post-production phases of all film, television and video productions including drama, documentary, commercials, infotainment and lifestyle programs, corporate, training and education programs and the like, excluding only news and current affairs programs.

Producers, as the principal employers, have the primary responsibility for occupational health and safety in the workplace. Employees, contractors and sub-contractors have a responsibility to comply with the safety measures developed in the workplace to minimise risk to themselves, others and/or the environment.

These Guidelines can be regarded as the national best practice within the industry. Failure to follow these Guidelines could be used to support an argument that adequate steps have not been taken by the employer to fulfil their obligations set out in occupational health and safety (OH&S) legislation.

These Guidelines have been developed to promote consistency across the industry in hazard management and have been designed to complement provisions of both federal and state OH&S legislation. These Guidelines should be read in conjunction with other relevant legislative provisions, regulations, Australian Standards and codes of practice. Where there is any inconsistency between these Guidelines and legislation or regulations in any state or territory jurisdiction, the legislation or regulations shall prevail.

2. OH&S LEGAL FRAMEWORK

At common law, every employer owes employees a duty of care. The employer's duty of care is not transferable and will depend upon the circumstances facing the employer at the time.

All employers are subject to the provisions of both federal and state OH&S legislation, regulations, approved codes of practice, Australian Standards, National Occupational Health and Safety Council (NOHSC) advisory documents and other recognised guidance information.

OH&S Acts establish a legislative framework for the regulations governing workplaces and mandate that regulatory bodies such as state and federal occupational health and safety agencies (eg. Victorian WorkCover Authority, WorkCover NSW, Comcare Australia) undertake core enforcement activities. This framework and regulatory activities are specifically aimed at encouraging employers to focus on developing a broad range of risk management strategies (eg. OH&S plans, procedures and guidelines) to reduce the incidence of occupational related injury.

These Guidelines have been developed to provide information about how to ensure that risks associated with film and television production are eliminated or reduced to the lowest possible levels.

3. OH&S AND WORKERS COMPENSATION ARRANGEMENTS IN AUSTRALIAN JURISDICTIONS

Federal and state based authorities are responsible for administering OH&S and workers compensation legislation and regulations. OH&S and workers compensation arrangements, whilst fundamentally similar, vary in their detail

from state to state. The legislation and regulations can be found on the web sites of the relevant state authorities. See Appendix L. Particular care needs to be taken when production activities are undertaken in more than one jurisdiction.

Other government authorities, such as health, police, ambulance and fire, are vested with specific powers in certain emergency situations and can also provide specific advice regarding health and safety.

Standards Australia and NOHSC oversee the development of OH&S related advisory documents that provide guidance on how to manage hazards and meet duty of care and occupational health and safety obligations.

In the course of discharging their statutory and advisory functions, these authorities will draw the attention of employers, unions, government and the general public to a variety of documents when providing assistance and advice regarding statutory compliance, best practice, hazard and risk management.

It is important to note that mere compliance with the guidance provided in such documents may not necessarily mean that an employer has met their duty of care and/or occupational health and safety obligations if:

- reasonably foreseeable risks were not identified, or
- the measures implemented for controlling the risks were inadequate given the circumstances.

Reference is made throughout these Guidelines to a number of regulatory and advisory documents for the purpose of providing specific information from a recognised external body. The documents can include legislation (eg. relevant Acts), Australian Standards (eg. AS/NZS 4249) and WorkSafe Codes of Practice (eg. National Code of Practice for Manual Handling).

4. RESPONSIBILITY FOR OH&S

Employers have the primary responsibility for ensuring adequate measures are taken to ensure the health, safety and welfare of their employees, contractors, sub-contractors, relevant third parties, the public and the environment.

All employees have a duty of care to themselves and others. All employees have a responsibility to participate in and comply with the safety measures implemented by their employer to minimise the risk of injury to themselves and others.

Whilst tasks may be delegated, health safety and welfare responsibilities cannot.

4.1 EMPLOYER'S OH&S RESPONSIBILITIES

Employers are specifically responsible for ensuring that the following occurs:

1. The provisions of relevant acts, regulations, standards, codes of practice are implemented and complied with by employees and/or contractors and sub-contractors.
2. Adequate risk assessment/s are undertaken on all productions for all phases of production and for all work sites.
3. Any person who has the discretionary authority to delegate work to other employees is fully conversant with their responsibilities and ensures that all work is carried out in a safe manner. The following critical point summary (not exhaustive) is provided to assist those responsible for assigning, scheduling and/or directing work to effectively discharge their OH&S responsibilities:
 - a. be familiar with relevant OH&S legislation, regulations, Australian standards, hazard management principles, these Guidelines and local safety policies, procedures and/or agreements;
 - b. develop and implement mechanisms for joint consultation with employees;
 - c. provide OH&S induction for all persons entering any and all work sites;
 - d. ensure all available information regarding potential hazards is provided to employees;
 - e. ensure risk assessments are carried out for every phase and stage at every workplace and as required under relevant legislation;
 - f. ensure all employees can access appropriate personal protective equipment (PPE) as and when required;
 - g. ensure that systems are in place to ensure that all furniture, vehicles and/or other plant/equipment to be used in the workplace is appropriate for the purpose and is maintained in a serviceable condition;
 - h. allow for and allocate adequate time for rest breaks in the production schedule;
 - i. report all OH&S related incidents as specified in relevant legislation (see Section 4.3).

4. Any accidents are fully investigated to determine the cause/s and to ensure appropriate remedial actions (to prevent a recurrence) are implemented.
5. All employees, contractors and sub-contractors are aware of their specific OH&S responsibilities and are fully compliant.

4.2 EMPLOYEE OH&S RESPONSIBILITIES

The following critical point summary (not exhaustive) is provided to assist employees in complying with their specific OH&S responsibilities:

1. be familiar with your specific OH&S obligations and these Guidelines;
2. monitor the workplace for potential hazards;
3. report or deal with any potential hazards appropriately;
4. actively assist with the preparation of risk assessments;
5. ensure you adhere to safe working practice at all times and wear appropriate PPE as required;
6. ensure you hold the appropriate licences and/or relevant certificates of competency;
7. report all injuries, accidents and incidents.

4.3 STATUTORY NOTIFICATION AND REPORTING OF WORKPLACE ACCIDENTS

1. Regulations made under federal and state laws require certain employment related incidents to be notified to the relevant statutory authority. The regulations also set out the prescribed time, manner and form of the notification and specify penalties for non-compliance.
2. Most regulations require the employer to formally notify certain incidents within the time frame prescribed once becoming aware of the incident. In general terms, the following incidents (having occurred at or near a workplace) need to be reported to the relevant authority:
 - a. the death of any person – usually within two hours by phone or by fax;
 - b. a serious personal injury to any person, ie. an injury to any person which needs emergency treatment by a doctor or treatment in a hospital whether or not the person is admitted to hospital – usually within 24 hours;
 - c. incapacity to any employee – usually within 24 hours of becoming aware of the duration of the incapacity (the incapacity varies but is usually defined as continuous working days or shifts);
 - d. a dangerous occurrence/incident (includes “near misses” that could have resulted in death, serious personal injury or significant damage and covers incidents such as the collapse of scaffolding, failure of a structural support, collapse of a trench or camera crane, etc.) – usually within 24 hours.
3. The above definitions and/or time frames may vary between states and territories.
4. Commonwealth Regulations effective from 29 July 1993 require all Commonwealth agencies to notify and report certain accidents and dangerous occurrences to Comcare Australia. Comcare Australia is required to collect and analyse this information, provide statistical data and other management information to employers and to actively investigate serious incidents in the workplace.
5. Any place at which filming and/or associated work is being carried out can be defined as a work place. If a notifiable accident or occurrence occurs, depending on contractual arrangements and/or the circumstances, the duty to notify may fall upon a number of parties.
6. Copies of all accident and incident reports shall be provided to MEAA and SPAA.

5. COMPETENCY OF EMPLOYEES

The employer must ensure that all persons engaged on a production are competent to undertake the duties for which they have been engaged.

5.1 COMPETENCY STANDARDS, PERFORMANCE CRITERIA AND CERTIFICATES OF COMPETENCY

In most cases, the competency standards and performance criteria required to obtain certificates of competency are set out in the Worksafe Australia National OH&S Certification Standard for Users and Operators of Industrial Equipment. In the case of equipment not covered by the Standard, eg. camera cranes and booms, employers are required to develop appropriate competency standards and performance criteria and maintain an internal register of any competent users and/or operators. Persons who are engaged in work such as scaffolding or rigging, operating cranes, hoists, etc., must hold the appropriate certificate of competency. In the case of learners, the learner must only operate and/or use plant and/or equipment under the direct supervision of a certificate holder, maintain a log book and keep the log book in their possession at all times.

5.2 ISSUING OF PERMITS, LICENCES AND CERTIFICATES OF COMPETENCY

All permits, licences and certificates of competency which are relevant to the design, installation, erection, operation and use of industrial plant and equipment under a particular statute or Codes of Practice must be issued by the relevant state or territory authority. Where the statutes are silent with respect to requiring permits, licenses and certificates of competency (eg. camera cranes and booms), employers are responsible for ensuring that such designers, installers, operators and/or users are provided with sufficient training, education and experience to ensure that the person operating the equipment can do so with a minimum risk of injury to themselves and/or other persons.

6. CONTRACTORS AND SUB-CONTRACTORS

Under OH&S legislation, employers are required to ensure that safe systems of work are adhered to in workplaces under their control, irrespective of whether the work is undertaken by employees, contractors and/or sub-contractors.

Indicators of a Contractual Relationship and an Employment Relationship can be found at Appendix N.

Notwithstanding the provisions of a contract between the principal employer and a contractor/sub-contractor, the provisions of the relevant OH&S legislation and regulations will apply.

6.1 CONTRACTOR MANAGEMENT

An employer contracting out work should have effective contractor management systems which are fully integrated into their overall business management system/s. An employer engaging contractors and/or sub-contractors has an overriding responsibility for ensuring any work undertaken by the contractor or sub-contractor is undertaken in a manner that does not jeopardise the safety of other employees, visitors, other contractors and sub-contractors or the general public.

The duty extends to monitoring the effectiveness of contractor management systems and ensuring that contractors strictly adhere to any conditions that may be imposed on the contractor as part of the contract and/or other documents such as work permits, work method statements and/or risk assessments.

A generic Permit to Work is attached at Appendix R.

The employer must ensure that their own employees fully understand the contractor management systems and the conditions of the contract, especially conditions pertinent to occupational risk management. All contractors must be required to undertake a site induction at which the above-mentioned items and conditions are discussed.

6.2 CONTRACTORS AND SUB-CONTRACTORS

Contractors and sub-contractors must be contractually required to:

1. adopt safe systems of work;
2. comply with relevant statutory provisions, regulations, Australian Standards and codes of practice;
3. ensure all relevant licences and certificates of competency are held and can be produced on demand by any relevant authority;
4. undertake risk assessment/s prior to any work being undertaken;
5. provide the employer with a copy of all risk assessment/s, work method statements, etc.;
6. adhere to the employer's policies, hazard management strategies, work permits and/or work method statements;
7. accept the employer's right to audit their OH&S management systems;
8. accept the employer's right to monitor OH&S performance;
9. accept the employer's right to stop any work being undertaken if the work violates agreed OH&S management systems or any relevant statutory provision, regulation, Standard or codes of practice;
10. abide by safety induction procedures..

Note: Whilst contractors and sub-contractors are employers and, as such, have all the legal responsibilities of employers in respect of their employees, in most jurisdictions contractors and sub-contractors may be considered to be employees of the principal employer.

7. SAFETY INDUCTION

7.1 INDUCTION FOR EMPLOYEES AND CONTRACTORS

All those working on a production must be given sufficient information to enable them to perform their job safely. Irrespective of the duration of their engagement period, all those working on a production must be given an induction at each work site at which they will perform duties. It must include an orientation and information relevant to the production. Time will be put aside on the first day of employment at each location or site for this induction. Key issues likely to be covered include:

- an outline of what the employer expects of employees/contractors while working on the site;
- the names of key contacts on site and their function/s;
- distribution of written information, eg. site maps, contractor rule book;
- relevant introductions;
- relevant site tour including location of:
 - safe access and egress points,
 - facilities and amenities,
 - OH&S equipment including personal protective equipment,
 - first aid facilities, emergency equipment, assembly points, accident reporting procedures;
 - material safety data sheets for any relevant hazardous substances;
- emergency and evacuation procedures and relevant personnel;
- crucial workplace-specific procedures, including relevant manual handling issues.
- a short test to ensure that the contractor/s understand their specific responsibilities with a signing off to acknowledge attendance at the induction training program.

Any person requiring information in addition to that provided at the safety induction should consult their supervisor. If the required information is unavailable for any reason, the matter should be raised with the relevant supervisor for rectification.

7.2 VISITOR INDUCTION

All visitors to a production must be given sufficient information to enable them to visit the site safely. Irrespective of the duration, all those visiting a production must be given information relevant to the level of risk.

8. GLOSSARY OF TERMS

Act	An act of parliament – federal, state or territory
ADG Code	Australian Dangerous Goods
Advisory body	A reputable body which has been formed to provide reliable and impartial advice and assistance to employers, employees, government, unions or other interested parties
Assistant/Trainee Rigger	A person able to undertake duties as a gopher and to assist as required fully supervised with rigging.
Australian Standard (AS/NZS)	A document published by Standards Australia to establish national benchmarks for products and services so as to enhance quality of life and industry efficiency. Australian Standards are advisory but can be cited under legislative arrangements to specify specific standards of compliance (refer www.standards.com.au).
(AusSAR)	Australian Search and Rescue – part of the Federal Government’s Australian Maritime Safety Authority.
Civil Aviation Safety Authority (CASA)	CASA is responsible for the safety regulation of civil air operations in Australia and the operation of Australian aircraft overseas (refer www.casa.gov.au).
Code of practice	An advisory document developed to assist employers and employees to meet legal requirements under specific federal, state or territory legislation. Codes of practice can be regarded as stand-alone documents or can be approved under legislation. Failure by an employer to comply with a recognised code can constitute a prima facie case that the duty of care has not been fully met.
Compensable injury	An injury/illness suffered by an employee during or in the course of their work for which a claim has been made and accepted by a workers’ compensation insurer under the provisions of the relevant workers’ compensation legislation.
Comcare Australia	The statutory body responsible for administering the Commonwealth OH&S and Workers’ Compensation legislation.

Employer	A person or entity, employing persons under contracts of employment, including self-employed persons and contractors and sub-contractors. For the purposes of these Guidelines, the principal employer is the producer.
EPTs	Explosive powered tools.
EWPs	Elevating work platforms.
FSWR rigging	Flexible steel wire rope rigging.
Film television and video industry	For the purposes of these Guidelines, all film, television and video productions regardless of how those programs are distributed or exhibited and excluding only news and current affairs programs
Floating line	A safety line used by crew members, camera operators and air dispatchers to allow safe movement about an aircraft cabin while the door is open or totally removed.
Gaffer	The head of the electrics department. The gaffer is usually a licensed electrician. Where the gaffer is not a licensed electrician, another member of the electrics department should be a licensed electrician. Where use of three phase power is required, the gaffer must be a licensed electrician.
Hard point	A secure anchor position on an aircraft, identified by an aviation rigger, pilot or engineer; sometimes identified in the Aircraft Flight Manual; must be used in tandem when securing floating lines; if used as a harness attachment point for people, whilst flying with the aircraft door removed, it must be approved by CASA.
Hazard	A characteristic, which is inherent in the work or has the potential to cause death or injury to persons and/or interrupt or interfere with the work process or activity.
Hazardous action	Any action which, in the opinion of the Producer or Safety Consultant, may place people or property at risk.
Health and safety authorities	Federal: National Occupational Health and Safety Commission Victoria: New South Wales: WorkCover NSW Australian Capital Territory: Queensland: Northern Territory: Western Australia: South Australia: Tasmania:
Joint consultation	A process of consultation between the employer and their employees, in some jurisdictions prescribed in regulations, to enable employees to contribute to the development, implementation and review of health, safety and welfare workplace policies and procedures.
LAME	Licensed Aircraft Maintenance Engineer.
MDF	Medium density fibre board.
MEAA	Media Entertainment and Arts Alliance, the union with coverage of persons working in the film and television industries.
MSDS	Material Safety Data Sheet.
Must	Means mandatory, ie. non-negotiable.
NOHSC	National Occupational Health and Safety Commission.
OH&S	Occupational health and safety.
Pendulum effect	A circumstance where a person in a harness is suspended from a fixed point so as to move to and fro by the action of gravity and acquired kinetic energy.
PPE	Personal protection equipment – includes safety glasses, safety shoes, hard hats, fall protection equipment such as safety harnesses and fall arrest devices, gloves, masks and hearing protection.
Plant	Includes any machinery, equipment (including scaffolding), appliance, implement or tool and any component or fitting thereof or accessory thereto.
Premium	The amount charged by insurers/statutory bodies to cover the estimated costs of the workers' compensation liabilities for a given financial year.
Producer	For the purposes of these Guidelines, the producer is the prime employer. The title of the prime employer may vary on individual productions or in individual workplaces. It is essential the person with prime responsibility as the employer is identified regardless of the title used.
Production	All aspects of the pre-production, principal photography, field operations, and post-production phases to the point where the program is delivered to the

	investors/broadcaster/distributor/exhibitor of all film, television and video programs including drama, documentary, commercials, infotainment and lifestyle programs, corporate, training and education programs and the like (excluding only news and current affairs programs), regardless of how such programs are to be distributed or exhibited.
Production crew	Production crew in these guidelines means ALL employees and/or other persons, regardless of how engaged, required for the production.
Rehabilitation	The restoration of occupationally injured or ill employees to the fullest physical, mental, social, vocational and economic usefulness of which they are capable.
Regulation (in law)	A type of delegated legislation, including such legislation designed to regulate particular hazards, eg. radiation, equipment (eg. cranes), processes (eg. welding) or workplaces (eg. film and television sets).
Return to work plan	A detailed, individual account of the stages involved in returning an injured or ill employee to their pre injury work or as close to that level as possible.
Rigger	Appropriately certificated rigger able to rig under supervision.
Risk	The degree of probability of injury or loss given a defined set of circumstances.
Risk assessment / management	The process of identifying, quantifying and prioritising potential risks and developing effective management strategies to assume control or eliminate such risks using a hierarchy of controls from the most effective to the least effective – namely, elimination, substitution, isolation, administration and lastly use of PPE.
RSI	Repetitive strain injury.
Safety Consultant	Means a person suitably skilled to provide specialist knowledge, expertise and advice verbally and in writing in the form of a Safety Report regarding the most appropriate measures to minimise the risks associated with principal photography, and photography undertaken on second or additional units.
Safety Report and Supplementary Safety Report/s	A report prepared by a suitably qualified safety professional which represents a systematic examination of any hazards which may associated with filming, program making and/or field operations that covers all aspects of principal photography and photography undertaken on second or additional units and detailing appropriate controls to eliminate or reduce identified risks.
Safety Supervisor	Means a person suitably qualified and skilled to provide specialist knowledge, expertise and advice regarding the most appropriate measures to minimise risks associated with filming, engaged to supervise cast and crew safety and may be engaged throughout principal photography, second unit and other unit filming but must be engaged whenever hazardous action, stunts or special effects are being undertaken.
Senior rigger	Appropriately certificated rigger able to rig unsupervised and qualified to direct both the rigger/s and assistant rigger/s.
Stunt rigger	A senior rigger who is suitably qualified and experienced to undertake the rigging required for the relevant stunt, whose engagement shall be approved by the Stunt Coordinator
Stunt Action Person - SAP	Means a person suitably qualified and skilled to perform in background action and group stunt work under the supervision of a Stunt Coordinator.
Supervising rigger	Appropriately certificated rigger able to rig unsupervised, to design the rigging, to design and implement the rigging risk management plan, and to oversee all rigging.
Medical Personnel	Medical personnel include medical practitioners, doctors, registered nurses, enrolled nurses, paramedics, first aid personnel and other rescue personnel such as life savers, underwater rescue divers, fire fighters, etc. Medical personnel must: <ul style="list-style-type: none"> • be currently qualified and, where relevant, currently registered in the jurisdiction in which the work is being undertaken, • if a nurse, be registered with the State Nurses' Registration Board in the state of work; • have appropriate training and experience in emergency medical care and reliable triage skills; • have a knowledge of OH&S; • be acceptable to the relevant child employment Authority if required to supervise babies/children on set; • if working in rural or remote locations, have a knowledge of wilderness first aid/medicine (remote area health nursing); • have experience in the film and television industry before working unsupervised.
SPAA	Screen Producers Association of Australia
Set/location	Anywhere filming is to take place or any area set up for the purposes of filming.

SMFs	Synthetic mineral fibres.
Should	Means recommended but not mandatory, ie. ought to be done but need not be followed if a safer alternative is available and is practical given the circumstances prevailing at the time.
Special Effects Co-ordinator	Means a person suitably qualified and experienced to arrange, set up and oversee the production of special effects.
Statutory duty	A legal obligation owed under legislative arrangements.
Stunt actor	See stunt performer.
Stunt coordinator	Means a person qualified and experienced to arrange, set up and oversee the production of a stunt. In the event consideration is given to the stunt coordinator undertaking a stunt as a performer, a risk assessment must be undertaken to ascertain whether or not another stunt coordinator should be engaged to coordinate the stunt in question.
Stunt performer	Means a performer suitably qualified and experienced to undertake the relevant stunt/s. Stunt performers must work under the supervision of a Stunt Coordinator.
SUSDP	Standard for the Uniform Scheduling of Drugs and Poisons.
Systems of work	The totality of the methods adopted for carrying out the operations required in a particular workplace. It covers all facets of the employment situation, including the organisation of work processes, the methods of using plant and equipment, job training and instruction about aspects of safety in the workplace.

9. RIGHTS AND OBLIGATIONS

All employees have a right to be advised about the nature of the risks associated with their work.

OH&S legislation provides for employees to enter a process of joint consultation with employers to develop and implement effective hazard management strategies.

All employees have the right to speak directly with their employer regarding any OH&S issue which they believe could have an adverse impact on their health and/or wellbeing while at work.

Employers must provide impartial accurate advice regarding any hazard/s to which employees may be exposed and/or about which they are concerned.

When hazard management strategies have been developed to manage a particular risk, such strategies will be fully implemented by the employer.

All employees are required to adopt safe systems of work.

Any employee has, at common law, the right to refuse to follow an instruction that involves some risk of injury normally inherent in the job that is an unreasonable or unnecessary risk.

Where hazard controls identified in the Safety Report are breached or where new or additional risk/s are identified:

- (a) the First Assistant Director, as the producer's delegate on the set, may at his/her own discretion stop the shoot until such time as a risk assessment is undertaken and appropriate hazard controls are implemented; and
- (b) the cast/crew delegate/elected safety representative shall have the discretion to stop the shoot after a majority vote has been taken; the stoppage shall remain in force until such time as a risk assessment is undertaken and appropriate hazard controls are implemented.

10. RISK MANAGEMENT, CONSULTATION AND RISK ASSESSMENT

10.1 RISK MANAGEMENT

Risk management is the identification of hazards, the assessment of the risk of the identified hazard causing injury or illness and where appropriate eliminating the hazard or in the event it cannot be eliminated implementing control measures to minimise the risk.

Therefore, well-developed systems for identifying, evaluating and controlling hazards are fundamental to managing risks.

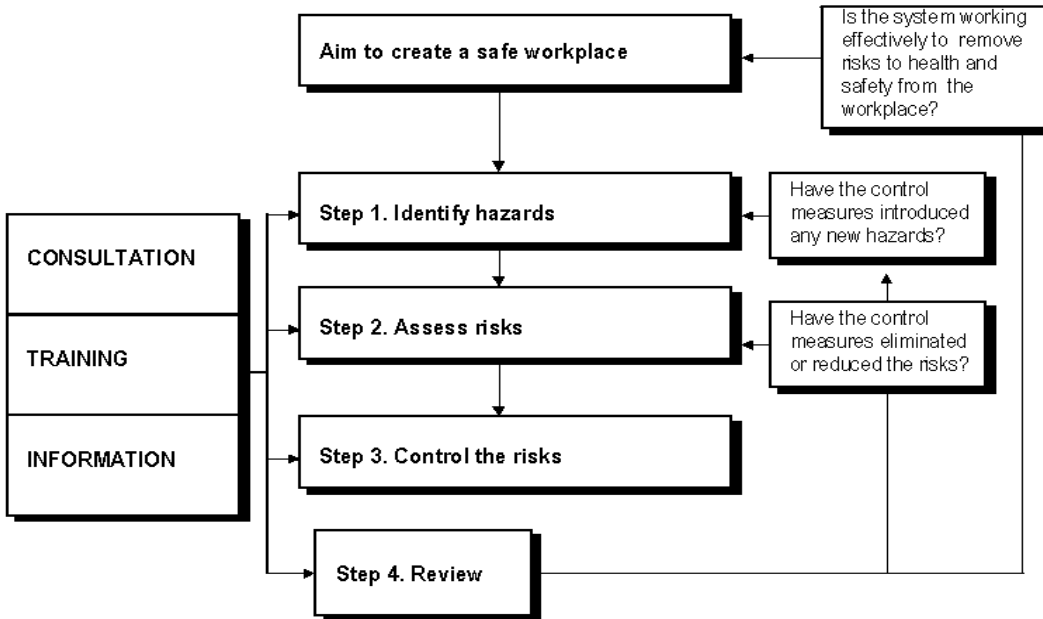
These systems can involve a range of activities and may include:

- direct consultation with employees involved in carrying out the work;

- a visual inspection of the workplace (including all equipment, materials and substances);
- auditing;
- work study;
- testing of equipment and substances;
- biological and environmental monitoring;
- technical or scientific evaluation;
- user trial of equipment;
- analysis of injury and/or near miss data;
- analysis of information provided by suppliers of plant, equipment and/or substances.

10.2 EXAMPLE OF A GENERIC OCCUPATIONAL RISK MANAGEMENT MODEL

Also refer to Appendices J and K, Risk Management Model and Hazard Identification Information Pro Forma. The Risk Management Model is designed to facilitate a systematic approach to identifying, evaluating and controlling the hazards in film and television production.



10.3 CONSULTATION

An employer must consult with their employees to enable the employees to contribute to the making of decisions affecting their health safety and welfare at work. Consultation should be undertaken:

- when risks to health and safety are assessed or reviewed,
- when decisions are made about risk elimination, control or monitoring,
- when decisions are made about adequacy of facilities for employee welfare,
- when changes are made to premises, systems, methods, plant or substances that may affect health, welfare or safety,
- when changes are made to consulting procedures.

Consultation involves providing employees with relevant information and giving them the opportunity to express their views. These views are to be valued and taken into account by the employer.

The need to establish and/or elect/appoint health and safety committees, representatives and other agreed consultative mechanisms are set out in the relevant state and territory legislation and regulations.

11. HAZARD MANAGEMENT

Effective hazard management is fundamental to reducing the risk of occupational injury, maintaining a safe working environment and maximising output.

Film and television production often takes place in a dynamic environment where employees are exposed to a range of hazards not usually found in office or other more static working environments that can include:

- sophisticated screen-based work;
- stunt work;
- special effects;
- working with animals and/or children and/or the elderly;
- working with people from overseas (cast and/or crew) and resultant language and cultural differences;
- ultraviolet radiation
- radio frequency radiation;
- heavy manual handling;
- hazardous substances;
- aggressive people;
- driving;
- using mobile phone whilst driving;
- a variety of weather conditions;
- a range of communicable diseases;

that may result in:

- death and/or serious traumatic injury;
- sprains and strains of the back, joints and muscles;
- sunburn;
- melanoma, basal cell carcinoma;
- occupational related stress;
- anxiety;
- dermatitis;
- tuberculosis;
- hepatitis;
- hypo/hyperthermia;
- burns.

12. RISK ASSESSMENTS AND SAFETY REPORTS

Historically, safety reports prepared for film and television productions have addressed the manner in which identified risks might be managed during filming. These Guidelines are based on the concept of hazard

identification, risk assessment and risk management and cover all aspects and all phases of a production, not simply on-set issues.

Comprehensive risk assessments must be undertaken for all phases of all film and television productions in respect of all workplaces in which work will be undertaken. Attention must be paid to preproduction – including design and construction, striking and demolition, casting, rehearsals, costumes, etc. – and postproduction – including editing, visual effects, mixing, etc. – in addition to all aspect of principal photography and all additional shooting units. Basic safety check lists are at Appendices A, B and C.

Risk management principles require hazards to be identified and controls put in place to eliminate the risk, or where elimination is not possible, to minimise the risk to the greatest extent possible. In order of preference, the following hierarchy of hazard controls must be followed:

- elimination,
- substitution,
- isolation of the hazard, for instance by engineering out the hazard,
- administration and training, for instance, training personnel in a safe system of work,
- provision of PPE.

The risk assessment prepared to cover principal photography and all filming continues to be known as the Safety Report and must be documented in writing, prepared in consultation with crew and cast including sub-contractors and must be made available to all persons involved in the filming.

Particular attention must be given to scenes and/or sequences involving hazardous action, eg. special effects, stunts, prosthetics, animatronics, weapons, animals, aerial shooting, which must be the subject of detailed risk assessment at the pre-production stage.

Risk assessments and the Safety Report must be prepared in consultation with those persons who will be affected by the tasks being assessed.

Appendices J and K outline a methodology for carrying out a risk assessment and a pro forma for identifying the hazards to ensure the risk assessment is relevant and complete. See also Section 10.1. Note: the pro forma is not exhaustive and will not cover all potential hazards that may be encountered in an individual workplace.

Where hazardous filming activities are to be undertaken, the Safety Report should determine:

- shooting days for which a Stunt Coordinator, Special Effects Coordinator, Medical Personnel and/or Safety Supervisor must be engaged;
- specific requirement for the Stunt Coordinator, Special Effects Coordinator and/or Safety Supervisor
- procedures to be adopted for eliminating and/or reducing any risks;
- when/if the employment of a specialist/s is necessary (eg. armourer, animal trainer, veterinarian, fire brigade, mechanic) and relevant licensing requirements;
- the emergency services, Medical Personnel and supplies required, such as adequate first aid kit/s, nearest hospital equipped to handle accident victims, etc.;
- the nearest local and contact number for emergency services;
- any safety requirements associated with any equipment to be used, eg. vehicles, rigs, props, cranes, lighting, dollies, etc.;
- provision of first aid supplies as appropriate in all work sites.

The employer must:

- commission a Safety Report;
- ensure that the report is compiled by an suitably qualified Safety Consultant;
- ensure that any recommendations made in the report are acted upon by the responsible person/s;
- coordinate distribution of the report to:
 - all cast and crew members (including, where relevant, contractors and sub-contractors);
 - a copy each to SPAA and MEAA; and
 - ensure that a copy is available at all times on the set/location for the use of extras.
- ensure that hazards and controls are detailed on daily call sheets.

12.1 SUPPLEMENTARY SAFETY REPORTS

In the case of series, serials and ongoing television programs, a separate Safety Report must be commissioned for hazardous action in any single episode unless it has been covered in a comprehensive Safety Report for the entire program (Supplementary Safety Report).

Any hazardous action that is proposed for a production at any time after the preparation of the Safety Report will be subject to detailed risk assessment and Supplementary Safety Report. The Supplementary Report must be added as an attachment to any previously prepared Safety Report/s and circulated to recipients as set out in Clause 12 above.

13. PERSONAL PROTECTIVE EQUIPMENT (PPE) AND FIRST AID FACILITIES

Use of PPE is the least effective manner by which to control an identified hazard and should be utilised only after all other appropriate measures to control the risk of potential injury or illness have been exhausted including elimination, substitution, isolation, administration and training. See Section 10.3.

13.1 PERSONAL PROTECTIVE EQUIPMENT

Hazards with PPE are associated with lack of maintenance, poor storage practices and improper use. Maintenance, storage and use practices are critical for risk control. The following practices should be followed:

- PPE should be on personal issue and marked with the name of the individual to whom it has been allocated;
- PPE should be cleaned daily and checked for defects;
- PPE should be stored in an airtight container;
- cartridges should be dated and changed regularly, where applicable;
- replacements should be readily available;
- operators should be properly trained;
- operators should be clean-shaven for adequate face seal; and
- air filter cartridges should be changed as required.

13.2 FIRST AID EQUIPMENT, FACILITIES, SERVICES AND PERSONNEL

Adequate and appropriate first aid supplies must be provided and available at all time at all workplaces and in accordance with relevant legislation and regulations.

13.2.1 Medical and First Aid Services

1. After consultation with the Safety Supervisor, the Producer will provide a medical service which is sufficient for the particular production. This will include liaison with a qualified medical practitioner in the immediate vicinity of the production, who will be prepared, if necessary, to treat unit members outside their working hours.
2. Registered nurse/s, paramedic/s, enrolled nurse/s and other appropriate first aid personnel (for example, surf lifesavers, underwater rescue divers, etc) must be engaged as appropriate to address the risks identified in the Safety Report for the particular production.
3. Qualified medical personnel (typically a qualified registered nurse), must be on set at all times when stunts and/or special effects and/or hazardous filming are carried out. Other appropriate Medical Personnel may also be required having regard to the risks identified in the Safety Report. Where a potentially dangerous stunt or special effect is being performed, an ambulance must, if available, be in attendance on set. Where an ambulance is unavailable, a suitable means of transporting injured person(s) to hospital must be provided. In all other circumstances, medical and/or first aid personnel shall be engaged having regard to the requirements of the production, consideration being given to matters such as:
 - the numbers of personnel who will be working on the day;
 - production requirements, eg. rigs, working with animals;
 - location considerations, eg. filming on/in/near water, heights, remote area locations, working outdoors in heat/cold;
 - babies and children: nurses/babycare professionals as relevant shall be engaged in a ratio in accordance with relevant legislation but, where legislation is silent on the issue, the following guidelines are recommended as a minimum:
 - the producer should ensure that no supervisor supervises at any one time more than:
 - two children, if any of the children are under three years old, and
 - five children, if any of the children are between three and five years old, and
 - ten children, if the children are more than five years old, and

- if the baby is twelve weeks or under, a baby care professional should be engaged for each baby.
4. The producer will ensure that adequate first aid kits are available at all work sites, develop evacuation and emergency procedures and ensure adequate back-up medical facilities have been arranged and implement the recommendations made in the Safety Report..
 5. When engaged, the Medical Personnel must be informed regarding the arrangements in 13.2.1.4 above and given adequate time to review the facilities and procedures.

13.2.2 First Aid Room/Post

Where required by OH&S legislation or other relevant legislation or regulations, a first aid room/s must be provided.

A first aid facility should be supplied wherever possible. It may be a designated room, fitted out caravan or other similar facility.

As a minimum, it should contain:

1. desk;
2. phone;
3. two chairs, one with arms (for patient use);
4. suitable lighting;
5. large lockable cupboard;
6. a bed;
7. a screen;
8. air conditioning/heating;
9. sink with hot and cold running water;
10. easy, close access to the set;
11. a wide door;
12. be easy to clean;
13. be easily secured, and
14. be connected to power.

Other important considerations include:

1. a refrigerator with freezer or separate deep-freeze unit for ice;
2. lockable filing cabinet or similar for medical records;
3. metal lockable cupboard or safe for restricted drugs;
4. desk lamp;
5. proximity to toilets;
6. privacy considerations;
7. waste disposal;
8. soap and towel dispensers;
9. secure storage for non-restricted drugs and expensive equipment;
10. open shelves/bookcase (to provide off ground level storage);
11. room clearly labelled;
12. notice regarding Medical Personnel on duty posted together with contact details (eg. by mobile phone/walkie-talkie);
13. notice board for displaying relevant/compulsory occupational health and safety notices;
14. autoclave sterilizer or alternative appropriate sterilization policy;
15. policy for disposal of infectious and/or contaminated materials, sharps, etc.

14. WORK PREMISES AND ENVIRONMENT – ON SET AND LOCATION

14.1 AUDIENCE AND GENERAL PUBLIC MANAGEMENT

Employers have responsibilities for the health, safety and welfare of all persons who may be at a film or television set including invitees, spectators, audiences, guests and members of the general public. A risk assessment/s must be undertaken to identify and assess any foreseeable hazards and eliminate or otherwise control any associated risks which could have an adverse impact on the health and safety of such persons and should address issues such as:

- potential overcrowding in studios and other internal venues;

- crowd control at exterior sites;
- satisfactory seating arrangements;
- distance between filming activity and members of the general public;
- access and egress;
- security;
- evacuation and emergency management.

14.2 FIRE RISKS AND PREVENTATIVE MEASURES

Potential causes of fire include:

- smoking in non-smoking areas;
- poorly managed “hotwork” such as welding, brazing or soldering;
- poorly managed special effects involving the use of pyrotechnics and explosives;
- proximity of props/costumes/sets/drapes, etc. to heat from lights and/or other ignition sources;
- faulty electrical equipment;
- poorly constructed equipments used to create special effects, eg. gas equipment;
- misuse of electrical equipment;
- incorrect or inappropriate storage, handling and use of flammable liquids and gases;
- lack of planning to manage a fire emergency;
- poor housekeeping.

Fire emergencies can be avoided by ensuring that:

- materials that could start, accelerate or maintain a fire are kept to the absolute minimum in the workplace;
- hazardous substances are stored and handled in accordance with relevant regulations and codes of practice;
- adequate measures are taken to manage potential fire hazards including fire retarding of fabrics, curtains, props, costumes, wigs and flammable elements of sets, ensuring items capable of combustion are kept at appropriate distances from lights, heat sources, etc.;
- serviceable fixed and portable fire fighting appliances (eg. fire extinguishers, sprinkler systems, fire blankets) are located in the workplace to deal with potential emergencies;
- employees are suitably trained to respond to a fire emergency and use fire fighting equipment if required;
- all employees accept a degree of responsibility for ensuring that potential fire hazards are rectified;
- all employees keep the workplace clean and free of combustible materials;
- regular inspections are conducted of the workplace to identify and rectify sources of a fire;
- additional inspections are conducted as and when substantial changes are made to the workplace, eg. before, during and after set construction on a sound stage;
- a fire emergency evacuation plan is developed, implemented, and tested on a regular basis.

A safety checklist for fire prevention is provided at Appendix F.

14.3 SMOKING

Smoking must not be allowed in workshops, where hazardous substances and/or dangerous goods (in particular, pyrotechnics and/or explosives) are being utilised and/or stored or where dust is being created.

Where performers are required to smoke as part of their performance, risk assessment shall take account of costumes, props and sets and ensure appropriate controls are implemented to eliminate the risk of fire. Suitable means of extinguishing cigarettes/cigars must be provided (eg. ashtrays and sandboxes) in positions in a manner accessible to the performer.

In all other circumstances, smoking can only occur if designated areas have been identified and specified in the risk assessment.

On the advice of the Stunt Coordinator and/or Special Effects Coordinator and/or Safety Supervisor, smoking may be banned during the setting up and/or execution of a stunt or special effect.

14.4 AMENITIES

The producer will ensure that:

- the ratio of toilets to the number of personnel is adequate;
- amenities are maintained in a sanitary condition;
- where possible, gender specific amenities will be provided;
- amenities are available at all workplaces.

14.5 ACCESS AND EGRESS

A safe means of access and egress must be provided and maintained to any place being used for filming or designated as a set or utilised as a workplace of any kind including mobile workplaces such as trucks, vans and other vehicles and vessels.

A safe means of access and egress may include the provision and maintenance of serviceable, adequately illuminated:

- floors, passageways, hallways, gangplanks, lanes, companionways, hatches;
- foyers, entrance ways, jetties, wharves, vessels, tanks, parks, squares;
- steps, stepladders, ladders (fixed and portable), walkways, poles;
- scaffolding, work platforms, hoists, cranes, and cherry pickers.

14.5.1 Developing an Emergency Response

An emergency management plan need not be complex.

The employer must develop effective workable emergency management plans for each workplace in consultation with employees. Emergency plans must be understood by all in the workplace. Key people must be identified and critical tasks allocated so that the tasks are carried out at the appropriate time. Where possible, emergency management plans should be generic, ie. the one plan can be implemented to deal with a range of emergencies.

The employer shall ensure that fire warden/s are appointed for each building where persons are undertaking work. The fire warden/s must be capable of raising the alarm and supervising the evacuation of the building and liaising with relevant emergency services. Refer to AS 3745-2002.

Potential workplace emergencies include:

- fire;
- collapse;
- escape of toxic material;
- medical, eg. multiple injury and/or fatality;
- bomb threat and/or extortion;
- picketing;
- violence;
- loss of key resources, eg. equipment, materials, personnel, etc.;
- loss of essential services;
- sabotage.

A generic emergency plan is provided at Appendix S.

14.6 WORKING IN DARKNESS OR DIMINISHED LIGHTING CONDITIONS

1. Working in darkness or diminished lighting conditions is a hazard that cannot be avoided in some productions. Risk assessments must identify procedures to reduce the associated risks.
2. Consideration must be given to the use of blues and other work lights, use of fluorescent tape markings on floors, steps and edges, etc.
3. Consideration must be given to those who need to move from areas of bright lighting to low lighting, including appropriate access and egress.
4. Appropriate warnings must be provided prior to light levels being reduced.
5. Consideration should be given to the fact that darkened environments can inhibit communication, especially for those with hearing impairments.
6. Exit and safety lighting must be maintained and visible at all times.
7. Good housekeeping is essential and trip hazards must be eliminated.

8. When working outside at night, consideration must be given to the use of practical work lights and safe pathways must be established.

14.7 TEMPERATURE

Risk assessments shall analyse appropriate working environment temperatures for all aspects of the production to ensure potential exposure to extremes of heat and cold are avoided. Where sites are not air conditioned, other means of heating/cooling shall be provided and may require monitoring on a daily basis. Acceptable performance temperatures will vary according to the activity undertaken.

Some working environments involve working in heat. Precautions need to be taken to reduce the risk of exposures, especially in relation to design of costumes, choice of fabrics and the likely activity to be performed during the performance to avoid overheating. In any event, it is essential that there is appropriate water available and any clothing does not create problems of overheating. When working outdoors, adequate shade must be provided. Risk assessments shall take account of any necessary temperature controls that may be required, including scheduling for cooler parts of the day.

14.7.1 Working in heat, including in seasonal heat

Working in hot conditions can result in a number of adverse health effects – ranging from discomfort to serious illness – which are generally grouped together as heat stress. Working in hot conditions can arise in a number of circumstances:

- outdoor working during summer months
- working in northern Australia
- working with plant or undertaking processes that generate radiant heat
- hot, stuffy and poorly ventilated buildings
- working in vehicles.

It is important to remember that people generally do not acclimatise to changeable seasonal heat, particularly heat waves. Therefore, exposure to seasonal heat is a significant impairment hazard. Similar effects are experienced when travelling from one climatic zone to another considerably hotter one.

If, due to environmental conditions and/or the level of physical activity, the body's cooling mechanisms are unable to prevent body temperature from rising and/or excessive fluid loss results in dehydration, people will experience symptoms which usually progress in the following manner:

- skin rashes
- dehydration
- heat cramps
- heat exhaustion, and
- heat stroke.

The risk of impairment and illness increases progressively with the seriousness of symptoms. Impairment in these circumstances can also lead to increased risk of accidents due to:

- slipperiness of sweaty palms
- fogging of safety glasses
- fatigue and reduced concentration
- blood pooling and fainting

Additional discomfort of protective clothing and/or equipment can result in reduced protection and unsafe conditions.

14.8 UNIT AND CATERING DEPARTMENTS

14.8.1 Trucks, Vans and Equipment (including unit, catering, makeup, hair, wardrobe, etc)

- a. the vehicle/s must be roadworthy, registered and in a serviceable condition;
- b. the vehicle/s must be appropriately fitted out in accordance with relevant electrical and gas Safety Guidelines, well maintained, well lit, and kept in a hygienic condition;
- c. fittings and fixtures must be serviceable and appropriate;
- d. the power supply must be quiet;
- e. if external power is required, the vehicle must be supplied with the correct leads for that particular vehicle;
- f. the vehicle must be levelled and parked safely;

- g. safe entry and exit must be provided and, where necessary, steps must be safe and hand rails fitted;
- h. suitable and sufficient fresh and waste water capacity for the purpose for which it is designed and for which it is to be used;
- i. if the vehicle is modified, the appropriate engineer's certificate must be provided;
- j. all equipment supplied with the vehicle should be suitable for the purpose for which it is to be used;
- k. all electrical equipment must be serviceable, tested and tagged;
- l. all gas equipment must be serviceable and comply with relevant Australian Standards;
- m. safety equipment must be in good working order;
- n. fire extinguishers must be in good working order and in current test, tagged and logged;
- o. smoke alarms must be fitted and serviceable in makeup, hair and wardrobe vehicles;
- p. employees working from the vehicle must be appropriately trained to use the equipment in the vehicle;
- q. adequate headroom must be available;
- r. storage facilities must of adequate size and of a type to prevent the deterioration of the items to be stored.

14.8.2 Toilets and amenities – refer to Location Checklist at Appendix 1.

14.8.3 Marquees/Tents

Care must be taken when siting marquees and tents and consideration given to the following:

- a) Check for overhead power lines and overhanging tree branches.
- b) If using pegs, establish if there is underground power, water, gas, telephone in the vicinity.
- c) Tie lines and pegs can be a major trip hazard, ensure they are well marked/fenced off/safe walkways established, etc.
- d) Erect marquees/tents on firm, non-muddy ground.
- e) Free standing or framed marquees/tents must be adequately secured.
- f) Marquees/tents must be in good condition and fit for the purpose.
- g) Adequate walkways must be considered and if necessary temporary walkways installed.
- h) Appropriate measures must be taken to avoid the risk of fire from heaters and/or lights.
- i) Lighting in and around marquees/tents must be appropriate.

14.8.4 Meal Areas

- Should be well lit.
- Seating and tables should be of sturdy design.
- Heated or cooled if required.
- Power leads placed so as to eliminate trip hazards.
- Tea/coffee equipment must be clean and serviceable.
- Single use drinking cups must be used unless reusable ones can be suitably sanitised.

i) Hot Water Urns, Toasters, Pie Warmers, etc.

