

Crime scene examination

This chapter contains the below topics:

Overview

Roles and responsibilities

Components of crime scene examination

Procedures for examining serious crime scenes

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Preserving scene and evidence integrity

Decontamination zones

Exhibits

Recording crime scenes

Safety at crime scenes

Checklist: What to look for at scenes?

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Scene forensic strategy document – example

Overview

Purpose

This chapter provides guidelines and outlines minimum standards for crime scene processing. It may be applied, with modification, to any crime scene, including high volume and serious crime scenes.

The guidance provided is not intended to be dictatorial or prescriptive. No two crime scenes are the same, so your initiative, flexibility and planning skills will be tested to the limit at times.

Audience

The intended audience for this chapter is all staff involved in the investigation of crime or the supervision or management of such staff.

Related information

This chapter must be read in conjunction with:

- Forensic evidence processing in the Police Manual (this includes links to and information about physical evidence such as blood patterns, DNA, bite or footwear marks)
- Forensic contacts
- information in specific offence related chapters in the Police Manual, e.g. Arson, Homicide, Burglary and allied offences.

Crime scenes

A crime scene is any place an offender has been in relation to the crime. Scenes are likely to include:

- place where the offence occurred or where the body, property or associated evidence was found
- the body itself in cases of homicide
- all people, whether living or dead, who are associated with the crime may be considered as crime scenes
- any vehicles used by the suspects
- suspects themselves
- the victim's and suspect's home and workplace.

What is crime scene examination

Crime scene examination uses physical evidence (any tangible object) at the crime scene and deductive and inductive reasoning to gain knowledge of the events surrounding the crime. It reconstructs what took place in a particular area and finds evidence connecting that activity to particular people, places and objects.

Crime scene processing incorporates several separate activities. It is multidisciplinary and must adopt an integrated approach ensuring the balance of the three forensic disciplines of:

- fingerprints
- photography, and
- physical evidence recovery for forensic science examination.

Objectives of crime scene examination

The objectives of crime scene examination (which can be the victim and suspect) are to:

- establish if a crime has been committed
- establish the crime's key elements and provide facts for the basis of an inquiry

- identify the suspect and place them in contact with the victim or scene
- identify people associated with the crime
- exonerate the innocent
- corroborate or contest witness' and victims' accounts
- verify confessions and admissions
- exclude possible defences
- corroborate or exclude other evidence relating to the crime or incident.

Ethical considerations

All examinations of scenes and exhibits must be conducted honestly, accurately and impartially.

Roles and responsibilities

Examination teams

A well-trained team, coordinated and properly equipped, is the key in effectively recovering forensic evidence. Key tasks at crime scenes are:

- scene attendance
- crime scene management
- photography
- crime scene recording
- crime scene examination and evidence recording and recovery
- exhibits recording.

These tasks may be conducted by the same person or by a team of multi-disciplined staff depending on the:

- circumstances and severity of the crime
- experience and skills of the individual
- availability of appropriately trained individuals and equipment.

Responsibilities

This section outlines the responsibilities of employees undertaking key tasks at crime scenes. It also gives examples of the roles usually responsible for carrying out these tasks.

| Task and examples of who may be responsible | Responsibilities of person undertaking this task |
|---|---|
| <p>Scene attendance</p> <p>May be:</p> <ul style="list-style-type: none"> • first and later arrivals at the scene • a crime scene examiner. | <ul style="list-style-type: none"> • Preserving own life • Saving life • Apprehending offender • Detaining witnesses • Preserving the scene, including: <ul style="list-style-type: none"> - clearing people from the scene - preventing scene contamination - establishing boundaries, scene headquarters and safe arrival and assembly points - guarding and controlling the scene. <p>The actions of the first arrivals at the scene have a vital effect on the inquiry and the forensic evidence capture potential. The first officer's primary objective is to protect the scene from interference, contamination and destruction.</p> |
| <p>Crime scene management</p> <p>May be:</p> <ul style="list-style-type: none"> • scene team leader/coordinator • O/C scene • crime scene manager/examiner <p>In serious and complex cases co-ordination of the multidiscipline forensic team</p> | <ul style="list-style-type: none"> • Controlling, freezing and preserving the scene and ensuring it is safe • Briefing staff on their duties • Coordinating and overseeing the crime scene examination • Providing the communication link between the scene and the O/C investigation • Ensuring scene is photographed, fingerprinted and examined by specialists before it is searched • Establishing a common approach path between the police cordon and scene's focal point • Conducting a reconnaissance to gain an overall picture of the scene and testing possible |