- Must be positioned safely and measures implemented to minimise burns especially when children are in the vicinity.
- Must be tagged and tested and protected by RCDs.
- Power cords must be positioned to minimise tripping hazards.
- Gas powered urns must be properly ventilated and used in accordance with manufacturer's recommendations.
- Care must be taken whilst re-filling urns to avoid steam and hot water burns.
- Coffee makers and plungers should be used in accordance with manufacturer's recommendation.

ii) Kitchens, Catering Trucks and Catering

- Must have and display current Health Department Certification.
- Staff should be suitably trained and qualified.
- Catering trucks must be built in accordance with relevant health department standards.
- Must have sufficient fresh and waste water capacity.
- Waste water must be disposed of in accordance with relevant regulations.
- Must have the ability to properly sanitise plates/utensils, etc.
- Sufficient cold storage for foodstuffs for the numbers being catered.
- Gas bottles must be properly secured in an upright position and in current test.

- Correct food handling procedures must be followed at all times.
- If food must be pre-prepared and pre-served, the caterer/s must remain in attendance unless food handling standards can be maintained in the absence of the caterer/s.

iii) Rubbish

Sufficient rubbish bins must be provided, emptied regularly, kept in a clean condition, appropriately secured to avoid spillage and rubbish disposed of legally. Catering rubbish must be disposed of separately to other rubbish.

iv) Generators/Power Distribution – refer to Section 42.

v) Water Supply

- There must sufficient potable water available.
- If water must be carted, tanks must be designed for the purpose.
- The water source must be of an acceptable standard.
- Any reticulation system used must be suitable for potable water and free of risk of contamination.
- Sufficient available water supply must be ensured when working in remote locations.

15. TRAFFIC MANAGEMENT – FILMING ON ROADWAYS

15.1 FILMING PERMISSIONS

Permission to film on public roads must be gained from the appropriate police and/or council authorities and the relevant state roads authority. Where appropriate and/or as directed by police/council/roads authorities, consultation may be required with public transport authorities and emergency services such as fire and ambulance. In some jurisdictions, road authorities and/or councils require lodgement of traffic management plans and/or pedestrian management plans. Depending on the nature of the proposal, traffic consultants may be required to develop the traffic management plans. The plans should minimise disruption to traffic flow, provide a safe environment for the travelling public and filming personnel, and communicate the impacts of any disruptions or changes to traffic patterns in an effective manner. Owner permission is required for private roads.

Permission to erect signs and direct and/or control traffic must be obtained from the appropriate authorities before crew members, appropriately trained and, where relevant, certificated, in traffic control, are assigned to the task.

15.2 FILMING ON ROADS

1. Road rules are to be observed at all times during the course of any works/activities unless otherwise approved by all relevant authorities.
2. Notwithstanding any approval received from a relevant authority, any lawful directions of members of the police, authorised local municipal council staff and authorised road authority personnel must be complied with at all times on the site.
3. Planning for filming on roads should ensure that film lighting, noise, placement of equipment, etc., minimises distraction to motorists.
4. Advertising of the filming in local newspapers and by letterbox drops must occur whenever practical and, in any event, in accordance with police and council requirements.
5. A Safety Supervisor shall be engaged or, where that is not considered necessary in the Safety Report, a crew member/s be so assigned, providing s/he has no other duties to perform while filming on the road is taking place. In any event, all work site traffic management personnel must have completed appropriate training as required in the relevant jurisdiction. Note that in some jurisdictions police personnel will be required to supervise traffic, for instance, in Victoria the only personnel authorised to direct traffic at signalised intersections are members of Victoria Police.
6. The employer must comply with AS 1742.3 Manual of Uniform Traffic Control Devices.
7. All persons working on roads must wear reflectorised vests including cast members other than when in costume.
8. The filming site must be clearly signposted. Witches hats, barricades, warning signs, ‘stop’ and ‘go’ signs are necessary and, at night, flashing warning lights.
9. Only essential crew are to be on the road. Where filming activities obstruct the footpath, proper alternative arrangements must be made for members of the public.

10. The road/s must be cleaned up after filming or at the end of each period of filming on the site and any debris that may pose a hazard to any road user removed from the site and disposed of appropriately.

15.2.1 Traffic Control

1. Persons required to supervise/direct traffic shall be suitably experienced and hold the relevant certificate of competency from the relevant state authority.
2. Adequate personnel shall be allocated to operate stop/go signs. They must be equipped with walkie-talkies with sufficient range and must receive full briefing on the sequence to be rehearsed/filmed. They must be able to advise the need to halt filming.
3. Traffic stopping can be a frustrating job made difficult by the occasional irritable motorist. It is advisable for handouts to be available for motorists, for the crew to be rotated and for rest/break periods to be planned.
4. Camera cut must be conveyed as quickly as possible to avoid traffic congestion and driver antagonism.
5. Stop points must be carefully located to give approaching vehicles plenty of time to stop. On country roads, extra stopping distance should be allowed for large trucks and semi-trailers.
6. Police should be in attendance if traffic is to be held on busy streets or highways.
7. Traffic stoppers are required for any road which runs directly into the area where filming is to occur and for which traffic has been stopped. Careful consideration should be given to driveways or other sources of unexpected traffic and sufficient traffic stoppers must be available to cover such situations.

15.2.2 Lead, Follow and Tracking Vehicles and Safety Bays

1. The Key Grip in consultation with the Tracking Vehicle Driver and the 1st Assistant Director shall determine use of lead vehicles.
2. Lead and follow vehicles should accompany the hero car and/or the camera/tracking vehicle. There must be radio communication between all vehicles [except where the road is closed and the location secure].
3. Safety bays may need to be established away from the base to enable camera re-loads, camera line-ups, etc. Safety bays must be large enough to accommodate all the travelling vehicles and marked clearly on the route map.
4. A base location safely away from traffic to accommodate cast, crew and vehicles should be established.
5. A route map should be drawn up which locates the base relative to the filming area and marks the routes the vehicles will take when filming. It should also show the safety bays and directions for those returning to the base. This map should be distributed to all crew and cast.
6. Where long filming rigs are involved, a turning bay/s may be needed, especially on straight country roads.
7. A test run for all cast and crew required to drive during the filming must occur in circumstances as similar as possible to those which will exist during the actual filming.
8. Adequate warning signage, supervision of camera positions and safe access for cast and crew from the base camp to actor's start mark all require special attention.
9. The tracking/accompanying vehicle must be equipped with appropriately supplied first aid kit/s.
10. Emergency procedures must be developed having regard to the nature of the filming and the location for the event of unauthorised/unexpected entry of vehicle/s in the filming area.

15.3 CAST DRIVING ACTION VEHICLES

- Cast members who do not feel confident to carry out the scripted driving sequence/s, or where deemed not competent by the Safety Supervisor/Stunt Coordinator/1st Assistant Director, shall not be required to do so.
- Driving doubles, low loading or towing the vehicle should be available as alternatives.

15.3.1 Driving in Traffic

Wherever an actor is actually driving a car in real traffic, the following conditions must apply:

1. The actor must hold the correct licence for the vehicle.
2. The vehicle must be:
 - roadworthy and have current registration; or
 - be roadworthy and inspected and issued with an interim permit if not currently registered;
 - low loaded or towed if it not roadworthy or currently registered or able to pass an inspection;
 - any towed vehicle must have good tyres, steering and brakes.
3. The actor should be able to drive at the speed limit or not more than 60 kph whichever is the lesser, or stunt driver/s engaged.

4. The action should allow the actor to drive on sealed or purpose made roads.
5. Where an actor is to perform as well as drive, suitable precautions must be taken such as lead and follow up vehicles, avoiding heavy or fast traffic areas, observing speed limits and choosing suitable roads.
6. Cameras, lights or rigs should be mounted on the car only when suitable precautions such as those mentioned above are taken. Narrow roads and sharp corners should be avoided.

15.3.2 Stunt Performers/Use of Low Loaders

Actors must be doubled with stunt performers or the vehicle low loaded if the action:

1. is at or over 60 kph or is intended to cause damage to other property;
2. requires the tyres to leave the ground, lose traction or lock;
3. involves any special effects or damage to be caused to the vehicle;
4. involves the possibility of an impact, including a near miss, rolling or an explosion.

In any event, both the producer and the actor must feel confident that the actor is capable of safely handling the vehicle during the sequence. Where necessary – for instance, when period cars are used or a manual is to be used when the actor is accustomed to automatics – time for instruction shall be allowed.

15.4 BASIC GUIDELINES FOR ACTION VEHICLES

Note: Also see Section 43.10.7 Stunt Vehicles

1. Before use, all action and stunt vehicles must:
 - be roadworthy,
 - have current registration, or
 - be inspected and issued with an interim permit if not currently registered, or
 - be low loaded or towed if not roadworthy or currently registered or able to pass an inspection.
2. In any event, towed vehicles must:
 - have good tyres, steering and brakes;
 - be examined by the Stunt Coordinator/Safety Supervisor/rigger/mechanic as appropriate to ensure they are in safe working condition and properly rigged.
3. Where an action vehicle is to be used as a stunt vehicle, the Stunt Coordinator and stunt performer driving the vehicle must:
 - be provided with detailed information on the condition of the vehicle, noting in particular the brakes, tyres, steering, suspension, gears, body damage and rust, and detailing any modifications and/or work that needs to be carried out in order to make the vehicle roadworthy and safe;
 - examine the vehicle to ensure it is in safe working condition for the circumstances in which it will be used;
 - be allowed adequate time to familiarise themselves with the vehicle.
4. For non-standard vehicles or vehicles of unrecognised manufacture (hybrids) and vehicles manufactured prior to seat belt legislation, the following must be checked:
 - proper harness and seat belt placements;
 - proper placement and parts for seating and controls including the steering wheel and pedals.
5. Location surveys must be carried out and any changes advised to all relevant personnel. (Also refer to the section Filming on Roads.)
6. Sufficient time for both preproduction training and the rehearsal of stunt performers must be allowed.
7. Where stunt action sequences may attract public interest, a controlled spectators' area must take account of the placement of crash barriers, escape routes, etc.

15.5 MOTOR BIKES

1. Any person required to ride a motorbike must be appropriately licensed and suitably experienced having regard to the action, location, road conditions, weather, etc.
2. Protective clothing such as strong shoes or boots, long leg and arm coverings and gloves, should be worn except where precluded by the script. In such instances, appropriate risk controls must be implemented which may include engagement of stunt double/s, etc.
3. Approved crash helmets must be worn for all riding and stunt work except where they are precluded by the script or period requirements. In such cases, the sequence shall be redesigned if proceeding without an approved crash helmet present a risk to the rider.

4. Crash helmets must be in good condition. A helmet which has been involved in an accident or an impact cannot be used again.
5. In all circumstances where a rig is mounted to a bike, the filming shall be treated as stunt work and a stunt performer engaged to undertake the riding unless the bike is mounted on an appropriate rig or low loader.
6. Side mounts can be used only if full road closure can be achieved.
7. Training may be required for actors required to ride pillion.

15.6 TRUCKS

Actors may only drive trucks if they are appropriately qualified and licensed and only if the truck is not required to travel at a speed in excess of 60 kph.

15.7 TRACKING VEHICLES

1. Police permission for an A-frame or other special rig may need to be obtained.
2. The intended location(s) for the rig must be surveyed beforehand to ascertain suitability of corners. The area should, for preference, be a light traffic area at the time of shooting. A suitable safe area should be set aside, off the road, for rigging and setting up the tracking vehicle. The Key Grip must be in attendance at such surveys and be satisfied about the suitability of the road/s, the route and safe areas.
3. Only vehicles approved by the Key Grip, in consultation with the Safety Supervisor, Tracking Vehicle Driver and, when relevant, the Stunt Coordinator, can be used for tracking purposes.
4. Competent personnel, under the direction of the Key Grip, must do all rigging of equipment in a safe manner.
5. Clearance and safety lights must be fixed prominently to the extremities of the tracking vehicle and/or trailer. To provide rear lighting, an A-frame must be fitted with two portable tail-lights. The lights will be affixed to the towed vehicle, but controlled by the tracking vehicle. If side mounts are to be used, lead and follow vehicles should stay sufficiently close to provide cover for left or right side.
6. Tracking vehicle personnel shall wear reflectorised vests unless reflections pose problems for filming.
7. All personnel must remain within vehicle surrounds while the vehicle is moving – sitting on side rails, leaning out, etc. is not allowed.

15.7.1 Competencies and Licensing

The driver of the tracking vehicle must be competent in the type of work, hold the appropriate licence for the vehicle concerned and be approved by the Key Grip in consultation with the 1st Assistant Director, the Camera Operator and Safety Supervisor. Persons driving buffer vehicles must be experienced and hold the appropriate licence.

15.7.2 Communications

1. Communications regarding tracking vehicles must be preceded by a meeting on site of all personnel concerned. It should include a dry run, with the driver and all involved in the shoot. The intended action, possible deviations and authority to abort must be made clear. Should any substantive changes become necessary, the 1st Assistant Director must again call all persons involved in the shoot and confirm everyone's understanding and agreement to the changes.
2. Lead and follow vehicles should be in place at all times with radio links to all three vehicles. The driver of the tracking vehicle must have direct communication with the 1st Assistant Director or the Stunt Coordinator or the Safety Officer and/or the Camera Operator.
3. The vehicle must travel at the slowest speed necessary for the scene to be shot as planned without exceeding legal speed limits.
4. Personnel and equipment not essential to the shots in progress must not be transported on the tracking vehicle.

15.7.3 Shooting from Non-approved Tracking Vehicles

1. A Camera Operator may shoot from, or in, a moving vehicle that is not an approved tracking vehicle provided:
 - a detailed risk assessment has been carried out;
 - the manufacturer's seat is installed in the vehicle and/or a purpose designed and built seat has been professionally fitted from which the Camera Operator can film;
 - the Camera Operator is wearing an approved safety restraint and/or other protective equipment as required;
 - all relevant traffic acts and/or other statutes are complied with;
 - shooting does not unreasonably compromise the safety of persons in the vehicle or the driver's ability to drive safely.

2. Risk factors include:
 - the duration of takes;
 - weights and forces exerted on the Camera Operator while holding the camera;
 - any postures which need to be adopted in order to set the camera angle and/or get the shot;
 - the time available to complete the task;
 - speed of the vehicle and any environmental factors which could impact on the safe operation of the vehicle or driver during the take;
 - any factors affecting the Camera Operator's safety whilst in the vehicle.

16. FILMING WITH BOATS AND FILMING ON, IN OR NEAR WATER

16.1 BOAT REGISTRATION

1. All boats must be registered, seaworthy and maintained in good working order.
2. All boat handlers must be appropriately licensed and have the necessary skills, experience and knowledge to perform the task/s required in the relevant vessel in a safe manner.
3. Boats must always be operated within the terms of their particular licence and registration with respect to speed, load and other relevant considerations.
4. State and territory legislation applicable to the location must be complied with and, where relevant, made known to all employees, contractors and sub-contractors.

16.2 SAFETY EQUIPMENT

1. All boats must carry as a minimum the life saving equipment required by local laws and such additional equipment as may be appropriate for the particular circumstances of the shoot.
2. All boats must carry one life jacket or buoyancy vest for each person on board.
3. All life saving equipment must be in first class working order, be regularly checked and maintained.
4. Appropriate first aid kits must be readily available.
5. Reflectorised patches must be attached to clothing (for identification of persons in water) by all personnel, other than cast where patches cannot be incorporated within their costume/s in which event other hazard controls should be implemented.
6. All boats operating in open water shall carry a minimum of two litres of fresh drinking water for each person on board.
7. Safety harnesses must be provided for all cast and crew where filming is taking place on board yachts.
8. Provision of additional safety equipment shall take into account whether the filming is to take place in open or enclosed water, and whether it will occur during the day or at night.
9. Further equipment that might be considered includes oars, buckets/bailers, lifebuoys with line attached, anchor with line attached, compasses, waterproof torches, fire extinguisher/s (which must be on board any boat carrying fuel of any type, including cooking fuel), distress flares and smoke signals and combinations of the two, maps, charts, V distress signal sheet, radio, bilge pump, lifeboats and safety boats.
10. Navigation lights, buoys or other maritime signs must never be covered or tampered with in any way.
11. Whenever cast and/or crew are working in water with or near boats, the boats must be fitted with propeller guards.
12. Having regard to the numbers of cast and crew members, sufficient crew members shall be designated as spotters to ensure that the whereabouts of all personnel is known at all times. In any event, spotter should accompany a camera operator on the boat when the camera is not stationary.

16.3 SAFETY SUPERVISOR

The Safety Report should specify whether sequences filmed on, in or near water require the services of a Safety Supervisor. If so required, the Safety Supervisor shall be experienced with working with boats and filming on/in/near water as appropriate for the particular circumstances.

16.4 SAFETY PROCEDURES

1. The person 'overboard' procedures must be demonstrated by the Safety Supervisor to all cast and crew.
2. When filming on yachts, the Safety Supervisor, with the skipper, must ensure that correct procedures are demonstrated to all cast and crew and followed during tacking, jibing and other manoeuvres that may be applicable.

3. Safety boats must be provided in adequate numbers for the particular conditions and never used to double any other sort of boat engaged on the shoot unless another boat is nominated as a safety boat.
4. When filming at sea, the nearest coast watch station must be advised of the intended destination and estimated time of arrival.
5. There must be adequate radio contact from boat to boat and from boat to shore. It may be necessary to make additional arrangements to overcome loud out-board motors which can obscure radio communication.
6. Non-swimmer/s must not be allowed in the water unless under close personal supervision.
7. Lifesavers or bronze medal holders may act as water safety supervisors if required.
8. As lights on water can constitute a hazard to shipping, permission must be received from the relevant local authority before filming with lights occurs.
9. Controlled ponds/tanks within studio premises should be kept drained, filled immediately prior to production and drained on completion. Where ponds/tanks must remain full for any period of time, appropriate measures must be implemented to prevent drownings. Water quality must be analysed prior to use with written results available 48 hours prior to production use. If results indicate unacceptable levels of contaminants, steps to eliminate contaminants will be taken, a second independent analysis undertaken and the results made available to the employer no less than 24 hours prior to production use.

16.5 PREVAILING CONDITIONS

1. Local knowledge of prevailing conditions such as tides, currents, rips, winds and the presence of dangerous marine life such as sharks, jellyfish and lice, must be acquired and the necessary preventative steps taken. These may range, for instance, from provision of waders in areas infested by pelican lice to cancellation of work during a stinger infestation.
2. All activities must be undertaken in accordance with the guidelines and advice of local authorities.
3. Still water areas, such as tanks, bogs, ponds and swamps, must be professionally examined for hazardous pollution or contaminants. If they cannot be removed or neutralised, the area should be avoided. Ground water must never be used for drinking.
4. Local knowledge must be acquired when filming on/in/near water or at sea to avoid any potential hazards from currents, flash flooding, sub-surface objects, dams, waste disposal sites, blue-green algae, chemical dumping regimes, sewerage, outfalls, storm water, etc.
5. When filming in fast moving rivers, downstream safety equipment such as ropes and nets must be available together with experienced fast water pick-up personnel in rescue boats.
6. Any hazardous objects must either be removed from the water or marked so they can be clearly seen. Where the hazardous object is to be filmed, then the area needs to be marked appropriately outside picture frame area.

16.6 HEALTH FACTORS

1. Motion sickness is a common and serious problem on boats. Safety crew and Medical Personnel should have no history of motion sickness.
2. The correct medication for motion sickness must be readily available, taken as directed (especially with respect to the lead time prior to leaving dry land and subsequent doses) and care taken to ascertain whether any person might be allergic to medication.
3. The Safety Supervisor and Medical Personnel must monitor the cast and crew for drowsiness, the most common side effect of medication taken to prevent motion sickness. Anyone affected by drowsiness-inducing medication must not be permitted to control the boat.
4. Working on water adds to the risk of over-exposure to the sun and to dehydration. Suitable protective clothing, sunscreen and non-sugar drinks must be available.
5. Working in water can lead to hypothermia – the lowering of internal body temperature. Water temperatures must be monitored and wet suits and flesh coloured body suits made available as required, together with warm water for immersion should the need arise, and blankets, heaters, hot drinks, etc.
6. Rubber footwear should be worn to prevent slipping, injury to toes, soles of feet and sunburnt feet.
7. Post-immersion washing facilities must be available to all water use sites.

16.7 CHILDREN

The number of supervisors for children shall be increased near water in accordance with the recommendations of the Safety Supervisor, having regard to the numbers of children, their age, swimming ability, confidence in/on/near water, time of year and all other relevant factors including state and territory legislation, regulations and codes of practice.

16.8 POLLUTION AND GARBAGE DISPOSAL

1. Polluting waterways is an offence which can also cause safety hazards. Paints, thinners, repellents, gasoline, oils, prop objects and other production effects must be kept away from water and removed from location/s on completion.
2. Consideration should be given to the potential for props, sets, construction materials, special effects materials, etc., to contaminate water.
3. Appropriate chemical toilets must be installed on boats as practical and appropriate and they must be correctly and hygienically maintained at all times. Consideration shall be given to holding tanks with pump out facilities, having regard to the numbers of people on set and the local environmental protection legislation.

16.9 WORKING IN WATER

1. Appropriately trained, experienced and licensed divers must be in position in the water whenever cast or crew members are working under the water.
2. Adequate numbers of appropriately trained and experienced safety swimmers must be engaged whenever cast are required to swim or perform in the water, whether in the surf or still water.

16.10 **FILMING IN CONJUNCTION WITH VESSELS, POOLS AND TANKS** – See Section 17.9

16.11 ELECTRICITY AND FILMING NEAR WATER

Electricity and water make a deadly combination. All measures must be taken to eliminate the risk of electricity making contact with water. Working with water on sets can pose particular hazards and may require the development and implementation of an electricity/water management plan. See also Section 17.9.2 and Section 42.

17. DIVING AND WORKING IN WATER WHERE THE USE OF BREATHING APPARATUS IS REQUIRED

17.1 DIVE SUPERVISOR

A Dive Supervisor shall be engaged on any production that requires the use of breathing apparatus to supervise all diving work. The Dive Supervisor shall ensure that:

- the appropriate number of personnel necessary for the safe execution of the underwater sequences are available at all times;
- the diving component of the production is organised appropriately; this includes (but may not be limited to) approving the crewing and competency of all divers including underwater technicians, actors and models, liaising between Heads of Department and supervising all aspects of the diving component of the filming.

If more than one dive team is required, a Dive Supervisor shall be engaged for each team at each dive site.

The Dive Supervisor will:

- not double as, or assume the duties of, a Safety Diver, Stunt Diver, Safety Supervisor and/or Stunt Coordinator;
- ensure the skill levels of any person/s involved with any diving work or associated duties are adequate and, if necessary, determine what additional training will be undertaken by such person/s prior to commencing any form of diving work and/or associated duties;
- ensure at least one Safety Diver is assigned to each actor and/or model.

In circumstances where the only underwater technician required is the Cinematographer, where no actors or models are required and filming does not involve any circumstances called up under AS 2815 Parts 2 or 3, the dive team, at the sole discretion of the Dive Supervisor, may comprise the cinematographer and the Dive Supervisor providing that a third person is engaged as an above water Safety Observer and at least one form of communication is in operation between the Observer and the two divers.

17.2 QUALIFICATIONS AND EXPERIENCE

17.2.1 Dive Supervisor

1. The Dive Supervisor shall have, at a minimum, certification as follows:

2. a Recreational Divemaster Ticket (providing that set construction, use of surface supplied air or any other activity called up under AS 2815-2 or AS 2815-3 is not a component of the production),
3. a commercial certification such as AS 2815-1 (providing that set construction, use of surface supplied air or any other activity called up under AS 2815-2 or AS 2815-3 is not a component of the production), or
4. a commercial certification such as AS 2815-2 or AS 2815-3, or
5. an internationally recognised equivalent certification, and
6. accreditation in accordance with the Film Industry National Underwater Diving Grading Procedure,
7. hold a St Johns Ambulance First Aid for Divers Certificate, or
8. Dive Medical Technician Certification, or
9. a recognised equivalent qualification, and
10. hold qualifications to administer oxygen.

If a production involves set construction, the Dive Supervisor must have, at a minimum, a commercial certification such as AS 2815-2 or AS 2815-3 or an internationally recognised equivalent certification. Such qualifications, however, shall not be mandatory where the production calls only for set decoration or set dressing as that term is generally used and understood in the film and television industry.

17.2.2 Safety Divers

Unless a higher diving qualification is specified in the Safety Report or is required by the Dive Supervisor, all Safety Divers shall hold, at a minimum, certification equivalent to a Recreational Rescue Diver.

17.2.3 Dive Supervisor and Safety Divers

The Dive Supervisor and all Safety Divers shall have a thorough understanding of:

- dive planning;
- expired air resuscitation (EAR);
- cardio-pulmonary resuscitation (CPR);
- oxygen administration.

The Dive Supervisor and all Safety Divers shall hold, at a minimum, a current St Johns Ambulance First Aid for Divers Certificate or equivalent and have sufficient experience and ability to recognise diving maladies including a working knowledge of the causes and potential effects of barotrauma.

17.2.4 Underwater Technicians

Underwater technicians shall hold, at a minimum, certification equivalent to a Recreational Open Water Diver unless a higher level of qualification is required by the Dive Supervisor or specified in the Safety Report.

Underwater Technicians include but are not limited to the following personnel:

- Directors,
- Cinematographers, videographers, camera operators and assistants,
- Gaffer and electricians,
- Art department personnel,
- Set construction personnel,
- Stills photographers.

17.2.5 Stunt Divers

Stunt Divers shall hold, at a minimum, certification equivalent to a Recreational Open Water Diver unless a high level of qualification is required by the Dive Supervisor or specified in the Safety Report.

17.2.6 Actors and Models

1. Actors and models with no previous diving experience shall, irrespective of the requirements of the production, be trained to a level of diving competency which is recognised by the Film Industry National Underwater Diving Grading Procedure.
2. All actors and models required to undertake dive training (irrespective of the level) shall do so under the supervision of a suitably qualified instructor.

3. The Dive Supervisor shall conduct a dive for the purpose of assessing the competency of all actors and models required to undertake dive duties prior to the commencement of the shoot. The Producer shall ensure that sufficient pre-production time is allocated for any competency dive/s to be undertaken to the satisfaction of the Dive Supervisor. Where possible, all competency dives shall be undertaken at the site where the shoot is to take place.
4. No person under the age of sixteen shall perform underwater using breathing apparatus in circumstances that are considered hazardous by the Dive Supervisor.

17.3 CREW SELECTION

1. When diving work is to be undertaken in a dive team, the Director and Director of Photography shall consult with the Dive Supervisor to ensure that a dive team has the appropriate mix of skills and experience to work together in a cohesive manner to reduce any risks associated with the work being undertaken by the dive team.
2. Notwithstanding the fact that a member of the dive team may hold an appropriate dive qualification/s, the Dive Supervisor, may, in consultation with the Director and Director of Photography determine that a person is unsuitable for inclusion in a dive team if s/he believes the inclusion of such person may pose an unreasonable risk to safety of the team.
3. The ratio of Safety Divers to other members of the dive team shall be determined by the Dive Supervisor.

17.4 DIVE MEDICAL

1. All divers included in a dive team shall hold a current dive medical conducted by an accredited diving doctor in accordance with Occupational Diving Standard AS 2299 (1992) or Diving Medical AS 4005.1.
2. All dive team and underwater technicians shall have medicals annually.

17.5 PROVISION OF CERTIFICATIONS

1. Any person/s who is engaged to undertake diving work using a breathing apparatus, apart from actors and models, shall provide the Producer with a copy of their certification prior to the confirmation of their engagement.
2. Actors and models required to undertake diving work using breathing apparatus shall provide the Producer with a copy of their certification. The copy of certification shall, in the case of being required by the Dive Supervisor as condition of undertaking the dive, be provided when attained or alternatively prior to performing in a shoot whichever comes first.

17.6 SET CONSTRUCTION

Regulations vary from state to state. Where set construction is required in water, relevant regulations and Australian Standards pertaining to set construction shall apply, including but not limited to AS 2299 (1979) and AS 2299 (1992).

17.7 THE RIGHT TO NOT PERFORM

1. No person shall be required to undertake any task underwater or in connection with the use of breathing apparatus for which they have not been trained or feel they have insufficient skill and experience to undertake in a safe manner.
2. No person shall be required to perform more than one job where in the opinion of that person safety is jeopardised.
3. The Dive Supervisor may cancel or abort filming if in their opinion the weather conditions present an unreasonable risk to safety of persons working on the shoot. Unreasonable risks may be created by, but not necessarily limited to, wind velocity, wind direction, rain, mist, fog, air and water temperature, tide, swell, quality of light and visibility in the water.

17.8 OPERATIONS MANUALS AND LOG BOOKS

1. The Dive Supervisor shall keep an operations manual.
2. Where the dive team does not exceed two persons, detailed log books may suffice providing such log books cover all aspects of procedures to be adopted in the event of an emergency.
3. The Dive Supervisor shall ensure that a log book is kept by all divers.
4. Divers' log books shall be overseen by the Dive Supervisor.

17.8.1 Content of Operations Manuals

Consideration shall be given to the inclusion in the operations manual of the following: planning, preparation and procedures during operations.

17.8.1.1 Planning

1. Forecasts of meteorological and oceanological conditions, eg. clarity, tides, etc.
2. Sea bed conditions.
3. Depth of water and depth to be dived.
4. Suitability of workplace and/or vessel/s.
5. Availability, qualifications and experience of personnel including assessment of need for special purpose training or work-dives where a diver has not dived for a considerable period of time or where the diving operation is considered particularly demanding.
6. Hazards of work site above and below water.
7. Shipping movements.
8. Type of operation.
9. Engagement of personnel familiar with local underwater conditions.

17.8.1.2 Preparation

1. Consultation with any persons having influence over or on the dive operation.
2. Selection of dive equipment.
3. Equipment check.
4. Diver selection and job allocation.
5. Precautions against cold in and out of the water.
6. Diver fitness, physical and psychological.
7. Forms of communication.
8. Underwater and above water hazards.

17.8.1.3 Procedures during Operations

1. Defining each diver's responsibilities.
2. Divers' experience with equipment.
3. Supply of clean air for cylinders and hookah.
4. Operation and use of equipment underwater.
5. Limits of depths and times underwater.
6. Descent, ascent, and recovery of divers.
7. Diving tables for decompression procedures for both single and repetitive diving.
8. Time for which divers are to remain in the vicinity of recompression chambers.
9. Maintenance of log books.

17.8.2 Dive Profiles

Copies of all dive profiles shall be kept with the operations manual.

17.8.3 Dive Medicals

1. Copies of the dive medicals for actors and models shall be kept with the operations manual.
2. Dive medicals for all members of the dive team and underwater technicians shall be sighted by the Dive Supervisor and recorded in the manual.
3. Dive Medicals shall be stored, used and archived in accordance with relevant privacy legislation.

17.8.4 Content of Divers' Log Books

All divers shall keep a log book that shall include:

1. dive numbers;
2. dive profiles;

3. medical information;
4. dive team;
5. records of dive equipment.

17.9 FILMING IN CONJUNCTION WITH VESSELS, POOLS AND TANKS

1. All vessels used in conjunction with diving must be seaworthy, comply with relevant federal, state and territory legislations and regulations and be appropriate for filming requirements.
2. All vessels must be operated within the terms of their licence and registration.
3. Persons in charge of vessels shall be suitably qualified, experienced and shall hold relevant licences.

17.9.1 Access and Egress

1. A safe means of access and egress will be provided to any vessel, pool, tank and/or other body of water used in conjunction with any diving work.
2. Any ladder, step, ramp, scaffolding or other device which is provided to facilitate a safe means of access and egress to a vessel, pool, tank or other body of water must be built, erected and/or installed in accordance with relevant state legislation and regulations by a person/s with the appropriate skill and experience to do so and who holds the appropriate certificates of competency.

17.9.2 Lighting

1. When 240 volt power supply is required from a vessel for filming, a three point mooring must be installed to prevent the vessel from swinging or dragging electrical cables from the filming area.
2. Generators must be checked prior to commencement of filming by a licensed electrician for correct earthing to ensure RCDs are tripped in the event of a water leak.
3. All 240 volt supplies must have a current "In Test" RCD device fitted.
4. A dry area must be allocated in the generator/cabling area of the vessel, pool or film tank facility.
5. When underwater lights are used, the electrician in charge must have direct access to the cut-off switches at all times.
6. Cable runners must be engaged when running lighting from a vessel.

17.10 DIVING EQUIPMENT

1. All diving equipment must be operated, serviced, checked, tested and maintained in accordance with the relevant regulations, codes of practice, Australian Standards and manufacturer's recommendations.
2. All servicing, checking, testing and maintenance must be undertaken by persons who have the necessary qualifications, skills and experience.
3. Diving equipment must be operated only by persons who have the necessary qualifications, skills and experience.
4. The Dive Supervisor must take reasonable steps to ensure that all equipment used in connection with diving work is being operated, serviced, checked, tested and maintained in accordance with the relevant regulations, codes of practice, Australian Standards and manufacturer's recommendations.
5. All persons required to perform with or otherwise use diving equipment must be competent to use the equipment. The Diver Supervisor must determine whether a person has attained the appropriate level of competency in the use of the equipment.
6. all actors and models required to perform with diving equipment must be supervised by appropriately qualified dive personnel.
7. If, in the opinion of the Dive Supervisor, an actor, model or other person cannot reach an appropriate standard of competency to perform with diving equipment, the Director and Director of Photography shall consult with the Dive Supervisor to formulate alternative methods of filming. The methods may include, but not necessarily be limited to, increasing the number of safety divers, using alternative equipment, modifying the script and/or using doubles.

17.11 ALTERNATE AIR SUPPLY

All Safety Divers must have an alternate air supply to enable them to assist another person who requires assistance.

17.12 COMMUNICATION

1. Two forms of communication must be in operation at all times.
2. In conditions of restricted visibility, the Dive Supervisor shall assess the need to use lifelines, float lines and/or other alternative means of communication.

17.13 FIRST AID EQUIPMENT, FACILITIES AND SERVICES

17.13.1 General

Adequate first aid equipment, facilities and services must be provided. The Dive Supervisor and/or Dive Medical Technician shall be responsible for ensuring that first aid, equipment facilities and services are adequate having regard to the diving circumstances and any requirements set out in the Safety Report. All first aid equipment, facilities and services deemed necessary must be available at the dive site and remain easily accessible at all times.

17.13.2 Oxygen

1. Oxygen must be available at the dive site and easily accessible at all times.
2. Sufficient oxygen must be available to allow for the transport of a diver under oxygen to a chamber.
3. Oxygen must be administered by a properly qualified person/s.

17.13.3 Chamber Locations

1. Chamber locations must be identified and recorded in the operations manual.
2. Prior to any diving operations being undertaken, availability and operational order of the nearest chambers must be verified.
3. Travel time from the dive site to the chamber/s must be in accordance with the Occupational Diving Standard 1992 (as amended).

17.13.4 On Site Recompression Chambers

1. When diving depths exceed 12 metres, having regard to immersion times and the duration of the filming, consideration shall be given to having a recompression chamber on site.
2. When a recompression chamber is required on site, suitably qualified and experienced personnel must be engaged to operate the chamber.

17.13.5 Chamber Information

Procedures manuals, log books and, when used, daily call sheets, must detail the location of the nearest chamber and its availability.

17.13.6 Dive Medical Technician

The Dive Supervisor shall, having regard to potential risk factors and other relevant criteria, determine the need to engage a Dive Medical Technician. The Producer will, on the recommendation of the Dive Supervisor, engage a suitably qualified Dive Medical Technician for the period of the dive.

17.14 ASTHMATICS, DIABETICS AND EPILEPTICS

Medical advice must be obtained regarding the fitness of people with asthma, diabetes and epilepsy to undertake diving work.

17.15 REPORTING OF ACCIDENTS

1. All diving related incidents, injuries or fatalities must be reported in accordance with relevant legislation and regulations.
2. The Dive Supervisor must prepare a report/s detailing the circumstances of any incident, injury or fatality the occurs in connection with any diving work under their control. The report/s must include all relevant information including the nature of injuries sustained by any person, treatment received, diving medicals, reports from any witnesses and, if possible, the injured person/s, the condition of the diving equipment involved in the incident and emergency procedures undertaken.

3. The Producer must ensure that all diving related incidents, injuries or fatalities are reported to the appropriate statutory authorities in accordance with relevant legislation and regulations.

17.16 DECOMPRESSION

1. Decompression tables must be utilised and recorded on all diving productions in accordance with Occupational Diving Standard 1992 (as amended).
2. Dive profiles must be kept by the Dive Supervisor.
3. Dive computers may be used providing the Dive Supervisor and the diver are in agreement and have a total understanding of the manner in which the particular computer functions.
4. When dive computers are used they shall always be utilised in conjunction with decompression tables to avoid untraceable dive profiles. When there is a discrepancy between the dive computer and the decompression table, the decompression table shall prevail.

17.17 DIVING DRESS

1. The Dive Supervisor shall, having regard to the diving conditions, eg. air and water temperature, wind and chill factors and immersion times, determine what diving dress will be used by the divers.
2. Adequate and accessible shelter, heating facilities and shower facilities shall be available to all divers at the dive site for the duration of the filming.

17.18 DIVING STANDARDS

The Dive Supervisor, Divers, Stunt Divers and Safety Divers must be familiar with the Standards set out below to ensure that safe procedures suitable for the filming and diving circumstances are adopted.

- a) **Recreational Diving Standards**
PADI, NAUI, SSI, NASDS, BSAC and other equivalent world diving standards.
- b) **Commercial Diving Training Standards**
AS 2815, parts 1, 2, 3 and 4.
English HSW Parts 1, 2 and 3.
- c) **Commercial and Occupational Diving Standards**
AS 2299 (1979) (developed for construction diving).
AS 2299 updates up to and including 1992.
Note: AS 2299 Occupational Diving is currently under review.
- d) **Gas Cylinder Codes**
AS 2030-1 (1989)
- e) **Gas Cylinder Test Stations**
AS 2337-1 (1987)
- f) **Cylinder Codes Approved for Australia**
AS 1777 Common Australian cylinder, aluminium.
DOT 3AA USA, steel,
HOAC 1, 2, 4 British cylinder, aluminium.
ASB 113/114 Japanese cylinder, steel.
BTC 3AA Canadian cylinder, steel.
3AC Common USA cylinder, aluminium.

18. RIGGING, WORK PLATFORMS AND WORKING AT HEIGHT

All work at height will be the subject of a detailed risk assessment undertaken in accordance with relevant state and territory legislation and regulations.

Work at height may include work undertaken on:

- studio grid areas and gantries;
- scaffolding, hoists, buckets, cherry pickers, other working platforms;
- roofs;
- masts, towers, crows nests.

Consideration must be given to:

- the weight bearing capacity of roof structure, gantries and grids and floor structures and, where relevant, load bearing documentation must be obtained from the owner/manager;
- rigging undertaken by qualified licensed riggers;
- scaffolding erected by competent and appropriately qualified person/s;
- edge protection, ie. guard and/or railing that complies with AS 1657;
- elevated work platforms operated by competent and appropriately qualified person/s;
- industrial fall arrest system/s, device/s and anchorage/s which comply with AS 1891.4, AS 2626 and AS 4626 must be worn where appropriate;
- double lanyards must be used when rigging to ensure that when a person moves between anchorages/safety lines, they are constantly attached to a safety system.

Appropriate risk reduction strategies will be determined in consultation with employees undertaking the tasks and having regard to the prevailing weather conditions.

18.1 GENERAL GUIDELINES FOR ALL WORK INVOLVING HEIGHTS

Careful risk management strategies must be developed and implemented for circumstances involving working at heights and for those working underneath operations being undertaken at heights.

1. Where there is the potential for a person to be injured from a fall, appropriate fall protection must be used.
2. Where specified, fall arrest system/s and device/s must be worn, and:
 - all harnesses, lanyards, fall arrest and fall restraint devices must be manufactured and maintained to Australian Standards;
 - inertia reel (fall arrest) devices must not be used in such a way that a fall will create a pendulum effect injury;
 - no person shall be allowed to undertake work requiring the use of fall restraint or fall arrest devices without having undertaken appropriate training in the use and maintenance of such devices;
 - an effective communications system between those at a height and those on the ground must be implemented.
3. Safe access must be provided for all work platforms where there is the potential to fall more than 1.8 metres, including:
 - where possible, use mobile platforms rather than ladders;
 - ensure mobile access equipment has its wheels locked prior to use;
 - do not enter scaffolding until the appropriately qualified person has completed its erection;
 - only ascend/descend facing towards the ladder and hold on while doing so.
4. Safe working practices must be implemented while working at a height, including:
 - ensure vision is not obstructed;
 - where there are no guardrails, use an approved safety harness connected to a secure anchor point;
 - do not work beyond the side of ladders or over guardrails;
 - do not place ladders on other structures to extend their reach;
 - ladders should extend at least one metre beyond the work area or step off point and be secured;
 - wear appropriate footwear to minimise slipping, clothing to minimise risk of snagging and tie back hair at all times;
 - attaching of ropes, cables, drapes, tarpaulins, etc. to rigging or scaffolds is a potential hazard and must be risk assessed.
5. Appropriate precautions must be taken against injury to people below those working at a height, including:
 - take aloft only essential tools and equipment;
 - prior to ascending, secure all tools and equipment with lanyards to prevent them falling on those below, and empty pockets of any unsecured items;
 - implement appropriate control measures to prevent props, sets, equipment, including cameras, etc. from creating a risk by falling.
6. Signs must be clear, unobstructed and in conspicuous places.
7. Smoking bans are to be enforced when work is being undertaken at heights.
8. Height rescue procedures must be developed for each workplace where working at heights is undertaken.

18.2 FALLING OBJECTS

A falling object includes any object or material falling from a height, but also includes objects or material that can be propelled upwards or sideways and be capable of injuring a person who is struck by the object or material. A risk assessment must be undertaken for all falling object hazards and appropriate management strategies identified.

1. Objects must be prevented from being accidentally knocked or dropped from heights:
 - secure all tools and equipment when working at heights or climbing ladders;
 - do not store anything on platforms or near unprotected edges or openings;
 - adequately secure luminaires with properly maintained safety chains;
 - secure props and scenery, especially during set-up and when striking;
 - maintain housekeeping at a high standard.
2. Particular issues concerning flying include:
 - ensure that the systems, ropes, slings, barrels, safety chains, etc. are in good order;
 - provide proper warning to all relevant persons prior to flying scenery;
 - inspection by a competent person, prior to its use, of any system used for suspending objects;
 - ensuring adequate mechanisms for securing chains on chain motors.
3. Other risk control measures include:
 - choreograph performers appropriately to minimise the potential for them to drop or propel objects hazardously (including themselves);
 - training performers and props staff in the correct methods of carrying weapons and firearms;
 - tape down cables in areas where people may walk;
 - install toe or kick boards on elevated walkways and platforms;
 - wear hard hats when working below where other people are working, where this protection is identified by the risk assessment.

18.3 PERSONAL FALL PROTECTION EQUIPMENT

1. Personal fall protection equipment is designed to stop a person falling. Protection equipment should be used when there is a risk of a person falling and it is not reasonably practical to change the design of the job to eliminate the risk of a fall. The equipment should be used to:
 - minimise the risk of a person falling from a height (travel restriction devices); or
 - minimise the risk of injury to a person who has fallen from a height (fall arrest devices).
2. A risk assessment must be undertaken to determine the most appropriate form of personal fall protection equipment for the situation – refer AS1891 – including:
 - travel restriction devices are to be preferred to fall arrest devices;
 - anchorage points must be capable of sustaining the load of the person falling;
 - all persons who need to use fall protection equipment must be trained in its use and maintenance;
 - adequate supervision must be provided to people using fall protection equipment.

18.4 USE OF SAFETY CHAINS AND SANDBAGS

Refer to Section 10 of AS/NZS 4249 Electrical Safety Practices Video and Television Sites. Refer also to Section 41.1.

18.5 FIRE PRECAUTIONS

Rigging, work platforms and associated equipment must be rigged and/or set in such a way as to not obstruct or otherwise compromise the effectiveness of fire emergency exits and/or fire fighting equipment. Fire extinguishers must be located at appropriate positions in studio gantries and a fire extinguisher must be carried in all cherrypickers.

18.6 WORKING WITH LADDERS

1. Only ladders designed in accordance with Australian Standards AS1892 and AS1657 should be used, and they should:
 - be designed and constructed with a load rating appropriate to the work to be performed;
 - be maintained in good condition and free from oil or grease when used;
 - have non-skid safety feet installed prior to use (if straight ladders).
2. Particular points when using ladders include:

- position ladders at a ratio of 1 out to 4 up, and ensure they extend more than 1m beyond the work level or step off point;
 - tie off or otherwise secure all straight ladders before use;
 - position ladders only on on-slip, flat surfaces;
 - do not position ladders in access areas or within the arc of a swinging door, without taking additional measures to safeguard a person on the ladder – eg locking off the door, displaying appropriate signs, erecting barriers to prevent access to the area where the ladder is being used.
3. Portable metal ladders must not be used for electrical work – metal ladders should be labelled: “Caution: do not use around electrical equipment”.

18.7 WORKING WITH ROPES

1. All ropes (and fittings) must be constructed of sound material with adequate strength for the particular application and use and inspected prior to use.
2. Ropes that are excessively worn or adversely affected by weather must be removed from service.
3. Fibre ropes must not be exposed to temperatures exceeding 65° Celsius.
4. No rope shall be used to lift a load greater than its safe working load.
5. Ropes which have been repaired and/or altered must be subjected to a load equal to their safe working load before being re-used.
6. Ropes must be:
 - kept clear of acids and other chemicals,
 - kept clean,
 - stored in a clean dry place when not in use in suitable packing to ensure they do not come into contact with edges and/or surfaces that cause damage.

18.8 ELEVATING WORK PLATFORMS

Elevating work platforms (EWPs) include self-elevating work platforms (SEWPs) such as Cougars, Genie Lifts, maxi-lifts, and scissor lifts.

Some suppliers may provide training and/or certificates for EWPs with a boom length of up to 11 metres. EWPs with a boom length greater than 11 metres must be operated by a person who holds a certificate of competency issued by a recognised issuing authority, eg. WorkCover.

1. Equipment must be appropriate to the job and used in accordance with specifications and Australian Standards, in particular:
 - use the most appropriate EWP for the job;
 - only operators competent in the use of the particular equipment may use it and must, as specified in relevant jurisdictions, hold appropriate certification;
 - use equipment in accordance with the manufacturer’s specifications;
 - if equipment is modified, appropriate risk assessment must be undertaken and an engineer’s certificate obtained.
2. Safe working practices must be used with all EWPs, including:
 - never exceed the safe working load for the EWP;
 - ensure the EWP is set up on stable ground;
 - ensure floor load bearing capacity is adequate;
 - maintain each EWP in good working order and inspect it daily;
 - be aware of clearances when operating or travelling with an EWP, in particular ensure the EWP and any object or person on the platform remains well clear of power lines (minimum 4 metres – see Electrical Safety) when fully extended;
 - wear safety harness at all times while working from an EWP;
 - do not lean over the safety barrier of an EWP, nor suspend or balance anything so that its centre of gravity is outside the safety barrier.
3. If it is necessary to move a SEWP with the boom raised and a person on the platform, ensure the outriggers are no more than 10mm from the floor and the person on the platform is not protruding from the confines of the platform.

18.9 POWERED AND NON-POWERED LIFTING DEVICES

The operation and maintenance of load-shifting devices, including powered and non-powered lifting devices, must comply with state and territory legislation. All drivers, operators and riggers, including anyone who slings or directs the movement of goods handled by a crane or power winch, must be competent to undertake the work they are involved with, and hold the necessary certification.

All load-shifting equipment must be maintained in good working order. Cranes should be parked when unattended and at the end of the work period in accordance with the manufacturer's recommendations.

18.10 THEATRICAL FLYING AND RIGGING OPERATIONS

1. Any person undertaking flying operations must hold the appropriate certificate of competency, and be competent to operate the relevant equipment. In particular, he or she must:
 - only ever rig loads appropriate to his or her level of training – if in doubt, ask;
 - ensure that all persons are protected from injury by means of appropriate barriers;
 - check braking systems of flying systems prior to use;
 - test that cabling and winches of flying systems are in line with manufacturer's recommendations;
 - maintain a lifting register for all cables and ropes.
2. Particular considerations in respect of movement of people include:
 - no-one must ever ride on hooks, slings or loads;
 - use a safety factor of 10:1 when suspending people;
 - use safety lines with ratings in accordance with Australian Standards;
 - plan aerial performance sequences with appropriate rigging for the size of the performer(s) and the task to be completed – include consideration of the need for crash mats, safety netting, appropriate emergency and contingency procedures – lighting, set or sound changes must be communicated to both riggers and aerial performers.
3. Safe working practices for flying and rigging include:
 - never exceed safe working loads;
 - ensure items being flown have been designed and constructed in a manner appropriate for flying;
 - ensure flown items are safely and appropriately attached to scenery bars;
 - when moving down scenery, warn those below (during a performance this will be via appropriate communications systems);
 - use steel slings as a secondary for fibre slings if there is a risk of fire;
 - use packing between slings and sharp edges;
 - lower loads onto timber to avoid sling crushing.
4. Flexible Steel Wire Rope Rigging (FSWR) and Synthetic Rope Rigging
 - Any rigging involving FSWR must only be undertaken by riggers holding relevant certification.
 - Any rigging involving FSWR, potential shock loads and the possibility of a pendulum effect must be carried out only by trained Stunt Rigger/s.
 - Note: WorkCover approved rigger qualifications do not provide training in synthetic rope rigging, supervisory skills or the shock management of FSWR. Consequently, Riggers Class 1, in the absence of demonstrating proof of further relevant training, are not able to under synthetic rope rigging nor to supervise anyone involved in synthetic rope rigging.
 - Responsibility for safe execution of rigging lies with the producer:
 - Safety rigging: the Safety Supervisor and the Producer must ensure that the Safety crew are adequately trained, experienced and supervised to undertake the duties required of them;
 - Stunt rigging: the Stunt Coordinator and the Producer must ensure that the rigging team is suitably trained, experienced and supervised.
 - Theatrical/Circus rigging: the Safety Supervisor and the Producer must ensure that the rigging team is suitably trained, experienced and supervised.

18.11 SCAFFOLDING

1. Scaffolding is a common means of providing a safe work platform and is sometimes used as a performance area of as part of a set.
2. If the potential fall distance is greater than two metres, scaffolding must be erected or dismantled only by a holder of a certificate of competency for that class of scaffolding or a person trained under the direct supervision of such a certificated person.
3. If the potential fall distance from a scaffold is less than two metres, it may be erected or dismantled only by a competent person who has trained in respect of the type of scaffolding being used.

4. Unauthorised changes to scaffold structures are illegal.
5. The scaffolder must ensure all persons are protected, in particular, by:
 - installing appropriate, clear, unobstructed signage during construction;
 - ensuring appropriate barricading against unauthorised entry;
 - when completed, certifying scaffolds are safe before anyone uses them.
6. Safe construction methods must be used for scaffolds, including:
 - ensure only correct materials for the load are used in accordance with AS 1576;
 - inspect all equipment and materials before use, and repair or dispose of any rejects;
 - tie scaffold effectively, both longitudinally and transversely, with safe means of access and egress;
 - fully plank out scaffolding more than 1.8 metres high, with properly supported planks of the correct size, toe boards and continuous handrails to ensure a safe work platform.
7. Mobile/wheeled scaffolding must not be moved whilst supporting people, and all wheels must be locked before anyone works on it.

18.12 WORKING ON ROOFS

Roof work for the purpose of this section refers to the need for work to be undertaken on a roof rather than roof work that involves the removal or replacement of a roof or roofing material.

Where possible, working from roofs should be avoided, particularly roofs that are known to be very old and do not have a record of regular inspection and maintenance. Prior to undertaking work on roofs other more reliable options such as elevating work platforms, scaffolding workboxes, etc. should be investigated. No roof work shall be undertaken without carrying out a detailed risk assessment. Consideration must be given to the prevailing weather conditions. Also refer to Appendix D – Safety checklist – Working from Roofs.

18.12.1 Susceptible Roofing Materials

The following roofing materials pose particular risks:

- rusted corrugated metal;
- translucent plastic;
- wired glass panels;
- corrugated cement sheeting (super six sheeting).

Falls through these types of materials can be avoided by introducing effective hazard management systems in conjunction with roof work.

18.13 PERSONAL FALL PROTECTION EQUIPMENT

1. Personal fall protection equipment is designed to stop a person falling. They should be used when there is a risk of a person falling and it is not reasonably practical to change the design of the job to eliminate the risk of a fall. The equipment should be used to:
 - minimise the risk of a person falling from a height (travel restriction devices); or
 - minimise the risk of injury to a person who has fallen from a height (fall arrest devices).
2. A risk assessment must be undertaken to determine the most appropriate form of personal fall protection equipment for the situation – refer AS 2626 – including:
 - travel restriction devices are to be preferred to fall arrest devices;
 - anchorage points must be capable of sustaining the load of the person falling;
 - all persons who need to use fall protection equipment must be trained in its use and maintenance;
 - adequate supervision must be provided to people using fall protection equipment.

19. DERELICT STRUCTURES

If filming activities are proposed in derelict structures, a risk assessment must be undertaken prior to the structure being loaned, hired, leased or rented. The risk assessment shall have regard to the architectural and engineering plans for the structure and assess the impact of the deteriorated state of the premises. As appropriate, assessment shall be sought from suitably qualified architects, structural engineers, and other relevant experts. The presence or otherwise of asbestos shall be established. The risk assessment shall address:

- necessary remedial construction work to render the site safe for filming activities having regard to issues such as roof collapse, wall collapse, etc.;

- removal/containment of asbestos;
- safe access and egress.

The employer must negotiate the lease/location agreement/contract in such a way as to enable remedial work, temporary repairs and/or installation of structural supports to ensure that the risk of collapse is eliminated or reduced – either at the cost of the owner or the employer. Also refer to Appendix E – Safety Checklist – Working in Derelict or Abandoned Structures.

20. CONFINED SPACES

1.1 A confined space is a space of any size that has certain characteristics that may include:

- limited openings for entry and exit,
- inadequate natural ventilation,
- a contaminated, toxic, flammable or oxygen deficient atmosphere.

It is also a space not intended as a regular work place. Potential hazards include:

- the risk of explosion,
- electrocution,
- engulfment,
- oxygen deprivation,
- being overcome by toxic gases and vapours.

Employers shall identify confined spaces and, in consultation with employees, develop confined space entry procedures that comply with Australian Standard 2865 Safe Working in a Confined Space and relevant state and territory legislation, regulations and codes of practice.

1.2 The senses cannot be relied upon to determine if the air in a confined space is safe. Many toxic gases and vapours are odourless and colourless and therefore cannot be detected by sight or smell. Similarly, it is not possible to determine the level of oxygen present in a space by smell. Equipment used to test for one condition is not always suitable to test in another. Generally, it is more difficult to undertake work in a confined space. Therefore, tasks may take longer to execute.

2. A confined space may include:

- pipes, sewers, vats, tunnels, shafts, ducts (including air-conditioning ducts) and/or similar structures;
 - trenches;
 - enclosed spray booths, fibreglass manufacturing booths;
 - open-topped spaces such as pits, wells or degreasers;
 - storage tanks, process vessels, boilers, pressure vessels, silos and other tank like compartments;
- and may include constructed sets.

3. The person undertaking the risk assessment/s of work to be carried out in a confined space/s must be appropriately trained.

4. Consideration must be given to:

- size/layout;
- oxygen levels;
- testing levels of atmospheric contamination and testing to ensure the atmosphere is not explosive (flammable/toxic atmospheres);
- type of work to be carried out;
- any work outside the confined space that might affect the environmental conditions in the confined space;
- means and identification of entry/exit;
- emergency procedures;
- heat from lights;
- prior to entry, purging with fresh air and/or water for a sufficient time to displace or remove residual amounts of harmful atmospheric contaminants;
- access to an air supplied respirator;
- the wearing of a harness which may aid speedy evacuation in an emergency.

5. The following guidelines must be implemented:

- a rescue plan must be in place prior to any entry of a confined space;
- a rescue shall never be attempted by only one person;
- the confined space must be tested prior to each new entry and/or re-entry;
- oxygen deficient confined spaces shall only be entered by person/s provided with an independent air supply;

- at least one or more competent stand-by persons shall be present outside a confined space when any person is inside the confined space;
- a competent stand-by person means a person who:
 - a. is assigned to remain on the outside of, and in close proximity to, the confined space, and
 - b. is capable of being in continuous communication with and, if practicable, able to observe persons inside the confined space, and
 - c. is capable of monitoring equipment used to ensure safety during entry and work in the confined space, and
 - d. is capable of initiating emergency procedures (including rescue procedures) if necessary.

20.1 WORKING BELOW GROUND (including excavations and trenches)

1. Before any work below ground begins, appropriate plans must be approved by the producer and venue owner/manager, including ensuring that:
 - there are not likely to be problems with electrical, water, gas or telephone pipes/lines in the area;
 - air quality in any trench is satisfactory;
 - emergency and rescue procedures and equipment are in place;
 - appropriate access and exits will be established.
2. Planning must also ensure that:
 - all trenches, pits and traps are barricaded and/or appropriately signed;
 - spoil heaps are kept well away from evacuations;
 - consideration is given to what could fall into or otherwise affect what is being done below ground;
 - appropriate methods are in place for removing loose material;
 - shoring (where necessary) is adequate and in line with requirements, eg. for nearby traffic.

21. NOISE AND HEARING CONSERVATION

1. Ten per cent of new workers' compensation claims reported annually in Australia are directly attributed to noise induced hearing loss (NIHL). NIHL will occur when people are exposed to significant noise levels.
2. Potential high level noise work in film and television production can occur in:
 - set construction and props manufacture especially work involving the use of power tools;
 - special effects that involve the use of pyrotechnics;
 - work that may be undertaken on a "noisy" set, eg. factory floor or airport apron;
 - work that involves live bands which use high powered amplifiers particularly concerts recorded in studios.
3. Noise is measured in decibels (dB) which is not a simple linear scale. An increase of 10 dB is a tenfold increase in sound energy. Therefore, 90 dB is ten times the energy of 80dB. The easiest way to consider decibels is that for every additional 3 dB the noise energy is doubled and therefore the permissible exposure time must be halved.
4. Exposure to noise can cause psychological and physiological effects including:
 - masking audible warning signals;
 - stress;
 - tinnitus (a hum, whine, whistle or rushing noise in the ears);
 - temporary hearing loss;
 - social isolation;
 - permanent loss of hearing.

21.1 REGULATORY EXPOSURE LEVELS FOR NOISE

To preserve hearing:

- sound level exposure must not exceed 85 dB(A) on average per eight hour day and, where possible, should be kept below an average of 85 dB(A) per eight hour day;
- where shifts longer than eight hours are worked, the exposure level must be appropriately reduced;
- peak sound pressure levels must not exceed 140 dB(C);
- nuisance noise such as high pitch, unexpected or distracting noises must be minimised.

21.2 NOISE MANAGEMENT STRATEGY

A comprehensive approach comprising risk identification, equipment and job redesign, training and education should be adopted to manage the risk of NIHL and any other noise related health effects, eg. stress and tension. The strategy should include:

1. direct consultation with employees regarding an appropriate hearing conservation program including audiometric testing;
2. information about the adverse consequences of long term exposure to high noise levels;
3. ensuring that new equipment or plant emits the lowest possible levels of noise or has adequate noise suppressant features;
4. undertaking regular noise assessments and/or spot checks of noise levels;
5. installing engineering solutions, eg. acoustic covers, etc. to reduce noise transmission;
6. regular inspection and maintenance of noise equipment and any acoustical silencing equipment;
7. providing employees with serviceable, appropriate, personal protective equipment that complies with Australian Standards.

21.3 HEADSETS

Headsets must be appropriate and compatible, otherwise damage can result from feedback.

As part of the risk assessment, appropriate protocol and procedures for the use of headsets and other communication systems must be developed and implemented for each production or event. Such protocols shall include requiring personnel using headsets to switch them off prior to removal.

22. ERGONOMICS AND MANUAL HANDLING

22.1.1 ERGONOMICS

1. Ergonomics involves designing tasks and workplace which complement the employee's skills, aptitudes and ability rather than expecting an employee to adapt to a poorly designed system of work or workplace.
2. Ergonomics does not simply deal with furniture, computer keyboards or tool design. A detailed ergonomic study of a job must include an analysis of the entire system of work which includes the study of:
 - sensory inputs and requirements;
 - decisions to be made;
 - feedback to indicate quality of performance;
 - the skills involved;
 - demands on the musculoskeletal system;
 - training required to undertake the work;
 - stress factors;
 - noise and thermal comfort, ie. ambient conditions;
 - organisational factors, eg. accountabilities and responsibilities;
 - autonomy;
 - social factors, eg. feasibility of interaction with others;
 - hours of work;
 - meal breaks and other breaks;
 - shift rosters, etc.
3. The most common causes of injury result from:
 - inappropriate body postures and/or movements;
 - the need to apply excessive forces in order to carry out a task;
 - repetitive tasks;
 - poorly designed tools and equipment;
 - poor training;
 - poor strategies to identify the incidence and potential severity of injuries.

22.1.2 TYPICAL VIOLATIONS OF COMMON ERGONOMIC PRINCIPLES

1. **Prolonged abnormal postures involving the back, neck, shoulders and/or upper arms:** often involve excessive flexing or twisting of the neck or back to one side and/or the excessive raising of the upper arms and/or shoulders; often due to a work surface that is too high or a work surface that does not allow enough clearance for the legs to facilitate easy swivelling of the body; commonly encountered in production offices,

construction workshops, editing and postproduction facilities and also encountered in on set tasks such as handheld camera work, operating booms and animatronics.

2. **Excessive extension of angles of joints particularly if associated movements are sharp or against a force:** can occur as the result of prolonged keyboard work, hammering above shoulder height or too far from the object. The maximum angle of extension should be around 60 degrees but this may vary depending on the individual.
3. **Excessive twisting of wrists or maintaining wrists for prolonged periods in a static position.** Extreme ulnar deviation can occur when packages have to be picked up, turned through 90 degrees in order to repack or store them elsewhere; and can be associated with the use of hand tools, particularly pliers, screwdrivers, soldering irons, file handles and knives.
4. **Motions which require repetitive actions of the forearm:** usually arises when the forearm is required to adopt a static position away from the side of the body for an extended period of time in a “static load” position, eg. using hand tools to carry out work in awkward positions for a sustained period of time.
5. **Repetitive manual activities requiring excessive force by squeezing the hand:** eg. cutting heavy wires with pliers, cutting heavy materials with scissors, for instance making costumes, using a chalking gun, removing materials from boxes by gripping and lifting a leading edge, etc. This problem can be exacerbated when a “pinch grip” rather than a “power grip” has to be used, ie. using the tips of the fingers as opposed to the entire hand.
6. **Repeated “shock loading” to the hand, wrist and arm:** eg. repetitive use of hammers, tugging at cloth or threads, using jerky motions or sustaining sharp reactions from hand held power tools. The repetition of shock over a substantial period of time can lead to cumulative damage of the hand, wrist or arm, eg. use of vibrating tools such as mechanical sanders can lead to “white finger” as a result of poor blood flow.
7. **Repetitive actions involving picking up small heavy objects by hand:** eg. laying bricks or any activity requiring excessive effort to pick up an object. These types of activities are performed mainly by elbow flexion but the wrist extensors are also put into considerable static tension to help maintain the wrist position.
8. **Using devices which place excessive stress on the hand:** eg. tool handles, etc. which do not allow hands of various sizes to take up an optimum position; input devices (eg. computer mice) that are too small or cannot be used in both hands.

22.2 MANUAL HANDLING

Manual handling injuries are the number one cause of employee injury resulting in time off work. Yet manual handling injuries are the easiest to prevent.

1. Manual handling is any activity where a person is required to exert force to lift, lower, pull, push, carry or otherwise move, hold or restrain any animate or inanimate object. Employers must ensure the risks associated with systems of work involving manual handling are either eliminated or reduced.
2. The risk assessment/s for the production must incorporate all manual handling activities through all phases of the production.
3. No person shall be required to lift more than they are capable of lifting on the day.
4. There are 18 risk identifiers in the National Code of Practice on Manual Handling and weight is only one. Other considerations include movements and posture required; layout of the workplace, actual handling task, exposure to the task, task requirements and object characteristics (weight, dimensions, grip, what the load is), the work environment and individual work factors.
5. Where possible, mechanical lifting devices must be used to move anything heavy or awkward. Appropriate aids to reduce the risk of manual handling injuries must be provided such as trolley, adequate storage, etc. Always ensure the pathway is clear prior to moving anything.
6. For loads that can be carried by the individual:
 1. **Assess the load**
Plan the lift. To do this, assess what you are lifting, deciding where and how you are going to move it. Ideally, lifting should occur at mid-thigh to shoulder height. Avoid unnecessary bending, twisting or reaching. Ensure there is a clear path to your destination and a suitable place to put the load down.
 2. **Get close to the load**
Position yourself as close to the centre of the load as possible. If the load is on a bench, pull it closer towards you. This will minimise the strain on the back while lifting and enable you to use your strongest arm muscles to hold the load.
 3. **Place feet apart for balance**
Place your feet apart to make sure your body posture is evenly balanced. If the load is positioned below waist height, straddle it if possible before lifting.
 4. **Relax the knees**
To begin the lift, gently relax your knees to get down close to the load.

5. Lower your body and bend your knees

Lower your body, bending at the knees. Preferably, your knees should not be bent beyond right angles. Bend your back slightly, if necessary.

6. Lower your head

Lower your head to look at the load you are lifting.

7. Get a firm grip on the load

Grip the load securely and comfortably with both hands. Use your whole hand, rather than your fingers. A firm grip should help pull the load closer, as well as support its weight. Pull the load as close to your body as possible.

8. Raise your head

Gently raise your head upwards. This will help you position your back correctly and ensure that your arm and leg muscles take most of the load.

9. Straighten your legs

Straighten your legs and lift slowly and smoothly, minimising the use of your lower back. Keep the load close to your body while lifting.

10. Lift and turn your feet

After lifting the load, turn your feet, then your body in the direction you wish to walk. Avoid twisting your body while carrying out the lift.

7. Team lifts:

- ensure one person is in charge during a team lift;
- designate the route of movement prior to the lift and remove any obstacles or obstructions;
- where possible, ensure members of a team lift are of similar height;
- position people for the lift having regard to the size, shape and balance of the load.

8. Use of mechanical lifting devices: see Sections 18.8 and 18.9.

22.2.1 HAZARD MANAGEMENT

A Manual Handling Hazard Identification Checklist is attached at Appendix I. Risks associated with manual handling can be minimised or reduced by:

- developing appropriate systems of work;
- designing and building workplaces that minimise manual handling;
- installing equipment that replaces the need to undertake manual handling;
- planning activities that will involve a significant amount of manual handling where manual handling is unavoidable.

See Appendix I – Safety Checklist – Manual Handling.

23. ULTRAVIOLET (UV) RADIATION IN SUNLIGHT

Australia has the highest rate of skin cancer in the world. Two out of three people will develop skin cancer. 1,200 Australians die annually from skin cancer related causes.

UV radiation is a component of the electromagnetic radiation (EMR) spectrum emitted by the sun. Prolonged exposure to sunlight is a major cause of skin cancer. UV radiation is potentially harmful, even on cloudy days. The primary factors affects the intensity of UV are:

- time of day;
- cloud cover;
- season of the year;
- altitude;
- extent of shade and reflection;
- geographical location.

23.1 MEASURES FOR CONTROLLING UV RADIATION IN SUNLIGHT

To reduce the risk of skin cancer:

- where practical, work shall be carried out in shade or partial shade;
- apply sun screens which are obtained from a reputable supplier, eg Cancer Council;
- wear hats and/or other loose fitting clothing to reduce the amount of skin exposed to the sun;

- wear sunglasses which comply with AS 1337;
- use lip and nose protection.

Also refer to the Guidance Note for the Protection of Workers from the Ultraviolet Radiation in Sunlight [NOHSC:3012 (1991)].

24. COMMUNICABLE DISEASES IN THE WORKPLACE

There are a number of common communicable diseases that have the potential to be transmitted in the workplace including:

- Tuberculosis (TB) – spread via droplets when a host starts coughing, transferred to another host as a result of breathing in the droplets;
- Hepatitis B (Hep B) – spread via a puncture wound such as a hypodermic, sexual contact and any exchange of bodily fluids;
- Hepatitis C (Hep C) – spread by a puncture wound or blood to blood contact;
- AIDS – transmitted by blood to blood contact.

Other communicable diseases include rubella (commonly known as German measles and of particular concern to pregnant women) and chicken pox.

24.1 INFECTION CONTROL GUIDELINES

The following will assist in minimising transmission in the workplace:

1. treat all human blood, body fluids and tissues as potentially infectious;
2. wear protective clothing such as gloves if contact with blood, body fluids and tissues is likely;
3. develop and maintain general hygiene standards in the workplace, eg. washing of hands, correct disposal of contaminated clothing or equipment, etc.;
4. take immediate measures to cover up wounds, broken skin, etc. and clean up spills;
5. adopt the precautions recommended by accredited training authorities prior to administering first aid;
6. provide proper disposal containers in first aid facilities;
7. ensure that public places which are to be used as temporary filming locations are checked for possible sources of infection, eg. used needles, sharps, etc., prior to setting up;
8. any person who may have contacted a communicable disease should be offered confidential counselling and medical assistance at the time of exposure.

25. WORKING WITH INDUSTRIAL PLANT AND EQUIPMENT

Industrial plant and equipment includes:

- cranes and hoists;
- camera cranes, jibs, dollies, booms, etc.;
- cherry pickers;
- turbines and reciprocating steam engines;
- vehicle loading cranes;
- scaffolding;
- elevating work platforms;
- gas equipment;
- compressors, air receivers, boilers and pressure vessels;
- equipment such as bench saws, drills, nail guns, guillotines, lathes, angle grinders, etc.;
- explosive power tools;
- spray painting equipment;
- certain equipment that may be used in stunt/special effects/hazardous filming sequences.

25.1 DESIGN, INSTALLATION, ERECTION AND OPERATION

Employers must ensure that industrial plant and equipment is designed, installed, erected, used and/or operated, maintained and stored in accordance with manufacturer's specifications and relevant legislation, Australian Standards and codes of practice by competent appropriately certificated personnel.

While certain types of equipment, eg. camera cranes, are not specifically referred to in the statutes as industrial plant or equipment, the designers, manufacturers, installers, erectors, users and operators of such equipment must have the necessary qualifications, knowledge, skills and experience to design, build, install, operate and/or use such equipment.

Plant for raising or lowering a load or person/s should be tested to ensure safety.

25.2 CAMERA CRANES, JIBS AND DOLLIES

All camera cranes must be certified structurally safe and sound at design and completion stage by a qualified structural engineer and operated by suitably qualified and experienced personnel.

25.2.1 Safe Use of Camera Cranes

Camera cranes must be inspected by a competent person prior to use, operated safely by competent, trained personnel and maintained regularly in accordance with manufacturer's recommended maintenance procedures, and:

1. all parts of the crane must be kept clear of any non-insulated electrical equipment;
2. where the crane is operated in the vicinity of members of the general public, adequate safeguards must be made to protect people and property;
3. when used on a public thoroughfare, adequate signage and barricades must be used to identify the location of the crane;
4. cranes must not block emergency exits;
5. cables must be serviceable and kept away from the wheels when the dolly is moving;
6. all electrical leads and cables must be tagged and tested – see Section 42.7.
7. cranes must not be operated on sloping ground or unstable surfaces;
8. be aware of clearances while the crane is travelling or operating;
9. add weights after boarding the crane (except in the case of the MR-80) – this is particularly important when using maxi jib or line jib cranes;
10. do not operate an unserviceable crane;
11. under no circumstances must a crane or dolly be moved or touched by unauthorised personnel;
12. the operating area must be kept well clear of non-essential personnel, any other person not specifically required and any equipment not required for the filming;
13. where cast or crew are required to move under a crane or jib arm, they must do so on the instruction of the Key Grip or Senior Camera Operator;
14. no unauthorised person shall be permitted to walk on or across laid and levelled track;
15. cranes or dollies must not be operated if there is any risk of lightning striking the crane or dolly;
16. a remote head should be used when a camera jib arm is operated from a moving vehicle, or where it is extended out from bridges, cliffs, buildings, etc.; where remote heads cannot be used, all possible steps must be taken to minimise risk, including measures such as attached head to structures other than the jib arm.

The following points are critical in the safe operation of cranes:

1. the condition and stability of the surface supporting the crane;
2. weather conditions when working outside;
3. serviceability of the safety devices;
4. skill and experience of the crew members;
5. nature and extent of special effects being used;
6. nature of the shots required for the production;
7. number and movements of other cameras, cranes and/or people working in the immediate vicinity of the studio/set/location;
8. the time available to complete the set-up and production;
9. any limitations imposed by the manufacturer/supplier on the operation and application of the crane.

Any associated equipment should be firmly secured to the crane or dolly. Regulations in each state and territory require personnel working on camera jib arms to wear seat belts above certain heights.

25.2.2 Safe Working Load

The safe working load (SWL) of a camera crane must not be exceeded at any time. Note that the camera/seat base, seat, column extensions, head, camera and operator/s are all included as part of the maximum SWL.

25.2.3 Communication

It is essential that the crane crew maintain a high level of communication which should be achieved by using a three-way wired communication system, including a dedicated (camera operator/director) talk-back facility and provision for the camera operator and the crew to communicate independently. Consideration must be given to the need to communicate with others, including other camera operators, in the immediate vicinity.

25.2.4 Modifications and Maintenance

Camera cranes must not be structurally modified without seeking guidance from an appropriate technically qualified person/authority and/or structural engineer.

25.2.5 Camera Cranes Involved in an Accident

If a camera crane is involved in a serious accident (whether or not a person is injured), eg. a crane falls over or collides with an object, the relevant federal, state or territory authority must be notified.

Photographs should be taken of the scene and the crane prior to disturbing the site after any injured people have been provided with medical aid. Where significant damage to the crane is evident or there is distortion to any parts, the crane must not be re-used until the incident is investigated and appropriate repairs carried out by a properly licensed technician and/or engineer.

25.2.6 Cranes not in Use

Cranes not in use must be secured to prevent uncontrolled movement and parked away from pedestrian/vehicular thoroughfares.

25.2.7 Working with Camera Cranes, Jibs, Dollies and Motion Control Camera Rigs

An experienced and competent Key Grip and/or Camera Operator must supervise the setting up and operation of a camera crane, jib or dolly for operation on tracks. Adequate time and personnel must be allocated to set up and operate the equipment in consultation with the supervisor/s. See also Section 41.3 Motion Control Cameras.

25.2.8 Serviceability and Checking

Camera cranes, jibs and dollies must be serviceable, used in accordance with supplier/manufacture recommendations and the following must be checked before each day's filming commences:

- integrity of the hydraulic system (eg. for leaks);
- supporting structures (eg. for warping, bending, distortion);
- serviceability of emergency controls, switches, etc.;
- serviceability of guards (eg. wheel guards);
- counterweight restraints.

25.2.9 Stability of Surfaces

A crane base and pedestal must be level and plumb before it is used. On unstable surfaces such as sand, it must be blocked to prevent the surface shifting and/or crane collapse. Dolly tracks must be made level in both planes. A riser used in conjunction with a camera crane must be able to support the aggregate weight of the crane, any personnel using it, and any additional loads which could be placed upon it. The riser must be also be braced and/or constructed in such a way as to prevent collapse.

25.2.10 Expertise

It is the role of the senior Camera Operator (in studio operations using three crew on a motorised crane) to ensure the skill and experience of crew using a camera crane is such that the crew as a team operates safely. The Producer must ensure that individual crew members are not rostered to undertake tasks which are beyond their level of skill and/or experience. Individual crew members must be provided with basic induction training regarding the safety aspects of the crane prior to undertaking their duties.

25.3 WORKING IN THE VICINITY OF POWER LINES

- There must always be sufficient clearance for safety when equipment is being assembled or used near overhead power lines, electrical lighting grids and/or non-insulated electrical equipment.
- The requirements for safe distances should be consistent with AS 2250.5-2002 – Safe Use of Mobile Cranes.
- Minimum safe distances without a spotter are 6.4m for overhead power lines or poles and 10m for overhead power lines on towers.
- Greater distances may need to be maintained depending on the requirements of relevant legislation, No go Zones Rules and environmental conditions.

25.4 PETROL/DIESEL OPERATED EQUIPMENT

1. Adequate ventilation must be provided if internal combustion engines are to be operated inside buildings or enclosed structures.
2. Where possible, exhaust gases should be vented to the exterior.

26. DANGEROUS MACHINERY

1. Any form of domestic and/or industrial machinery that has moving parts should be regarded as potentially dangerous.
2. Any devices that have impellers, jaws, nip points, cogs, blades, rotating worms, running rollers and/or other moving parts should be regarded as potentially high risk.
3. Dangerous machinery includes any engine, motor, shaft, belt, gearing, pulley, flywheel, contrivance or appliance operated by any source of motive power.
4. The installation, operation, guarding, maintenance and disposal of dangerous machinery is covered by relevant legislation, regulations, Australian Standards and codes of practice.

26.1 GUARDING DANGEROUS MACHINERY

1. All dangerous machinery must be adequately guarded in accordance with manufacturer's recommendations and statutory requirements. Except for maintenance purposes, machine guards must not be removed.
2. Employers must ensure that all machine guards are effective and appropriate for the particular type of machine. All machine guarding should comply with AS 4024 – 1996 Safeguarding of Machinery. Guards must be maintained in a serviceable condition. If and when guards are removed, precautions must be taken to ensure the machine is not operated. Employees must be trained in how to operate dangerous machinery and provided with necessary PPE, eg. glasses, dust masks, etc. All PPE must comply with the relevant Australian Standards.
3. Machine parts which require guarding include:
 - non-operational parts which transmit power and motion such as:
 - belts and pulleys;
 - gear wheels;
 - shafts and spindles;
 - flywheels;
 - chain and sprocket gears;
 - operational parts such as:
 - the tools and dies of power presses;
 - the blades of guillotines;
 - milling cutters;
 - drop saws;
 - circular saws;
 - drills and chucks.

26.2 TYPICAL HAZARDS TO LOOK FOR WHEN IDENTIFYING DANGEROUS MACHINE PARTS

The following machine parts represent the most significant hazards and are usually synonymous with the use of machinery:

- “drawing in” of a body part, eg. fingers, hands or hair, or of clothing, eg. sleeves;
- shear points;
- impact and crushing;
- cutting;

- entanglement;
- stabbing;
- abrasion;
- flying particles or projectiles.

26.3 TYPES OF MACHINE GUARDING

There are four main types of machine guarding:

1. **Fixed guards:** ie. permanent non-moving guards that cannot be removed without the assistance of tools.
2. **Interlocked guards:** ie. guards that are linked to the machine so that the machine will not operate unless the guard is fully in place. This type of guard can be electrical, mechanical, pneumatic or hydraulic.
3. **Presence sensing guards:** i.e. photoelectric guards that use beams of light which, if broken or interrupted, will cause the machine to stop or not start; pressure sensing devices such as mats or motion sensors.
4. **Combination guarding:** ie. combining a number of different types of guards to provide the best possible protection.

27. HAZARDOUS SUBSTANCES

27.1 MATERIAL SAFETY DATA SHEETS

1. Material Safety Data Sheets (MSDSs) provide information about how to minimise risks associated with the storage, handling, use and disposal of hazardous substances.
2. Suppliers of hazardous substances are responsible for providing a copy of the MSDS which has been prepared by a manufacturer or importer. Employers must acquire MSDSs for all substances to be used in the workplace and ensure a copy is available to all persons required to use the substances.
3. The MSDS provides information on:
 - identification – product name (trade and chemical), physical description and properties, typical uses, composition;
 - health hazard information – appropriate first aid, spills management, etc.;
 - precautions for use – eg. appropriate PPE;
 - safe handling information – storage, decanting, disposal, etc.

27.2 LABELLING OF SUBSTANCES USED IN THE WORKPLACE

All substances used in the workplace must be appropriately and clearly labelled. Particular care must be taken when decanting from a larger to a smaller container: specifically, the smaller container must be appropriate for the material and appropriately and clearly labelled. OH&S legislation requires employers to store, handle and label hazardous substances in a manner that does not jeopardise the health and safety of persons at a workplace. Domestic end use products that are incidentally used in the workplace must comply with the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) labelling requirements.

27.2.1 General Labelling Requirements

Labels should be:

1. on an outside face of the container;
2. in the English language;
3. in durable print;
4. in lettering of a size and type which is easily legible;
5. firmly secured and printed in colours which provide a distinct contrast;
6. kept on the container until the container has been emptied and cleaned;
7. robust enough to withstand fair wear and tear while being handled by users;
8. designed to incorporate warning signs.

27.2.2 Labelling Hazardous Substances

1. Labels for containers holding more than 500ml of hazardous substances must include:
 - a. signal word/s and/or Dangerous Goods Class and subsidiary risk label/s where applicable;
 - b. product name;

- c. chemical name;
 - d. United Nations (UN) number where required by the Australian Dangerous Goods Code;
 - e. ingredients and formulation where relevant;
 - f. risk phases;
 - g. directions for safe use;
 - h. safety phases;
 - i. first aid information and procedures;
 - j. emergency procedures;
 - k. details of manufacturer and/or importer;
 - l. expiry date where relevant;
 - m. reference to MSDS.
2. Labels for containers holding less than 500ml of a hazardous substance:
- a. should contain as much of the above information as possible without jeopardising the clarity or legibility of the information but must include relevant signal word/s (eg. POISON) and/or hazardous goods class, and
 - b. consideration should be given to other options for providing information that cannot be included on the label, eg. leaflets, signage, etc.

27.2.3 Signal Words, Dangerous Goods Class and Subsidiary Risk Labels

1. Signal words (eg. FLAMMABLE), must be prominently displayed on labels to indicate the relative risk associated with the substance.
2. State dangerous good legislation requires dangerous goods class and subsidiary risk labels to be assigned according to the Australian Dangerous Goods (ADG) Code.
3. Similarly, poisons legislation in all states and territories require that, if a substance is scheduled by the SUSDP, the signal words “WARNING POISON” and “DANGEROUS POISON” must be assigned in accordance with the SUSDP.
4. Where a hazardous substance is not defined as a dangerous good, and is not scheduled under the SUSDP, then the word “HAZARDOUS” must be used.

28. WORKING SAFELY WITH CHEMICALS

1. Employers are responsible for developing and implementing safe systems of work in consultation with employees and ensuring that persons using chemicals strictly adhere to prescribed working practices.
2. Only use chemicals if absolutely necessary.
3. Quantities of chemicals must be kept to an absolute minimum.
4. All users must be trained in safe systems of work.
5. Chemicals must be stored in properly labelled, appropriate containers (also refer to Section 28), handled and disposed of properly.
6. All users must be able to access the MSDSs and any other information relevant to the use of the chemical/s.
7. Adequate first aid facilities must be available in the event of an accident, including appropriate equipment to mitigate the adverse impact of spillages, splashes, etc., eg. absorbent material, eyewashes, emergency showers, etc.
8. Any person who uses a chemical has the right to access a copy of the MSDS and to know:
 - a. what chemicals they are working with and whether the chemicals can be safely used together;
 - b. the proper name of the chemical/s;
 - c. any potential side effects associated with their use;
 - d. how to protect themselves from harm while using the chemical, including use of appropriate PPE such as hand protection;
 - e. how to handle emergency situations;
 - f. where to get additional advice.

29. COMPRESSED GASES

See Section 27, Hazardous Substances.

All Class 2 gases, ie LPG, acetylene and hydrogen, that have been compressed, liquefied or dissolved under pressure must be kept in secured cylinders.

All pressurised gas cylinders must be stored outside buildings and must be secured and upright at all times.

The Australian Dangerous Goods Code sets out conditions for the commercial transport of LP gas cylinders, applies where the aggregate capacity is more than 62.5 litres and is administered by the Environment Protection Authority.

Small gas cylinders

A small gas cylinder is generally less than 25 litres total internal capacity (often defined as its “water capacity”). Examples are domestic barbeque cylinders such as 4.5 kg (11 litre capacity) and 9 kg (22 litre capacity) of LP gas or propane. Other cylinders for trade use range from 0.34 kg of LP gas (1 litre capacity) up to E size acetylene and oxygen cylinders (25 litre capacity). They may have detachable fittings such as torches.

Other examples are butane cartridges and aerosol containers designed for use with heating equipment and/or fittings. These can contain as little as 175 grams flammable gas.

Risks associated with use and transportation of small gas cylinders

Explosions and fires have occurred when cylinders of LP gas (propane) or acetylene have been carried or left in closed vehicles, such as vans or cars. It is heavier than air, so it will accumulate in low areas rather than dissipate. It can generate an explosive mixture with air if the cylinder or attached equipment leaks.

Spark sources in the vehicle’s electrical components include remote locking systems, electric motors (starter, wipers, aerial), ignition systems, radios and sound systems, cigarette lighters, and possibly light switches, can ignite a flammable gas mixture. Lighting a cigarette in the vehicle will also ignite such a mixture.

Do:

- Check for leaks by brushing on soapy water (or water from the windscreen wash bucket at service stations) and looking for bubbles. Smell is not always a reliable test.
- Ensure windows of vehicle are wound down for cross flow ventilation or use a suitably ventilated cabinet.
- Disconnect any attachments used with the cylinder before transport and close the cylinder valve.
- Keep the cylinder upright when transporting it in a trade vehicle or car.
- Store or keep the cylinder in a vehicle only if there is a purpose built compartment, cabinet or tool box that provides adequate ventilation to allow any leaking gas to drain to the outside of the vehicle. Also make sure there are no ignition sources around when opening the compartment to take the cylinder out. An open vehicle such as a utility provides the best ventilation and avoids the risk of gas accumulation.
- Unload the cylinder from inside the vehicle immediately when reaching your destination, unless the vehicle has a suitable compartment or cabinet as above.

Don’t:

- Do not put a cylinder in any vehicle without first checking for gas leaks.
- Do not carry a cylinder in the car with the windows wound up.
- Do not lay a small LP gas cylinder on its side (or upside down). Make sure that it is securely packed in a way that prevents it from tipping over in transit.
- Do not store or keep a cylinder in a van without a purpose-built ventilated compartment.
- Do not leave equipment and accessories attached to the cylinder when transporting.
- Do not carry a cylinder mounted external to the profile or body of a vehicle.
- Do not carry or keep a cylinder in an enclosed tool box, especially with loose tools.

30. FLAMMABLE LIQUIDS, INCLUDING PAINTS, GLUES AND SOLVENTS

Employers must develop hazard management systems for reducing risks associated with the storage, handling, use and disposal of flammable liquids including paints, glues, solvents and thinners. Such systems must comply with relevant legislation, Australian Standards and codes of practice.

Risks can be reduced by:

1. seeking advice from the local WorkCover authority about storage and licensing requirements;
2. using non-solvent based products wherever possible;
3. keeping the minimum necessary in the workplace;

4. providing dedicated, well maintained, well ventilated storage, preparation and mixing areas away from known heat and possible ignition sources;
5. no smoking rules in areas where flammable liquids are stored or used;
6. using only approved storage containers with tamper proof locking lids;
7. never decanting (pouring) materials into non-approved containers (eg. plastic drink bottles);
8. ensuring all containers are correctly labelled (also see Section 28);
9. MSDSs are available to all using or handling flammable liquids;
10. never mixing incompatible materials;
11. ensuring spillages are cleaned up promptly and the spilt material disposed of correctly;
12. ensuring users adopt safe work practices and use appropriate PPE;
13. seeking advice from the relevant WorkCover authority and road transport authority regarding safe transportation.

NB: mineral based paints, varnishes and shellacs may cause giddiness and headaches.

31. SPRAY PAINTING

1. Many paints are classified as hazardous. Exposure can cause injury and illness through inhalation of toxic vapours and mists and absorption of irritants through the skin and may result in occupational asthma, allergic contact dermatitis, lung cancer, damage to the reproductive system and kidney or liver damage.
2. Hazardous substances include thinners, degreasers, resins, surface preparation products and dusts from sanding.
3. Other hazards include:
 - a. **Fire, explosion and electrical hazards:** Spray painting disperses more paint into the atmosphere than other methods of application. Many paints contain flammable substances. Spray painting mists spread and rapidly fill air space, where they may come into contact with potential sources of ignition, eg. static electricity, sparks, flames and hot surfaces.
 - b. **Electrical installations and use of electrical equipment** can be hazardous in spray painting, mixing and storage areas. Spray painting can involve electrical equipment which, if not properly installed or regularly maintained, can result in electrical or explosion hazards. Static electricity charges can be generated if two differently charged materials come into contact, eg. two metal cans touching during decanting can create a static spark sufficient to cause an explosion or to ignite flammable materials. Electrical equipment that is not appropriately insulated or designed to provide spark suppression must not be used where spray painting is undertaken.
 - c. **Water** can conduct electricity from electrical equipment to people. Wet work, eg. wet rubbing in an area where electrical equipment is being used, can lead to electrical shock or electrocution. electrical shock or electrocution can also be associated with electrostatic spray painting.
 - d. **Incorrectly stored flammable materials** are a hazard. Any build-up of paint residue in work areas or on equipment is also a hazard as it may be flammable. Paint and solvent soaked rags can spontaneously burst into flames if they are not wet and safely contained after use.
 - e. **Water** can conduct electricity from electrical equipment to people. Wet work, eg. wet rubbing in an area where electrical equipment is being used, can lead to electrical shock or electrocution. electrical shock or electrocution can also be associated with electrostatic spray painting.
 - f. Paint vapours and mists build up rapidly in **confined spaces** which increases the risk of exposure to hazardous substance and fire or explosion. (See also Section 20.)
 - g. **Noise:** Sources of noise include pumps, electrical motors, compressed air spraying. Spray booths also intensify sound. Noise can make communication difficult and may mask warnings. (See also Section 21.)
 - h. **Manual handling:** Poorly designed equipment and tasks that require stretching, bending and twisting of the body are manual handling hazards, eg. holding the spray painting gun in a static position above shoulder height. (See also Section 22 and Appendix I.)

31.1 HAZARD MANAGEMENT

31.1.1 Workplace Environment

The workplace must be well designed and maintained. Consideration must be given to:

- ventilation;
- the impact on surrounding work areas (eg. over-spray, smell, noise, etc.);
- lighting;
- cleanliness and good housekeeping;
- storage;

- temperature.

31.1.2 Personal Protective Equipment

Appropriate PPE must be provided including respirators, gloves and protective clothing. Employees carrying out spray painting must be issued with their own set of PPE, marked with their own name. The PPE must be:

- appropriate, well maintained, checked and cleaned daily;
- stored in an airtight container;
- cartridges must be dated and changed regularly;
- airline filters must be changed as required.

Operators must be:

- adequately trained in the use of PPE;
- clean shaven to ensure adequate face seal.

32. SYNTHETIC MINERAL FIBRES (SMFs)

SMFs is the term used to describe a wide variety of fibres made by industrial processes using mineral substances such as rock, slag and glass. The three main categories are:

- **glass fibre (or fibreglass)** – including glasswool and glass filament;
- **mineral wool** – including rockwool and slagwool;
- **ceramic fibres** – made from molten glass of alumina and silica or from Kaolin clay.

SMFs are mainly used as insulating materials against heat, cold or noise and are used in many situations where asbestos was previously used. While asbestos is known to be a health hazard, concerns have also been raised about possible health risks associated with exposure to SMFs. Some fibres may be small enough to be inhaled into the deepest part of the lung. Fibres can also cause irritation of the skin, eyes, nose and throat.

SMFs can be found in:

- machinery – fibreglass or mineral wool batts or blankets for noise or temperature control;
- ceilings, walls, air conditioning ducts – fibreglass or mineral wool batts or blankets for noise and temperature control;
- fibre reinforced products – glass filament used for strength, rigidity;
- fire protection – granulated (loose) form or as a spray coating;
- mixed with cements, clays or other materials.

SMFs are often surfaced with foil, cloth or tissue coating.

32.1 WORKING SAFELY WITH SMFs

Safe working practices with SMFs include:

1. ordering SMF materials in a form that reduces on-site cutting and handling;
2. using hand tools rather than power tools to cut or work with SMF materials;
3. providing appropriate, individually issued, well maintained PPE such as approved respirators, eye protection and coveralls;
4. providing training in SMF safe work methods;
5. using local exhaust ventilation equipment in conjunction with power tools;
6. reducing dust associated with the use of SMFs by wetting down or dampening prior to cutting or handling;
7. working in well ventilated areas;
8. implementing effective waste control measures;
9. including clean up time as part of work procedures;
10. not using compressed air or water jets for cleaning;
11. using wet sweeping, wet wiping or vacuum cleaner for clean up work;
12. putting waste in a bag or pack to prevent fibre release;
13. providing washing facilities.

Also refer to National Standard for Synthetic Mineral Fibres and the National Code of Practice for the Safe Use of Synthetic Mineral Fibres: AGPS 1990.

33. HANDLING TIMBER, WOOD AND WOOD BASED PRODUCTS

Timber, wood and wood based products are not designated as “hazardous substances”. However, the ingredients of a number of industrial wood adhesives and preservatives may pose hazards in the workplace including:

- storage and manual handling;
- formaldehyde based adhesives and other preservatives;
- adhesives containing trichlorethylene;
- machining, finishing and treating;
- noise;
- dust.

33.1 STORAGE AND MANUAL HANDLING

1. Properly stored timber will facilitate finding, handling and manoeuvring in the workplace, minimising the risk of manual handling injuries. Dry, well ventilated storage areas should be fitted with appropriate racks to ensure the timber product can breathe and thus minimise the build-up of formaldehyde and other preservatives.
2. Mechanical assistance and/or team lifts should be utilised to handle heavy loads as appropriate (refer to Section 22).

33.2 FORMALDEHYDE AND OTHER PRESERVATIVES

1. Wood glues containing formaldehyde and/or preservatives containing copper chrome-arsenate (CCA) are often used in association with timber product for fumigation, stability, support and/or preservation. Products such as particleboard, medium density fibre (MDF) board and plywood which utilise formaldehyde based adhesives may emit small amounts of formaldehyde into the air. Products such as pine are often impregnated with chemicals to extend their serviceable life and facilitate wider use in a variety of applications especially outdoors.
2. Formaldehyde is a colourless, naturally occurring substance which can cause mild irritation, including watering of the eyes and mild effects on the nose and throat. Some people may exhibit an allergic reaction and hyper sensitivity may produce asthma type reactions, runny nose and skin irritation. Individuals may demonstrate no adverse effects for long periods of time but may still, without warning, develop acute symptoms.
3. Unlike at timber treatment plants, where significant amounts of raw preservatives such as arsenic, chromium and copper are used to impregnate the timber, the finished treated timber product, if handled properly, poses a relatively small risk. Other products such as creosote or creosote vapour can cause irritations of the skin. Short term exposure to high concentrations may cause nausea, vomiting, headache and/or fainting.
4. Alternatives should be used wherever possible and, if use is unavoidable, appropriate PPE must be provided, the workplace adequately ventilated and good housekeeping must be implemented and maintained.

33.2.1 Medium Density Fibreboard (MDF)

Exposure to the dust, gas and vapour from the boards may result in the following health effects:

- Acute:
 - Swallowed: swallowing the dust may result in abdominal discomfort.
 - Eye: the dust, gas and vapour may be irritating to the eyes causing discomfort and redness.
 - Skin: the dust, gas and vapour may irritate the skin, resulting in itching and a red rash.
 - Inhaled: the dust, gas and vapour may irritate the nose, throat and lung, especially in people with upper respiratory tract or chest complaints.
- Chronic: Repeated exposures over many years to uncontrolled dust from MDF may result in allergic dermatitis, asthma or chronic nose or throat irritation in some people. The risk of nasal or paranasal sinus cancers may be increased.

Mandatory Safety Controls

1. Power tools must be fitted with dust bags and be used in well-ventilated areas to avoid the spread of dust, gas and vapours.
2. Storage and work areas must be well ventilated.
3. Work areas should be cleaned at least daily and dust removed by HEPA-filtered vacuum cleaning or wet sweeping method.
4. Skin Protection: Comfortable work gloves must be worn in accordance with AS/NZS 2161 Occupational Protective Gloves.

5. Respiratory Protection: A class P1 or P2 replaceable filter or disposable face piece respirator must be supporting and worn when sawing, drilling or sanding. Respirators must comply with AS/NZS 1716 – Respiratory Protective Devices and be selected, used and maintained in accordance with AS/NZS 1715.
6. Eye Protection: Safety glasses or non-fogging goggles (AS/NZS 1337) must be worn when sawing, drilling or sanding.
7. Wood working areas should be isolated from other work areas.

33.3 MACHINING, FINISHING AND TREATING

Machining, finishing and treating timber can significantly increase the risk of exposure to injury and/or illness. Sawing, planing, sanding drilling, etc., will create dusts and allow fumes to be liberated that can enter the lungs.

- Extraction systems (either local or reticulated) must be utilised to control dusts and vapours at the source.
- Appropriate PPE including respiratory protection (eg. oxygen fed masks) and solid boots or shoes, overall, etc., must be provided to and used by employees who are machining and/or finishing timber products.
- Good housekeeping is essential.

33.4 NOISE

Sawing, planing, sanding, drilling, etc., using portable or fixed power tools can create noise which exceeds recommended occupational noise exposure levels. See Section 21.

34. DUST HAZARD MANAGEMENT

1. Dusts can pose significant hazards in the workplace. They may be naturally occurring or created as part of the work process. Wind and fans can exacerbate dust hazards.
2. Some dusts, including flour, grain, wood, coal, metal and sulphur dusts, can create an explosive hazard.
3. Sources of dust include:
 - a. dusty work process, eg. woodworking, sanding, cutting, etc.;
 - b. adjacent dusty sites;
 - c. naturally occurring, eg. vegetation, beaches;
 - d. animals;
 - e. deliberately created, eg. special effects.

34.1 DUST CONTROL MEASURES

Safe working procedures must be developed which include provision of information and training and take account of the following:

1. ensuring dusty work processes are isolated from the main work area and a purpose built dust exhaust ventilation system is provided to suck the dust away to an appropriate collection point for proper disposal;
2. using portable tools such as electric planners, etc., with attached dust bags;
3. wetting dusty work down where possible (but avoiding contact with electrical equipment and wiring) to limit the spread of dust;
4. providing personal protective equipment, eg. respirators, dust masks, etc.
5. risk assessments to minimise the possibilities of explosions;
6. materials such as asbestos, asbestos cement sheeting and synthetic mineral fibres must be handled in accordance with relevant codes of practice and/or regulations (see Section 33.1).

35. WELDING, CUTTING AND BRAZING (including Soldering)

35.1 MAJOR HAZARDS

Major hazards include:

1. **electric shock** – contact with live electricity;
2. **radiation burns** – to the eyes or body due to the welding arc;
3. **body burns** – weld splatter or hot molten materials or due to burning clothing, etc.;
4. **fire and/or explosion** – arc, flame, sparks or spatter or electrical faults in combination with flammable materials, gases or liquids;

5. **sprains and strains** – heavy materials manual handling;
6. **eye injury** – foreign matter, eg. chipped welding slag;
7. **sickness** – due to inhalation of fumes from surface coatings, etc.
8. **asphyxiation** – due to displacement of oxygen by non-toxic gases.

35.2 HAZARD MANAGEMENT

The following hazards management measures should be taken:

1. welding, cutting and brazing must only be undertaken by competent appropriately qualified personnel;
2. appropriate PPE, eg. aprons, protective filters, gloves, footwear respiratory protection devices, etc., must be provided and worn while working;
3. self-contained breathing apparatus and/or air line respirators must be filled and/or supplied from an approved air supply;
4. all electrical equipment must comply with relevant standards and have the required capacity or rating;
5. all equipment must have appropriate name plates setting out the operating conditions of the relevant machine;
6. contaminated welding surfaces must be cleaned;
7. electrode holders must conform with relevant Australian Standards;
8. earth connections must be secured correctly to provide a safe and sound electric current return;
9. flashback arrestors should be fitted to all gas cylinders;
10. do not use oxygen to “sweeten” air when welding or cutting in confined spaces;
11. do not leave connected torches or hoses in a confined space during work breaks or overnight;
12. ensure confined spaces are adequately ventilated;
13. do not use oxygen as a substitute for compressed air;
14. do not work with “kinked” pressure hosing/s;
15. do not use oxygen or compressed air to dust off clothing;
16. never “crack open” fuel gas cylinders adjacent to an ignition source;
17. do not use damaged valves or regulators;
18. never use cylinders as rollers to assist moving heavy objects;
19. always store cylinders with approved keys or hand wheels;
20. appropriate screens, mechanical and exhaust ventilation systems must be used.

(See also Section 20, Confined Spaces.)

35.3 HOT WORK PROCEDURES WITHIN BUILDINGS

Hot works are the second largest cause of fires within buildings.

1. Many venue owner/managers will not allow hot work to be undertaken without a hot work permit being issued.
2. Hot work procedures should be performed in accordance with AS 1674.1 – 1997 Safety in Welding and Allied Processes Part 1 Fire Precautions.
3. Risk assessment shall identify hot work hazards and appropriate controls shall be implemented, preferably by removing such hazards or where that is not possible by covering them with fire resistant tarpaulins.
4. Adequate serviceable fire fighting equipment, including extinguisher/s and fire hoses, shall be available in the work area and an appropriately trained and competent fire watch personnel identified to undertake fire watches.
5. All hot work equipment shall be utilised in accordance with manufacturer’s instructions and be maintained in good working order.
6. Inspections of the hot work area must be undertaken for four hours following completion of the work to ensure there is no re-ignition.
7. All combustible materials must be removed to an area outside a radius of 15 metres from the hot work area both laterally and above and below the hot work.
8. The hot work supervisor shall notify all relevant personnel in other departments and in adjacent work areas when hot work is being undertaken.

A pro forma Hot Work Permit is at Appendix R.

36. EXPLOSIVE POWERED TOOLS

Explosive powered tools (EPTs) are used to drive a projectile against, into or through any substance by means of an explosive, and include all attachments and accessories. There are two types of EPTs: direct acting and indirect

acting. The charge from direct acting EPTs can reach 600 metres/second. The charge from indirect acting EPTs can reach 100 metres/second.

EPTs are commonly used for:

- fixing formwork to concrete;
- suspending ceilings;
- conduit fixing;
- fixing steel decking to structural steel;
- fixing brick to concrete.

36.1 SAFE USE OF AND OPERATION OF EPTS

Employers are required to ensure that any person using an EPT in the workplace is an appropriately trained and qualified operator who holds the appropriate certificate of competency and uses the tool in a safe manner. EPTs and all accessories, eg. guards, must be properly maintained and regularly inspected to ensure that they are fully serviceable. See also Appendix H – Safety Checklist – Use of Explosive Powers Tools.

36.2 EXPLOSIVE CHARGES

Charges must be stored in an appropriate container marked with the words ‘WARNING – EXPLOSIVE CHARGES’ and colour coded in accordance with AS/NZS 1873:1994.

36.3 FASTENERS

Fasteners take a variety of forms and can be used with/without washers or threaded. The correct fastener must be chosen for the particular application.

37. CONSTRUCTION WORK

Also Refer to Sections 18, 19, 20, 22, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36 and 43.

37.1 SET CONSTRUCTION

Risk assessment for sets and prop manufacture must be undertaken at the design stage and progressively as required through the construction, installation and strike phases of production.

37.1.1 Carpentry and Related Operations

1. Particular carpentry, set and prop manufacture and/or repair hazards include:
 - a. materials used in construction and associated dusts and fumes;
 - b. chemicals, flammable materials and hazardous substances used in construction, manufacture and repair processes;
 - c. the plant and equipment used.
 - d. Appropriate information must be available, including:
 - e. maintenance of a hazardous substance register;
 - f. provision of MSDSs to those involved in manufacture, maintenance, repair and storage of constructed items.
2. Control measures include:
 - a. plant, equipment, tools and associated items including guards used, maintained and stored in accordance with manufacturer’s specifications;
 - b. appropriate dust management procedures;
 - c. adequate ventilation;
 - d. adequate storage facilities;
 - e. fire management and control procedures;
 - f. good housekeeping;
 - g. use of appropriate PPE.
3. Fumes arising from set construction (including those created in on-set finishing) must be fully dispersed prior to set dressing, pre-rigging of lights, block-throughs, rehearsals and/or filming.

4. Minimise the use of medium density fibreboard (MDF) wherever possible, If use of MDF is unavoidable, work must be undertaken in an isolated or separate area and mechanical extraction, appropriate PPE and good housekeeping must be utilised.
5. Avoid use adhesives and degreasers containing trichloroethylene as, even in small quantities, trichlorethylene is now recognised as a carcinogen.

37.2 SET STRIKING AND/OR DEMOLITION

Adequate time must be allowed for the removal of sets, taking into account the safety of crew and passers-by.

It is important to ensure that:

- people walking or driving past any demolition work are protected from falling objects, projections, dust, noise, mechanical plant including trucks entering and leaving the site;
- in both the planning execution of the demolition work, action is taken to prevent demolished materials from falling freely outside the demolition site;
- security fencing is provided around the perimeter of the demolition area;
- where high temperature cutting and welding is to be carried out, the precautionary measures set out in AS 1674.1 – 1997 Safety in Welding and Allied Processes Part 1 Fire Precautions shall be observed;
- a competent person determines the presence of hazardous materials and organise its appropriate removal;
- deliberate burning is not be used as a method of demolition;
- all plant and equipment used in the striking of a set is operated by a competent person;
- cranes are selected, used and operated in accordance with the manufacturer’s specifications;
- waste water does not enter any stormwater drainage;
- having regard to the structural integrity of the set, crew are advised regarding the safety way and in what order the set should be pulled down.

37.3 EXCAVATION

Check for underground pipes and cables prior to undertaking any excavation work.

See also Section 18 Rigging Work, Platforms and Working at Height, Section 20 Confined Spaces, Section 21 Noise, Section 25 Materials Manual Handling, Section 25 Working with Industrial Plant and Equipment,

37.3.1 Common Hazards

The following hazards are commonly associated with excavation work and should be considered by the risk assessment process:

1. the fall or dislodgement of earth and rock;
2. the instability of the excavation or any adjoining structure;
3. the inrush or seepage of water;
4. unplanned contact with utility services, eg. electricity cables and gas main;
5. the placement of excavated material;
6. falls into excavations;
7. the movement and positioning of heavy plant and equipment affecting the excavation;
8. ground vibration affecting the stability of the excavation;
9. vehicle movement;
10. excessive noise from the operation of machinery and plant;
11. manual handling injuries;
12. changes to excavation conditions.

37.3.2 Prevention of collapse or failure of trenches and open excavations

Injuries can result from the collapse of trenches and excavations as a result of the inability of the soil to stand by itself for the duration of the work. A risk assessment must be conducted to determine which controls will be implemented to prevent collapse or failure of all or part of a trench or open excavation. It should consider at least the following:

1. the depth of the excavation;

2. the nature of the strata – sand, clay, shale, floaters, etc. – including their likely behaviour upon exposure to the elements;
3. fractures or faults in the rock;
4. the presence of moisture or water;
5. the possibility of exposure to wet weather and water from other sources;
6. any load close to the edge or in the zone of influence of the excavation;
7. vibration;
8. the exposure time;
9. any previous disturbance of the ground, eg. previous excavations; and
10. adjoining buildings or structures.

Removal of soil from an excavation causes unbalanced soil stresses which reduce the capacity of the excavation to support itself. Control measures that have worked previously may not be satisfactory for a current situation. There may be additional geotechnical engineering issues that should be considered.

Where the risk assessment identifies the risk of an unstable condition, the following should be considered prior to excavation commencing:

- seeking advice from appropriately qualified engineers;
- carrying out a geotechnical analysis;
- engaging a competent person to supervise the progress of the excavation work.

Shoring systems, benching and battering are engineering issues that involve both structural design and soil mechanics. The use of adequate shoring, benching and battering is essential to control the risk of a collapse or failure of a trench or open excavation.

37.3.3 Design of engineering controls

Design specifications for engineering controls such as shoring support structures, benching or battering should be prepared by an appropriately qualified person in accordance with relevant standards and codes. In developing specifications, the following should be considered:

1. the size and strength of the component members of the shoring;
2. existing and changing ground conditions;
3. the loads and types of ground or soil conditions to be shored;
4. static loads near excavation, eg. spoil pile, buildings and structures;
5. dynamic loads near excavation, eg. traffic and excavation equipment;
6. ground vibration, eg. heavy traffic, mobile plant, trains, pile driving and blasting;
7. undermining of roads, footpaths, buildings, structures, etc;
8. difficulties or risks that other services may pose, ie. overhead power lines, existing or proposed under ground services;
9. working environment such as exposure to dust, fumes, gases, noise, water, contaminated atmosphere or ground, etc;
10. systems of work are in accordance with requirement of the local council, police service, and Environment Protection Authority;
11. location of utility services;
12. safety during installation and removal.

37.3.4 Shoring

- It is a legal requirement that where necessary, all trenches and excavations be adequately shored or supported to prevent a fall or dislodgement of earth, rock or other material forming the side of or adjacent to any excavation work from burying, trapping or striking a person that is in the excavation.
- Where such a risk also exists for those installing supports, other appropriate control measures must be in place to ensure the safety of persons entering the excavation.
- A shoring system is not required if, having regard to the nature and slope of the side of the excavation and other relevant circumstances, there is no reasonable likelihood that earth, rock or other material will fall or dislodge from a height of more than 1.5m and bury, trap or strike a person that is in the excavation. The risk assessment should identify unstable conditions and the risks involved.

- Shoring the face of the excavation should proceed as the work of excavation proceeds. Where a mechanical digger is used, the risk assessment should determine whether any part of the trench may be left unsupported.
- Shoring may include any suitable system of temporary supports and sheeting material used to maintain the stability of the sides of an excavation. The installation and removal of shoring should take place from outside an excavation.
- Appropriate ground support equipment should be on site before the excavation commences.
- When removing shoring, the support system should be extracted/dismantled in the reverse order of its installation. Persons performing the work should not work outside the protection of the ground support system.

37.3.5 Benching and battering excavation walls

- Both benching and battering of excavation walls are methods of work which minimise the risk of the soil or rock slipping onto the excavation.
- Benching is the creation of stepped sides to an excavation. This is done by forming a series of vertical and horizontal planes forming a number of steps in the wall of an excavation. Benching is used to reduce the height of the vertical wall of the excavation by cutting a series of steps. A risk assessment should determine the height and width of the steps necessary to ensure stability.
- A batter is where the wall of an excavation is sloped back to a predetermined angle. Battering should commence from the bottom of the excavation.
- When benching or battering the walls of an excavation, an angle of repose of 45 degrees should not be exceeded unless certified in writing by a geotechnical engineer.
- In some circumstances, a combination of the two methods may be appropriate.

37.3.6 Inspection of support systems

- It is a legal requirement that excavation work be examined prior to commencement of work and at regular intervals to ensure that the excavation and its supporting systems are stable and intact to ensure the safety of work proceeding. The risk assessment should determine the intervals of inspection. Inspection should be conducted and documented by a competent person.

Where risks or hazards that create a risk to health and safety of those carrying out the work are identified, they must be controlled prior to any further work being carried out. This may require further advice from geotechnical and design engineers to review the adequacy of the control measures. The risk assessment should be reviewed after collapses or falls of materials, after adverse weather conditions and after use of explosives.

37.3.7 Security of excavations

- Many accidents on construction or demolition sites have involved people including young children sustaining serious injuries as a result of inadequate control measures to prevent unauthorised entry to the site. Such injuries can result from falls into open excavations, plant not being immobilised and being struck by falling objects. Even shallow excavations can be trip and fall hazards.
- The risk assessment should identify which controls need to be implemented to ensure the security of the excavation both during work and when left unattended. Consideration should be given to how long the excavation will be open, who may gain access (authorised or otherwise and including all persons such as pedestrians, children, etc).
- The following control measures should be considered:
 1. isolating the hazardous area, by use of perimeter fencing, barricades, screens, barriers, handrails and/or covers, which are capable of preventing access or preventing the fall of a person;
 2. removal or lowering ladders on site;
 3. immobilisation of plant to prevent unauthorised use;
 4. compliance with relevant local authority requirements;
 5. hazard warning lights, signs, markers or flags;
 6. sentries (may be necessary to provide protection for the public and employees);
 7. site security measures including fencing or use of safety observer/s;
 8. night lighting.

37.3.8 Fall prevention

A safe system of work and appropriate control measures must be provided wherever persons are exposed to a risk of falling during excavation work. It is a legal requirement to effectively fence all excavations and holes more than 1.5m deep. All platforms, open sides of stairways and stairway landings must be fenced.

The following should also be considered:

1. clearly defined and protected pedestrian detours;
2. use of intermediate platforms for deep excavation;
3. provision of a safe means of movement between different levels of the excavation;
4. provision of an adequate fall arrest system;
5. backfilling as work progresses.

37.3.9 Prevention of drowning

Where excavation work is likely to collect or retain water so as to create a hazard to persons in the vicinity, including children, the excavation should be covered or fenced off.

Control measures must be provided where there is a risk of a person drowning as a result of falling into water or other liquid, eg slurry. The following should be considered:

1. provision of positive means of fall protection such as fencing, handrails and safety harness;
2. provision of flotation vests;
3. provision of rescue means such as lifebuoys or rescue boats;
4. provision of an observer;
5. the availability of qualified personnel to administer expired air resuscitation;
6. prominent display of cardio-pulmonary resuscitation chart.

37.3.10 Underground services

- Prior to commencement of any work, the location of any underground services – gas, water, sewer, electricity, telecommunication cables, etc – must be identified.
- Wherever service plans are available they must be obtained. The services must be clearly marked according to the available plans and on site checks prior to commencement of work.
- All persons whose work may be affected must be advised of the location of every underground service.
- Appropriate control measures must be implemented following consultation with the relevant service provider/s and may include protection, support or removal of services.

37.3.11 Protection against rising, irruption or inrush of water or material

It is a legal requirement that employers ensure that where there is a risk from rising water or from an irruption of water or material, the means to enable every person to reach a position of safety must be provided. The risk assessment shall ascertain such risks and identify appropriate control measures which may include:

1. isolating procedures, such as physical or mechanical barriers, suitable valves, etc;
2. membranes to prevent the rising or inrush of water;
3. exploratory or warning holes where water flows at a reduced rate to warn of danger;
4. provision of sumps;
5. lowering the water table;
6. freezing the ground;
7. increasing exit points;
8. provision of suitable life-saving equipment;
9. provision of pumps;
10. an effective emergency rescue plan.

37.3.12 Materials and loads above and near excavations

- It is a legal requirement that employers ensure materials are not placed or stacked near the edge of any excavation work so as to endanger persons employed below, nor in a manner where it is likely to cause the collapse of the side of the excavation work and thereby endanger any person.
- Excavated or other loose material should be effectively stored or retained away from the excavation. Excavated material should be placed outside the zone of influence. Alternatively, the support system must be designed to accommodate such additional loads.

- Mechanical plant, vehicles, storage of materials or any heavy loads should be prevented from approaching within or encroaching on the zone of influence of an excavation unless the support system has been specifically designed for such loads.
- Where the risk assessment identifies a risk of collapse as a result of loads or materials above or near the excavation, shoring must be in place before any person enters the excavation.

38. ANIMATRONICS, ROBOTICS AND PUPPETRY

38.1 DESIGN AND CONSTRUCTION

1. Animatronics should be inspected by licensed engineers, electricians and riggers prior to use on set to ensure compliance with established manufacturing codes and safety requirements.
2. Productions establishing special workshops for animatronics construction must ensure that construction facilities comply with relevant regulations for ventilation, safety and fire standards in a manufacturing environment.
3. Fire safety and first aid equipment must be readily available in all workshops established for the construction of animatronics devices. Where appropriate, eye bath facilities must be provided.
4. A staff rest area should be provided with amenities for changing clothes and showering.
5. A qualified first aid officer should be a member of staff in any construction area.
6. All mechanical and electrical equipment used in the construction of animatronics must comply with relevant regulations and must be inspected and approved by the relevant authority.
7. Only competent staff shall operate machinery and equipment for construction of animatronics.
8. The use of dyes, solvents, and other hazardous materials shall be undertaken in strict compliance with relevant codes of practice and Australian Standards. (See also Section 28 Hazardous Substance.)
9. The storage, removal and disposal of material, including hazardous goods and substances should be undertaken in strict compliance with relevant codes of practice and Australian standards. (See also Section 28 Hazardous Substances and Section 29 Working Safely with Chemicals.)
10. Where animatronics are powered by batteries, the safety guidance requirements for fire prevention must be observed and implemented.
11. Where animatronics are powered by radio waves or similar transmissions, checks must be made prior to their use to ensure that there will be no interference with on-set communications or emergency service frequencies.
12. Animatronics designers must be briefed on the conditions in which the devices will be working to ensure that appropriate protective measures are taken at the design and construction stages. This is particularly important where animatronics will be used with animals, children or in wet conditions where, for example, low voltage operating mechanisms would be more appropriate.

38.2 ON SET

1. The operating mechanisms of animatronics must be insulated in required to work in wet conditions.
2. Where animatronics are to be used with explosive, pyrotechnical, spark emitting, or similar devices, such devices should always be constructed and operated under the supervision of the Special Effects Coordinator.
3. All electrical items must be tested and tagged by a licensed electrician. The Gaffer must be consulted regarding power requirements, power distribution and power safety to animatronics.
4. All computer equipment on set must be run through appropriate cables and the Gaffer must be consulted regarding power requirements, power distribution and power safety.
5. The operational space, movement and physical safety requirements of puppeteers and animatronics operations must be taken into consideration in designing sets, blocking through action and rigging camera and lighting equipment.
6. Licensed riggers shall set up any flying or elevated rigs to be used on set. (See also Section 18 Rigging, Work Platforms and Working at Heights and specifically Section 18.10 Theatrical Flying and Rigging Operations.)
7. Where performers are to be working with or as part of an animatronics device, appropriate communications mechanisms must be established to ensure there is access to the 1st Assistant Director and the Safety Supervisor.
8. Where operators or performers are required to work in cramped or restricted areas, water, rigs or other physically demanding environments, regular breaks, amenities such as heating/cooling, hot/cold drinks, blankets, showers as necessary must be provided.
9. Where actors are working with animatronics, rehearsal time must be provided to ensure the actor is familiar with the requirements of their performance and the capabilities and limitations of the animatronics device.
10. A Safety Supervisor and, where necessary, support and/or safety personnel must be on set whenever performers or operators are undertaking strenuous performances that may require immediate assistance or safety spotting.

Note: The risk assessment must take particular note where large pneumatic and/or hydraulic devices are required and identify appropriate control measures to eliminate or minimise risk posed by the use of such devices.

39. DIGITAL EFFECTS

1. Digital effects staff are particularly vulnerable to overuse injuries and workstations should be designed to prevent the incidence of such injuries. In particular, ergonomic chairs, workbenches and wrist supports must be provided. Care must also be given to design and installation of lighting for computer based work.
2. In establishing a digital effects workshop, productions should consult the appropriate WorkCover/WorkSafe Australia publications to ensure that workstations provided meet and are maintained to the recommended standards. (See also Section 22 Ergonomics.)
3. Digital effects staff must be aware of safe work practices and understand that risk of Repetitive Strain Injury (RSI) can be minimised by:
 - a. good posture, correct height of chair and workbench, keyboard, etc.;
 - b. taking frequent short breaks from computer based work;
 - c. varying tasks frequently.
4. Manufacturers' guidelines for monitor calibration and maintenance must be followed and regular inspections of computer areas should be undertaken by appropriate safety inspectors.
5. Design and construction of computer workstations must strictly adhere to regulations for electrical power loadings and safety inspections should be undertaken to ensure that proper cable and power connections are in place.

39.1 ON SET ISSUES

1. Where blue/green screen environments are being used, safety markers and barriers must be utilised to limit visual disorientation.
2. Any props, raised areas or suspended objects must be clearly visible and/or guarded during set preparation and rehearsals.
3. Where actors and/or stunt performers are required to perform in rigs or harnesses, safety supervision and on set support must be provided to ensure the actor/stunt performer is comfortable and familiar with the equipment and the action supervised by the Stunt Coordinator. (See also Section 18.10 Theatrical Flying and Rigging Operations.)
4. Appropriate rehearsal time must be allowed for sequences requiring an actor to perform in a rig or harness. Time, facilities, and appropriate tutoring/instruction must be allocated for warm-up and preparation for any strenuous performances in rigs, harnesses and similar blue/green screen action sequences.
5. Appropriate mats, padding and safety costuming must be used wherever an actor is undertaking actions that might involve contact with props, platforms or other elements in blue/green screen sets.
6. All computer equipment on set must be run through appropriate cables and the Gaffer must be consulted regarding power requirements, power distribution and power safety.
7. Only licensed riggers shall set up any flying or elevated rigs to be used on set.
8. All rigs and harnesses must comply with relevant Australian Standards.

39.2 MOTION CAPTURE EQUIPMENT

1. Motion capture equipment must be used and maintained in accordance with the manufacturer's specifications.
2. All power requirements, power distribution and power safety standards for the operation of motion capture equipment must be established in consultation with the Gaffer and/or licensed electrician.
3. All computer equipment on set must be run through appropriate cables and the Gaffer consulted regarding power requirements, power distribution and power safety.
4. Motion capture equipment generating radio frequencies must be installed and operated in accordance with the manufacturer's specifications to ensure that there is no interference with radio communications. Some motion capture equipment is not suitable for operation outside of shielded environments.
5. Where actors are working with motion capture equipment, rehearsal time must be provided to ensure the actor is familiar with the requirements of their performance and capabilities and limitations of the motion capture device.
6. A Safety Supervisor and, where necessary, support and/or safety personnel must be on set whenever performers or operators are undertaking strenuous performances that may require immediate assistance or safety spotting.
7. Only essential personnel may be on set during sequences involving motion capture performance.
8. Only licensed riggers shall set up any flying or elevated rigs to be used on set.

39.3 MOTION CONTROL CAMERAS

1. When motion control cameras are being used, the camera start and finish positions shall be clearly marked and, where possible, barriers established.
2. Crew and performers must be fully briefed on the operation of the motion control camera and related safety requirements, in particular, the pathway the equipment will be following and the need for crew and performers to remain clear of the track at all times.
3. When the motion control camera commences operation, the operator shall call “rig moving”.
4. An assistant must walk the camera head through the range of movement to ensure the pathway is kept clear prior to block through, rehearsals and filming.
5. Only essential personnel shall be on set during sequences involving motion control filming.
6. All motion capture cameras should be run on a separate power supply and the Gaffer must be consulted regarding power requirements, power distribution and power safety. Electrical connections must not be adjusted without the express permission of the Gaffer.
7. Tracks and rigs for motion capture cameras must be set up by competent grips and conform to the same safety standards and work practices required of other camera tracks and rigs. (See also Section 25.2 Camera Cranes, Jibs and Dollies.)
8. Equipment, eg. lights, rigs, booms, must not extend within the area of camera movement unless directly supervised and controlled.

40. AERIAL FILMING AND AIRCRAFT

1. This section applies to all registered aircraft, including helicopters and balloons, used for the carriage of persons required to undertake filming activities including the use of unregistered aircraft kit aircraft and remote control pilot-less aircraft.
2. The Civil Aviation Safety Authority (CASA) provides specific safety information regarding operating aircraft (including balloons and ultralights) used in productions within Australia and the requirements of regulatory bodies in other countries.
3. All aircraft and equipment must be fully certified and airworthy under Australian law.
4. All persons involved in filming activities of or from aircraft must comply with relevant regulations and legislation.
5. All passenger carrying charter aircraft shall have public liability insurance at a level per passenger as determined from time to time by CASA.

40.1 INTRODUCTION

1. Civil Aviation Regulations (CARs) and Civil Aviation Orders (CAOs), documents issued by CASA, are the rules and regulations govern the basic activity of all aviation. They are subject to constant review and change. It is the responsibility of the Operator, Charter Operator and Chief Pilot to ensure they are aware of the rules and regulations as they may be updated and amended from time to time.
2. As aviation is a complex regulatory environment, a specialist should be engaged to ensure that all aspects of the filming requirements are integrated safely, including the establishment of appropriate lines of communication and liaison between the Producer, Director, Charter Operator and the Pilots.
3. The safe operation and navigation of the aircraft is the responsibility of the Pilot in Command.
4. Whilst in/near aircraft, film crews must comply with all lawful directions give by the Pilot in Command.
5. Working in and about the cabin of the aircraft may require the expertise of an Aircrew person, who remains under the authority of the Pilot, but whose expertise in areas not directly related to the operation and navigation of the aircraft exceeds that of the Pilot. Such an Aircrew Person will have expertise in air dispatch, winching, airborne rappelling, hot work, observation, cabin management, refueling, aircraft rigging, ground safety, and general safety. An Aircrew Person must be experienced and endorsed by AUSSAR or CASA.
6. Many of the following guidelines are not specifically incorporated in CASA rules and regulations but incorporate the requirements of MEAA, SPAA and WorkCover authorities in respect of the safe execution of aviation operations in the film and television industry. These protocols are derived from commonsense and many years of experience in hazardous aviation operations.
7. Dispensations are exceptions granted to a rule or regulation. An Air Operator is required to hold a dispensation from CASA for any activity which is otherwise regulated against; for example, an exception may be granted by CASA for the conducting of low level flying. In such an event, the dispensation granted by CASA will specify the parameters within which the activity must be undertaken.

40.2 OPERATIONS – GENERAL

It is the Producer's responsibility to ensure the safety and well-being of all personnel on a production. Responsibility for the legal and safe operation of a charter aircraft lies with the charter company's Chief Pilot. It is the Producer's responsibility to ensure that the charter company's Chief Pilot is fully and accurately briefed on all requirements of the production and to ensure that a comprehensive risk assessment is undertaken and its recommendations implemented.

The Producer must liaise with the Chief Pilot of the charter operator to ensure that:

1. the pilot/s hold the relevant licenses and ratings;
2. the pilot's command experience exceeds 1,000 hours – as filming activities are not normally associated with aviation activities the pilot's experience must exceed that required for general aviation activities;
3. the pilot's experience, as evidenced by logbook entries, on the type of aircraft exceeds 100 hours;
4. the pilot has a minimum of 100 hours experience in the following if such activities are required for the filming activities:
 - low level flying
 - formation flying
 - sling work
 - confined area work;
5. where special dispensation is required (eg. for flights below standard height restrictions), such dispensation has been approved in writing by CASA and by any other relevant authorities, instrumentalities, owners, etc.;
6. the aircraft has a current certificate of maintenance and is suitable for the requirements of the production. (Note: non "VH" registered ultra light and kit aircraft do not require a maintenance release and do not have to comply with airworthiness requirements – see Section 40.11);
7. aircrew persons hold a CASA or Military endorsement:
 - for a minimum of three years working full time professional as an aircrew person; or
 - five years part-time with a minimum of 20 missions logged; and
 - relevant experience and necessary endorsements for the tasks to be performed;
8. additional trained safety support crew, as may be required and as set out in the risk assessment, are available.

Note: When production activities involve filming from privately owned aircraft consequently neither a charter company nor a charter company Chief Pilot are involved, a suitably qualified Specialist Aviation Consultant with filming experience must be engaged to advise and oversee all operations to ensure appropriate safety measures including those identified in the risk assessment are implemented. Public liability insurance cover must be effected as required by CASA.

Extraordinary hazards include any work involving:

- ultralights and kit aircraft;
- helicopters;
- flying with the door off;
- open cockpit;
- anything thrown out of the aircraft;
- anything mounted on the exterior of the aircraft;
- low level flying;
- formation flying with other aircraft, boats, cars, other vehicles or animals (eg. mobs of cattle);
- aerobatics;
- parachuting;
- suspended loads and/or people;
- airborne abseiling/fast roping from any aircraft;
- in and out in the hover;
- moving equipment/personnel in/out of aircraft whilst engines are running (hot loading and unloading);
- hot air balloons

and require a risk assessment to be undertaken by an independent specialist.

40.3 GENERAL SAFETY GUIDELINES

The following guidelines (in addition to other precautions that may be prescribed having regard to the particular circumstances) must be taken if filming is to be carried out from an aircraft, irrespective of the type of aircraft.

1. All aviation requires a written risk assessment to be conducted by the Chief Pilot and/or an Independent Aviation Specialist.
2. All personnel required for the filming must be briefed by the Pilot or the Pilot's deputy on the dangers of being close to an operating aircraft.
3. All passengers, ie. all those persons other than Flight Crew, are to be briefed by the Pilot or the Pilot's deputy regarding all aspects of air safety applicable to the type of flight being undertaken;
4. All personnel involved in the sequence must be thoroughly briefed on:
 - the sequence of events to be undertaken;
 - the risks;
 - the emergency action plan to be implemented in the event of an incident;
 - escape paths and procedures;
 - the filming plan developed in consultation with the Pilot – no changes can be made to the agreed plan for the sequence without the direct approval of the Pilot/s involved and further risk evaluation being undertaken.
5. Cast/crew members must not pressure Pilots to change their position on any aviation decision.
6. Cast/crew members must not be pressured to fly on an aircraft for any reason.
7. Flying in conditions which may jeopardise the safety of passenger and/or film crew members and/or flight crew and/or members of the general public at unreasonable risk is not permitted.
8. All persons who are required to work from or in conjunction with any type of aircraft must be provided with appropriate training to enable them to under the work in a safe manner and comply with CASA air safety requirements.
9. Everyone must follow all lawful direction from the Flight Crew whilst in the aircraft.
10. The Producer must ensure that all personnel filming from the aircraft will at all times abide by CASA regulations concerning filming from aircraft.
11. The Pilot in command of the aircraft has final authority over the execution of the sequence and the right to abort at any stage.
12. Everyone must be made aware of the difficulty of see moving blades and instructed to keep clear of relevant areas.
13. A trained Marshall (who must have completed a course in basic aircraft safety) shall supervise whenever aircraft are operating on the ground or personnel and equipment are being loaded. Suitable pathways must be established and closely supervised when people are entering and exiting the aircraft area especially while blades are turning.
14. No smoking is permitted within 50 metres of a fuel installation or an aircraft that is refuelling.
15. Air to ground communications must be maintained at all times.
16. Where more than one aircraft is involved, air-to-air communication must be maintained at all times during operations.
17. The risk assessment must take account of the activities of other filming units in the vicinity that may be jeopardised by the activity of the aircraft, eg. aircraft radio equipment is extremely hazardous around electrically fired pyrotechnics.
18. Ensure all personnel working within 50 metres of aircraft are wearing appropriate PPE.
19. The Producer must appoint an Aerial Coordinator. This may be the Senior Pilot or an Aviation Specialist. The Aerial Coordinator will facilitate a particular aerial sequences but not necessarily the entirety of the aviation activities.
20. Appropriate safety measures such as barriers and marked safe areas must be provided where aircraft are operating near people.
21. Pyrotechnic fallout and other effects are not permitted within 50 metres of an aircraft. However, under certain circumstances smoke generators may operate within 50 metres subject to approval by the Chief Pilot/Aviation Specialist and subject to a full risk assessment.
22. No-one is permitted to walk under or near propeller driven aircraft until the propellers have come to a complete rest. Flight Crew must grant permission before persons enter or leave the area 25 metres around the aircraft perimeter or, in the case of helicopters, the rotor disc area.
23. The Pilot must ensure all items brought on board the aircraft are safe and secure prior to take off. Film crew members must ensure that nothing can fall from the aircraft, dangle outside of the aircraft, become entangled in aircraft controls or hinder safe movement inside the aircraft cabin.
24. In flight, passengers are not permitted to move about the cabin unrestrained without the permission of the Pilot.
25. Passengers must be seated in an approved seat and wearing an approved seat restraint during take-off and landing in all phases below 1,000 ft unless special dispensation is granted.

26. Passengers must not use more than one means of restraint except when moving from one means of restraint to another.
27. A CASA approved inflatable life jacket must be worn for any flight over water in a single engine aircraft or long flights offshore in accordance with regulations.
28. The use of a floating line is not permitted below 1,000 feet without CASA dispensation. Helmets must be worn when using a floating line as head injuries are a hazard when a person is not secured in a conventional seat belt.
29. Electrical connections cannot be adjusted without the express permission of the Pilot in command. The Pilot must also be notified of any proposed mechanical alteration/s. The Pilot in command will inspect all installations such as camera mounts before each flight.
30. Pilots are bound by duty hours' restrictions which cannot be exceeded. If filming schedules require more than one Pilot may need to be engaged.
31. Objects deliberately dropped from aircraft must be closely supervised and conducted by a qualified Air Dispatcher. (Also see Section 40.7 Air Dispatch.)
32. All low level and "nape of the earth" flight paths/circuits must be thoroughly reconnoitred by the Flight Crew before film crew members board the aircraft.
33. Only trained personnel are permitted to reconfigure the aircraft, eg. removal of panels or doors, attaching anything to the aircraft, interfering with any flight controls or physically touching any extremity of the aircraft other than the door handles.
34. No-one is permitted to attach anything to the aircraft without permission of the Pilot, Chief Aircraft Engineer and the charter company. No person can ride on wings, struts or undercarriages unless special dispensation has been approved.
35. Parachutists must be certificated to a minimum of "C" certification. The senior parachutist must personally verify the integrity of each rig. Special attention must be given to the closing mechanism due to the catastrophic effects of an inadvertent opening while still on board.
36. The Producer must ensure that any and all mounts to be used for aerial filming meet with the approval of CASA and all other relevant bodies.
37. Chase aircraft must be made aware of the possibility of Foreign Objects Damage (FOD) emanating from the target craft.

40.4 HELICOPTERS

40.4.1 On the Ground

1. All of the general safety guidelines set out in Section 40.3 apply.
2. Supervision of safety around the helicopter is the responsibility of the Safety Supervisor. Any person involved with helicopter operations must complete a course of instruction in basic helicopter safety.
3. All personnel entering or leaving the rotor disc area must do so with the express permission of the Flight Crew.
4. When working around, approaching or leaving the helicopter while the blades are turning, all personnel shall be under the strict supervision of the Pilot or trained Ground Marshall.
5. Under no circumstances shall any person move underneath moving blades as they are slowing to a stop.
6. The rear and tail sections of helicopters must be avoided at all times. Never walk under the tail section.
7. All equipment must be carried parallel with the ground within 25 metres of a helicopter.
8. In the vicinity of helicopters, vehicles must be driven under supervision of the Pilot or trained Ground Marshall and, must not approach closer than 50 metres when blades are turning or closer than 25 metres when blades are stationary and never under the rotor disc area.
9. All loose articles and clothing must be removed.
10. Nothing whatsoever must be thrown anywhere near a helicopter.
11. Parachutists must have a minimum "C" certification. The Senior Parachutist must personally verify the integrity of each rig. Given the catastrophic results of an inadvertent opening while still on board, special attention must be given to the closing mechanism.

40.4.2 In Flight

1. All the General Safety Guidelines set out in Section 40.3 apply.
2. All loose articles and clothing must be removed.
3. Air Dispatchers must be experienced and have a minimum of five years of service dispatching from helicopters (see Section 40.7).
4. No person must ever be suspended by means solely of a cargo hook.
5. Helicopters cannot operate closer than 500 ft vertically and 300 metres horizontally from another aircraft unless both Pilots hold formation flying approval.

41.5 FIXED WING AIRCRAFT – GENERAL GUIDELINES

1. All the General Safety Guidelines set out in Section 40.3 apply.
2. Aircraft are able to land only on authorised or licensed aerodromes or other areas providing such other areas meet the requirements of an authorised landing authority.
3. Fixed wing aircraft cannot fly below 1,500 ft when over built up areas unless taking off or landing.
4. In other areas, aircraft are able to operate down to 500 ft above ground level. Dispensations are available and, where appropriate, must be obtained and held by those associated with aerial filming.
5. Aircraft cannot operate closer than 500 ft vertically and 600 metres horizontally unless both Pilots hold formation-flying approval.

41.6 FILM CREW WORKING ON THE TARMAC/LANDING AREA

1. Locked off camera must be used wherever possible when aircraft are to fly closer than 50 metres. If this is not possible, the camera position must be marked clearly enough to be seen from the air and to allow for the easy calculation of the aircraft's line and distance from it. Fixed distance markers are suitable.
2. Should it be necessary to film on the extended centre line of a runway:
 - a. Filming with a locked off camera unattended:
 - i. The Pilot will calculate the greater of:
 - the necessary take-off distance to place the aircraft at a height no less than 25 metres above the camera, or
 - the accelerated stop distance required to place the aircraft at less than 25 metres from the camera, and
 - the camera placed at the greater distance from the beginning of the take-off run.
 - ii. No person is permitted on the runway during such a manoeuvre;
 - iii. Other persons may be located only on a safe edge of the apron as agreed to by the Pilot of the target aircraft.
 - b. Filming with a camera operator:
 - i. The Pilot will calculate the greater of:
 - the necessary take-off distance to place the aircraft at a height no less than 50 metres above the camera, or
 - the accelerated stop distance required to place the aircraft at less than 50 metres from the camera, and
 - the camera placed at the greater distance from the beginning of the take-off run.
 - ii. No other persons – other than a safety person (see below) – are allowed on the runway during such a manoeuvre.
 - iii. Other persons may be located only on a safe edge of the apron as agreed to by the Pilot.
 - iv. Approvals from the aerodrome owner will be required.,
3. The Pilot must ensure that an escape route is available for both the aircraft and for all personnel inside the aircraft and/or on the ground, that all personnel are briefed and clear of the area prior to the commencement of the take-off. In the case of helicopters, a clear area, free from personnel, must be available for a forced landing.
4. A safety person shall be allocated to any camera operator working on the tarmac or landing areas whenever aircraft are moving.
5. The Pilot and Safety Supervisor/Aviation Consultant have the absolute right to insist that any shot be redesigned, the camera repositioned or locked off and unattended.

40.7 AIR DISPATCH

1. Air dispatch can be dangerous. When the terminal velocity of the object to be dispatched is less than the speed of the aircraft, the outcome may be disastrous. Small light objects are often more dangerous than large heavy ones.
2. Air dispatch is when an aircrew member is required to eject objects from an aircraft in flight. This includes:
 - a. dropping lifesaving equipment;
 - b. dispatching airborne abseilers;
 - c. dispatching swimmers or divers into the sea;
 - d. any object regardless of size.
3. Only personnel who are trained by a qualified Air Operator or by AUSSAR and endorsed by CASA are permitted to dispatch anything from a moving aircraft.
4. An Aviation Specialist must be engaged.

5. Helicopters are particularly vulnerable. The tail rotor is easily damaged and is essential for flight.
6. Chase aircraft must be made aware of the possibility of Foreign Objects Damage (FOD) emanating from the target craft.
7. Dispensations are required for dropping articles in flight.

40.8 FLYING IN AN AIRCRAFT WITH A DOOR REMOVED

1. All of the General Safety Guidelines at Section 40.3 apply.
2. Before undertaking flight in an aircraft with the door removed, the Producer must verify that the:
 - a. Pilot has, as a minimum, a commercial Pilot's license and appropriate CASA exemptions for the type of flight required;
 - b. the aircraft is approved in the flight manual for flight with the door removed;
 - c. the aircraft is insured for flight with the door removed.
3. The Pilot must brief all passengers and crew prior to flight with a door removed.
4. Operational limitations imposed by flight with the door removed, as listed in the flight manual, must be understood and any placards or warnings, required for flight with the door removed, are fitted as stipulated.
5. Harnesses and harness attachment points must be approved by CASA.
6. Unless a specific exemption has been issued by CASA to use an alternative seat and means of restraint, all persons undertaking flights below an altitude of 1,000' must be seated in an approved seat and must wear an approved seat restraint.
7. The door of an aircraft must only be removed by a suitably qualified person. Film crew personnel must not attempt to remove the door of an aircraft.
8. Hand held cameras must be secured to a hard point, namely a secure anchor position identified by an aviation rigger, pilot or engineer.
9. Equipment, including cameras, must not be attached to any person's safety harness. If in doubt, ask an aircrew person, engineer or the Pilot.
10. All passengers and aircrew must remain in their seats with seat belts fastened at all times when an aircraft is operating with its door removed, unless they are wearing an approved harness checked for security by the Pilot and firmly attached to a hard point, approved by CASA for the purpose of securing a harness.
11. After take-off, a safety harness must be worn by the camera operator and anyone else who is:
 - a. required to move around the cabin of the aircraft;
 - b. required to assist the camera operator;
 - c. seated near the removed door aperture.
12. An approved harness means a safety harness equipped with an emergency quick release mechanism which has been approved by CASA for use in a camera operator's harness. Other types of harnesses not approved by CASA are unacceptable.
13. The correct procedure for camera operator use of a harness in an aircraft is as follows:
 - a. be seated, wearing your harness, in a seat with the seat belt fastened, for take-off;
 - b. under direction from the Pilot, attached harness to a hard point, check its security and then remove seat belt;
 - c. under direction from the Pilot, move to shooting position;
 - d. when shooting is completed, advise the Pilot and return to seat as directed by the Pilot;
 - e. fasten seat belt and, when secure, disconnect harness from hard point;
 - f. be seated, wearing harness, in a seat with seat belt fastened, for landing, and
 - g. be directly supervised by an Aircrew Person.
14. All persons must keep all parts of their body and all equipment, including camera and lenses, inside the body of the aircraft at all times unless acting under specific instructions from the Pilot.
15. Communications must be maintained between the Pilot and camera operator at all times. If engine or air stream noise makes verbal communications difficult, a communications headset, with a noise-cancelling microphone, must be provided.
16. Fully valise jacket life jackets are mandatory when life jackets are required. The basic under-the-seat type of life jackets are not permitted in slipstream situations.
17. Flight helmets must be worn when using a floating line.

40.9 MOUNTING CAMERAS, ETC., ON THE OUTSIDE OF AN AIRCRAFT

1. Anything fitted to an aircraft, including any camera, mount, cable or other item fitted outside the aircraft, must be CASA approved prior to take-off.
2. Item(s), once approved by CASA, must be fitted to an aircraft by a Licensed Aircraft Maintenance Engineer (LAME) in accordance with the instructions approved by CASA. The LAME must endorse the fitting in the

aircraft's logbook or maintenance release and the fitting must be done in accordance with the aircraft's maintenance schedule.

3. The Pilot must also approve the fitting of any item to the aircraft and has final responsibility for the safety of any flight.
4. Film crew personnel must not, under any circumstances, attempt to mount equipment, like lipstick cameras, outside an aircraft, even under the direct supervisions of a LAME or the Pilot.

40.10 MOUNTING OR HAND HOLDING A CAMERA INSIDE AN AIRCRAFT

40.10.1 General Guidelines

1. The Pilot must brief all passengers and crew prior to flight where a camera will be mounted or hand held inside the aircraft. The use of, and/or mounting of, camera equipment inside an aircraft requires a risk assessment to be undertaken in consultation with the Pilot and any other responsible persons, eg. a Licensed Aircraft Maintenance Engineer (LAME).
2. Cameras and associated equipment to be used inside an aircraft must:
 - a. be fitted and/or used in accordance with the Pilot's instructions;
 - b. not interfere with the Pilot's ability to safely fly the aircraft;
 - c. not interfere, either physically or electronically, with the aircraft's control systems, instrumentation or navigation equipment;
 - d. not structurally modify or alter the aircraft in any way, unless such modifications have been approved by CASA, carried out by a LAME in accordance with the aircraft's maintenance schedule and not in the aircraft's logbook or maintenance release as required;
 - e. not present an unreasonable risk of injury or damage to the aircraft in the event of an accident or emergency;
 - f. not restrict access to fire fighting equipment or exits;
 - g. be properly secured during take-off and landing;
 - h. be tethered short to a hard point during door open/off operations.
3. The above must be fulfilled prior to take-off. If anyone expresses any doubt about whether the above conditions have been met, a LAME must be formally consulted prior to the flight.

40.10.2 Camera Operators Sitting "in the Door" on Harness

1. This section refers to camera operators or any passenger sitting in an open door way wearing a safety restraint. The safety restraint must be attached to one or more hard points within the aircraft by a security lanyard known as a floating line.
2. Using a floating line can be very hazardous.
3. Do not improvise any other mechanisms into the system such as linked carabiners to gain extra reach. Not only is this illegal, it is a major hazard regardless of experience.

40.10.3 Operator's Check List – Sitting "in the Door" on Harness

- a. Wear an approved harness – usually full body with a high pick point.
- b. The floating line must have an approved quick release to allow the chance to escape a wrecked aircraft. It should be "tight" to allow limited movement and no chance of falling out of the aircraft. Even the smallest fall could be catastrophic.
- c. Use only Maillons or "screw gate" carabiners for attachment.
- d. Special dispensation from CASA is required to use the floating line system below 1,000 feet. If you intend to take-off and land from this position you must have dispensation.
- e. Clean yourself and camera of all loose fittings.
- f. Tie off all gear. Strap in all bags away from the open door.
- g. Wear an approved flight helmet during any floating line use and any operations where you are not restrained in a seat belt. Head protection is essential in the event of a rough flight or landing.
- h. If you intend to come off a conventional seat on the lanyard, an aircrew/rigger minder should be employed to check you before you take up position in the door and to assist you in any emergency.
- i. Do not enter the doorway or poke out into the slipstream until the aircraft has had time to slow down and permission is given by the Pilot.
- j. The floating line must be attached to aircraft hard points used in tandem as they are not legally strong enough to comply with basic height safety standards, such hard points having been approved by an Engineer and/or as specified in the Aircraft Flight Manual.

40.11 ULTRA LIGHT AND KIT AIRCRAFT, PARA GLIDERS AND HANG GLIDERS AND UNREGISTERED FLYING DEVICES

1. Registered craft of this type are subject to all of the above regulations, conditions and guidelines.
2. Unregistered craft are not subject to the above regulations, conditions and guidelines and cannot be assumed to be airworthy. Pilots are also not required to undergo the same level of training.
3. The regulations governing the operation of such craft can appear both detailed and vague to the lay person. Amateur groups and associations often govern the operation of these types of aircraft.
4. An Aviation Specialist must be employed to inspect the aircraft, interview the Pilot and undertake a risk assessment with each shot being treated on a case by case basis.
5. Standard operating procedures must be devised by the Aviation Specialist in consultation with the Pilot, the Safety Supervisor and the Producer.
6. The Aviation Specialist and the Safety Supervisor must be present throughout all aircraft operations.

40.12 REMOTE CONTROLLED PILOT-LESS AIRCRAFT

Remote controlled aircraft are not permitted:

- within controlled airspace;
- above 300 feet unless in a model flying area;
- above built-up areas;
- above people other than the model operator.

Refer to CAO 95.21.

40.13 REFUELLING AIRCRAFT

1. Refuelling must only be carried out by a trained refueler.
2. Film crews must remain at a distance of 50 metres from refuelling operations.
3. Refuel sites must be located at a distance of no less than 50 metres from building/s and people. If necessary, consult the Pilot and/or Aviation Specialist regarding the suitable location for refuelling sites.
4. Fire extinguishers must be kept up wind from the refuel site.
5. The Safety Supervisor must ensure that refuelers are wearing natural fabrics or synthetic fire retardant clothing.
6. “Hot” refuelling must be planned and conducted only when absolutely necessary.

40.14 SKYDIVING

In this section, Certified Parachutist means a Parachutist holding a current and valid certification card issued by a nationally or internationally recognised certification organisation.

1. Consultation between the Producer, Director, Production Manager, 1st Assistant Director, Camera Operator, Stunt Co-ordinator, Pilot/s and, where relevant, Special Effects Co-ordinator and Visual Effects Co-ordinator will determine if skydiving is necessary for the particular sequence or whether the required effect can be achieved in another manner.
2. If deemed necessary, contact should be made with the [Australian Parachuting Association] to determine the type of endorsement or certification will be required of the Parachutist to undertake the planned skydive/s.
3. The Skydive Co-ordinator should have an endorsement or certificate equal to, or greater than, that of the Parachutist/s.
4. The Skydive Co-ordinator in consultation with the Pilot/s shall supervise the safety of the skydive/s and ensure that factors such as location, weather, communication systems and security and appropriate for the planned skydive/s.
5. Before each jump, all persons involved shall be thoroughly briefed and a “dry run” carried out on the ground at the site.
6. All equipment, props, wardrobe, etc., shall be made available to the Skydive Co-ordinator prior to the skydive for safety evaluation. Final safety approval rests with the Skydive Co-ordinator with respect to equipment and wardrobe used in the jump.
7. The pilot/s must be endorsed for skydiving.

41. ELECTRICAL SAFETY AND CABLE MANAGEMENT

1. All electrical installations, appliances and equipment used on film, video and television productions must comply with and be used in accordance with relevant legislation and AS/NZS 4249 Electrical Safety Practices – Film, Video and Television Sites.
2. All Telsa Coils and other non-standard electrical equipment designed to be used in conjunction with creating special effects must be appropriately guarded and inspected, tagged and tested in accordance with AS/NZS 3760:1996 – In Service Inspection and Testing of Electrical Equipment and/or other relevant state regulations covering the use and operation of such equipment.

41.1 AUSTRALIA/NEW ZEALAND STANDARD 4249 ELECTRICAL SAFETY PRACTICES – FILM, VIDEO AND TELEVISION SITES (AS/NZS 4249)

1. AS/NZS 4249 outlines the minimum safety requirements for the use of temporary electrical installations which supply electricity to appliances and equipment on film, video and television sites including in-service testing of portable and transportable equipment. The Standard applies to any temporary installations, portable distribution systems, appliances and equipment connected to temporary electrical supply in connection with dry hire studios, any buildings and their environs used as temporary studios and interior/exterior locations and all outside broadcasting.
2. **Note:** The Standard does not apply to electrical installations on theatre stages, concert locations and permanent television studios, except for additional equipment which has its source of power supplied through a temporary distribution system for film and television work.
3. The Standard outlines a range of specific safety measures in connection with:
 - a. general electrical safety procedures;
 - b. the use of residual current devices (RCDs);
 - c. the protection of cables, cords and cord extension sets;
 - d. portable distribution boards;
 - e. generating sets;
 - f. earthing and bonding;
 - g. equipment testing and recording.

41.2 GENERAL SAFETY PROCEDURES

1. Containers of liquids (including drinks) must not be placed on any electrical appliance or fitting.
2. Any electrical hazard/s or potential electrical hazard/s must be advised immediately as they arise to the person with delegated responsibility who must ensure immediate remedial steps are taken to control the hazard.
3. In adverse climatic conditions and/or water locations, the Gaffer must assess the risk of electric shocks and, if the risk/s is unacceptable, instruct the power be disconnected until the situation is rectified.
4. A minimum clearance of 4 metres must be maintained between mechanical equipment and overhead electric power lines when operating cranes, boom swinging, carrying tall objects, in a boat with a mast up on the water, or on a trailer on land. Greater separation clearances may be specified in AS 1418 in certain circumstances.

41.3 RESIDUAL CURRENT DEVICES (RCDs)

1. RCDs must comply with AS 3190. For New Zealand, they must be of a type not affected by pulsating direct current.
2. RCDs with a rated residual current not exceeding 30 mA must be installed to protect:
 - a. all socket outlets;
 - b. all final sub-circuits;
 - c. all individual circuits.

For the purpose of AS/NZS 4249 1994, the outlet socket on an in-line portable RCD may be taken to be the socket outlet.

Note: Care should be taken to avoid unwanted tripping due to accumulated leakage currents.

3. Ensure that every RCD is:
 - a. functionally trip tested using the RCD test button by a competent person daily before use, or prior to the commencement of each operational period;
 - b. subjected to an operational performance test with an RCD tester which connects the active to the socket earth pin during the test, in accordance with the requirements for portable RCDs in AS 3760, conducted by a competent person every three months.

Note: The operational test may be conducted more often, dependent upon frequency and severity of use.

4. Record operational tests in a permanent and readily accessible format held on site or at the owner's premises. The record must include:
 - a. the plant number of the RCD;
 - b. the result of the test;
 - c. the date of the test;
 - d. the name (printed) of the person performing the test; and
 - e. the serial number of the RCD operation test instrument.
5. Flexible cords must be:
 - a. located in positions where they are not subject to mechanical damage or damage by liquids; or
 - b. provided with suitable protection against mechanical damage or damage by liquids. Cable ramps or rubber mats must be used where cords are crossing walkway areas. If ramps or mats are not available, cords must be supported overhead.

Note: Cords may require de-rating when enclosed or covered by mats.
6. Cord extension sets must comply with AS 3199.
7. Flexible cords and cables must not be used while in a coiled or reeled configuration.

41.4 CABLES

1. Stationary cables must be protected in accordance with AS/NZ 4249.
2. All temporary leads and cables must:
 - a. be industrial quality;
 - b. not be frayed or have wiring exposed;
 - c. be protected from the weather;
 - d. be off the ground where possible;
 - e. not be twisted, crushed or kinked;
 - f. be secured and clearly identified;
 - g. not create a tripping hazard, and
 - h. not be contacted by cranes or overhead mobile equipment; and
 - i. ends must have plastic protective covers.
3. In the event it is not possible to keep leads off the ground, appropriate controls must be implemented with consideration being given to the use of covers. Leads must never be run across roads or any area subject to vehicular access.
4. Cables must be protected against contact with sharp edges or heavy loads.
5. Where cables need to be moved manually in conjunction with dollies, cameras, booms, etc.:
 - a. cables must be kept as short as possible;
 - b. adequate numbers of cable runners shall be utilised;
 - c. the sequence/s must be rehearsed;
 - d. the path of the cable runner/s must be kept clear;
 - e. all those in the vicinity must be aware of the cable running;
 - f. when laying and retrieving cables, they must be looped loosely rather than coiled tightly to minimise overheating of cable insulation and to avoid entanglement.
6. Cable runs must be considered when generators are being parked. Generator cable runs must not be laid, covered or uncovered, across roadways or any area subject to vehicular access.

41.5 PLUGS, PLUG SOCKET ADAPTORS AND PORTABLE OUTLET DEVICES

1. The individual pins of three-phase plugs must not be connected in parallel to supply single-phase loads.
2. Double adaptors and three-pin plug adaptors (piggy-back) and similar fittings are not permitted in Australia.
3. Portable outlet devices must comply with AS 3100 and:
 - a. the enclosure must be constructed of a suitable impact-resistant and durable material;
 - b. equipment mounted on the device must be flush mounted or be protected against damage by suitable means.

41.6 LIGHTING FIXTURES AND PORTABLE ELECTRICAL EQUIPMENT

1. Equipment must be electrically isolated from the power source before proceeding to work on it, eg. changing light bulbs/lamps.
2. All lighting fixtures or equipment must be adequately supported or mounted to prevent tipping or falling.
3. Equipment must be secured against falls that might be caused by wind and/or rain.

4. Suspended equipment must have a separate safety chain or cable to prevent falling. The chain or cable must have welded links or be made of wire rope. Removable accessories, eg. barn doors, must be similarly restrained by their design or by added restraints. Static load rating of safety chain or cable must be 10:1.
5. Any open-faced lighting unit must have protection where practicable (wire mesh, safety glass) against the shrapnel effect caused by an exploding bulb/lamp, particularly when in close proximity to people.
6. Every lamp holder of the Edison screw type must be connected to the supply so that where a neutral conductor is required it must be connected to the outer contact.
7. All electrical equipment not appropriately IP rated must be covered in adverse conditions to prevent water from entering the equipment.
8. Underwater lights and equipment rated above 32 V a.c. and fixtures must have a degree of protection IPX8 and be protected by an RCD having a rated residual current not exceeding 30 mA.
9. Protection from ultraviolet lights from HMI lamps:
 - a. All personnel on site should be advised that various 'arc'-type lamps, including HMIs, emit much larger amounts of ultraviolet (UV) radiation than tungsten lamps. Care should be taken to protect against skin and eye damage when they are set up close to people. Various filters are available to reduce UV light.
 - b. All HMIs should be used with UV filters. Fixtures must not be used if the filters are cracked or broken. Micro switches must not be bypassed.
 - c. A UV filter/gel must be used in conjunction with a clear glass filter when using open-faced HMI lamps to minimise the incidence of headaches and eye damage and to provide protection against exploding bulbs.
10. The use of any combustible material in close proximity to lamps must be avoided to prevent fire or the emission of dangerous fumes.

41.7 EQUIPMENT TESTING AND RECORDING

For New Zealand, the requirements of AS 3760 apply. For Australia, the following requirements apply.

41.7.1 Electrical Equipment

1. Ensure that all flexible extension cords, portable lights, electrical equipment and electrical appliances supplied at a voltage above 32 V a.c. (extra low voltage) used as production equipment on site are inspected, tested and tagged by a competent person at six-monthly intervals. Double-insulated equipment need only be inspected. The inspection, testing and tagging should be conducted more often, depending upon frequency and severity of use.
2. Subject to a risk assessment/s, all electrical equipment must be tested and tagged. Good practise is that it should occur not less frequently than:
 - a. annually in the case of house lanterns and electrical equipment;
 - b. six monthly in the case of extension cables;
 - c. before and after every hire in the case of hired equipment;
 - d. five yearly in the case of non-moveable fixed electrical equipment;
 - e. after repair and before use in the case of electrical equipment under repair.
3. Record the details of inspections and tests in a permanent and readily accessible format kept on site or at the owner's premises.
4. Ensure that details in the records show:
 - a. the date of inspection;
 - b. the equipment number or inspection number of the item inspected;
 - c. the results of the tests and inspections and details of any repair work; and
 - d. the name (printed) of the competent person.
5. The record of inspections must be made available to an inspector on request.
6. At the date of test, attach the appropriate colour coded tag.
7. Ensure that the tags specified show:
 - a. the date of the inspection;
 - b. the equipment number or inspection number of the item inspected; and
 - c. the name of the person carrying out inspections and tests.
8. The tag will be valid for the months that the colour tag represents.
9. Ensure that all tags are:
 - a. durable;
 - b. non-metallic;
 - c. self-adhesive or otherwise positively secured;
 - d. incapable of re-use; and
 - e. bright and distinctive in appearance.

10. It is recommended that the tags be placed at the plug (male) ends of the electrical equipment.

41.7.2 HIRED EQUIPMENT AND APPLIANCES

1. Ensure that all electrical equipment or appliances hired for a site are inspected, tested, tagged and recorded at the supplier's premises prior to issue.
2. It is the responsibility of the person who has hired the electrical equipment or appliances to meet the conditions of testing, tagging and recording as required during the period of hire.

41.7.3 EQUIPMENT INSPECTIONS AND TESTS

1. When inspecting electrical equipment, ensure that:
 - a. the outer sheath of electrical cords is not damaged to an extent that reveals the insulation of the inner conductor;
 - b. the sheath of all electrical cords is secured at the ends; and
 - c. rewirable plugs and extension sockets are correctly connected and serviceable.
2. Testing:
 - a. Care needs to be exercised to ensure that insulation resistance testing does not damage electronically controlled equipment.
 - b. Do not perform insulation resistance tests between active and neutral conductors. When testing electrical equipment ensure that:
 - i. all electrical equipment, extension cords and portable power tools are subjected to an insulation resistance test conducted at 500 V d.c. with a minimum acceptable level of insulation resistance as set out in the table below;
 - ii. all electrical equipment, extension cords and portable power tools, except for double-insulated tools, have a continuous and safe level of electrical conductivity for the earthing system in accordance with the table below; and
 - iii. debris or other accumulated matter will not adversely affect the safety of the plant.

41.8 INSULATION RESISTANCE AND CONTINUITY TESTS

Class of equipment	Where measured	Minimum insulation resistance
Class I (single insulated)	a) between each live conductor and the earthing conductor b) A continuity test between the earthing conductor and any exposed metal of the equipment	1 MQ
Class II (double insulated)	between each live conductor and accessible conductive parts	1 MQ
Extension cords	Between each live conductor and the earthing conductor	1 MQ

41.9 PROTECTIVE EARTHING

Parts to be measured	Maximum resistance — (Ω) —
Between the earthing pin of the supply plug and exposed metal	0.5
Between the earthing pin of the supply plug and oscillating or rotating metal parts (such as drill chucks)	1.5
Between the earthing pin of the supply plug and the earthing contact of any outlet sockets of cord extension sets, portable RCDs or portable outlet devices	1.0

41.10 STROBE LIGHTING

1. Strobe lighting has been known to induce epileptic seizures. Epileptics who are flicker-sensitive are likely to experience a full seizure if triggered.
2. Flicker rates of 4 flashes/second or less are recommended and all strobes should be synchronised when more than one is used.

41.11 LASERS

1. Lasers used for effect can create a severe hazard to people in a short space of time. Lasers (Light Amplification by Stimulated Emission of Radiation) produce narrow beams of ordered light rays. They are beams of coherent, monochromatic, high-intensity beams of electromagnetic radiation with a frequency near that of visible light. They have three basic components:
 - a. the active medium, the substance from which the laser light issues;
 - b. the pump system providing the energy to cause the discharge; and
 - c. the optical cavity which produces the collimated mono-chromatic, or coherent, beam.
2. Lasers use wavelengths in the infrared, visible light and ultra violet range. The eyes and skin are particularly susceptible to damage. There are five classes of lasers. Class 1 products only are considered intrinsically safe whilst Class 2 emit visible radiation but are considered safe when you assume a normal blink reflex and do not stare at the beam. Special precautions are required for Class 3A, 3B and Class 4. These classes of laser should not be used for display purposes except under carefully controlled conditions by a competent trained operator. These conditions are outlined in AS 2211. No person should be exposed to radiation in excess of maximum permissible limits.
3. Risk assessment must be undertaken detailing:
 - a. intended scope of use, display in both plan and elevation, positions of laser sources, mirrors and target areas with relevant distances and dimensions;
 - b. the need or otherwise to engage a laser safety officer;
 - c. control measures in the event of power failure or knocking of the laser device that might result in freezing or displacement of the laser beam;
 - d. for outdoor performances, control measures to ensure no interference occurs with the installation and control of reflection for surrounding structures.

42. STUNTS, SPECIAL EFFECTS AND HAZARDOUS SEQUENCES

1. All special effects and stunts and sequences involving hazardous filming will be the subject of risk assessment.
2. **For the purposes of this section, all references to special effects and stunts shall include any and all hazardous sequences.**
3. All the activities involved in the designing, formulating, setting up, initiating, triggering, carrying out and/or altering a special effect/stunt will be supervised by a Special Effects/Stunt Coordinator who:
 - a. holds the appropriate licence(s) and/or other certificates of competency relevant to the tasks involved in creating the effect;
 - b. is acceptable to the affected **production crew**;
 - c. has the appropriate qualifications, expertise and skills to create the effect with a minimum risk to people and property.
4. Unlicensed special effects operators can only work under the supervision of licence holders where permitted under relevant state and territory legislation and regulations.
5. All stunt performers shall have qualifications, experience and expertise necessary to manage the risks associated with performing the stunt.
6. The producer will ensure that a Stunt/Special Effects Coordinator (Coordinator) is present at any time that stunt/special effect is performed. If the Coordinator is performing a stunt/special effect, the Coordinator will nominate an appropriately qualified and experienced Safety Supervisor for the stunt/special effect in question and advise the producer of whom s/he has nominated. All stunt/special effects personnel must hold the appropriate licence/s and/or other certificates of competency relevant to the tasks involved in creating and carrying out the special effect/stunt. Every task in a production must be carried out by a person who is competent.
7. Any crew or cast member has the right not to work where such crew or cast member considers that s/he is exposed to unreasonable risk.
8. Only essential personnel shall be allowed to be in close proximity to the stunt/special effect.
9. The Producer must ensure that the Coordinator liaises with the 1st Assistant Director and Director of Photography/Camera Operator regarding the safety of stunts/special effects and the positioning of all cast, crew and cameras. The 1st Assistant Director and/or Director of Photography/Camera Operator and/or Coordinator has the authority to inform the Director that a stunt/special effect is unable to be performed safely and to cancel the stunt/special effect and advise the crew and cast to not work if, in his/her opinion/s, any cast or crew member or member of the general public is at unacceptable risk.
10. The 1st Assistant Director must coordinate safety practices regarding the rolling and cutting of unattended cameras.

11. In the event of a combined stunt and special effect, adequate communication must be established between the Stunt and Special Effects Coordinators.
12. The weather conditions must be assessed on the day and at the location at which the stunt/special effect/hazardous sequence is to be undertaken and, if necessary, the sequence abandoned and rescheduled.

42.1 PREPARATION TIME

1. The Director and, where appropriate, the designer of the program will discuss the proposed sequence with the Special Effects/Stunt Coordinator at an early stage of planning.
2. A survey of the proposed location must be carried out with at least the following personnel:
 - a. Director;
 - b. 1st Assistant Director;
 - c. Safety Consultant;
 - d. Special Effects/Stunt Coordinator/Safety Supervisor;
 - e. Director of Photography;
 - f. Producer/Associate Producer/Line Producer/Production Manager/Location Manager, and
 - g. Relevant Heads of Department and Medical Personnel.
3. Where the location may present hazards to third parties, a representative of that group should be present at the survey.
4. Sufficient pre-production time must be allowed to enable the Stunt/Special Effects Coordinator to fully research, prepare, set up, initiate and monitor the special effect/stunt to ensure the safety precautions set out in the Safety Report are fully implemented.
5. All actors are to be allowed reasonable pre-production time, as specified by the Coordinator, to work with the Coordinator when the actor is required to work with horses, vehicles, boats, explosive or pyrotechnic effects, weapons or any other special effect or stunt or to perform in fight or sports sequences.
6. Adequate rehearsal time shall be scheduled within the filming day for the stunt/special effects/hazardous sequence.
7. It is the actor's responsibility to inform the Producer of any matters relevant to their own capacity and ability to perform effectively in action sequences.
8. If, for any reason, a Coordinator is replaced during shooting, all sequences involving special effects/stunts must be suspended until the new Coordinator has been given sufficient time to familiarise themselves with all relevant aspects of the shoot and any safety provisions.
9. A hazardous scene must be scheduled and completed within the first eight hours of the shift of each worker directly involved in the hazardous action. The scene should be scheduled as early in the day as is practicable.

42.2 NOTIFICATION OF SAFETY PROCEDURES

1. A copy of the daily call sheet will be provided to all crew, cast members and any other person who will be present on set for any reason or who may have reasonable cause to ask for a copy.
2. The following information must be attached to or be part of the daily call sheet:
 - a. a detailed description of any special effects/stunts, as supplied by the Director;
 - b. the date and approximate time of day the effects/stunts will be performed;
 - c. the location and contact number of the nearest emergency medical facilities, location of on set first aid facilities and contact details for Medical Personnel (eg. radio, mobile phone number);
 - d. the procedures to be followed in the event of an accident;
 - e. the location of back-up services (eg. fire brigade, police);
 - f. an estimation of camera positions and any special rigs;
 - g. the names of the Special Effects/Stunt Coordinator/s, assistants and assigned Safety Supervisor/s, Medical Personnel.
3. The crew and cast must be given a full verbal briefing regarding the special effect/stunt by the 1st Assistant Director immediately prior to its execution.
4. The Producer must ensure that police, council and all relevant permissions for all special effects/stunt filming are obtained.

42.3 EMERGENCY PRECAUTIONS

1. The risk assessment shall specify necessary Medical Personnel. Such Medical Personnel must be appropriately qualified and provided with the necessary equipment to deal with an emergency having regard to the nature and scope of the stunt/special effect.

2. Medical transfers are best effected by ambulance or by best method available, eg. helicopter evacuation, Royal Flying Doctor Service. However, in any event, back-up emergency transport and driver facilities must be at the disposal of the Medical Personnel. The driver must be familiar with the most direct route to a hospital or other medical facility. The vehicle must be fully serviceable, fully maintained and have a full tank of petrol, until the stunt/special effect is completed.
3. Back-up medical services must be identified and evaluated especially in country areas where people with certain types of injuries may need to be transferred to other hospital and/or medical services.
4. Suitably trained rescue personnel and mechanical equipment for rescuing trapped performers from smashed vehicles, hazardous climbing situations, buildings, etc. must be available when specified in the Safety Report.
5. Details of all emergency provisions must be included in relevant call sheets.

42.4 SPECIAL EFFECTS

Also refer to Section 28 Hazardous Substances.

1. All hazardous materials must be used, stored, transported and disposed of in accordance with the MSDSs and relevant state and territory legislation and regulations.
2. A ban on smoking and naked lights must be enforced in the entire area in which the special effects is being created, including workshops and storage areas.

42.5 THEATRICAL FOGS, SMOKES AND DUSTS

Performers are often required to undertake physically demanding work in an atmosphere that has been deliberately contaminated by theatrical fogs and smoke to create a range of special effects. Employers have a legal obligation to ensure that the risks are reduced to the lowest possible levels.

42.5.1 Potential Side Affects from Exposure to Theatrical Fogs and Smoke

1. Whether an individual experiences an adverse reaction to fogs, smokes and other substances is dependent on a number of factors including:
 - a. the concentration of the substance per unit volume of air;
 - b. the particle size of the substance when suspended in air;
 - c. any predisposition the person may have and taking account of their age, eg. asthma;
 - d. the amount of the substance that the person inhales during the performance;
 - e. the respiratory rate of the performer during the performance;
 - f. the chemical composition of the substance.
2. Common symptoms include:
 - a. eye and throat irritations;
 - b. increased incidence of colds and respiratory infections;
 - c. headaches;
 - d. dizziness;
 - e. fatigue;
 - f. bronchitis;
 - g. various types of pneumonia;
 - h. allergies and other related ailments.

42.5.2 Chemicals Commonly found in Fogs and Smokes

There are many trade products available but most fall into the following categories:

1. **Glycol Based Products:** Often called “water based” because they are mixed with water in varying quantities. They contain “poly functional alcohols” or “glycols”. Typical glycols used in fog produces include ethylene glycols, propylene glycols, butylene glycols, triethylene glycols and polyethylene glycols. Ethylene glycols can pose an explosion hazards.
Where there is no alternative to using a glycol based product, triethylene glycols are generally preferred over other glycol based products as they are the least toxic.
 (Also refer to the National Occupational Health and Safety Commission’s Exposure Standards for Atmospheric Contaminants in the Occupational Environment.)
2. **Petroleum Based Products:** Usually contain fuel oil, baby oil, mineral and cutting oils.
3. **Organic Chemical Based Products:** Usually contain glycerine and vegetable oils.

4. **Burned Materials:** Usually include materials such as frankincense (burned in bee smokers), oil and other combustibles including paper, cigarettes and cigars.
5. **Fumed Chlorides:** Smoky chemicals which form smoky looking fumes when heated. Usually made of sal ammoniac (ammonium chloride) and other chlorides such as zinc and titanium chloride.
6. **Dusts and Power Based Products:** Usually include talcum powder, vermiculite and wheat flour.
7. **Gases:** Using carbon dioxide from dry ice, freons and liquid nitrogen.
8. **Fragrances and Dyes:** Added to fogs to make the product smell better, mask chemicals odours or to look more attractive.

42.5.3 Hazard Management

The development of a hazard management strategy should include:

1. avoiding using physical effects if the result can be achieved another way, eg. digitally;
2. ensuring adequate information is available about the substance and equipment to be used to create the effect. eg. chemical composition, known health affects, any special characteristics such as explosivity range, first aid information, operating instructions, etc.;
3. only purchasing products from a reliable supplier who can provide the information referred to above;
4. not accepting or using special brews or concoctions on the basis that the ingredients are a “trade” secret, even if assurances are given that they are not toxic;
5. using only competent personnel;
6. using the substance with the least likely potential for giving rise to side affects using the lowest concentration needed to achieve the desired effect;
7. ensuring all performers who are required to work in contaminated environments are fully informed about the substance to be used, its manner of use and any known side effects both short and long term;
8. ensuring any individual who knows they may develop allergies or may have an emotional or irrational response working in the contaminated area is able to explain how their concerns might be managed, if at all; if their concerns cannot be managed, then an alternative to the use of the substance must be identified or consideration given to the use of stunt doubles or other alternative means of achieving the effect;
9. avoiding substances known to contain inert minerals, eg. talc and silica;
10. caution must be taken when used near ignition sources and accelerants such as oxygen, eg. oxyrevivers;
11. avoiding products that are not environmentally friendly such as freons;
12. using appropriate, well maintained respiratory protection;
13. ensuring all substances used for creating fogs and smoke are stored, labelled and handled appropriately;
14. ensuring adequate first aid, including oxyrevivers, showers, etc., are available to manage any side effects that may be experienced by people expose to the substance, eg., breathing difficulties, skin irritations, runny eyes, sore throat, dizziness, etc.;
15. periodically ventilating/exhausting the contaminated area, both vertically and laterally;
16. giving all personnel and animals breaks away from the contaminated area at appropriate intervals and/or at a frequency set out in the Safety Report;
17. excluding all non-essential personnel and animals from the contaminated area;
18. respirators shall be provided if required and in any event if specified in the MSDS.

Note:

1. The use of any substances known to be carcinogenic shall be banned (eg. Fullers earth, benzene smokes, burning rubber tyres).
2. Although coloured smokes burn at low temperatures, the outer casing of the device may cause bad burns to the skin.
3. All smoke devices can produce dangerous bursts of flame on first ignition.
4. Clean water mists, while relatively safe, can cause humidity problems and care must be taken in respect of equipment, floors and surfaces to prevent electrical and slip hazards.
5. See also Section 20, Confined Spaces.

42.6 SNOW AND RAIN EFFECTS

42.6.1 Snow Effects

1. When snow effects are being carried out, materials used must have an MSDS and be used in accordance with relevant technical information.
2. Shaved styrene flakes must never be used to create snow effects.

42.6.2 Electrical Safety in Conjunction with Rain and Snow Effects

1. All electrical cables must be insulated and must be kept off the ground wherever possible to avoid electrical current being carried through the water.
2. All single phase and three phase outlets, leads and three-pin connections must be kept dry. Where possible, submersible cables should be used.
3. AS/NZS 4249 and all relevant regulations must be complied with during rain and wet-down effects.

42.6.3 Water

1. Only appropriately licensed and authorised personnel can draw water from hydrants and stand pipes.
2. All personnel operating nozzles must be adequately trained in their use.
3. When large volumes of water are to be used, the drainage capacity of the area must be assessed by a hydraulic engineer and, where necessary, made adequate to cope with the increased volume of water.
4. Where reticulated piping is installed on or attached to roofs, the structure must be inspected and assessed by a structural engineer to ensure the additional pressure and load can be carried. The roof itself must be made watertight.
5. Fire hoses must be routed to minimise danger (of electrocution or whiplash from the fire hose) if a coupling failure occurs.
6. Hoses must be bled between takes to ensure they are not “loaded” and therefore potentially dangerous when unattended.
7. Hoses must be maintained in sound working order to avoid rupture.
8. Under no circumstances should anyone tap into a fire service main without permission from the local fire service.
9. Ramps must be used to cover hoses whenever there is pedestrian or vehicular traffic.
10. Rain stands and sprinklers must be adequately sand bagged and secured to prevent them from toppling over.

42.7 EXPLOSIVES AND PYROTECHNICS

Relevant state and territory explosives and pyrotechnics legislation and regulations must be adhered to at all times.

1. **Explosives** may be high explosive (bullet hits, detonators, detonating cord, gelignite, TNT, etc.) or low explosive of the burning (deflagrating) or propulsive kind (flash powder, gun powder, etc.).
2. **Pyrotechnics** are devices, compounds and mixtures which burn fiercely and produce light or heat or smoke or sparks in varying colours and quantities without an explosive effect.

42.7.1 Planning and Preparation

Special effects requiring the use of explosives or pyrotechnics must be planned in consultation with the Production Designer.

If a Production Designer has not been assigned, one must be assigned to co-ordinate any special effects required for the production and a written “Firing Plan” developed in conjunction with suitably experienced personnel who have an appropriate understanding of the effect/s.

42.7.2 Testing

Testing must be performed by a person who holds a Licence to Test Pyrotechnics or Explosives.

Special effects using explosives must be tested in the presence of the Special Effects Coordinator, the Safety Supervisor and essential personnel only.

Testing must be scheduled away from the day’s shooting and prior to filming the effect. Testing is required to determine safe distances, minimum quantities of explosive necessary to produce the effect, etc. Where objects are to be projected into the air, the testing method must be with the objects themselves or their equivalent to ensure the effect and the outcome is simulated. Any subsequent changes made to the effect after initial testing will require a re-run of the testing procedure.

Results of all testing must be recorded.

42.7.3 Permits and Licenses

The Producer must ensure that all those who are to undertake specific effects hold the relevant permits/licences and the Special Effects Coordinator has in his or her possession at all times, all necessary permits and licenses covering products and equipment used and intended for use, together with literature on all relevant chemical compositions and safety guidelines regarding the use of smoke, flammable materials, explosives and pyrotechnics.

42.7.4 Preparation of the Site

1. Preparation of the site for explosive effects should be carried out, where possible, before **production crew** members arrive on the set. This activity will exclude the actual charge laying, but will include digging in mortars, fitting rams where required and strengthening or pre-cutting structural members.
2. Explosive devices should always be constructed or confined in such a way that allows the Special Effects Coordinator to predict, as far as is reasonable to do so, the direction and nature of the subsequent explosive effect. Small items such as buttons or other items worn on clothing can, if left in the path of a body hit, become a projectile capable of penetrating the body.
3. The choice of siting an explosive effect on location must allow for wind, as wind direction may become a critical risk factor when a fireball and/or inflammable liquids or powders are being used. If the wind changes after an effect has been sited, the effect must be cancelled or delayed until the wind direction has changed and/or the wind is not longer justification for delaying the effect.
4. The siting of spark-emitting devices must protect personnel from the risk of burning particles and also take account of anything above or adjoining it, such as drapes and dressings.
5. Any change to the type of explosive, the location and/or structural design, must be made in consultation with the Coordinator. Sufficient time must be allowed to implement the change and assess any consequences without compromising other safety requirements. Great care must be exercised if any pyrotechnic items are to be substituted with high explosive items, for instance, substitution of detonators for squibs, and substitution can only be undertaken following a comprehensive risk assessment that establishes there are no alternative safer procedures.
6. The laying of charges must not take place until crew, cast and all other non-essential personnel have withdrawn from the site to a designated safe area. The Coordinator or Safety Supervisor will indicate to the 1st Assistant Director the designated safe area to which non-essential personnel must withdraw. The 1st Assistant Director must ensure that all non-essential personnel remain in the designated safe area until the effect is completed. Safety helmets must be worn or protective shelters provided if there is any possibility of falling debris or materials.
7. While every effort should be made to achieve the desired aesthetic effect required, the provisions set out in legislation and/or these guidelines must be strictly adhered to by all persons.

42.7.5 Camera and Cast Positioning

1. Camera positions and the positioning of performers and all personnel essential to the sequence shall be determined by the Director subject to the approval of the Special Effects Coordinator.
2. No changes whatsoever will be made to either the action or to the circumstances (including camera positions) without the prior approval of the Coordinator.
3. Any changes made must be conveyed to everyone concerned with the production irrespective of whether they are between tests, rehearsals or takes.
4. Where shrapnel or flying debris could result from an effect, the risk assessment shall establish how it might be contained to prevent injury. Additional measures may need to be taken to protect personnel and equipment or the sequence may need to be rechoreographed.

42.7.6 Notification of Authorities

1. Where a high fire risk exists or total fire ban is in place a clearance from the local fire authority must be received prior to setting up or initiating a special effect. If risk becomes apparent after the special effect has commenced, the effect must be cancelled or deferred until clearance is received from the local fire authority. Local fire authority personnel may have to be present, depending on the nature and size of the effect, its location and its potential to generate a serious fire hazard.
2. The Explosives Inspectorate (or equivalent), the police service, local councils and other authorities such as the Environment Protection Authority must be notified of an intention to create an explosive or pyrotechnic effect

and all relevant permissions granted as may be relevant before the effect can proceed. Residents, local industry, hospitals and retirement homes should be given notice of explosions where they will be within earshot.

3. Civil aviation clearance must be received for locations under or near a flight path or where an effect with rise to a height of 150 metres or greater.

42.7.7 Precautions on Location

1. Whenever any explosive device is installed in studio or location scenery, a warning sign must be fixed to the scenery and may only be removed when the scenery has been cleared by the Special Effects Coordinator.
2. Warning must be given to all present of very high sound levels experienced with even small quantities of high explosives. If hearing protection is required, it must be provided and worn.
3. Appropriate Australian standards compliant respirators and eye protection must be provided if specified in the Safety Report.
4. Fire fighting equipment must be positioned as near as possible to areas which may present a fire hazard.

42.7.8 Monitoring

1. No explosive or pyrotechnic effect will occur unless there is a direct line of sight for the Special Effect Coordinator to the site of the effect. In studios, monitors must never be used to control explosive or pyrotechnic effects.
2. When multiple effects are being fired, assistant/s must be engaged to work with the Coordinator to observe the nature of the effect and to check the number of effects that fired.

42.7.9 Firing Procedures

1. A sequence of firing cues and a strict routine of rehearsals must be established and understood by all involved. Emergency procedures for each effect must be explained.
2. Firing devices must conform to AS 2187.2 Appendix B.
3. The command to arm the circuits must be given by the 1st Assistant Director immediately prior to, or on, camera roll. This must be followed by the conformation “armed”. A command to disarm circuits must immediately follow a “cut” command, again given by the 1st Assistant Director. The firing device must always be disconnected after a firing.
4. The Coordinator will be the only person in possession of the source of power for firing, eg. the battery pack of the firing box and to the key to the firing device.
5. During preparation and/or use of electronically fired pyrotechnics, all transmitters, including mobile phones and walkie-talkies, must be switched off.
6. Firing circuits must be tested, without fail, by a firing circuit galvanometer, conforming to AS 2187.2 Appendix B, on a cleared set.
7. The battery box, key, etc., must always be disconnected after a firing and firing cables shunted.
8. After a successful firing, the Coordinator must make a full inspection of the explosion area and take the necessary steps to render it safe prior to anyone else entering the site, checking that all components have fired, that all hazardous, burning or smouldering material is removed and that the site is made safe.
9. In the event of a misfire:
 - a. everyone must be clearly told by the Coordinator;
 - b. the entire affected area must be cleared;
 - c. the battery, key or other device must be disconnected;
 - d. all potential causes of failure must be checked before the effect is approached.
9. Following a misfire and after electrical connections have been checked:
 - a. the effect must be observed from a safe distance for signs of hang fire, smoke, etc., by the Coordinator and left for 15 minutes or 30 minutes in the case of non-electrical devices;
 - b. if nothing appears wrong then it is best to re-site the new charge and delay unmaking the existing one for as long as possible;
 - c. if the misfire must be unmade, then only the Coordinator shall do so, exercising the utmost caution and assisted by other department members only if necessary.

42.7.10 Flares

Flares are incendiary devices. The surface on which the flare burns must be sufficiently protected from heat to minimise the risk of fire. When working on surfaces that may be damaged by heat, a sheet metal flare tray should be

raised on bricks above a sheet of non-flammable mineral insulation board which itself should also be raised further on bricks.

42.7.11 Working in Confined Spaces

1. When working in confined spaces sufficient ventilation must be available to remove the smoke and heat produced by flare combustion. The provisions set out in relevant legislation and Australian Standards must be strictly adhered to when working in confined spaces.
2. Personnel must be made aware that high temperature particles may be ejected from a flare at the end of the burning time as a result of dampness in the device and/or pressure build-up and steps must be taken to avoid being burnt.
3. See Also Section 20, Confined Spaces.

42.7.12 Using Out of Date Explosives and Pyrotechnics

All explosives, include flares and/or other pyrotechnics, which have exceeded the manufacturer's recommended use-by-date as specified in MSDS or Product Data Sheets must not be used and must be disposed of appropriately.

42.7.13 Gas Cylinders and Associated Equipment

1. All gas cylinders used to create special effects must be designed, certified and inspected in accordance with the requirements of AS 2030.1 – 1955: Cylinders for Compressed Gases other than Acetylene.
2. Gas cylinders that have been modified, cut, painted, altered or otherwise tampered with will not be permitted in the workplace unless that have been appropriately inspected, tested and certified for use by the relevant state inspecting authority.
3. Non-standard associated additional equipment such as guns, burners, lines, headers, solenoids, valves, pipes, shafts, coils, rings, caps or other devices to be used in conjunction with gas cylinders must also be inspected, tested and certified prior to being used.

42.8 BREAKAWAY PROPS

1. Safety procedures must reflect the fact that breakaway props are designed to collapse and are therefore potentially dangerous. Their use must be supervised by a Special Effects Coordinator or Designer with specific experience and knowledge of breakaways.
2. Only essential personnel shall be allowed near breakaways. Safety lines must be erected to clearly mark "essential personnel only" areas. Breakaways must be fenced off and kept secure when not in use.
3. Adequate time must be allowed for pre-production and set up to ensure the breakaway effects are carried out with a minimum of risk.

42.9 SPECIAL EFFECTS INVOLVING FIRE

1. A Special Effects Coordinator with specific experience and a working knowledge of fire control must be engaged.
2. The Coordinator will be responsible for supervising, designing, formulating, setting up, initiating, triggering, carrying out and/or altering the fire effect.
3. All personnel working in the area must be well-briefed on the scope of the effect and on related emergency procedures.
4. Advance warning must be given to all performers, including stunt performers of any work involving open fire and/or naked flames.
5. The set must be adequately ventilated to avoid smoke inhalation and have sufficient fire exits served by well-marked paths that are kept clear at all times.
6. Studio areas must be cleared of excess rubbish, eg. extra set materials, sawdust and papers.
7. Special care must be taken where sound proofed walls and ceilings are made of flammable material.
8. Overhead ventilation must be available for large studio fire effects to prevent heat building up at ceiling level.
9. Gas fuelled fires must be designed, built and installed by a licensed gas fitter and inspected periodically by a licensed gas fitter. All gas lines and fittings must be installed in accordance with the applicable building codes, fire codes and Australian Standards. Gas fuelled fires must be adequately supported on metal plates which are covered by fire resistant material and raised sufficiently to prevent damage to surfaces.
10. Flammables and combustibles must be kept at a safe distance from open flames. When used to act as a fire accelerant in interiors, continual ventilation should be initiated until ignition or clean up and storage is

completed. Further, such materials shall be kept in approved containers. Each propane tank “shut off” location shall have an operator who has a clear view of propane fires at all times.

11. Naked flames must be protected from draughts and kept a safe distance from other combustible materials. Flammable liquids must be kept a safe distance from flames and stored in Standards approved containers. Any scenery adjacent to the fire must be adequately protected by a fire retardant material, eg. a fire blanket.
12. Where vehicles are involved in fire or explosive effects, the Special Effects Coordinator must ensure that the petrol tank is empty and split wide open, purged of fuel/vapour and filled with water or preferably completely removed. The drive shaft should be drilled in several places and all loose material inside the cabin removed. Vehicles must be made of natural fabrics and wigs made of real hair treated with fire retardant mixtures whenever performers are required to work near fire.
13. Consideration must be given to the chemical composition of materials that are to be burned as some may emit toxic gases/particles. Consideration must be given to preventing personnel being down wind of flame/smoke, etc.
14. The Special Effects Coordinator must be present at all times while a fire effect is being created.
15. Where wigs are required, real hair wigs, appropriately treated with fire retardant, must be used. As few hair pins as possible shall be used to attach wigs as they can puncture skin and retain heat. Where possible, adhesives should be used in the place of hair pins, metal clips or elastic or otherwise the wig sewn into the performer’s hair where appropriate. Non-flammable hair products shall be used on stunt performers’ hair. See also Section 47, Makeup, Hair and Wardrobe.

42.9.1 Precautions on set or Location

1. The producer must ensure that the nearest fire brigade is notified and must be present whenever deemed necessary by the Special Effects Coordinator. Appropriate fire prevention equipment and personnel must be on set (in studio or on location) where open flames are involved.
2. Fire fighting equipment, appropriate for the particular fire risk, must be provided in accordance with the Special Effects Coordinator’s recommendations and as detailed in the risk assessment/Safety Report.
3. An adequate number of approved fire blankets must be available whenever fire effects are being carried out in the event they are needed to protect personnel and/or smother a fire.
4. Takes involving fire must be kept to the absolute minimum necessary.
5. The gelling up of liquid fuels (petrol, diesel, kerosene) creates a sticky product which is extremely volatile and must be used very soon after its application. Comprehensive planning and fully detailed rehearsals are critical to ensure total coordination of all aspects of the effect. Special attention must be given to “light up” and “extinguish” cues with all personnel aware of the exact sequence. Care must be taken when extinguishing fires created using these products to avoid unintentionally spreading the fire. To avoid accidental re-ignition, sufficient time must be allowed for cooling between takes prior to refuelling.

42.10 STUNTS

42.10.1 Foot Falls

1. Foot falls may or may not require the use of stunt performers. However, actors shall be given the option of having stunt doubles perform foot falls.
2. Risk assessments of foot falls must take account of:
 - a. the required action;
 - b. age and physical ability of the performer including pre-existing medical conditions/prior injuries;
 - c. location of the action;
 - d. design of the shots.
3. Suitable mats must be provided during rehearsal. Wherever possible, mats should be provided during actual filming. Foot falls on concrete or other rigid surfaces should be avoided.
4. Consideration should be given to the wearing of padding, including elbow and knee pads, and, if necessary, incorporated into costumes.

42.10.2 High Falls

1. High falls should only be undertaken when it is not possible to achieve the effect by any other means, eg., digitally, use of wires, redesign of shots, etc.
2. Fall arrest devices (harnesses, lanyards, mats, box rigs, tyre rigs, etc.) must always be provided in setting up landings for high falls. The protection must be appropriate for the circumstances, of first class quality and

maintained in a serviceable condition. All rigs must be set up and supervised by a Stunt Coordinator who is experienced in their use.

3. Box rigs must be kept dry and built on dry ground or surfaces. Unused boxes must be on stand-by and on set. Box rigs must not be used for falls over 15 metres.
4. An adequate number of qualified and experienced safety personnel should act as spotters around each and every box rig/pad to assist the safety of the stunt performer under the direction of the Stunt Coordinator.

42.10.3 Falls into Airbags

Falls into airbags are not permitted.

42.10.4 Sheer Drops including Cliff and Building Faces

1. At sheer drops, such as cliff or building faces, sufficient rehearsal and training must be provided to allow all persons involved in the sequences to perform efficiently, safely and with confidence.
2. All crew must wear a safety harness and/or remain at least one body length clear of an unfenced edge. All personnel and visitors must be kept well away from any unfenced edge/s. The edge must be roped off when close to camera positions/observation points.
 - For abseiling, all equipment and ropes must be checked. A brakeman or braking device should be considered for face-first abseiling by stunt performers and used after rehearsal if required. A braking device must be used by actors who are involved in abseiling activities.

42.10.5 Falls into Water

1. Stunt personnel required to jump into water must be experienced and capable swimmers.
2. An underwater survey to check for submerged objects, to verify water depth and quality must be carried out by a safety diver during pre-production and again immediately prior to the jump in consultation with the Stunt Coordinator.
3. There must be an adequate number of qualified and licensed safety divers for the stunt performers involved, or as specified in the Safety Report. Except where indicated in the Safety Report, the Safety Supervisor cannot be a safety diver. Safety boat/s equipped with propeller guards shall remain in attendance for the duration of the stunt work.
4. The Safety Supervisor shall ensure that floating objects and water craft are kept well clear of the jump site.
5. Adequate provision shall be made for appropriate wardrobe, on-site warm showers, blankets, heaters and drinks etc. Wetsuits must be supplied to all cast and crew when specified in Safety Report.

42.10.6 Falls from Moving Vehicles

1. Jump stunts from vehicles must be fully rehearsed and shot under controlled conditions.
2. All traffic must be held and the road closed for the duration of the action, suitable safe landing areas must be prepared and maintained for the duration of the action.
3. Direct communications between the 1st Assistant Director, Stunt Coordinator, Safety Supervisor and stunt drivers must be maintained at all times during the action.
4. The Wardrobe Coordinator shall give consideration in pre-production to allowing for padding being inserted in the stunt performer's clothing.

42.10.7 Stunt Vehicles

Note: Also see Sections 15.4 Action Vehicles, 15.5 Bikes and 15.6 Trucks

1. Prior to use in any rehearsals or filming, all vehicles to be driven for stunts and/or hazardous driving sequences must be safety checked by a qualified mechanic. They must also be fitted with serviceable tyres.
2. Before use on a public road, all stunt vehicles must be:
 - a. roadworthy and have current registration; or
 - b. inspected and issued with an Interim Registration Permit; or
 - c. low-loaded or towed (still requiring good tyres, steering and brakes); and
 - d. examined by the Stunt Coordinator and Safety Supervisor and, where relevant, Rigger, to ensure they are in safe working condition and properly rigged.
3. Any mechanical alterations or modifications to vehicles, including vehicles to be used for stunt and/or hazardous driving sequences, must be carried out by appropriately qualified technicians and/or mechanics.

4. For non-standard and hybrid vehicles and vehicles manufacture prior to seat-belt legislation, there must be proper harness/es and seat-belt placements and proper placement and parts for seating and controls, including the steering wheel and pedals.
5. External design additions or enhancements of futuristic or imaginative vehicles must be checked to ensure they are not unsafe for the circumstances in which the vehicle is to be used.
6. For crashes and rolls at speeds less than 60 kph, the vehicle must be fitted with appropriate safety apparatus as agreed by the Stunt Coordinator. Depending on the circumstances, this could include a rollover hoop of an appropriate diameter and thickness and back braces.
7. For crashes and rolls at over 60 kph, the vehicle must be fitted with:
 - a. a full roll cage of appropriate strength and construction;
 - b. a seat-belt/harness and seat mounting connected directly to the chassis if the roll cage is connected to the chassis, or
 - c. the seatbelt/harness and seat mounting connected direct to the roll cage if the roll cage is independent of the chassis, and
 - d. other safety equipment as required.
8. Vehicles involved in explosions and fire should have all internal flammable materials, such as carpets, head linings, and seat covers, removed. Any sources of toxic fumes such as plastic and styrene fittings should be removed if possible or documented and appropriate hazard controls implemented. An internal racing standard fuel cell should be fitted, the fuel tank removed and a standard five point safety harness must be fitted.
9. Emergency exits from the stunt vehicle must be carefully planned for each stunt and will vary according to the nature of the stunt. Plans could, for instance, include having all door locks removed and the doors closable and openable with wire accessible from the interior or having the rear window removed.
10. A lexan shield of polycarbonated fibre of a minimum 4mm thickness can be considered for use between the driver and windscreen for all crashes, explosions and rollovers but will not be appropriate safety measure in all cases. Safety glass in the windscreen is more commonly used.

42.10.8 Stunts using Lasers

1. A laser or laser product must not be operated unless it has been classified and labelled in accordance with AS 2211. Laser installations (all types) will not be altered and/or tampered with by any person other than a qualified and competent person.
2. All lasers will be used with due care. A Class 1 laser can be used without a licence by any competent person. All classes of laser above Class 1 will only be used by a person who is qualified, competent and experienced in the use of lasers and in accordance with AS 2397. When it is envisaged that extensive use will be made of lasers to create special effects a laser safety officer will be appointed to oversee the selection, planning, setting up, operation and dismantling of the laser/s.
3. All personnel must be adequately briefed regarding any safety procedures and the specific action/s which need to be taken to avoid injury from the beam and/or reflection.

43. USE OF ANIMALS

State and territory legislation generally make the committing of or being party to cruelty or aggravated cruelty to animals an offence. The use of animals in film, television and video productions may be subject to specific state or territory legislation/codes of practice.

Where requests are made for pets to accompany their owners to workplaces, a risk assessment must be undertaken to ensure that the presence of pet/s does not pose a health or safety risk to any persons in the workplace. Particular consideration must be given to the impact that the presence of pets might have where animals are required for the production or where farm animals or native fauna are present.

43.1 GENERAL GUIDELINES

1. Acquisition and disposal of animals must be in accordance with relevant state and territory legislation.
2. Quarantine requirements may apply where interstate or overseas travel is involved.
3. An appropriately experienced Animal Supervisor must be employed whenever animals are being used.
4. Adequate pre-production must be allowed for training and familiarisation of animals and performers for any and all sequences involving animals.
5. Animals should be pre-conditioned to any unusual behaviour they are likely to experience, including familiarisation with clapper-boards, boom poles, lights and any strange noises likely to occur whilst the animal is on set.

6. When animals are on set, the Animal Supervisor shall liaise directly with the 1st Assistant Director and the Stunt and/or Special Effects Coordinator.
7. The wrangling department must comprise sufficient appropriately skilled and experienced crew to cover the number of animals involved and the complexity of the sequence/s.
8. Facilities for animals through pre-production, production, postproduction – both on and off set – must be consistent with maintaining the animals in good health. The size and cleanliness of housing must be adequate for comfort. Food and water must be clean and unspoilt.
9. Holding areas on set must be sufficient to prevent the escape of animals.
10. Only authorised personnel shall handle the animals.
11. Stress, including stress arising from restraint or being held in confined areas, must be avoided. Some animals are more prone to stress than others. Animals kept in confined conditions must be able to exercise at least once a day.
12. An easily accessible area shall be available for loading and unloading animals. Animals should always be given a clear path to their holding area. The 1st Assistant Director shall clear the set of all animals prior to clearing the set of people at all breaks and at wrap.
13. Adequate provisions to ensure the general safety of the animals, including safety from their predators, must be taken.
14. The Animals Supervisor and/or Animal Trainer and, where relevant, the Stunt Coordinator shall brief all cast and crew (including the supervisors of any children on set) about safety precautions while animals are on set. Safety precautions may include, but not be limited to, maintaining a safe distance from the animal/s, no personal pets, no feeding, no running and provisions for escape routes.
15. The Animal Supervisor must ascertain (with veterinarian advice, if required) that all animals are disease-free and whether special hygiene precautions are required.
16. A qualified veterinarian is the only person able to prescribe drugs, including tranquillisers. S/he shall examine all animals prior to use to ensure their good health and that they have received all appropriate inoculations and medication. Some animals, such as reptiles, should not be sedated.
17. Sedation or tranquillisation of animals to alter behaviour of performance may only occur if supervised by a veterinarian and after establishing that the same effect cannot be achieved with a fake or trained animal. Undue pressure for heavy or lengthy sedation of animals shall not be placed on veterinarians.
18. Notice advising that animals are working shall be noted on the call sheet, together with contact details for the nearest veterinarian.
19. A “closed set” notice should be posted on all stages where animals are working and every effort should be made to maintain a closed set where animals are working on location.
20. Free running animals such as cattle and brumbies can present special hazards. Sequences involving free running animals must be carefully planned in regard to camera and cast positions and there must be sufficient skilled and experienced handlers to ensure safety is maintained.
21. When persons are required to ride horses, consideration must be given to the use of PPE such as toe stoppers to minimise the risk of riders being hooked up in stirrup irons and dragged.
22. No shod or hard hoofed animal shall be led, ridden, draughted or driven over mains/electrical cables.
23. A receipt of purchase must be held by the Producer for any dead animals acquired for use in scenes, such animals must not have been killed expressly for the production.

43.2 HORSES

1. Pre-production time must be allowed for any performer required to ride or drive a horse. The route to be ridden or driven by the performer must be surveyed by the safety supervisor or other appropriate person who must walk and ride the route first to ensure it is clear of hazards.
2. No-one shall ride horses “off camera” except for those persons designated to do so by the Animal Supervisor.
 - An experienced pick-up rider, nominated after consultation between the Stunt Coordinator and Animal Supervisor, must be in attendance at all times when horses are working on set.
3. All harness, saddlery and other animal-related accessories must be in good condition and of a high safety standard.
4. Horse falls must not be achieved by trip wires or pit falls.
5. Horse-drawn vehicles shall only be used when operated by, or under the instruction of, a qualified driver whose decisions regarding the capabilities or limitations of the rig will be final.
6. Under no circumstances will spurs be worn by any actor or extra without prior approval of the Animal Supervisor and where relevant the Stunt Coordinator.
7. All hitch rails shall be fastened in the ground so that the tugging of a frightened horse cannot pull it loose (ie. Sleeve installation). On a stage, hitch rails shall be bolted or fastened in a rigid manner. Scenery and props shall be secured together with items such as ladders that can be easily tipped over.

- Horses shall be properly shod for the working conditions (eg. rubber shoes, etc.).

43.3 STUNTS AND SPECIAL EFFECTS

1. Only extremely well trained animals shall be used in stunt and/or special effects sequences and must be familiarised with the proposed stunt/special effect action. The Animal Supervisor, Stunt and/or Special Effects Coordinator and Safety Supervisor must have sufficient pre-production time with key stunt and special effects personnel.
2. Animals required for sequences involving fire must be preconditioned to fire and their coats and tails protected with fireproofing solutions or water.
3. Squibs must be so positioned as to not frighten the animal/s. Action and breakaway props must be of safe materials such as sugar glass, balsa wood, rubber, etc.
4. The Animal Supervisor and Safety Supervisor must satisfy themselves regarding precautions taken to protect the safety of people applying makeup or prosthetics to animals, in addition to ensuring the safety of animals in such circumstances.
5. Precautions taken for the movement of actors during special effects sequences shall apply equally when animals are on set.
6. A receipt of purchase must be held by the Producer for any dead animals acquired for use in scenes, such animals must not have been killed expressly for the production.
7. The Animal Supervisor and wrangling personnel shall be given notice prior to shots being fired or the detonation of explosives.

43.4 USE OF VENOMOUS REPTILES

- Extreme caution must be taken when using venomous reptiles.
- Use of venomous reptiles must be noted on the call sheet, together with the location of the appropriate antidote, name of doctor/s and medical facility.
- When a live venomous reptile is to be used in close proximity to personnel and the hazard exists that someone may be bitten, the appropriate anti-venom serum shall be available together with a suitably qualified medical attendant, qualified to perform injections and trained in the administration of the anti-venoms.
- Only personnel essential to the sequence will be allowed within a 20 metre radius of the reptile.
- Proper protection which may include barriers, gloves, leg guards, shall be provided to cast and crew working closely with the reptile.
- Snakes should be milked on the day on which they are to be used.
- Carbon dioxide bottles must be on hand.
- The Snake Handler should have a snake pincer.

43.5 FIREARMS AND ANIMALS

Live ammunition is allowed on set only when animals are being used. The Producer must be advised of the whereabouts of the necessary firearm and must ensure that the firearm is kept dismantled in a secure position and that any and all ammunition is stored separately when not in use. The Producer will ensure the confidentiality of such information and advise only such heads of department as, in the interests of safety, must be informed.

The use of weapons and live ammunition is only permitted where:

- there is a threat to the life or serious injury of a person on set;
 - humane animal treatment is necessary.

The Use of Live Ammunition on Set

1. Use of weapons and live ammunition must be in accordance with relevant state and territory legislation.
2. Live ammunition will not be fired in the direction of any human being under any circumstances other than to protect a person from injury or loss of life from an animal.
3. Live ammunition must be stored in a locked metal box to which only the licensed wrangler/armourer has access.
4. Any firearm used to fire live ammunition:
 - a. must be of high quality and in excellent working condition;
 - b. must be kept completely away from prop weapons and locked away off set when not in use;

- c. must be of a type and calibre that is not interchangeable with prop weapons.
5. The safe weapon handling skills and shooting accuracy of any person/s who might need to fire live ammunition will be demonstrated to the satisfaction of the Producer.

43.6 USE OF “FREE-LIVING” ANIMALS

1. Protected native fauna are covered by state and territory legislation and regulations which generally prohibit the taking or holding of most native animals except under licence. Such legislation and regulations generally impose restriction on the release of protected native fauna and usually require such animals to be released only in the locality of their capture.
2. “Free-living” animals are defined as animals not routinely under human control, including those that have been captured but are intended for return to the wild within ten days of capture.
3. A person competent in the handling of the particular species must supervise all activities.
4. See General Guidelines above.

43.6.1 Capture

1. Free-living animals are likely to be distressed by capture. Stress must be minimised by using skilled operators familiar with the species utilising techniques appropriate to the particular species.
2. Care must be taken to limit disruption to the animal’s social structure and breeding activity. Regular monitoring for traumatic or metabolic injury must be undertaken.
3. Traps, if used, must be checked regularly. Trapped animals must be protected from predators, exposure and lack of food and water.
4. If a large or unknown number of animals is likely to be caught, an estimate must be made of the likely reasonable maximum number and sufficient competent persons provided to ensure they are caught and processed with the minimum of stress.

43.6.2 Transport

1. Transport methods must be appropriate to the species and the numbers of animals involved.
2. Transport containers must be constructed to:
 - a. prevent escape and/or injury;
 - b. provide adequate shelter, noise reduction, inner shelters where necessary, ventilation;
 - c. tranquillisation, even temperature and humidity, motion support and space to lie;
 - d. accommodate separation of animals if appropriate;
 - e. provide regular food and water.
3. Suitable release areas must be prepared at the arrival site.

43.6.3 Handling and Restraint

1. Methods of handling and restraint must take into account that captured free-living animals are usually apprehensive and therefore prone to injury and/or stress-induced diseases.
2. There must be sufficient competent persons engaged to allow for firm and quiet handling, minimum times of restraint and prevention of injury to both handlers and animals.
3. Chemical restraints, including tranquillisation to induce calm or for the animal’s best protection, may be used where appropriate under the supervision of a veterinarian.

43.6.4 Holding

1. Holding areas must be safe and quiet and free of sharp objects or materials likely to injure the animals. They must be free of badly placed solid objects which restrict movement such as fence posts and feeding and watering containers.
2. Adequate shade, access to drinkable water and appropriate cover must be provided.
3. Protection from predators must be taken at all times.

43.6.5 Release

The requirements of state and territory legislation and regulations must be observed. Animals must be assisted to find their way to “safe” areas. Human perception of suitable alternatives might not be correct. The animal may introduce disease or unsuitable genetic material into a new community. The animal may be stressed by or cause

stress to a new community. Animals should not be released unless they can move freely and unaided and the area they are entering is as free as possible from potential hazard and injury. Prior to their release, animals should be handled quietly and firmly.

44. FIREARMS AND WEAPONS

Live ammunition is not allowed on set at any time other than in the event animals are being used. See Use of Animals – Firearms above. Live ammunition is defined as any cartridge loaded with explosive and a projectile or projectiles or any cartridge loaded with a propelling charge and one or more projectiles. [NB: need to address the issue of Police on set.]

Until formal competencies are established, the following the following definitions of “suitably qualified armourer” are recommended.

Note: the legislation varies between the states (see Appendix L).

Theatrical Armourer - Class 1

1. Anyone able to meet police standards for secured premises and criminal background check, and,
2. has had a minimum of three years experience working for a Class 1 Theatrical Armourer as an assistant or employee. This can be demonstrated by (a) written reference and, (b) by the presence of the assistant or employee’s signature as an authorised person in the police sign-in/sign-out register used on-set over 100 weeks of the qualifying period, and (c) the assistant or employee having held a Theatrical Armourer’s permit – Class 2.

Theatrical Armourer – Class 2

1. Anyone able to meet police standards on a criminal background check, and,
2. a Theatrical Armourer working for a Theatrical Armourer Class 1 who has been certified in writing by their employer to have sufficient on-set and armoury experience to work on-set unsupervised, but responsible to a Theatrical Armourer Class 1, and,
3. has had a minimum of 1 years experience working for a Class 1 Theatrical Armourer as an assistant or employee. This can be demonstrated by (a) written reference and, (b) by the presence of the assistant or employee’s signature as an authorised person in the police sign-in/sign-out register used on-set over 30 weeks of the qualifying period.

Theatrical Armoury Supplier – Class 3

1. Anyone able to meet police standards for secured premises and a criminal background check, and, that they intend to supply weapons for theatrical purposes through a Class 1 or Class 2 Theatrical Armourer can be proven by way of three written references from Theatrical Armourers Class 1, and
3. are licenced in the state in which they are working.

Endorsements for Theatrical Armourer - Class 1 or 3

- To manufacture blank and dummy ammunition – no less than one year’s full time or equivalent employment with a Theatrical Armourer of Class 1 or Class 3 who held an endorsement for the manufacture of blank and dummy ammunition covering them and employees under their supervision.
- To manufacture weapons and modify weapons to blank fire – no less than three years’ full time or equivalent employment with a Theatrical Armourer of Class 1 or Class 3 eligible to manufacture weapons and modify weapons for blank fire and dummy ammunition covering them and employees under their supervision.

General Note: The qualifying periods need not necessarily be continuous but could be made up of sections of employment with one or multiple employers until the requisite experience is achieved.

Foreign Armourers

The head of the armoury department on any production filmed in Australia must always be a suitably qualified Australian permanent resident or citizen.

44.1 ARMOURER

1. An Armourer must be engaged and on set whenever firearms or prohibited weapons, such as replica firearms, machine guns, flick knives, grenades and crossbows, are to be used. Relevant State and/or Territory firearms

and/or weapons legislation is to be strictly adhered to at all times. The Armourer must hold current appropriate licences for all firearms and weapons prior to their use on set.

2. The Producer must ensure that:
 - a. the police are notified in the event there will be firing of blanks;
 - b. the police are notified that guns of any kind will be used and/or discharged;
 - c. council, land holders and other concerned parties are notified as required and the name and telephone number of the contact person/s notified appears on the Call Sheets for the relevant scenes;
 - d. adequate hearing protection is provided to the crew during the firing of blanks;
 - e. clear or flesh coloured ear plugs must be provided to the cast;
 - f. adequate camera protection is provided for the camera crew;
 - g. adequate time is allowed for the Armourer to instruct actors in the safe and confident use of the weapon/s.
3. The Armourer must:
 - a. instruct relevant members of the crew and cast in the safe handling and safety procedures for all the weapons to be used;
 - b. ensure that the weapons and ammunition are safe to use together and are of good fit and type whether or not they are specially manufactured or obtained commercially;
 - c. supervise the supply, transport, storage, use and safe handling of weapons on set, including making safe set dressing weapons.

44.2 HANDLING PROCEDURES

1. The Armourer must satisfy the Safety Supervisor and the 1st Assistant Director or senior crew member that the weapon/s are unloaded and safe when brought onto set.
2. The Armourer must demonstrate or advise all cast and crew that weapons are empty (unarmed) during all rehearsals and when weapons are being transferred from hand to hand. Firearms must always be unarmed for rehearsals and when being transferred from hand to hand.
3. Weapons on set must be under the direct supervision of the Armourer and when off set must be locked away securely so only the Armourer has access to them or alternatively be under the direct supervision of the Armourer.
4. Weapons shall only be armed on the direct request of the 1st Assistant Director. An announcement of the following kind, that arming has occurred, must be made to the 1st Assistant Director, cast and crew: Guns loaded – standing by.
5. Before the firing of any weapon, the Armourer, 1st Assistant Director, Key Grip and Safety Supervisor shall plan for the protection of cast and crew essential for the shot who must remain either in the line of fire or the arc of fire. All non-essential personnel shall be removed from the line of fire and from the arc of possible fire.
6. If a weapon is to be fired in the close proximity of cast, the Armourer, 1st Assistant Director, Safety Supervisor and those members of cast who may either be firing the weapon or being fired at, shall agree upon the safe angles and distances having regard to the weapon, ammunition, distance and type of protection available for participants. An example test blank should be fired.
7. The Armourer shall remain close to any actor to whom a firearm has been given in order to take possession of the firearm immediately a cut is called or for any other reason to ensure safety.
8. Storage and transport of weapons must be in accordance with relevant state and territory legislation and regulations.
9. Blanks must be stored under secure lock when not under the direct supervision of the Armourer.
10. Dummy ammunition used in prop firearms must be proved to be safe to the Safety Supervisor, the 1st Assistant Director and to any actor/s using the firearm/s or having them pointed in their direction.

44.3 USE OF BLANK AMMUNITION ON SET

1. If crimped blanks are used, cases must not be re-used.
2. If non-crimped blanks are used, wadding must be of soft material.
3. Sample blank cartridges to be used must be test fired prior to filming.

44.4 OTHER WEAPONS

1. Other types of weapons requiring the use of an Armourer include all the projectile firing class of weapons such as crossbows, long bows, blowguns and slingshots.

2. The use of an Armourer or Safety Supervisor is advisable if there are more than two sharp edged weapons in use or multiples of other weapons. In such events, the Stunt Coordinator or Fight Choreographer shall be consulted.

FILMING WITH CHILDREN AND BABIES

45.1 REGULATORY COMPLIANCE

Production companies are legally bound to comply with the following acts (and regulations as amended):

- The NSW Children (Care and Protection) Act 1987 and Code of Practice;
- The Victorian Community Services Act 1970;
- The Queensland Child Protection Act 1999;
- The South Australian Education Act 1973;
- The West Australian Child Welfare Act 1974;
- The Tasmanian Education Act 1994;
- The ACT Children's Services Act 1986;
- The Northern Territory Education Act.

Note: the definition of a child varies between the states and territories. People working with children may be required to undergo criminal history checks. Again, procedures vary between the jurisdictions.

Information and/or advice should be obtained from the relevant state/territory authority responsible for administering the above acts prior to using children and babies in productions.

45.2 PARENTAL RIGHTS AND RESPONSIBILITIES

1. Parents and/or carers must ensure their child's employment complies with the relevant state/territory legislation. Parents do not have the authority to waive any rights or entitlements for a child under an act, regulation and/or code of practice.
2. During filming, parents and/or carers may:
 - a. remain with their children;
 - b. watch each aspect of their child's employment;
 - c. intervene on behalf of their child if concerns arise during employment.
3. The parent and/or carer must provide the 1st Assistant Director with the telephone number at which the parent and/or carer is contactable for the duration of the time the child remains on the production. The parent must be contacted immediately if the child becomes distressed, ill and/or the child requests to speak with the parent.
4. Children under six must be accompanied by a parent, guardian or responsible person nominated by the parent.

45.3 WORKING TIME GUIDELINES

1. Legislation and regulations covering the employment of children vary from state to state. In some cases, legislation is supported by a Code of Practice which must be observed in addition to observance of the relevant legislation and regulations.
2. Awards and enterprise agreements also include requirements covering the engagement of children.
3. The child should get a 10 minute break every hour and a one hour break every 4 hours. No child should commence a working shift unless 12 hours has expired from the end of the previous shift, irrespective of whether the work was done for another employer.
4. Where the child is under 16 years old, the producer must ensure that suitable safe arrangements are made for the child for travel between their residence and place of work and return.

45.3 EDUCATION/TUTORING

Children who are employed in productions for extended periods, such as feature films, or employed regularly, such as television drama series or recurrent exposure in commercials, will miss varying degrees of continuity in their education and schooling. States and territories have different requirements regarding the provision of on-site tutoring. Enquiries should be made of the relevant state education department. The need for tutoring should be determined in pre-production and performance schedules designed to allow purposeful periods of study with a qualified tutor away from the immediate set in an environment appropriate for educational purposes.

45.4 WORKING CONDITIONS

1. Additional care needs to be taken whenever children are employed on a production. Special consideration needs to be taken with all aspects of a child's presence on set or location.
2. It is unrealistic to expect children to work the same hours as adults. Children are unable to sustain consistent levels of performance for extended periods.
3. There is a far greater likelihood of success working with children if the general atmosphere is calm and encouraging.
4. It is a good idea to involve children in the planning and rehearsing of sequences in which they are involved as it gives them a greater sense of confidence that their wellbeing and safety are the primary consideration of the crew.
5. Children must not be forced to perform if they feel afraid, scared or unprepared. The option of being able to use a standby child should be considered.
6. The Producer must ensure appropriate supervision is provided for each child at all times. In determining the appropriateness of and style of supervision, the age, sex and maturity of the child must be considered. Appropriate supervision means that a responsible person is nominated as the child's supervisor for the time the child remains on set or is involved with the production.
7. If it is necessary for a child to be away from home overnight, the child will be accompanied by the child's parent or legal guardian at all times that the child is away from the workplace. If a parent and/or legal guardian cannot accompany his or her child, the Producer must engage a suitable chaperone who is at least 18 years of age, approved by the child's parent/guardian.
8. The Producer must ensure that the dietary needs of children working on the production are met, ie. nourishing food and drink must be made available at the appropriate time/s.
9. The Producer must ensure clean and accessible toilet, hand-washing and hand-drying facilities are provided at each location; and that appropriate recreational materials and rest facilities are available for each child during breaks in the work schedule.
10. No child can be subjected to any corporal punishment, social isolation, immobilisation or any behaviour likely to humiliate or frighten the child.

45.5 SPECIFIC SAFETY PRECAUTIONS

1. Under no circumstances is a child's physical or emotional well-being to be put at risk. All sequences involving children should be considered for the potential to expose them to physical danger. Dummies or stunt doubles should be used to reduce the risk of injury to children as required. No child shall perform stunts.
2. Stunt car sequences must not be performed with children.
3. Children travelling in unit vehicles must always be provided with appropriate legal constraints, eg. belts and boosters.
4. When working near water, the 1st Assistant Director and/or the Safety Supervisor must ensure an appropriate ratio of children to adult supervisors who are able to swim is maintained at all times.
5. Stringent safety precautions should be applied for all special effects where children are involved. A dry, warm comfortable area should be provided as close as possible to the set. Adequate time should be allowed to explain and prepare any special effects to avoid creating fear or panic in a child. Particular care should be taken to ensure children are not exposed to irritants which could give rise to respiratory distress.
6. The Wardrobe Coordinator must ensure that each child is appropriately clothed for the working conditions.

45.6 STRESS AND TRAUMA

1. Situations that might give rise of stress or emotional trauma, even when they are dramatised, should be treated as health, safety and wellbeing hazards. Adequate time should be provided to explain to the child what measures are being taken to eliminate or reduce a perceived threat. Where appropriate, expert advice should be sought, from the appropriate statutory authority.
2. For scenes that involve highly traumatising events, such as child abuse or incest and/or scenes involving nudity (including nudity required of other performers), it must be ascertained (with the assistance of a professional counsellor) that the child actor is emotionally able to deal with the scene. After the scene is shot, the child should be debriefed by the counsellor.

45.7 BABIES UNDER 12 WEEKS OLD

1. A baby under 12 weeks old must only be used in a production in accordance with relevant state legislation. Where legislation is silent on the issue, it is recommended that a baby care professional is engaged and present

at all times. The baby care professional must be satisfied that the baby's health and welfare is not threatened by the conditions of the location/set. The baby care professional's instructions must be followed in all matters relating to the baby's health and welfare.

2. A baby must not be exposed to direct lighting; must not have make-up applied and must not be handled by more than four people (including the baby's mother and the baby care professional) in any call.
3. A baby must not be allowed to come into contact with any person with a respiratory or skin infection.

46. MAKE-UP, HAIR AND WARDROBE

46.1 COSTUME DEPARTMENT

46.1.1 Overuse Injuries

The repetitive, fine movements involved in making costumes may lead to overuse injuries, repetitive strain injuries and manual handling injuries. See also Section 25 Ergonomics and Manual Handling. Overuse injuries can be prevented by:

- good posture, correct height of chair, workbench, machine, etc.;
- taking frequent rest breaks;
- varying tasks frequently;
- using rubber mats or wooden platforms to cover concrete floors.

46.1.2 Lighting

- The work involved in costume production requires good, preferably natural, light. If natural light is inadequate, artificial light that provides correct colour spectrum and light intensity should be installed.
- Triphosphor fluorescent lighting or metal halide lights with a lux value of around 2,000 are adequate for very fine work.
- For other work, a lux value of 1,200 is sufficient.

46.1.3 Working with Chemicals

Costume manufacture often involves work with dyes, organic solvents, varnishes, adhesives and glues. Proper local exhaust ventilation and appropriate PPE must be provided and, where necessary, spray booths. See Section 28 Hazardous Substances and Section 29 Working Safely with Chemicals.

46.1.4 Dyes

1. There are numerous dyes available and it can be difficult to ascertain the contents of many dyes. Some can be toxic, corrosive, allergenic or carcinogenic. The cancer-causing potential of most dyes used in crafts is largely unstudied and unknown. Consequently, precautions must always be taken when dyeing.
2. Use of internationally recognised Colour Index assists in identifying dyes. In the CI, names and numbers are assigned to all commercial dyes by the British Society of Dyers and Colourers and the American Association of Textile Chemists and Colourists. Suppliers and manufacturers should be asked to provide the CI identification for their dye products and, if not available, another product should be used.
3. Dyes are also classified into classes which relate to their chemical structure such as fibre-reactive dyes, acid dyes, etc. This information should be requested from suppliers and manufacturers.
4. Aniline dyes are synthetic dyes and are rarely used in their true form.
5. MSDSs must be obtained if possible.
6. Care must be taken to avoid inhaling or ingesting dyes or making skin contact with dyes. Protective clothing goggles and gloves must be worn.
7. Wherever possible, it is preferable to use liquid dyes rather than powders to minimise the chances of inhalation.
8. Fibre reactive dyes and acid dyes can be obtained pre-dissolved in water.
9. Water-based solutions are safer than solvent-based solutions which use, for example, methyl alcohol.
10. Exhaust ventilators and/or cartridge respirators should be used when dyes or other chemicals are being used.
11. Discharge dyeing, using sodium hypochlorate-based bleach to remove colour from fabrics, can be irritating to the skin and inhalation and ingestion should be avoided.
12. Care must be taken to avoid skin contact when tie dyeing, where concentrated dye solutions are poured over tied fabric.
13. In batik processes, the wax may be removed either by ironing fabric between sheets of newspaper or by the application of solvents such as a white spirit. Pine resin may be added to the wax to allow better flow and

penetration of the wax. Hot wax fumes can be irritating to the respiratory tract but are thought to be not otherwise hazardous.

14. Melting wax can present a fire hazard and wax decomposition products from heating or ironing are highly irritating.
15. The use of carbon tetrachloride to remove residual wax is highly dangerous to the liver and should never be used.

46.1.5 Properties and Qualities of Fabrics

When choosing fabrics, consideration must be given to:

1. prevailing climatic conditions and the need to allow the skin to breathe, to ensure or prevent heat retention,
2. the flammability potential of any fabric to be used in a scene involving flames, excessive heat, the potential for flames, proximity to heat sources including lights, etc., and
3. the likelihood of skin irritations caused by the fabric/s, for instance, some people are sensitive to wool and others to certain synthetics.

46.1.6 Reverse Season Filming

The problems encountered in reverse season filming such as hypothermia and dehydration can be reduced by careful choice of fabrics. To minimise exposure to the cold or to cold water, consideration must be given to the use of flesh coloured wet suits, the provision of warm towels, clothes, showers, drinks, heated facilities and doubles of costumes.

46.1.7 Protective Costuming, Make-up and Hair and Costume Design Hazards

1. The modification of costumes to protect performers, including stunt performers and doubles, including the insertion of padding and/or utilisation of stronger fabrics and/or fire retarded fabrics, must be accommodated where by so doing potential risks to performers can be minimised. The flammability potential of fabrics must always be considered for sequences involving flame, sparks and pyrotechnic effects.
2. The Producer must notify the Costume Designer of all sequences involving the use of practical flame, flash effects, where the possibility of fire exists, all sequences involving stunts and all sequences involving blue screen work and/or scenes requiring performers to work in or with rigs to ensure that all costumes can be designed and manufactured in a manner that ensures the safety and comfort of performers.
3. Designers must be advised of performance requirements to ensure that the design of masks, headwear and special effects and prosthetic makeup does not restrict the performer's vision.
4. The Costume Designer must be given adequate time to work with the Special Effects and/or Stunt Coordinator and Designer to ensure that potential risks are minimised or eliminated.
5. Some flame retardants that can be applied to costumes can cause problems if they come into contact with skin. Actors and all personnel handling such flame retarded materials must be advised and, if necessary given adverse reactions, other personnel shall be designated to handle the materials or in the event a performer required to wear the costume has an adverse reaction, alternative measures must be taken to flame retard the material or to eliminate the risk of fire by other means.
6. Attention must be given to costumes that may incorporate design features such as long scarves, trains or other trimmings which, under some circumstances, could pose a risk of strangulation or tripping. Other design hazards include undue restriction of movement.
7. Costumes and wigs to be used in potentially hazardous sequences (eg. fire, explosives, bikes, cars, performing with animals, etc.) must be designed, treated and manufactured in such a way as to reduce the risk of injury.
8. Actors should provide any information regarding potential allergic reactions to particular fabrics, cosmetics and any skin conditions which may be exacerbated by any materials and/or substances. If necessary, alternative fabrics/costumes/undergarments/cosmetics, etc. shall be used.
9. Sensitivity testing for makeup, hair and costuming components must be undertaken if an actor is uncertain and in any event in accordance with manufacturer's recommendations.
10. The design and manufacture of all costumes, wigs and prosthetic and special effects makeup must take account of the possibility of heat exhaustion and hyperthermia and be designed to accommodate the performer's natural bodily functions and requirements including eating, drinking and going to the toilet at adequate intervals.
11. Where performers are exposed to extreme noise, clear or flesh coloured ear plugs must be provided.

46.1.8 Resting Equipment

Facilities must be provided to ensure the comfort of actors' requirements to stay for lengthy periods of time in awkward or heavy costumes or costumes which make sitting difficult.

46.1.9 Hygiene

1. Performers must not be required to wear costumes worn by others that have not been laundered.
2. Costumes must be regularly laundered and maintained in a clean, safe and hygienic condition.

46.1.10 Footwear

Footwear must fit properly, be maintained in a clean, hygienic condition, not be dangerous to wear and must be appropriate for the action and the location.

46.2 MAKEUP AND HAIRDRESSING

46.2.1 Application and Hygiene

1. Application
 - a. Makeup artists must be the only people responsible for the application and removal of makeup. Actors' requests to remove their own makeup, for whatever reason, shall be notified to the Producer.
 - b. Only ingredients-labelled cosmetics or cosmetics from established and reputable manufacturers may be used.
 - c. The makeup and hairdressing area must be kept clean and tidy and Makeup Artists and Hairdressers must maintain a high standard of hygiene and appearance with the minimum use of hand/wrist jewellery.
2. Makeup artists and hairdressers must take adequate precautions against communicable diseases.
 - a. Hand washing and hand care are the first steps in any infection control program. Cuts and abrasions on a make-up artist's exposed skin should be covered by a waterproof dressing which should be changed as necessary and when soiled. The surface of hands and nails must be washed and sanitised:
 - i. immediately before and after application of makeup to each and every performer;
 - ii. after contact with any blood or body substance;
 - iii. after touching the eyes or mouth;
 - iv. before and after eating and drinking and smoking;
 - v. after going to the toilet.
 - b. The following is the recommended method to clean hands:
 - i. wet hands;
 - ii. use liquid soap with warm running water;
 - iii. rub hands vigorously;
 - iv. wash hands all over, including backs of hands, wrists, thumbs and between fingers for 10 to 15 seconds;
 - v. rinse hands well, and
 - vi. thoroughly dry hands with a single use paper towel or one person use only cloth towel.
 - c. Adequate numbers of clean capes and headbands must be provided on make-up calls.
 - d. Individual sponges, powder puffs, combs and brushes must be provided for each performer and transported in zip-lock bags.
 - e. Combs and brushes must be cleaned and disinfected regularly.
 - f. Single use lipstick brushes must be provided.
 - g. Foundations and lipsticks to be shared must be used on a palette to reduce cross contamination.
 - h. Disposable mascara wands must be used at all times and a mascara mask may be used by one person only.
 - i. Styptic liquid should be used with disposable cotton buds for razor cuts.
 - j. Containers, razors, scissors, tweezers and spatulas must be disinfected before and after each use.
 - k. There must be sufficient new clean brushes, powder puffs and sponges for each actor. Puffs, sponges and brushes must be cleaned by washing in antibacterial disinfectants, properly rinsed and dried. Disposable sponges can offer advantages as sponges are difficult to disinfect properly.
 - l. Emery boards and nail files must be single use to prevent the spread of fungal infections.
 - m. Tweezers should be washed in warm soapy water before and after each use.
 - n. Manual clippers with non-detachable blades are not recommended as they cannot easily be changed. Detachable clipper blades must be cleaned with soap and water before re-use. Disposable one use only razors are recommended for shaving. Electric razors should be one-person use only and regularly disinfected and sprayed with an antibacterial/alcohol spray.
 - o. All equipment including combs, brushes, rollers, clippers and scissors, must be cleaned between use. Cleaning in warm water and detergent and allowing to air dry is usually sufficient. Equipment should not be soaked in disinfectant solution unless specified by the manufacturer.

- p. Where linen or towels are used, they must be cleaned before use on another person. Single use paper towelling or liners can be used on benches instead of lined or placed over towels. Used and clean linen must be stored separately. All linen must be washed with laundry detergent and water, rinsed, dried and stored in a clean, dry, dust free location.
 - q. Use of Milton (sodium hypochlorite, normally used to sterilise baby bottles): Before anything is disinfected it must be thoroughly cleaned. Equipment must remain in Milton for a minimum of one hour. When Milton is used, it must be changed every 24 hours.
 - r. All cleaned equipment must be stored clean and dry. Cleaning items must also be cleaned regularly and stored clean and dry. Damaged cleaning equipment does not clean effectively and can result in the transfer of micro-organisms.
 - s. Makeup must always be kept clean to prevent cross contamination and packaging must be kept intact.
 - t. Makeup must not be lent or borrowed.
 - u. Brushes and pencils shall only be moistened with safe tap water, mineral water or transported boiled water.
 - v. Appropriate makeup removers must be used and in the correct quantity.
 - w. Spills must be cleaned up and disposed of immediately.
 - x. Any waste must be stored and disposed of correctly.
 - y. Cleansing materials must be disposed of hygienically (rather than put in the removal agent again).
3. Medical advice must be sought for any skin problem or eye injury, even of a minor nature, and reported to the Producer.
 4. Appropriate PPE (eg. face masks, goggles, gloves, etc.) must be used for application of potentially hazardous materials such as colours, hair sprays, mixing powder bleaches and oxidising chemicals. Hand protection and masks must be worn and adequate ventilation be provided when working with acetone, dry-cleaning fluid, carbontetrachloride, air brushing aerosil/cabosil, alcohol, latex, thinners, raw pigments, powders, sprayed particles, solvents, etc.
 5. All chemicals must be clearly labelled and a current manufacturer's MSDS retained by the area(s) using the chemical.
 6. Chemicals must not be mixed and must be stored, handled and disposed of in accordance with the MSDS.
 7. The minimum amount of chemicals shall be retained.
 8. Special effects makeup should be removed with non-solvent materials, such as isopropyl myristate.
 9. Adequate first aid facilities must be available in the event of an emergency.
 10. Makeup should never be used on babies aged under twelve weeks.

46.2.2 Scheduling

1. Adequate attention must be given to the scheduling of makeup calls, especially special effects make up calls, to ensure cast and makeup staff do not work excessively long hours. Consideration must be given to the time required to remove makeup, special effects makeup, etc., at the end of filming.
2. Adequate breaks must be scheduled when long makeup applications are to be undertaken.

46.2.3 Working in the Sun

Skin protection agents must be used for cast required to work in direct sunlight. Problems of baldness must also be considered.

46.2.4 Special Effects Makeup

1. Special attention must be given to the needs of actors who are required to keep prosthetic or special effects makeup on for lengthy periods or during tea and meal breaks.
2. Adequate air conditioning and/or heating, appropriate cool rest areas, straws, appropriate diet and other relevant assistance must be provided.
3. Where a performer is required to wear extensive prosthetics such as a full head or full body prosthetic or creature suit, consideration must also be given to balance, stress, strain and/or exhaustion that might be caused by heat, vision impairment, restricted mobility and/or isolation.
4. Care should be taken when body suits are used in wet environments as such suits may absorb liquid and become severely weighted causing difficulties including the risk of fatigue or drowning.
5. Where special effects makeup involves the use of hydraulics or air-pressurised equipment, consideration must be given to the impact discharges might have around the eye area or other relevant section of the performer's body.
6. Use of products on animals for the purpose of cosmetic enhancement or causality simulation shall be undertaken in consultation with the animal handler and all products used must be non-toxic and in accordance

with relevant legislation, regulation and codes of practice covering animal welfare and their use in film production.

46.2.5 Contact Lenses

1. If a performer is required to wear contact lenses, an Optometrist or other suitably qualified specialist must be consulted before any lenses are fitted.
2. A lens technician must insert contact lenses if the performer is unable to do so.
3. The lenses must be sterilised after every use.
4. Contact lenses must not be worn for periods of time in excess of that specified by the Optometrist/relevant specialist.

46.3 FACILITIES

2. The makeup and hairdressing facilities and facilities for changing of costumes must be clean, well-lit, adequately ventilated and properly equipped with adequate access to clean water.
3. Chairs, benches and all work surfaces should be of a material and construction that facilitates easy cleaning and maintenance.
4. Smoking, eating and drinking should not be permitted in the makeup and hairdressing room/s.
5. Aerosols must not be used in small unventilated makeup or hairdressing rooms or dressing rooms.
6. Changing facilities must be adequate and have regard to privacy and the design and dimensions of costumes, wigs and makeup.
7. Bottles and containers must be clearly labelled and any hazardous or flammable products must be appropriately marked. See Section 28 Hazardous Substances.
8. All electrical appliances must be tested and tagged in accordance with relevant standards.
9. Makeup and hairdressing areas must have adequate space, benches and height adjustable styling chairs.
10. Stools shall be height adjustable with foot rails.
11. Where facilities are in the form of a caravan, truck or similar area, refer to Section 14.8.

47. SHIFTWORK, FLEXIBLE WORKING HOURS, ROSTERING, NIGHT SHOTS ETC.

1. Everyone has a responsibility to ensure exposure to fatigue is minimised. Attention must be paid to good diet, adequate exercise, adequate sleep, meal and rest breaks during working hours and adequate breaks between shifts.
2. Fatigue is tiredness that results from physical and/or mental exertion. The level of fatigue experienced will depend on the workload imposed by a job, the length of shift, previous hours and days worked and the time of day or night.
3. Disruptions to normal sleep routines and a lack of sufficient sleep lead to what is called sleep debt. (After the urge to breathe, the urge to sleep is the most powerful physiological urge.) Without enough sleep, the human brain may spontaneously shift into sleep in order to meet its need. This might only last a few seconds or might stretch to several minutes. These involuntary sleep episodes can occur while undertaking work related activities including operating machinery and driving.
4. Other effects associated with sleep debt include fatigue, dizziness, inability to concentrate, perceptual and mood changes – all of which can be an impairment risk. Lack of sleep and fatigue in combination can adversely affect job performance, risking individual health and safety and the safety of others.
5. The risk of sleep debt and fatigue is higher when the following working conditions apply:
 - a) shift work, particularly extended shifts and night work;
 - b) long hours of work and/or high levels of overtime;
 - c) unpredictable work schedules, particularly if there is a continual possibility of recall to work;
 - d) jobs which require standing for lengthy periods, frequent manual handling or repetitive movements and/or heavy work which is physically demanding particularly on long shifts or shifts with overtime;
 - e) monotonous work or work where a high level of attention and alertness is required can also increase fatigue; and
 - f) night work combined with extended hours is extremely hazardous in terms of sleep debt and fatigue.
6. The employer's responsibilities extend to ensuring that the adverse OH&S effects of night shoots, half day/half night shoots and overtime are considered and avoided whenever possible.
7. Employers and supervisors are responsible for ensuring that those persons required to operate equipment and/or drive vehicles of any kind are in fit condition, fully awake and alert. Consideration may need to be given to the provision of alternate means of transport, the engagement of additional personnel and double crewing.

8. Other problems associated with shiftwork, flexible working hours, night shoots and changing from day to night shoots include:
 - a) some people experience gastro-intestinal complaints and/or depression and/or psychiatric disturbances;
 - b) social isolation;
 - c) possible unintended consequences of the interference with the effects of certain medicines for medical conditions.

48. HEAVY VEHICLE RISK MANAGEMENT

These requirements apply only to:

- restrictions on driving hours and have no application to entitlements (wages and conditions) under the Motion Picture Production Agreement; and
- a driver of a vehicle with a Gross Vehicle Mass (GVM) of 12 tonnes or more .

48.1 DRIVING HOURS

- Combined work and driving time cannot exceed 14 hours per day or 72 hours per week excluding scheduled meal breaks and rest periods or any other break required by the employer. (See Rest Periods below)
- Driving hours start and finish from when the driver commences driving the vehicle from the garaged address/depot or overnight parking spot to location/studio and return.

48.2 REST PERIODS

- An employer may require a driver to take additional breaks to ensure that the driver does not breach the maximum driving hours referred to above.
- A driver must have a rest period of six continuous hours between the finish of one day's driving hours and the commencement of the next day's driving hours.
- No rest period can be less than 15 minutes.
- Rest periods include meal breaks and other breaks required by the employer.

48.3 DRIVING RECORDS

For each journey made by the driver of a heavy vehicle the driver must keep a record of the following:

- the driver's name;
- the date; and
- total hours spent on driving, work, meal breaks and rest periods or any other break required by the employer for each day and per week.

The driver will supply to the employer a copy of the record each Monday following the week of work. The employer is required to keep these driving records for at least 12 months.

48.4 ACCREDITATION

9. All heavy vehicle drivers must undertake an accredited Fatigue Management course and supply a copy of their accreditation to the employer.
10. Owners of heavy vehicles must be certified under the National Heavy Vehicle Accreditation Scheme and provide a copy of their certificate to employers. This is mandatory for drivers of heavy vehicles and recommended for drivers of trucks under 12 tonnes GVM.
11. Owners of heavy vehicles must provide copies of endorsed licenses to employers.

48.5 FATIGUE MANAGEMENT

1. Drivers of heavy vehicles should supply the employer with the name and contact numbers of four alternative drivers who may be engaged to drive the heavy vehicle when the driver's total working/driving hours exceed the safe maximum.
2. All drivers of heavy vehicles must keep their employer or their nominated representative informed of fatigue levels and should notify their employer as soon as possible after becoming aware that the safe limits of driving/working hours are likely to be exceeded.

49. ALCOHOL AND DRUGS

1. At no time shall any illegal drug/s be brought into or consumed in the working environment.
2. No alcohol shall be consumed in the working environment during working hours without the express permission of the employer.
3. If the employer considers any person to be intoxicated or under the influence of any drug to the extent that the person's performance is affected or the person presents a risk to themselves or to others, they may enforce that person's removal from the work environment.
4. If any person is taking medication that may affect their work performance, the employer must be notified and due consideration given to the ability to perform work tasks.
5. All personnel will be requested to advise their employer of any medical condition/s that may impact on their ability to perform their work duties. A suggested form for recording this information is set out at Schedule R.

50. MEDICAL QUESTIONNAIRE

At the conclusion of the Safety Induction, all personnel will be requested to advise their employer of any medical condition/s that may impact on their ability to perform their work duties. A suggested form for recording this information is set out at Schedule Q. The questionnaire is designed to ensure appropriate regard is given to the health and well-being of every person in the workplace. The provision of this information shall be treated confidentially and shall only be used in the interests of the health safety and welfare of the individual employee. Access to, storage and archiving of such information shall be in accordance with relevant legislative requirements.

51. SECURITY AND TRANSPORT TO AND FROM WORK

1. The Producer shall ensure the security of all persons in the workplace, including ensuring safe entry and egress from the working environment.
2. Having regard to the time of day/night, the presence or otherwise of crowds and other relevant matters, the Producer shall take all reasonable measures so that all persons have safe access between the working environment and transport to and from work.

52. OCCUPATIONAL RELATED STRESS

1. Employers have a duty to identify potential causes of hazardous occupational related stress and implement effective hazard management strategies which will reduce the incidence of occupational related stress in the workplace. Such systems should focus on eliminating the root causes of occupational related stress and target "work context" issues rather than the "personal disposition" of individual employees.
2. The following factors are key contributory causes of occupational related stress:
 - a. role ambiguity and contradictory goals or objectives;
 - b. poor job design and working conditions;
 - c. inadequate consultation;
 - d. qualitative and/or quantitative overload;
 - e. poor information dissemination, communication, education and training;
 - f. poor managerial skills and supervisory skills;
 - g. poor relationships, ie. peer to peer and supervisor to employee;
 - h. unrealistic work deadlines, unrealistic rehearsal, pre-production, production and postproduction schedules.

53. OCCUPATIONAL VIOLENCE

1. Violence in the workplace can be described as the unjust or unwarranted use of force and/or power. Violence in the workplace, ie. occupational violence, can take many forms ranging from verbal abuse, threats, harassment, bullying to physical assault which can result in serious bodily injury and/or death. NB: this section does not cover contrived violence that is part of creating special effects or stunts which are called for as part of the script.
2. Because occupational violence takes many forms it can be difficult to develop hard and fast strategies for prevention. However, employers have a responsibility to identify potential sources of violence in a workplace and implement strategies for eliminating or reducing the potential risks which can arise from occupational violence.
3. As film and television productions require work to be undertaken in a diverse range of locations and circumstances, it lends itself to a wide variety of potential sources of occupational violence that may include:

- a. fellow employees, ie. violence between people in a workplace. It may include bullying, intimidation, abuse of power, isolation, alienation of workers, or poorly managed conflicts of opinion and/or failure to manage unacceptable behaviour.
 - b. violence motivated by material gain, ie. acts of violence committed to gain money, drugs, valuable goods, etc.
 - c. opportunistic violence, ie. violence committed by people who need no motivation to be violent and can include vandalism, snatch and grab, theft, assault and violence toward certain cultures and/or individuals.
 - d. indirect violence, ie. third parties who, though not directly involved in the act of violence, may become emotionally traumatised by witnessing a violent incident.
 - e. disturbed people, ie. people who may have a mental or intellectual disability or be under the influence of a mind altering substance can, in certain circumstances become violent.
4. Options for identifying potential sources of occupational violence include:
- a. auditing systems of work and value of items handled, eg. cash, drugs, people in and having access to the workplace, current security measures, lighting in workplace and surrounds;
 - b. ensuring current reporting procedures are appropriate;
 - c. consulting with employees about potential sources of occupational violence;
 - d. providing a confidential method of reporting violent incidents for employees who may require it;
 - e. providing appropriate crowd control measures when filming in public places.

54. WORK EXPERIENCE STUDENTS AND WORK PLACEMENT

Standard of care obligations at common law demand that an employer consider what, if any, special precautions may need to be taken over and above those already taken for more experienced workers to ensure that youth workers, work experience students and work placement students are not ignorant of any hazards or are not, through their own inadvertence, injured while at work. This can involve providing:

- closer or more direct supervision;
- not allowing very young and/or inexperienced workers to operate certain dangerous equipment;
- providing additional training and information about particular hazards, eg. dangerous substances;
- obtaining a medical certificate stating a young person is fit to be in the workplace.

APPENDIX A LOCATIONS – A BASIC SAFETY CHECKLIST

INTERIORS

1. Entry and exit – all points of entry and exit must be safe by day and night and kept well lit.
2. Fire escapes – must be adequate, unobstructed, clearly marked and noted on call sheets, together with evacuation plans and procedures.
3. Fire detection – the position and operational status of any sprinkler or smoke detection systems should be established and the necessary steps taken to avoid the systems being activated by filming lights or smoke effects.
4. Fire extinguishers – those already on the location must be checked for appropriateness and currency. Depending on the filming, additional and/or different types of extinguishers may be required and, if so, must be acquired and positioned appropriately.
5. Traffic areas – the general “traffic” areas of building areas such as passageways, stairwells and exits must be kept clear of crew equipment and well lit and, where necessary, enhanced by way of floor markings, signs, etc.
6. Ventilation – the ventilation capacity of the building or particular area being used must be known and whether it would be adversely affected by blackout or similar occurrence.
7. Building structure – the basic structure should be established as safe, including the flooring and roofing and whether or not asbestos has been used in the structure.
8. Older buildings – such as factories or warehouses – should be checked for hazardous storage items, chemicals, dust residues etc and made clean. Older lifts should be certified or serviced.
9. Hazardous substances must be removed or safely disposed of if not in use. Information about the use, handling, storage and transport of hazardous material must be made accessible along with suitable personal protection equipment
10. Plant and equipment must be securely guarded and in safe working order.
11. Construction sites – on construction and building sites, hazards such as incomplete floors, unsound support members, stacked materials, uneven footings, chemicals and power tools in use must be checked.
12. Access road – must be well sign-posted, safe and wide enough for unit vehicles. Parking must be adequate and safe.

EXTERIORS

Having regard to the requirements of the particular sequences and the location/s concerned, consideration must be given to the following:

1. Anticipated temperature ranges.
2. Types of land terrain to be encountered.
3. Prevailing water conditions including tidal extremes, current direction, strength and temperature.
4. Drainage capacity of the location must be checked if filming involves water effects of any kind.
5. Prevailing wind directions, their strengths and the possible effect on temporary structures, sand, soil, etc.
6. The nature and possible hazards posed by the animal life both on land and water, especially with regard to mosquitoes, spiders, snakes, wasps, sea lice, sharks, box jelly fish stingers and crocodiles.
7. The nature and possible hazards posed by plant life both on land and in water, especially with regard to palms with sharp fronds, stinging nettles, falling branches, etc.
8. The current bushfire status of the area and any existing rules. Escape routes must be marked clearly on maps.
9. The potential for flash flooding even after relatively light rain.
10. The potential for cyclones.
11. The level of the use of chemicals for pest control, and whether aerial or ground spraying of insecticides is due to occur or has occurred recently.
12. The quality of the roads in and out of the locations considering the variety of unit vehicles using them, including emergency use. Allowances may need to be made for maintenance of roads and access routes.
13. The location of local emergency medical facilities which must be established and noted on the call sheet with rapid transportation plans and evacuation plans to the nearest major hospital. This information shall be provided to local police.
14. Consideration needs to be given to the incidence of situational health risks, eg. Q Fever, Murry Valley Encephalitis, Ross River Fever, malaria, etc. and appropriate risk minimisation strategies, eg. inoculations, medication, mosquito repellent and mosquito netting.

GENERAL

The following apply in most situations:

1. Adequate lighting.
2. Toilets – clean operational toilets must be available in reasonable proximity to the shooting areas; gender specific where possible; in an appropriate ratio to cast and crew numbers; serviced as necessary; sanitary disposal bins provided; located away from sensitive, eg. away from food, people’s front doors, etc; and waste water disposed of in accordance with relevant regulations.
3. Hygiene facilities – in all cases, plumbed, simple hand washing facilities, including fresh water, soap and towels, must be available prior to meal breaks. In some unusual conditions, more elaborate measures may be required to maintain hygiene to a suitable standard. Communal hand basins must be avoided as they create a high risk of infection transfer.
4. Water supply – an adequate supply of clean drinking water must always be available, regardless of location.
5. Road access – safe and all weather roads or tracks must be provided for those driving to and from the shooting area.
6. Access by foot – safe and all weather paths must be provided for those walking to and from the shooting area. Scrambling lines may be required in some cases. Additional labour may be required and/or equipment, to transport filming gear into remote sites – flying foxes, larkin frame, etc.
7. Emergency care – access to first aid and to emergency care on remote locations needs to be considered including plans for transport to immediate care, establishing the hours of operation of local hospitals and facilities and their range and transport to care at major centres.
8. Emergency services – access to emergency services on remote locations, such as bush fire brigades, needs to be considered in pre-production, including establishing the hours of operation of all local facilities and the range and standard of services available.
9. Radio communication – in extremely remote locations, radio communication to police, local authorities and other emergency services should be established and maintained on a regular basis.
10. Accommodation – in remote locations where temporary accommodation is to be provided by the producer, basic standards of fire safety, access safety, clean water, hygiene, electricity, etc, must be included in all plans.
11. Back-up power – in extremely remote locations, back-up emergency power should be maintained for radio and emergency care.
12. First aid – adequate first aid services and facilities.

LOCATION SURVEYS

Once it has been established how sequences are to be filmed, and before filming, all locations should be visited by the producer, director, heads of department and the Safety Consultant. Refer to Section 42.1.2.

GENERAL PUBLIC

Liability for the safety of the general public can be the responsibility of the producer. Therefore, consideration of the safety of the general public must be consideration in the choice of locations and all appropriate steps taken to minimise or eliminate risks to the general public arising from filming activities. Safe crowd control measures are essential and local authorities must be informed of filming activities.

FILMING PERMISSIONS

1. Filming permissions – appropriate permission must be received from any involved owners (in addition to the occupiers) and/or authorities, including police and councils.
2. Crowds – if filming is to take place where crowds do not generally congregate but might be attracted by the filming, the police should be informed.
3. Local fire brigade – should be advised of filming in bush areas, especially where a fire risk exists even on moderate fire alerts.
4. Isolated location – in isolated locations, local authorities and police should be kept informed of crew movement plans, specific locations, surveys, aerials, etc, and any comments about weather, road conditions or other factors noted.

FILMING IN REMOTE OR DISTANT LOCATIONS

Filming is sometimes undertaken at locations distant from the nearest town or city and accommodation and all facilities must then be established specifically for the production. In such instances, accommodation may be provided in demountable “shearer’s style” units/ tents etc. Consideration should be given to:

- Fire fighting equipment

- Sewerage
- Communications systems
- Power
- Lighting – internal, external and for pathways
- Planking of pathways (location may be sandy, subject to becoming muddy, uneven, etc.)
- Water accessibility and quality – drinking, cooking and ablutions (may need to be transported, may be contaminated and chlorination units needed, water boiled or bottled water required).
- Medical facilities, personnel, equipment and evacuation.
- Access roads (for instance, may become inaccessible when wet, may be inadequate for trucks, heavy vehicles).

FILMING OVERSEAS

The Department of Foreign Affairs and Trade (DFAT) offers advice regarding travelling and working overseas. When taking a production overseas it is in most instances advisable to notify the Australian consulate in the relevant country of the itinerary and contact details.

1. Cultural sensitivity is important when working in overseas countries and appropriate information must be sought and made available to all persons travelling.
2. Locale specific information regarding climatic and environmental conditions should be sought and made available to travelling persons in advance of departure.
3. Consideration must be given to access to health and medical services including:
 - a. engagement of English speaking and/or other language speaking nurse/s,
 - b. medical evacuation procedures including repatriation to Australia,
 - c. access to prescription medicines: prescriptions for known needs may need to be filled in Australia and carried if legally possible (some readily available medicines may be illegal in some countries and drug prohibitions need to be ascertained in addition to availability), prescriptions may need to be translated into other languages,
 - d. the need for inoculations prior to departing Australia eg, hepatitis, meningitis, or for preventative treatments to be undertaken prior to departure, eg, for malaria.

Consideration should be given to all persons travelling carrying identification both in English and all relevant languages that should include contact details for the production company in the event of an emergency. See also Distant/Remote Locations above.

APPENDIX B STUDIOS AND NON-STUDIOS ESCAPE AND FIRE PROCEDURES

1. The producer must liaise with the studio management and ensure that all persons are familiarised with the studio's safety, evacuation and fire emergency procedures including the procedure in the event of discovering a fire and hearing a fire alarm.
2. A general set of instructions must be displayed in conspicuous places and fire drills instituted.
3. Also see Appendix S – Generic Emergency Plans.

MEANS OF ESCAPE

1. All exit signs, including temporary signs, must be clearly displayed and, where possible, located out of reach of persons using studio exits, staircases and corridors which lead from the premises.
2. Maintained illuminated exit signs should not be obscured by sets but if this becomes unavoidable then temporary additional signs which indicate the direction of the exit must replace them and be fixed where they can be seen easily at the appropriate points of access to the perimeter gangway.
3. Suitable lighting, independent of the main electricity supply, must be provided for studios, perimeter gangways and exits.
4. A clearly marked gangway must be kept clear around the perimeter of the studio and indicated on the studio floor plan. No equipment can be used, nor any scenery or equipment stored in this area.
5. Adequate space must be allocated on the studio floor plan for the storage of equipment, properties and scenery stacks required during production. None can be left or stored in the gangway.
6. If there are storage facilities adjacent to the studios, they should be utilised rather than keeping spare equipment and stores in the studio.
7. Engineering equipment should be kept away from traffic areas and never kept where it can obstruct escape routes. Cables must be properly ramped where they cross escape routes.

FIRE ALARM PROCEDURE

The following notes are general in nature and depend for their implementation on the nature of the fire which occurs and the site in which it occurs. The 1st Assistant Director and designated fire wardens should be familiar with AS 3745 – 2002 Emergency Control Organisation and Procedures for Buildings, Structures and Work Places.

Fire procedures should embrace the following four essential steps which in most cases will be initiated concurrently:

1. Life safety – ensure the immediate safety of anyone in the immediate vicinity of the fire.
2. Call the fire brigade.
3. Evacuation – an evacuation plan should be based on the following:
 - a. Effective warning arrangements. A suitable arrangement to advise occupants of an emergency should be available.
 - b. Personnel. Appropriately trained emergency control personnel.
 - c. Assessment of all evacuation routes. A detailed assessment should be made of escape paths, and normal exits and the effect that any emergency condition might have on these, and appropriate allowances made in planning.
4. Fight the fire.
5. In the case of fire in a film studio or on a filming set/location:
 - a. The person discovering the fire should start the alarm, telephone for assistance and alert people in the immediate vicinity.
 - b. The 1st Assistant Director or designated fire warden should direct production/work to cease and ensure emergency services have been contacted.
 - c. The production lighting should be turned off under the control of the gaffer and, if safe to do so, the house lighting/emergency lighting turned on.
 - d. All persons, except those with fire duties should be cleared from the studio, gantry and ancillary areas such as make-up, wardrobe, props stores, construction area, etc.
 - e. If necessary, the gaffer should lower any suspended lighting and remove floor lighting.
 - f. Technical equipment should be secured by appropriate technical crew.
 - g. The art director or nominated persons should move any scenery or props and raise or lower backcloths as required.
 - h. If safe to do, the 1st Assistant Director/fire warden shall direct fire fighting activities.

- i. In the event of a full evacuation, the 1st Assistant Director/fire warden/fire brigade personnel shall ensure all persons have been evacuated from the site to the designated assembly area, that all personnel are accounted for and any missing persons identified.

STUDIO GRID AREAS

1. Because of the danger from falling objects, nothing may be stored on grids.
2. Unauthorised personnel are forbidden from entering grid areas.
3. Grids and gantries must have adequate guard rails.
4. Temporary scaffolds, grids and gantries must be erected, modified and maintained in accordance with relevant state and territory legislation and regulations and relevant building codes. Scaffolders and riggers must hold relevant licences.
5. Scaffolding materials must be in good condition and not warped or bent.

BATTERIES IN STUDIOS

1. Lead-acid or high capacity batteries used to supply low voltage power must be kept in stable, leak-proof containers to prevent accidental spillage.
2. Batteries must be protected from the possibility of short circuit by physical means and by using the appropriate fuses.
3. Lead-acid batteries may not be charged in the studio under any circumstances excepting when they are installed in equipment on constant charge such as camera crane batteries.

APPENDIX C SETTING UP WORKING AREAS FOR PRODUCTION DEPARTMENTS

1. The following checklists are intended to cover those occasions where various departments such as art department, construction department and costume department are set up on a one-off basis for a particular production.
2. Relevant state and territory legislation and regulations specify the requirements for safe working conditions. A producer assumes those responsibilities whenever it sets up production departments in a building or series of buildings, including temporary ones.
3. Although the results are often unique rather than mass produced, the need to establish some common safe work conditions remains the same.

BUILDING AND WORKING AREAS

In many cases, production departments are set up in rented premises which may have been recently used for other purposes or not recently used at all. The following should be considered:

1. Wiring – is there any exposed wiring? Is the wiring insulated and secured? Does any wiring run across aisles? Wiring should be protected from damage and from becoming a tripping hazard.
2. Electricity switchboard – has the switchboard been recently inspected? Will it take the load imposed by various departments in its present configuration or are modifications required?
3. Residual current devices (RCDs) – compliance with relevant regulations is mandatory.
4. Ventilation – the level of effective ventilation will vary from department to department. Ventilation must be installed where necessary and where it already exists it must be checked for correct positioning and recent maintenance.
5. Sanitation – are the washing facilities sufficient and adequate. Arrangements must be made to ensure they are kept clean and well maintained. There must always be adequate access to drinking water.
6. Lighting – as with ventilation, requirements will vary from one department to another. The lighting must be assessed in each area for suitability and remedied where necessary. Defective lights must be replaced and shade for lights provided where strain will otherwise occur.
7. Provision must be made for first aid supplies.
8. Plant and equipment safety features – refer to Section 25 Working with Industrial Plant and Equipment.

FIRE AND FIRE ESCAPES

1. The fire alarm system must be tested to ensure it is working correctly.
2. If there is no fire alarm or smoke detector system, then consideration must be given to its installation.
3. A fire evacuation plan must be developed and practiced sufficiently for everyone to know their escape routes and any responsibilities they may have.
4. There must be sufficient fire equipment of the correct type and a basic understanding by nominated crew of how it should be used.
5. All fire exits must be kept free of obstructions and clearly marked.
6. There must be a water supply capable of being used in the event of fire.

PROTECTIVE GEAR

Personal protection equipment such as goggles, safety shoes and masks must be provided on a needs basis following risk assessments for each department and workplace.

APPENDIX D SAFETY CHECKLIST - WORKING FROM ROOFS

1. Necessity for roof work

Can one or a number of the following options be used instead?

- a. Scaffolding
- b. Elevated work platform
- c. Cherrypicker
- d. Workbox
- e. Camera crane

2. Permission(s) to work from roof

- a. Has permission been obtained?
- b. What condition(s) has the owner(s) imposed ?
- c. Can the conditions be complied with?

3. Structural integrity of the roof

- a. How old is the roof?
- b. What is the roofing material on the roof?
- c. What load is the roof structure eg.. trusses, rafter, purlins, battens etc and the roofing material rated to?
- d. Does the roof have safety mesh installed which complies with AS/NZS 4389-1996?

4. Preparation for the work

Has a risk assessment been undertaken? Have the following criteria been considered as part of the assessment?

- a. Has the information about the structural integrity of the roof been adequately assessed?
- b. Is there a safe means of access and egress to the roof or will another means be necessary?
- c. If ladders are to be used will the ladders have non slip feet, be secured at the top, have the styles run at least one meter above the stepping off point, have a safe stepping off area, be non conductive if used near power lines?
- d. How high is the roof access point?
- e. For access points between 6 and 15 metres has a ladder access tower been considered?
- f. Has the underside of the roof been inspected to assess the serviceability of safety mesh?
- g. How much additional equipment needs to be placed on the roof besides the people and what is the total load?
- h. How will any additional equipment be raised to the roof and will the means of raising the equipment create additional loads on the roof?
- i. Have the people who are to work on the roof been adequately trained in roof work?
- j. Are fall arresters required and can they be secured to adequate anchor points?
- k. Is there a lot of glare on the roof?
- l. Is there a need to erect temporary hand railing before the work can commence?
- m. What type of weather conditions will there be eg. windy, cold, wet, etc?
- n. How close to the perimeter of the roof will the work need to be undertaken?
- o. What means can be used on the roof to better distribute the loads to be placed on the roof eg.. roof ladders, walkways, crawl boards, planks etc?
- p. Will the people working on the roof or the roof material itself likely to be adversely affected by any special effects in the vicinity?
- q. Does remedial work need to be carried out prior to commencing work?
- r. Have the people who need to work on the roof been provided with the necessary personal protective equipment eg. glasses, hats, footwear etc?
- s. Do any of the people who are required to work from the roof suffer from height related sickness eg. vertigo?
- t. Has sufficient provision been made to deal with an emergency eg. a fall or a person unable to get back down?

APPENDIX E SAFETY CHECKLIST – WORKING IN DERELICT OR ABANDONED STRUCTURES

Written permission to use the structure obtained from the owner(s).

Any special conditions under which the structure is to be loaned, hired, leased or rented documented.

Initial inspection undertaken and major hazards identified (eg floor/support structure, trenches, asbestos, etc) and removed/rendered safe.

All potential sources (permanent) of power, water, gas, steam, oil, etc identified and safe isolations made as required;

Any temporary services required during filming are appropriate and comply with the requirements of local authorities and/or other relevant Australian Standards eg.. AS/NZS 4249 Electrical Safety practices – Film, Video and Television Sites;

Evidence to indicate the presence of:

- rodents, snakes, wasps, hornets, etc;
- poisonous vegetation eg. nettles, poison ivy, etc;
- asbestos or other synthetic mineral fibres, lagging, etc;
- toxic materials that may have been dumped;
- soil fungi;
- feral animals;
- nesting birds;
- lice, fleas;
- stagnant water;
- partially suspended materials;
- subsidence.

APPENDIX F SAFETY CHECKLIST – FIRE PREVENTION

GENERAL

- No smoking signs prominently displayed.
 - Designated smoking areas identified, if appropriate.
 - Dangerous goods stored correctly.
 - Material Safety Data Sheets available.
 - Fire Emergency procedures established.
 - Emergency telephone number prominently displayed.
 - Fire Emergency coordinator nominated.
1. Non-essential combustible equipment and material removed from workplace.
 2. Fire risk inspections undertaken regularly in all workplaces and whenever substantial changes are made to the workplace.

FIRE

1. Available fire extinguishers appropriate for the most likely fire risk.
2. All fire extinguishers properly located, mounted and labelled correctly.
3. All fire extinguishers properly serviced and maintained.
4. All fire hydrants and hose reels (where applicable) properly serviced and maintained.
5. Overhead fire sprinkler/thermal detector heads clear of obstructions eg.. stores, high sets etc.
6. Fire doors serviceable and free from damage/obstruction.

EGRESS

1. Exits and corridors clear of obstructions.
2. Exit signs clearly visible with and without sets installed.
3. Exit doors unlocked.
4. Temporary cable and wiring adequately secured so as not to present a trip hazard.

FLAMMABLE LIQUIDS

1. *Only store the minimum amounts of material required for the job.*
2. Only approved cabinets/containers used for storage.
3. All containers correctly and legibly labelled.
4. Storage facility (if applicable) licensed with appropriate authority if required.
5. Appropriate warning signs displayed on storage facility.
6. Appropriate fire extinguisher available within 3 metres of storage facility.
7. Only the appropriate class of good is stored in the facility.

COMPRESSED GASES

1. All relevant gas cylinders stored/secured correctly.
2. Empty gas cylinders stored separately from empty cylinders.
3. Hazard management information available regarding material stored in cylinders.
4. Appropriate fire extinguisher available within 3 metres of storage facility.
5. Emergency management information clearly displayed on the facility.
6. Suppliers contact number clearly displayed.

ELECTRICAL

1. Portable electrical power tools serviceable, tested and tagged in accordance with relevant regulations.
2. Temporary electrical installations meet the requirements of AS/NZS 4249:1994.
3. RCDs comply with AS 3190 and installed to protect all socket outlets, final sub circuits and individual circuits.
4. No double adaptors, 3 pin plug adaptors or similar fitting being used.
5. All portable distribution boards are of a robust non-corrosive design.
6. All socket outlets and associated control gear protected against mechanical damage.
7. All portable outlet devices comply with AS 3100, constructed of an impact resistant and durable material.
8. All electrical equipment designed to enable isolation from the power source prior to working on the equipment.
9. Provision is made for electrical work to be undertaken by a suitably qualified person.

MACHINERY

1. All electrical connectors in sound order.
2. Emergency stop switches clearly identified and readily accessible.
3. Strategy developed to limit any waste material from machinery becoming a fire hazard eg.. dust, shavings etc.
4. All employees have the necessary training to operate the machinery without overloading.

GENERATORS

1. Earthing.
2. Storage of fuel.
3. Baffling/insulation/noise suppression.

APPENDIX G SAFETY CHECKLIST – HAZARDOUS SUBSTANCES MANAGEMENT

1. Is it necessary to use a hazardous substance for this job?
2. If yes, what is the minimum necessary to undertake the work?
3. Has a hazardous substance register been set up list the substances used in the workplace?
4. Has an assessment been undertaken to identify the risks that may be associated with the storage, handling and disposal of the substance?
5. Has a strategy been developed to obtain, store, handle and dispose of the chemical in a manner that presents the minimum risk of injury or damage to persons and /or the environment?
6. Have the strategy and the identified risk minimisation measures been documented?
7. Have the risk reduction measures identified in the strategy been fully implemented and determined to be effective?
8. Is it necessary to introduce workplace hygiene measures eg.. biological and/or environment monitoring as part of ensuring that exposure to the substance is kept to the lowest possible levels?
9. If monitoring is required have proper measures been taken to ensure that it is carried out by a competent person?
10. Will regular health checks be required for the end users?
11. If regular health checks are required have the checks been scheduled and has a competent person been identified to carry them out?
12. Has a training program been developed and introduced to ensure that end users of the substance have the necessary skills to use the substance with a minimum risk to themselves or others?
13. Are all substances stored in accordance with the relevant regulations and codes of practice?
14. Are all containers of hazardous substances properly labelled?
15. Have adequate emergency management procedures been developed to deal with unintentional exposures, spills etc?
16. Has a MSDS been obtained from the manufacturer or supplier of the substance and displayed at the point of use?
17. Are the first aid measures available in the workplace consistent with the first aid information provided in the MSDS?
18. Has the nearest medical emergency facility been identified?

APPENDIX H SAFETY CHECKLIST – FOR THE USE OF EXPLOSIVE POWERED TOOLS (EPT)

DO NOT:

1. use an EPT unless it is fitted with an effective muzzle guard, shield or fixture according to the maker's recommendations for any type of material being fixed;
2. load the EPT until ready for immediate use;
3. leave an EPT unattended or put away, or carry to another place or transport any tool which is charged. remove the charge and projectile – check to make sure the tool is unloaded before altering, adjusting, removing or changing muzzle, safety guards or barrel extensions;
4. point the tool, loaded or unloaded, towards yourself or towards other persons, no matter how far away they are.
5. use an EPT in a congested area – remove casual onlookers or bystanders from the immediate vicinity.
6. use the EPT unless warning signs are displayed near the place where the tool is being used.
7. use a EPT without the operator and any assistant wearing approved safety goggles complying with AS 1337 Industrial Eye Protectors – if there are insufficient pairs of safety goggles, ask for them and do not use the tool or work near the tool assisting until they are provided;
8. load an EPT before checking that the barrel is free from obstructions.
9. fire the EPT at an angle - make sure the tool is perpendicular to the work surface.
10. use an EPT in any places where flammable gas or dust or vapour is or may be present, or in compressed air, or in any place where the explosive charge might be exploded or rendered dangerous by heat.
11. attempt to drive a projectile into concrete and mild structural steel unless a check has been made to ensure it is of sufficient thickness to prevent the projectile passing completely through.
12. use EPT charges in other firearms; this is very dangerous; keep the “explosive” container locked at all times except when cartridges are being placed therein or removed there from;
13. leave charges lying around – keep them in the appropriate container;
14. mix charges with other projectiles or materials.

NEVER:

1. use the high charges first;
2. use charges in other fire arms;
3. leave a loaded and/or charged EPT unattended;
4. stow a loaded and/or charged EPT;
5. attempt to position an EPT by “eye” over or in line with pre-drilled holes;
6. fire an EPT on a surface that is covered in loose particles;
7. use an EPT on a fastener already in situ to push the fastener in deeper;
8. point an EPT at anyone loaded or unloaded;
9. fire into a finished or rendered wall without locating mortar joints first;
10. leave failed charges lying around;
11. use or try to repair a defective EPT;
12. allow an unauthorised person to repair an EPT.

THE EPT OPERATOR MUST ALWAYS:

1. inspect the EPT immediately prior to use to ensure that it is serviceable;
2. clean and lubricate the EPT after use each day;
3. dismantle, inspect, lubricate and check the EPT for defects at least once a week;
4. maintain the EPT in safe working order.

REMEMBER:

1. only use explosive power tools that have been designed according to AS/NZS 1873:1994 – Power-Actuated (PA) Hand Held Fastening Tools;
2. only use explosive power tools that display the manufacturer's name, the serial number, the model number and a misfire warning and instructions for safe operation;
3. in the case of misfire or jamming keep the tool square to and in contact with the surface for at least 10 seconds before attempting to try a gain with the same charge.

APPENDIX I – MANUAL HANDLING HAZARD IDENTIFICATION CHECK LIST

1. Actions and Movements

- a. Does the task involve bending and twisting?
- b. Are loads shared unevenly between the hands or lifted with one hand?
- c. Is there frequent or prolonged bending down where the hands pass below mid-thigh height?
- d. Is there frequent or prolonged reaching above shoulder height?
- e. Is there frequent or prolonged twisting of the back?
- f. Is there frequent or prolonged twisting or sideways bending?
- g. Are awkward postures assumed frequently or over prolonged period, ie. postures that are not forward facing and upright?

2. Workplace and Workstation Layout

- a. Does the work layout make it hard to reach things involved in the task?
- b. Are work heights and/or seat heights not suitable?
- c. Are objects in the way of legs or feet?
- d. Are mechanical handling aids easily accessible?

3. Duration and Frequency

- a. Do employees perform manual handling frequently or for long periods?
- b. Are tasks requiring manual handling performed at high speed?

4. Location of Loads and Distances Moved

- a. Are objects moved or carried over long distances?
- b. Are objects double handled unnecessarily?

5. Weights and Forces

- a. Is the weight of the object:
 - i. more than 4.5kg and handled from a seated position?
 - ii. more than 16kg and handled in a working posture other than seated?
 - iii. more than 55kg?

Note: Lower loads than those listed above may be hazardous when combined with other risk categories.

- b. Is it necessary to pull, push or slide objects that are difficult to move?
- c. Are large forces applied while seated?

6. Characteristics of Loads and Equipment

- a. Are objects being handled large or have an awkward shape?
- b. Is the object hard to grasp or hold?
- c. Are loads often wet, greasy or dirty and cannot be held close to the body?
- d. Does the object block the person's view when carried or handled?
- e. Are loads unstable or have contents that may move suddenly?
- f. Are large heavy objects placed or stored.....?

7. Work Organisation

- a. Are there busy periods when employees have difficulty keeping up with demands?
- b. Are personnel for team lifting always available when required?
- c. Is the equipment used for manual handling regularly maintained?
- d. Is there sufficient manual handling equipment such as trolleys?
- e. Can the order in which the work is done be improved? For instance, heavy tiring tasks can be alternated with easier tasks.

8. Working Conditions – Environment

- a. Is the task performed in a confined space?
- b. Is the lighting adequate for safe manual handling?
- c. Is the climate particularly hot or cold?
- d. Are the floor working surfaces cluttered, uneven, slippery or otherwise unsafe?
- e. Are the different floor levels in the work area?

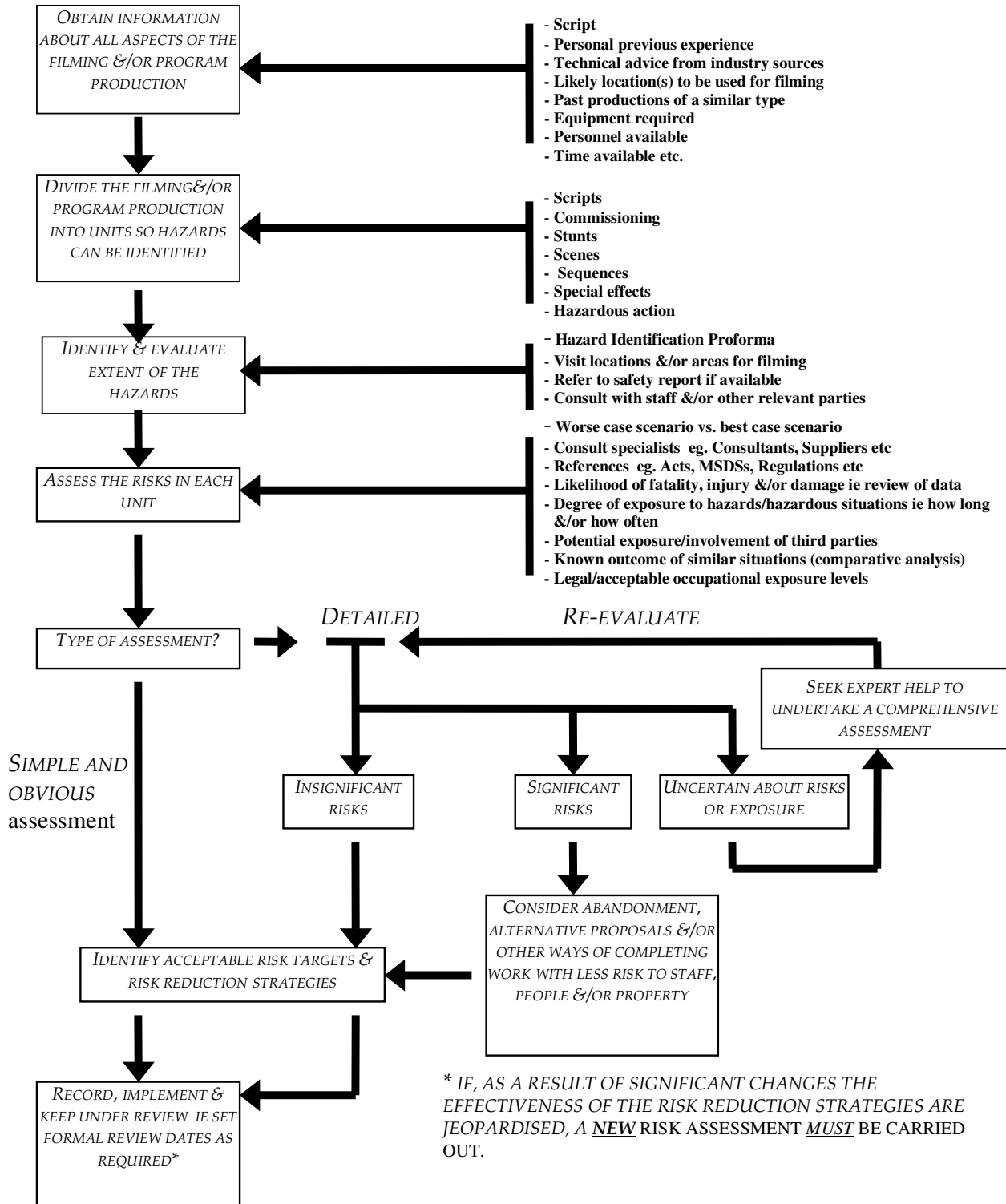
9. Personal Factors

- a. Age
Are workers under the age of 18 performing strenuous or repetitive tasks or lifting objects weighing more than 16kg?
- b. Skills and experience
Have employees received appropriate training in manual handling?
Are employees properly instructed in work practices and procedures?
Do the demands of the task exceed the physical capacity of the employee?
- c. Clothing
Does clothing restrict movements or otherwise hinder manual handling?

- Is protective equipment or clothing suitable?
- d. Special needs
Are there employees who may be at higher risk due to, for instance, pregnancy, current medical conditions or recent illness?

APPENDIX J RISK MANAGEMENT MODEL

Filming & Program Production



APPENDIX L REGULATORY DOCUMENTS

Note: Legislation and regulations are from time to time amended.

Commonwealth

Occupational Health & Safety (Commonwealth Employment) Act 1991
Occupational Health & Safety (Commonwealth Employment) (National Standards) Regulation

New South Wales

Occupational Health & Safety Act 2000
Occupational Health & Safety Regulation 2001
Dangerous Goods Act 1975 and Dangerous Goods (General) Regulation 1999
Roads Act 1993
Road and Rail Transport (Dangerous Goods) Act 1997
Road Transport (Safety and Traffic Management) (Road Rules) Regulation 1999
Food Act 1989
Marine Safety Act 1998
Weapons Prohibition Act 1998
Marine Safety Act 1998

Victoria

Occupational Health & Safety Act 1985
Occupational Health & Safety Regulations
Transport Act 1983
Building Act 1993 (Amendment Acts 1996, 1997, 1998, 2001)
Dangerous Goods Regulations
Firearms Act 1996
Food Act 1984 (Amendment Acts 1997, 2001)
Firearms & Dangerous Weapons Legislation
Road Safety (Traffic) Regulations 1998
Road Safety (Drivers) Regulations 1999
VicRoads' Worksite Traffic Management (Roadworks Signing) Code of Practice
Marine Act 1985
Code of Practice for the Welfare of Film Animals October 2001 AG0973 Department of Natural Resources and Environment

Queensland

Workplace Health & Safety Act 1995 & Regulations
Explosives Act 1999 & Regulations
Child Protection Act 1999
Animal Care and Protection Act 2001
Food Act 1981
Standard Building Regulation 1993
Transport Operations Acts (various)
Transport Operations (Road Use Management – Fatigue Management) Regulation 1998
Transport (Road Use Management – Dangerous Goods) Regulation 1998
Weapons Regulation 1996

South Australia

Occupational Health & Safety Act 1986 & Regulations 1995
Commercial Motor Vehicles (Hours of Driving) Act 1973 and Regulations 1998
Dangerous Substances Act 1979 & Regulations 1978, 1998
Explosives Act 1936 & Regulations 1996
Harbours & Navigation Act 1993 & Regulations 1994, 1997
Motor Vehicle Act 1959 and Motor Vehicles and Motor Traffic Regulations
Firearms Act 1977 and Regulations

Western Australia

Occupational Safety & Health Act 1994 & Regulations 1996
Explosive & Dangerous Goods Act 1961 & Regulations
Marine and Harbours Act 1981
Road Traffic Act 1974 and Regulations
Firearms Act 1973
Weapons Act 1999

Tasmania

Workplace Health & Safety Act 1995 & Regulations 1995

Animal Welfare Act 1993
Dangerous Goods Act & Regulations
Food Act 1998
Maritime Legislation???
Traffic Act 1925
Firearms Act 1996

Northern Territory

Work Health Act & Regulations
Dangerous Goods Act & Regulations
Motor Traffic Legislation
Firearms Legislation
Maritime Legislation

Worksafe Australia - Codes of Practice

National Code of Practice for Manual Handling
National Code of Practice for the Control of Hazardous Substances
National Code of Practice for the Protection of Workers from the Effects of Ultraviolet Radiation in Sunlight
National Standard for Plant
National Code of Practice for the Certification of Users & Operators of Industrial Equipment

Australia Standards/New Zealand Standards

AS 172.3 (1996) Manual of Uniform Traffic Control Devices Part 3 – Traffic Control Devices for Works on Roads
AS/NZS 1337 Eye Protection: Safety glasses and non-fogging goggles
AS 1674.1 – 1997 Safety In Welding and Allied Processes Part 1 Fire Precautions
AS/NZS 1715
AS/NZS 1716 Respiratory Protective Devices
AS 2030.1 Part 1 - Cylinders for Compressed Gases other than Acetylene
AS/NZS 2161 Occupational Protective Gloves
AS 2211 Laser Safety
AS 2397 Safe Use of Lasers in the Construction Industry
AS 2772.1 Radio Frequency Radiation Part 1: Maximum Exposure Levels-100kHz to 300
AS 2865 Safe Working in a Confined Space
AS 1348.2 Traffic Management
AS 1680.1 Interior Lighting - General Principles & Recommendations
AS 1680.2 Interior Lighting - Recommendations for Specific Tasks & Interiors
AS 3000 SAA Wiring Rules
AS 3590.1 Visual Display Units
AS 3590.2 Workstation Furniture
AS 3590.3 Input Devices
AS/NZS 3760 In service Inspection and Testing of Electrical Equipment
AS 1657 Fixed Platforms, Walkways and Ladders - Design, Construction & Installation
AS 1851 Maintenance of Fire Protection Equipment
AS 2626 Industrial Safety Belts & Harnesses - Selection, Use & Maintenance
AS 4626 Industrial Fall Arrest Devices - Selection, Use & Maintenance
AS 1067.1 Sunglasses - Safety Requirements
AS 1067.2 Sunglasses - Performance Requirements
AS 1800 The Selection Care & Use of Industrial Safety Helmets
AS/NZS 4249 Electrical safety practices-Film, video and television sites
AS/NZS 3760 In-service Inspection & Testing of Electrical Equipment
AS/NZS 4576 Guidelines for Scaffolding
AS/NZS 4804 OH&S Management Systems
AS/NZS 4360 Risk Management
AS/NZS 1336 Recommended Practices for Occupational Eye Protection
AS/NZS 2210 Occupational Protective Footwear
AS/NZS 1715 Selection, Use & Maintenance of Respiratory Protective Devices
AS/NZS 1269 Occupational Noise Management
AS/NZS 2293.3 Emergency Evacuation Lighting for Buildings - Emergency Luminaires and Exit Signs

Comcare Australia

Comcare Australia Fact Sheets October 1994 onwards
Comcare Australia Summaries of Codes Approved Under s70 of the OH&S (CE) Act 1991

Comcare Australia Safety Wise Self Assessing OH&S in the Workplace
Comcare Australia All About Workers Compensation - A Guide for Employers
Comcare Australia Office Wise - A Guide to OH&S in the Office
Comcare Australia OHS Risk Management: A Reference Guide for Supervisors & Managers

APPENDIX M SAFETY INSPECTION CHECKLIST - OFFICE ENVIRONMENTS

Area Inspected: _____ **Date:** _____ **Inspected by:** _____

Item	OK	Not OK	Repair/ Replace	For action, refer to:				Insert Action	By whom	Date completed
				Line manager	Staff member	OHS Rep / Committee	Building mg'tment			
Floors clear of slip hazards										
Emergency exits not obstructed										
Emergency evacuation plan in place										
Emergency exits clearly marked										
Office materials stored correctly										
Floors clear of rubbish eg. newspapers										
Correct fire extinguishers located on floor and not obstructed										
Emergency fire fighting equipment serviceable										
Lighting levels adequate for tasks performed										
Air temperature & air flow adequate										
Hazardous substances stored correctly										
All hazardous substances identified										
MSDSs available for information										
Staff aware of safe manual handling procedures										
Ergonomic chairs available & serviceable										
Workstations meet ergonomic guidelines										
Ergonomic chairs are adjusted correctly by users										
Staff aware of high risk manual handling tasks										
Manual handling risk assessment carried out										
Adequate space for manual handling										
Manual handling training provided										
Manual handling equipment required/serviceable										
Insulation of electrical leads in sound condition										
Electrical equipment in serviceable condition										
Electrical distribution boards have overload protection										
High reflection obvious on VDT screens										
Document holders serviceable										
VDT monitor adjustable										
Desk space available for frequently used equipment										
Staff aware of emergency evacuation procedures										
Filing cabinets/bookshelves serviceable or overloaded										
Staff aware of accident/injury reporting procedure										

APPENDIX N INDICATORS OF A CONTRACTUAL RELATIONSHIP

The “multiple indicia test” is a test which is used to ascertain whether a person is an employee or contractor. The test recognises that there is no single criterion that distinguishes an employee from a contractor. Therefore a range of factors or “indicia” must be taken into consideration before a distinction can be made. This approach was confirmed by the High Court of Australia in *Stevens & Gray vs. Brodribb Sawmilling Company Pty Ltd.*

Although there are no hard and fast rules as to the nature of these indicia, the following pointers (not exhaustive) may be a good indication that a worker is a contractor:

- the contract is for a given result and the person responsible for payment may only terminate the contract without penalty when it can be demonstrated that the worker has not fulfilled the terms of the contract;
- the worker exercises a high degree of discretion and flexibility as to how the work will be performed even if the contract is precise in terms of resources and materials to be used and methods of performance;
- the worker bears the risk of any commercial loss or profit and any liability for poor workmanship;
- the worker sets their own hours of work;
- the contract does not include leave provisions;
- payment is based upon performance of the contract;
- the worker incurs their own expenses;
- the worker has unlimited powers of delegation.

Note: Despite the provisions of a contractual relationship, in some jurisdictions under OH&S legislation, a contractor and its employees may be deemed to be the employees of the principal employer.

Indicators of an Employment Relationship

The following pointers (not exhaustive) may be a good indication that a worker is employed under a contract of service rather than a contract for service:

- the person responsible for paying the worker usually has the right to direct the manner of performance of the work;
- any commercial risks associated with the work are borne by the person responsible for paying the worker;
- the worker usually receives a range of employment benefits which are usually prescribed in an industrial award or agreement;
- remuneration for the work performed by the worker is in the form of salary or wages;
- the person responsible for paying the worker provides any equipment and materials for carrying out the work;
- the worker has no inherent right to delegate their tasks to another but may have the power to delegate some duties to another employee.

APPENDIX O GENERIC OH&S WORK METHOD STATEMENT

DATE: _____

PROJECT DESCRIPTION:

ASSESSMENT CONDUCTED BY:

DATE ISSUED **DATE REVIEW REQUIRED**.....

Sequence of Job Steps	Potential Hazards	Protective Measures or Controls

CONFIRMATION STATEMENT

I have read this Work Method Statement and understand the safety requirements of the tasks to be performed.

NAME **DATE:**

SIGNATURE

APPENDIX P GENERIC OH&S TENDER & SELECTION DOCUMENT

Request for OH & S Information - Tender and Selection of Major Contractors

1) Please provide the following details of your company:

Name: _____
Number of Employees: _____
ACN: _____
Name of Directors: _____

2) Please provide the names and job titles of those people with the ultimate responsibility for OH&S:

Name: _____
Job Title: _____
Contact Phone Number: _____

3) Please provide copies of insurance details for:

- Workers Compensation _____
- Public Liability _____
- Motor Vehicle _____

4) OH & S Performance Record

Has your company ever been prosecuted or fined under OH & S legislation or related legislation in the last three years?
YES/NO If yes, give details: _____

5) OH & S Policy and Management

Please attach a copy of your company's most recent OH&S policy (including general statement of intent, organisation for OH&S and working agreements).

6) Safe Systems of Work

- Please enclose a copy of any OH&S manuals, statements of safe working methods relevant to this contract.
- Does your company have any documented permit to work systems? YES/NO If yes, please attach.
- Does your company anticipate using subcontractors on this contract? YES/NO If yes, give details of the procedures you will use to ensure that subcontractors are competent and managed correctly.
- Enclose a copy of any risk assessments undertaken to this contract. Include general risk assessments, safety data sheets and assessments for any substances your company proposes to use (if applicable) and any other relevant assessments (eg manual handling, noise).
- Does your company have documented procedures for storing and handling hazardous substances? YES/NO If yes, give details.
- Will your company provide required work equipment and personal protective equipment for the job? YES/NO If yes, give details. If no, attach details setting out what arrangements will be made to ensure the safety of work.
- Does your company have written procedures for identifying, assessing and controlling risks associated with manual handling? YES/NO If yes, attach details.

7) OH&S Inspections

How does your company ensure that plant, equipment and vehicles are kept in safe working condition, for instance by documented regular inspections, preventative maintenance routines, etc. Please attach details.

APPENDIX Q MEDICAL QUESTIONNAIRE

Please fill in this questionnaire, and return it to the Production Company. All information will be treated confidentially and cannot be used to discriminate against any person in any way. Access to, storage and archiving of this information shall be in accordance with all relevant legislative requirements. The information requested is designed to ensure that appropriate regard is given to the health and well-being of every person in the working environment of this production/event.

NAME: _____ AGE: _____
ADDRESS: _____ PHONE NO: (____) _____

MOBILE NO: _____

DATE OF BIRTH: _____
NEXT OF KIN: _____ PHONE NO: (____) _____
ADDRESS: _____

DOCTOR: _____ PHONE NO: (____) _____
ADDRESS: _____

ANY ALLERGIES? YES / NO
If yes, please detail any allergies to drugs including drugs such as penicillin, sedatives, antihistamines, aspirin, etc.

Please detail any allergies to other substances including food allergies, allergies to stings (eg, bees, wasps), animals (eg, cats) and environmental allergies (eg, dust mites, pollens, grass seeds). Please note symptoms and preferred method of treatment.

Past medications: _____

ANY PHYSICAL DISABILITIES OR PRE-EXISTING MEDICAL CONDITIONS? YES / NO

If yes, please provide details including treatment required in the event of an incident (eg, diabetes, asthma, back problems, epilepsy, history of heart problems, pregnancy, vertigo, sea sickness, etc)

EYESIGHT/HEARING:
Please provide details if you have impaired eyesight and/or hearing:

Do you wear glasses/contact lenses/hearing aid? YES / NO
Do you have specific eyesight problems (eg right blindness, colour blindness, history of recurrent conjunctivitis)? YES / NO
NO

SPECIAL DIETARY REQUIREMENTS? Eg, vegetarian, no milk products or other.

HAVE YOU HAD A TETANUS INJECTION IN THE LAST FIVE YEARS? YES / NO
ARE YOU ON ANY REGULAR MEDICATION AT THIS TIME? YES / NO
If yes, please detail:

APPENDIX R – PERMIT TO WORK

CONTRACTOR SAFETY INFORMATION – PERMIT TO WORK

1. TO BE COMPLETED BY CONTRACT PERSON

Permit Valid From Time: _____ Date: _____ To Time: _____ Date: _____

Name: _____

Phone Contacts (including mobile): _____

Name of Company: _____

Name of Company Sub Contracted to: _____

Production Company Contact Name: _____

Location of Work: _____

2. WILL THE WORK INVOLVE ANY OF THE FOLLOWING?

- New work – Current work method statement required.
- Electrical isolation – lock out/tag required.
- Services isolation (thermal and smoke detection) – services impairment permit required.
- Entering a confined space – risk assessment and permit required.
- Hot work (grinding, welding, thermal or oxygen cutting or heating and other related heat producing or spark producing operations) – hot work permit required.
- Working at heights or on roofs – fall prevention equipment required.
- Hazardous substances and/or dangerous goods – completion of hazardous substance and dangerous goods register required and MSDSs must be available at all times.
- Use of plant and equipment – certificate of competency to be available where relevant.
- Use of electrical leads and power tools – must be tested and tagged every six months.

You are required to familiarise yourself with the [Production Company] Contractor Safety Guidelines and relevant work method statements prior to the commencement of work. A copy of these documents can be obtained from _____. Please note that these guidelines are a mandatory production company requirement and must be followed at all times. Failure to comply with these guidelines may result in a termination of the contract.

3. ACKNOWLEDGEMENT

I have read and understand the relevant safety requirements and work method statement and agree to follow these guidelines whilst conducting work for [production company]. This permit must be readily available at all times when on site.

Name: _____ Signature: _____ Date: _____

4. PRODUCTION COMPANY USE ONLY – ISSUED AND RETURNED CHECK LIST

- Work method statement/s issued.
- Relevant department/supervisor notified: Name: _____
- Hot work permit issued: No.:
- Confined space risk assessment sighted.
- Confined space permit issued: No.:
- Drivers licence sighted.
- Certificate/s of competency sighted.
- Services impairment permit issued.

Name: _____ Signature: _____ Date: _____

APPENDIX S – GENERIC EMERGENCY PLANS

DRAFT EXAMPLE EMERGENCY MANAGEMENT PLAN

EMERGENCY RESPONSE PROCEDURES MANUAL

Contents

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- Role of Emergency Control Organisation (ECO)
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- B – Regular Hazard Checklist
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STANDARD EMERGENCY RESPONSE PROCEDURES FOR ALL OCCUPANTS

- Move persons from danger.
- If achievable, activate the “break glass” alarm.
- Notify Chief Warden/Ring Emergency Services 000.
- After hours, contact Emergency Services immediately on 000.
- If competent in use of fire extinguishers and safe to do so, attack fire.
- If fire cannot be controlled, inform others in the vicinity and evacuate premises.
- On being instructed to evacuate:
 1. Assemble as directed by your Warden.
 2. Evacuate under directions of Wardens.
 3. Leave by fire exits/fire stairs.
 4. Proceed to assembly area until emergency is over.

DO NOT USE LIFTS

Emergency Control Organisation for XYZ Production

Chief Warden _____	Phone No _____
Deputy Chief Warden _____	Phone No _____
Deputy Chief Warden _____	Phone No _____
Communications Officer _____	Phone No _____
Area Warden _____	Phone No _____
Warden _____	Phone No _____
Warden _____	Phone No _____
Warden _____	Phone No _____

Emergency Phone Numbers

Fire Brigade/Police/Ambulance	000
Electricity	131 388
Gas	131 909
Translating and Interpreting Service	131 450
Poisons Information Centre	131 126
Water and Sewerage	131 090

Definitions

Assembly Area Predetermined external area which is used when a building is evacuated. This area is established to check that persons are accounted for, to brief persons evacuated on future action and to prevent re-entry.

Assembly Point A predetermined point in each area where crew/cast/members of the public assemble prior to being ordered to evacuate under the control of the Area Warden/Wardens.

Emergency Any event which arises which may adversely affect the safety of persons in a building or the community generally and requires immediate response by the occupants.

Emergency Control Organisation (ECO) A structured organisation drawn from the occupants of the building to organise and supervise the safe movement of all occupants of a building in an emergency.

Emergency Control Point (ECP) A dedicated point located in the building from where all emergency situations are controlled by the Area Warden.

Warden Control Point (WCP) A designated point in each area where Wardens meet to coordinate their actions during an emergency.

Part 1 – General Information

1.1 Foreword

These procedures have been prepared to assist productions in dealing with an emergency. When following these procedures, the first priority is the safety of crew and cast members. If safe to do so, ensure protection of sets, property and other assets.

1.2 Introduction

This draft Emergency Response Procedures Manual has been designed to provide guidance in addressing a variety of emergency situations.

These procedures must be modified to suit the needs of the production.

1.3 Establishment of an Emergency Control Organisation

In the event of an emergency situation, all occupants may have to be evacuated from a building, stage, workshop, etc. To facilitate this, an Emergency Control Organisation (ECO), consisting of Wardens drawn from crew, needs to be established in accordance with the Australian Standard AS3745-2002 Emergency Control Organisation and Procedures for Buildings.

Wardens should be aware that their primary duty is not to combat emergencies, but to ensure, as far as practicable, the safety of crew, cast, extras and members of the public and their orderly evacuation from a hazardous area.

1.4 Authority of Wardens

All directions given by ECO Wardens in respect of evacuating a building need to be obeyed in full. If any such directions given by Wardens are inconsistent with those of other production crew, the direction of the ECO Warden shall prevail.

1.5 Warden Indemnity

ECO Wardens shall not be held legally liable (including liability for negligence) as a result of any act or omission on their part during the course of an emergency evacuation (or practice emergency evacuation) of the buildings, when they act in good faith and in the course of their duties.

1.6 Directions

1.6.1 Directions to Wardens

Wardens are to ensure that they are familiar with these procedures, and make them available to all crew in their areas of responsibility. It is also the Warden's/production's responsibility to ensure all crew are made aware of the contents of this Manual.

1.6.2 Directions to Crew

Crew must be aware of the location of fire appliances, method of notification of an emergency, and exits within or near their area. They must also familiarise themselves with the route to and location of the Assembly Areas outside their building.

The effectiveness of these procedures depends on the willingness of crew at all levels to make themselves aware of the immediate actions they must take in an emergency so that they are capable of action promptly, calmly and efficiently.

1.7 Use of Lifts in an Emergency

Only the Officer-in-Charge of the Emergency Services can make the decision to use the lifts in an emergency.

1.8 Removal of Vehicles in an Emergency

The Chief Warden should prevent the movement of vehicles within the site during an emergency. On arrival, the Officer-in-Charge of the Emergency Services will determine if it is safe to allow people to remove vehicles from the property.

1.9 Maintaining the Effectiveness of the Emergency Control Organisation

A determined effort is required by all crew within a building, particularly by Department Heads, to ensure the following is maintained:

- Suitable persons are nominated to carry out the duties of Wardens in a building. All buildings should be represented by trained Wardens.
- A list of Wardens containing the name, telephone number and location of all Wardens in a building. Copies of the list of Wardens should be maintained by the Chief Warden and Deputy Chief Warden/s.
- The Emergency Control Organisation should meet regularly to reassess the changing nature of sets, etc.
- At least one full scale evacuation should be conducted. All occupants are encouraged to participate to ensure they are familiar with the emergency response procedures.

Part 2 – Emergency Control Organisation

2.1 Role of the Emergency Control Organisation (ECO)

The role of the Emergency Control Organisation is to facilitate the safe and orderly evacuation of all crew, cast, extras and members of the public in an emergency situation. The ECO is composed of crew from the production and may form a smaller unit of an overall ECO. For example, if shooting within a studio complex, the production ECO would be part of a larger site wide ECO.

The composition of the ECO is:

- Chief Warden
- Area Wardens
- Wardens

The primary functions of the ECO in an emergency are to:

- Ensure the safe and orderly evacuation of all crew and cast from a building, stage, workshop, etc. to a safe area called the Assembly Area. Casual crew, extras, visitors, members of the general public and mobility or sensory impaired persons may require special assistance during an emergency.
- Assist the Emergency Services upon attendance, and
- Operate the first attack fire fighting equipment, if safe to do so.

If filming within a studio/building complex, the production should form its own ECO to be integrated into the larger site wide ECO. Check with studio/facility management to see what the production is required to do.

2.2 Chief Warden

- Upon receipt of an alarm, or being made aware of an emergency, the Chief Warden will determine the nature of the emergency, what emergency procedures are required to be implemented and activate the ECO.
- The Chief Warden will assume control of the building or area in alarm from the time emergency action is required until the arrival of the Fire Brigade or other Emergency Services.
- The Chief Warden and the Deputy Chief Wardens' day to day duties should not require frequent absences from the building/workshop/stage. Where possible, their normal working area should be located close to the location.
- The Chief Warden will maintain a current roll of all ECO personnel, including their physical location and telephone numbers.
- The Chief Warden should also maintain a roll of any mobility impaired persons (permanent and temporary) who work on the site.

2.2.1 Duties of Chief Warden in the Event of Fire or Other Emergency

- On hearing the alert alarm or on being made aware of an emergency:
- Proceed to the Emergency Control Point.
- Assess and take control of the situation.
- Ensure the Emergency Services have been contacted.
- Obtain report from area where alarm originated using telephones or runners.
- Evaluation situation.
- Advise Area Wardens of the present situation and request they stand by.
- If an evacuation of part or the whole building is required, give instructions to the relevant Area Wardens to sound the evacuation alarm (whistle, bell, alarm).
- Ensure access to the building is restricted. This includes motor vehicles and visitors.
- Ensure lifts are called to the ground floor and unable to be used.
- If communication cannot be established and an evacuation is necessary, sound the evacuation alarm.
- Standing Rules:
 - Evacuate the affected area, then additional areas if further evacuation is required.
 - Keep area Wardens informed of the situation.
 - Receive reports from Area Wardens.
 - Always given an all-clear announcement to occupants when directed.
- If a false alarm, inform all Area Wardens to stand down.
- When the attending Emergency Services arrive, advise the Officer in Charge of the following:
 - Location of alarm.
 - Present situation.
 - Any other relevant information.
- Obtain the all-clear only from the Officer in Charge attending Emergency Services.
- Send Deputy Chief Wardens to the Assembly Area to arrange the return of the crew.
- Stand-down the ECO when advised of the all-clear.
- Reset (or arrange for the resetting) of any plant or equipment shut down due to the alarm.
- Record details in log book.

The Senior Officer of the Fire Brigade or Police may take control of the situation upon arrival. If it is a fire situation, the Senior Fire Brigade Officer will take over the duties of Chief Warden. The Chief Warden should remain at the Emergency Control Point to assist if required.

2.3 Deputy Chief Warden

The Deputy Chief Warden assists the Chief Warden and will assume the Chief Warden's duties whenever the Chief Warden is absent. The duties of Deputy Chief Warden could include acting as Communications Officer.

2.3.1 Duties of Deputy Chief Warden in the Event of Fire or Other Emergency

On hearing the alert alarm or on being made aware of the emergency:

- Proceed to the Emergency Control Point and assist with evacuation procedures under the directions of the Chief Warden.
- Assume duties of Chief Warden in the absence of the Chief Warden.
- Maintain record of areas evacuated.

2.4 Communications Officer

The Communications Officer should be competent in the use of the communication equipment in the building and have a clear commanding voice.

2.4.1 Duties of Communications Officer in the Event of Fire or Other Emergency

On hearing the alert alarm or on being made aware of the emergency:

- Ascertain the nature and location of the emergency.
- Confirm that the appropriate Emergency Services have been notified.
- Notify other ECO members of the emergency.
- Relay instructions between the Chief Warden, Area Wardens and occupants.

2.5 Area Wardens, Floor/Building Wardens

- Area Wardens should be appointed for each area that the production occupies to control the emergency procedures and the evacuation of their area under the direction and control of the Chief Warden.
- Area Wardens have the authority to evacuate their area if they consider there is danger to any person, or if the situation is life threatening.
- The Area Warden should be aware of the layout of their areas, all exits, and alternative escape routes. They should know of the location of Wardens under their control. Any changes of Wardens in their area should be notified to the Chief Warden.
- Area Wardens should be familiar with the location and operation of fire fighting equipment installed in their area. They should regularly inspect this equipment to ensure it is available and operable at all times.
- The Area Warden should be aware of any mobility impaired, sight or hearing impaired persons in their area who may require assistance during an evacuation.
- In any out of hours emergency, an Area Warden may be required to assume the duties of the Chief Warden.

2.5.1 Duties of Area Wardens in the Event of Fire or Other Emergency

On hearing the alert alarm or on being made aware of the emergency:

- Alert Wardens in their area.
- Instruct Warden on the actions required.
- If the fire emergency is in their building:
 - Ensure the Fire Brigade has been notified.
 - Evacuate occupants from the immediate area.
 - Inform the Chief Warden of the current situation.
 - Commence fire fighting operations if safe to do so.
 - Direct Wardens to assemble crew, cast, extras at the assembly points.
 - Advise the Chief Warden of any mobility impaired persons in the building including their location and the disabilities.
- If necessary, order an evacuation or, under the directions of the Chief Warden, order an evacuation.
- Sound the evacuation alarm in the building.
- Prior to leaving the building, ensure that the building has been searched thoroughly and that all crew, cast, extras have been evacuated.
- Report to the Chief Warden that the building or area has been evacuated.
- If a person refuses to leave the building, ensure that they are aware of the danger involved, then inform the Chief Warden of their location. The Chief Warden will inform the Emergency Services who will take appropriate action to remove the person.
- Join personnel from the building/area at the assembly area and remain at this point until the all-clear (or other action) is given by the Officer in Charge of the attending Emergency Services.

2.6 Wardens

- Wardens are appointed to assist the Area Wardens during an emergency. Should insufficient Wardens be available during an emergency, Wardens should nominate other crew to assist with the evacuation of their building or area.
- Wardens are appointed on the basis of at least one for every twenty persons (with a minimum of two for each area), to ensure that sufficient Wardens are available at all times.
- Wardens should be familiar with all exits, escape routes and occupiable spaces in their area. They should be trained in the use of fire fighting equipment and be prepared to operate hose reels and fire extinguishers to extinguish a small fire if it is safe to do so.
- Assisting mobility impaired persons to a safe area, searching an area for people and for suspicious objects (in a bomb threat) are among the tasks of a Warden.

2.6.1 Duties of Wardens in the Event of Fire or Other Emergency

On hearing the alert alarm or on being made aware of an emergency:

- Carry out instructions/directions of the Area Warden which may include:
 - Check the building for any sign of emergency.
 - Notifying the crew to assemble at the nearest fire exit in preparation for an evacuation.
 - Assemble and evacuate any disabled persons.
 - Operate emergency communication equipment.
 - Operate fire fighting equipment to extinguish a small fire if it is safe to do so.
 - Assume duties of Area Warden in the absence of the Area Warden.
 - Prevent people from re-entering a building whilst an evacuation is in progress.
 - Closing fire doors and smoke doors where necessary.
- If a fire is evident, or when directed by the Area Warden:
 - Commence evacuation. Guide occupants to the assembly area.
 - Evacuate occupants from the area who are in immediate danger.
 - If trained, commence firefighting duties if safe to do so.
 - Follow evacuees to the assembly area and ensure they stay together.
 - Stay in a safe area with mobility impaired persons until rescue personnel arrive.
- Prior to leaving building, search all areas, including toilets, change rooms, store rooms and all occupiable spaces to ensure that everyone has been evacuated.
- Report to Area Warden when area has been evacuated.
- Ensure there is an orderly flow of persons into the exits/fire stairs.
- Stay with persons in the assembly area.
- Await all-clear or other instruction before re-entering the building or area.

Other crew members should know what to do in an emergency, for example, the Gaffer should turn off power isolation switches, shut down generators, etc.

Part 3 – Fire Safety

3.1 Fire Prevention

Report any matter that you consider a potential hazard to your Department Head/Area Warden.

Typical hazards are:

- Accumulation of litter, dust or paper.
- Faulty electrical wiring or appliances.
- Items blocking access to exits and fire extinguishers.
- Items which block a clear view of emergency signs.
- Leakages of flammable gases or liquids.
- Missing or discharged fire extinguishers or fire extinguishers not mounted on wall.
- Repetitious or excessive spills of liquids.
- Fire rated doors propped open.
- Misuse of equipment, eg radiators.
- Overloaded power points.
- Items stored in fire stairs.
- Defective emergency communication equipment.

3.2 Precautions against Fire

- Observe “no smoking” signs.
- Observe “hot work” procedures.
- Be aware of and obey the rules for handling, storage and use of flammable liquids.
- When using flammable liquids, make certain they are stored in approved containers.
- Don’t hoard unnecessary waste paper or cardboard boxes in your area.
- Put away paper, drawings, files and other documents when leaving your floor on completion of work.
- Remove rubbish regularly.

3.3 Actions of Occupants upon Discovering Fire or Smoke

Upon discovering fire/smoke, take action as follows:

- Immediately call 000.
- Rescue or remove any persons from immediate danger to safety if safe to do so.
- Alert others, notify Chief Warden and inform Wardens in your area.
- If competent in use of fire extinguishers or hose reels, attack and attempt to extinguish small fire if safe to do so.
- Close doors if safe to do so. This restricts the spread of fire and smoke.
- Turn off power isolation switches.
- When directed by Wardens, evacuate to Assembly Area.
- Remain in designated assembly area until emergency is over. Ensure all crew, cast, extras, visitors are accounted for.
- Carry out instructions of the ECO and the Emergency Services.

3.4 Checking Fire Equipment and Alarms

All fire equipment available for use of crew such as fire extinguishers, fire hose reels and emergency communications equipment should be operational at all times and serviced in accordance with the relevant Australian Standard. All these items and means of escape from the building/area should be checked regularly by members of the ECO (see Hazard Checklist, Appendix B).

3.5 Fire Fighting Equipment

Different fire extinguishers may be available for different types of fire. Occupants of the building/area should be familiar with the types of fire extinguishers available and their limitations.

3.6 Operation of Fire Extinguishers

A simple method of remembering how to operate a fire extinguisher is by using the pneumonic “PASS”:

P Pull the pin

There is an anti-tamper tag fitted that prevents the pin being withdrawn accidentally. It is broken by a sharp tug. Pulling the pin arms the extinguisher.

A Aim the extinguisher

If the extinguisher has a hose, then the hose is aimed at the fire. On smaller extinguishers that do not have a hose, aim the extinguisher.

S Squeeze the handle

To operate the extinguisher, the handle is squeezed. When the handle is squeezed, the extinguisher operates and when the handle is released, the extinguisher ceases to operate.

S Sweep

Sweep the extinguishing agent across the fire. Attack the fire from front to back and from bottom to top.

3.6.1 Guidelines for Attacking the Small Fire

Select the right type of extinguisher and follow these important guidelines:

- Prior to attacking the fire, give the extinguisher a short test to ensure that it operates correctly.
- Ensure you have a safe exit should the fire become uncontrollable. Do not allow the fire to block your escape route.
- Start attacking the fire from a distance, moving in closer as the fire dies down. A crouching attitude should be adopted to protect yourself against smoke and heat.
- When in the open, attack the fire from the windward side. This allows the wind to blow the extinguishment onto the fire.
- Always try to have another person with an extinguisher backing you up as a safety precaution.
- Keep low to avoid smoke.
- Do not turn your back on the fire.
- Make sure that the fire has been completely extinguished.

3.7 Operation of Hose Reels

Wardens should ensure they are familiar with the location and method of operating a fire hose reel.

Hose reels should be located in strategic positions for the use of the occupants of the building/area to combat small Class A (ordinary combustibles) fires involving items such as paper, wood and plastics. Do not use a hose reel on a fat fires or fire involving electrical appliances.

3.7.1 Guidelines for the Operation of Hose Reels

- Determine if water is a suitable extinguishing agent for the class of fire involved.
- Turn water on at the reel before unrolling the hose.
- Unroll the hose.
- A second person can ensure the hose runs freely around corners.

- Turn water on at nozzle.
- See the guidelines for attacking a fire with an extinguisher.

3.8 Using Fire Blankets

Fire blankets may be located adjacent to the applicable risk, such as near stoves in kitchens. They may be used on flammable liquid containers such as deep fat fryers, frying pans and small electrical appliances.

3.8.1 Guidelines for Use of Fire Blankets

- Take the blanket out package.
- Cover the object with the blanket.
- Turn off the source of heat.
- Leave until cool.
- Call the Fire Brigade.

Part 4 – Bomb Threats and other Internal/External Emergencies

4.1 Bomb Threats

4.1.1 Introduction

- There may be a number of reasons why someone may make a bomb threat to a production.
- The Police have overall authority and control when dealing with bomb threats or an actual bomb placement. They must be notified in the first instance.
- In addition to general production security, disruptive effects of a bomb threat can be reduced by good security planning, good housekeeping and a well trained ECO.
- Good security arrangements, including the vetting of visitors, assists in ensuring that unauthorised access is denied to non-production personnel.
- It is important to ensure emergency exits are kept completely clear.
- These measures will minimise the number of potential places to conceal a bomb and thus reduce the search time in the event of a bomb threat. It will also contribute to a good standard of security and safety.

4.1.2 Telephone Bomb Threats

An accurate analysis of the telephone threat can provide valuable information on which to base recommendations, action and subsequent investigation. The person receiving the bomb threat by telephone should, as soon as possible, complete the information required on a Bomb Threat Checklist. A Bomb Threat Checklist should be held by telephonists and other persons who regularly accept incoming telephone calls.

4.1.3 Actions by Recipient when a Telephone Bomb Threat is Received

- Try to remain calm.
- Let caller finish message.
- Keep caller on line as long as possible.
- DO NOT HANG UP PHONE – the telephone company may be able to trace the call.
- Use Bomb Threat Checklist provided.
- Obtain as much information as possible about the bomb.
- Do not discuss the call with other occupants.
- Complete the Bomb Threat Checklist.

4.1.4 Threat Evaluation

- In order to make a realistic evaluation of the threat, the Chief Warden, Senior Management and Police must be in possession of as much information as possible.
- Over-reaction to bomb threats will be avoided by sensible evaluation. A telephone bomb threat may be assessed as:
 - Non-specific call – usually the caller will give very little information before terminating the call. This type of call is considered of a low risk.
 - Specific call – the caller gives specific information and, sometimes, reasons for the threat and the general location of the explosive device.
- The non-specific threat is more common, but neither can be immediately discounted without further investigation. Every threat has to be treated as genuine until proven otherwise. The evaluation of the call will involve one of the following four decisions:
 - Take no further action.
 - Search without evacuation.

- Evacuate and search, or
- Evacuate (without search).
- The decision to evacuate will normally be made by the Chief Warden and/or the building management. The Police may offer advice, but will usually leave the decision to evacuate to the above persons.

4.1.5 Search for a Suspicious Object

- The aim of a search is to look for an object that “does not belong” in its present location. The persons most aware of what does and does not belong in an area are the persons normally working in that area. The Police are not aware of what is normally in your area and would be less likely to recognise a suspicious object.
- Building management personnel should search such areas as plant areas, lift motor rooms, storage areas, car parks and areas outside the building.
- Wardens are responsible for directing the search of their area. Where possible they should involve crew, supervisors and management.
- Remember you are looking for an item which should not be where it is.
- The most important areas to search and the sequence in which to search is as follows:
 - External areas and particularly the assembly areas.
 - Entrances and exits to the building.
 - Areas where there is public access.
 - All other areas within each occupancy.
- Warden should ensure that fire stairs are searched up to the next level.
- Remember you are conducting a visual search only – look without touching.
- Note: two way radios and mobile phones should not be used during the search.
- If nothing is found, mark the area with chalk or post-it stickers as “searched” or “clear”.

4.1.6 If a Suspect Item is Found

- Do not touch it. Do not move it. Do not cover it. Do not disturb it in any way.
- Immediately move persons in the immediate area to safety.
- Contact Chief Warden and give the following details:
 - Exact location of the item.
 - Exact description of the item.
 - Any unaccounted for person/s.

4.1.7 Evacuation

- Evacuation of the building should not be considered unless a suspicious object has been discovered or unless there are compelling reasons to convince the decision makers that a real threat exists. A partial evacuation or an evacuation to another area should be considered. In the event of a hoax call, a total evacuation is likely to encourage further hoax calls.
- The evacuation procedures for the ECO members are basically the same as those for a fire evacuation. The notable exceptions are:
 - If it is safe to do so, windows and doors should be left open to lessen the damage of an internal explosion.
 - Building occupants should take with them those personal belongs which are close at hand, thus making the search for a suspect object easier.
 - The public address system should not be used for announcements of an evacuation for a bomb threat. Panic can be avoided by sensible use of the telephone and word of mouth, especially in the threatened floor or area.
- Wardens should request occupants to visually check their area for any suspicious items as they evacuate their room or area.
- The removal of vehicles from the building should be prevented by the Chief Warden until the building is declared safe or the Officer in Charge of Emergency Services gives permission to move vehicles.
- The decision to return to the building will normally be made by the Chief Warden and the building management. The Police will give advice on this matter but generally leave the decision to the occupants.
- If a bomb threat is received after hours, the person receiving the call should immediately report the matter to the Police, inform other occupants where possible and evacuate the building. Leave by the fire exits and do not return until the Police give the all-clear.

4.2 Other Internal/External Emergencies

The following are some life threatening situations and disturbances which could occur during a production:

- Civil disorder/demonstrations
- Building structural damage
- Spills of flammable or toxic substance

- Gas leaks
- Earthquake
- Flood
- Medical emergencies
- Armed hold-up or intrusion.

Action will depend on the type and severity of the emergency.

4.3 Civil Disorder/Demonstrations

- On becoming aware of civil disorder occurring in the vicinity of the production, notify the Supervisor/Manager and the Chief Warden.
- The Chief Warden will:
 - Notify Police and Security (if applicable).
 - Alert other members of the ECO.
 - Ensure that occupants:
 - Lock doors and windows.
 - Restrict entrance to the building.
 - Confine presence of demonstrators, etc. to the ground floor.
 - Avoid contact with demonstrators.
 - Follow instructions of Police and Chief Warden.
- Do not attempt any action that places you in danger.

4.4 Building Structural Damage

- If a building is damaged by unexpected events such as a structural collapse, building works or work being undertaken on an adjacent site, the Chief Warden will:
 - Notify Emergency Services.
 - Alert members of the ECO.
 - Evaluate the need to evacuate.
 - Ensure gas and electricity are shut down.
 - If so to do so, evacuate occupants – ensure fire exits are safe and the route to the assembly area is safe.
 - Direct first aid personnel to injured persons.
- Wardens should report to the Chief Warden any hazards, gas leaks or persons illegally entering the building.

4.5 Spills of Flammable Liquid or Toxic Substances

- In the event of a flammable liquid spill or the spill or accidental release of a toxic substance within a building, within a building, the Chief Warden will:
 - Notify the Emergency Services.
 - Evacuate people in the immediate area.
 - Alert other members of the ECO.
 - If necessary, evacuate persons in danger to a position well up-wind of the building.
 - Request Wardens to keep unauthorised persons away.
- If the spill or accident is outside or adjacent to a building, the Chief Warden will:
 - Direct Wardens to request persons to remain in the building.
 - Close all windows and doors.
 - Shut down the air conditioning.
 - Direct Wardens to remain at entry doors and exits.
 - Prevent people leaving the building until the all-clear is given by the Emergency Services.

4.6 Gas Leak

A gas leak in a building is dangerous for the occupants. Recirculating of the internal air in the air conditioning system means the gas could be circulated to other floors and areas. The gas can be ignited by heat, sparks or flames and is explosive when mixed with air. In the event of a gas leak, the Chief Warden will:

- Have the gas supply shut down.
- Contact Police and Fire Brigade.
- If safe, try to contain the leak.
- Shut down air conditioning system.
- Eliminate ignition sources.
- If necessary, evacuate the building occupants to an area well up-wind from the incident.
- Request Wardens to keep unauthorised personnel away from the building.

4.7 Earthquake

- Tremors varying in intensity have been felt in many areas of Australia but modern buildings are designed to withstand earthquakes and it is usually more dangerous outside the building. Major movement can cause structural damage to buildings and additional dangers are aftershocks which can occur hours or days later.
- During an earthquake, ECO members should instruct occupants to move away from windows, seek shelter under a desk, table or the arch of a strong doorway.
- If safe to do so, move to the centre core of the building.
- After the earthquake, the Chief Warden will:
 - Evaluate the need to evacuate the occupants.
 - Establish communications with ECO members.
 - Ensure that electricity, gas and water shut down where necessary.
 - Arrange first aid treatment where necessary.
 - Request reports of any structural damage, fires, gas leaks or other hazards.
 - If necessary, evacuate personnel from dangerous areas.
 - Instruct ECO members to warn people:
 - Not to light matches or cigarette lighters.
 - Not to leave the building before permission is given.
 - Stay in their area if it is safe. Wandering through the building could hamper rescue operations and may be dangerous.

4.8 Power Failure

- In the event of power failure, the Chief Warden will:
 - Inform the ECO of the loss power and, if known, the cause.
 - Direct the ECO to inform all personnel of the failure of power.
 - Direct personnel to switch off all equipment and await orders.
- If the power failure is prolonged, it may be necessary to evacuate the occupants. The Chief Warden will give instructions to the ECO who will evacuate the occupants as for a fire situation in the assembly area.

4.9 Flood

The flooding of a building can affect the safety of the occupants in addition to causing the loss of valuable equipment and damage to property. If prior warning is received of an impending flood, the Chief Warden will:

- Evaluate the need to evacuate occupants and decide on a possible assembly area.
- Move lifts to a higher level and shut down.
- Switch off electrical appliances in areas likely to be flooded.
- Shut down electricity, water and gas.
- Move valuable equipment to above anticipated flood level.
- Arrange for first aid officers to stand-by.

4.10 Medical Emergency

It is possible that a medical emergency may occur in a building at any time and it may involve one person or it may involve many people suffering smoke inhalation, etc. The Chief Warden will:

- Ensure the ambulance has been contacted and they are aware of the medical problem involved.
- Ensure that no one in the area is in danger.
- Arrange for first aid to be administered by a qualified first aid person.
- If no first aid assistance is available, ensure the patient is made as comfortable as possible.
- If evacuation of the building is necessary:
 - Evacuate walking patients to the assembly area.
 - Move non-walking patients to a safe area in the building. (If the patient has fallen, do not move unless in immediate danger.)
- Arrange for a person to meet the ambulance and escort them to the location of the sick/injured patient.
- Request a qualified first aid person to remain with patient/s until not required by medial/para-medical officers.

4.11 Armed Hold-up or Intrusion

- Businesses with a cash flow should ensure that cash and valuables are kept to a minimum workable level. Employees who may be exposed to a hold-up should be given special instruction to ensure they know how to react in a threatening confrontation.
- No amount of cash or equipment is worth a human life.
- Summary of actions if you are confronted by an armed intruder:
 - Obey their instructions.

- Try to remain calm or appear to be calm.
 - Do not make any sudden movement.
 - Be courteous, answer questions.
 - Hand over valuables/cash on request.
- Try to make a mental note of speech, mannerisms, clothing, scars, age, height, build, tattoos or other distinguishing features of the intruders.
- If possible, take note of the direction take, the vehicle colour, make and registration number.
- Do not give chase.
- When the intruders have departed, the Chief Warden will:
 - Ensure the Police have been advised.
 - Request persons involved to write all observations of the intruder/s as soon as possible.
 - Arrange for a person to meet Police and direct them to the location of the incident.
 - Organise first aid assistance if necessary.
 - Ensure no item in the vicinity is touched or removed.
 - Request witnesses to wait until Police arrive.
- Any person involved in an armed hold-up should receive trauma counselling as soon as possible following the incident.

4.12 Crowd Management in an Emergency

In any evacuation of a building it may be necessary for the members of the ECO to control the movement of a large number of people. The following is a brief guide to the management of crowds in an emergency.

4.12.1 Positioning

Members of the ECO responsible for the movement of people out of a danger area should, in the first instance, position themselves so that they are:

- Clearly visible and identifiable by wearing helmets or uniforms.
- Not exposing themselves or any other person to danger.
- Able to exercise control over persons leaving the confines of the building.

4.12.2 Movement Control

- Wardens should direct persons towards the exits using a calm but firm voice and smooth and commanding hand signals.
- It is imperative that Wardens, at the very outset, prevent panic from infiltrating the crowd. Words such as “Hurry”, “Faster”, “Bomb” and “Trapped” should be avoided at all costs.
- People will be bewildered and curious as to the cause of the evacuation but Wardens must not engage in lengthy explanations with people at the exit points. The objective is to quickly, calmly and safely move people out of the building.
- Exits must not be obstructed by persons stopping to ask questions or attempting to manhandle bulky items through an exit door.
- In directing the crowd, Wardens should use terms such as “This way please”, “Move directly outside”, “Move that way”.
- Positive and commanding hand signals should be used to augment verbal directives. Once people have left the building they must not be permitted to re-enter until it is safe to do so.

Attachment B – REGULAR HAZARD CHECKLIST

Inspected by: Area:

Inspection Date:/...../..... Last Inspection Date:/...../.....

1. Check Items (Yes/No/N/A)

If 'No', enter location and report to appropriate person/s for action.

ITEM	YES	NO	N/A	LOCATION	REPORTED TO
Fire exits clearly marked?					
Stairwell doors closed and close automatically?					
Passageways and exits free of obstructions?					
Fire extinguishers/hose reels accessible and free of obstruction?					
Fire extinguishers in place and clearly signposted?					
Emergency Procedures instructions clearly displayed?					
Emergency Procedures Manual up to date and accessible?					
Crew briefed on emergency procedures at least once a year?					
New crew introduced to Procedures?					
All emergency signs operating and visible?					
Electrical appliances safe?					
Flammable substances properly stored? (if applicable)					
All emergency equipment operational?					
All areas free of non-essentials/rubbish?					

Attachment C – BOMB THREAT CHECKLIST

KEEP CALM – DO NOT HANG UP

BOMB THREAT CHECKLIST QUESTIONS TO ASK	THREAT LANGUAGE
1. When is the bomb going to explode? _____ 2. Where did you put the bomb? _____ 3. When did you put it there? _____ 4. What does the bomb look like? _____ 5. What kind of bomb is it? _____ 6. What will make the bomb explode? _____ 7. Did you place the bomb? _____ 8. Why did you place the bomb? _____ 9. What is your name? _____ 10. Where are you? _____ 11. What is your address? _____	Well spoken: _____ Incoherent: _____ Irrational: _____ Taped: _____ Message read by caller: _____ Abusive: _____ Other: _____
EXACT WORDING OF THREAT	BACKGROUND NOISES
_____ _____ _____ _____ _____ _____ _____	Street noises: _____ House noises: _____ Aircraft: _____ Voices: _____ Local call: _____ Music: _____ Mobile Phone: _____ Machinery: _____ STD: _____ Other: _____
ACTION	OTHER
Report call immediately to: _____ Phone: _____	Sex of caller: _____ Estimated age: _____
CALLER'S VOICE	CALL TAKEN
Accent (specify): _____ Any impediment (specify): _____ Voice (loud, soft, etc): _____ Speech (fast, slow, etc): _____ Diction (clear, muffled): _____ Manner (calm, emotional, etc): _____ Did you recognise the voice? _____ If so, who do you think it was? _____ Was the caller familiar with the area? _____	Date:..../.../.... Time: _____ Duration of call: _____ Number called: _____ RECIPIENT Name (print): _____ Telephone Number: _____ Signature: _____

APPENDIX T HOT WORKS PERMIT

TO BE INCORPORATED INTO DOCUMENT