| | |
|--|--|
| and subsequent examination may be delegated to the forensic team co-ordinator/adviser. | <p>reconstructions</p> <ul style="list-style-type: none"> • Planning a <u>strategy</u> for forensic examination • Uplifting, inspecting and ensuring delivery of labelled exhibits to the exhibit recorder • Proving relevant exhibits in court. |
| <p>Photographs/Video</p> <p>May be undertaken by:</p> <ul style="list-style-type: none"> • forensic photographer • forensic videographer • crime scene examiner. | <ul style="list-style-type: none"> • <u>Photographing</u> and video recording crime scenes to permanently record appearance post incident or police involvement before removing physical evidence • Preparing logs and reports accurately reflecting the photographer's activities within the scene. |
| <p>Crime scene recording (<u>sketch plans</u>)</p> <p>Completed by:</p> <ul style="list-style-type: none"> • crash teams • crime scene examiners, or • external experts. | <ul style="list-style-type: none"> • Recording the scene and the position of associated evidence. |
| <p>Crime scene examination and evidence recording and recovery</p> <p>May be undertaken by:</p> <ul style="list-style-type: none"> • crime scene examiners • SOCO • CSA • fingerprint officers • ESR scientists or other external forensic science service providers or experts. | <ul style="list-style-type: none"> • Identifying, collecting and evaluating forensic evidence and intelligence • Conducting an initial assessment and calling in ESR and other specialists when necessary • Searching for and preserving offender fingerprints and obtaining elimination prints • Identifying appropriate forensic recovery techniques for specialist samples and deciding the priorities for examination • Developing and implementing a forensic strategy in consultation with the officer in charge of the case. |
| <p>Exhibits recording</p> <p>Undertaken by exhibits recorders or officers</p> | <ul style="list-style-type: none"> • Receiving exhibits and ensuring they are labelled, numbered, recorded, stored and secured • Delivering exhibits for examination or analysis • Preparing exhibits for presentation in court • Ensuring that continuity 'chain' of evidence is maintained. |
| <p>Managing the deceased</p> <p>May be:</p> <ul style="list-style-type: none"> • officer in charge of the body • forensic specialists such as the pathologist, the ESR scientist, and the Fingerprint Officer. | <ul style="list-style-type: none"> • Guarding the body with dignity and respect and preserving associated samples and exhibits • Preserving or collecting trace evidence from the body • Proving the continuity of the body from the scene to the mortuary • Completing the sudden death procedures and arranging: <ul style="list-style-type: none"> - identification and body examination - post mortem examination - disrobing the body - fingerprints to be taken |
| External forensic specialists | <ul style="list-style-type: none"> • Providing expertise or specialist techniques to crime scene examiners, not otherwise available within Police. |

Components of crime scene examination

Five components for success

There are five components to successful serious crime scene examination:

- Forensic teamwork
- Preservation
- Documentation
- Communication
- Flexibility.

Forensic teamwork

A team approach to crime scene examination ensures appropriate experts provide scene management, coordination and specialist knowledge and skills. Consider all forensic disciplines so there is comprehensive knowledge of the forensic scientific support available to meet the spectrum of current investigative needs.

Early consultation and co-operation with specialists at the scene:

- is essential in clarifying the sequence of events and maximising evidence recovery and its potential significance
- can be cost effective as appropriate items are selected for sequential treatment at an early stage in the investigation (allows firmer interpretation of subsequent results as well as anticipating possible lines of defence).

Always involve the forensic team in the development of a forensic examination strategy. If samples are gathered in isolation, vital evidence can be destroyed if one type of evidence is collected to the detriment of another.

Preservation

Preserving the crime scene and integrity of evidence cannot be over emphasised. All forensic aspects of the case, including linking the suspect to the scene, hinge on the preservation of the evidence.

You often only have one chance to collect the evidence. Get it right first time.

Documentation

Documentation is the hallmark of professionalism. Base all scene reports, including post event history and scene examination details purely on the facts.

Given the volume of physical evidence normally recovered during a serious scene examination:

- carefully manage the chain of evidence / continuity of evidence and associated disclosure issues with care
- keep complete and accurate examination reports and exhibit schedules.

All details of a forensic scene examination should be recorded on the crime scene examination report attachment in NIA. (Refer to Crime scene report in the NIA Manual for detailed information about completing the report).

Communication

Communication is the key to an evidentially successful scene examination and the subsequent presentation of reliable, accurate forensic related information to investigators and courts of law. This includes the communication of the expectations of

the scene examination (objectives, resources available, parameters and depth of examination required).

The O/C case should introduce clear lines of communication between a single point of contact within the incident room or operation headquarters and the forensic service providers.

What information does each group need?

This table outlines the information various groups need.

| Scene examination team members need to know what... | Investigating officer and intelligence unit need to know... | Scientists (when evidence is submitted to a laboratory) need... |
|--|---|---|
| <ul style="list-style-type: none"> • the investigative needs are prior to attending the scene of crime? • needs to be proved? • needs to be eliminated? • we already know and what more is needed? | <ul style="list-style-type: none"> • the findings from the scene examination • any relevant forensic information and its evidential significance (particularly important for interviewers). | <ul style="list-style-type: none"> • case background • clear instructions on what is to be established? |

Flexibility

The significance of forensic material may change over the course of the investigation. The O/C case should regularly review all test results and observations in discussion with the forensic examination team as they may become critical at a later stage of the enquiry. (Ensure discussions are formally documented).

Forensic team members must be flexible to adapt to changing requirements and improvise as necessary. There must be discussion, co- operation and co-ordination between all forensic disciplines.

Procedures for examining serious crime scenes

Team approach

The forensic examination of a serious scene should be conducted by a team representing all forensic disciplines co-ordinated and managed by a crime scene manager or co-ordinator. Early attendance of specialists will ensure the scene and associated evidence is protected and the maximum potential forensic evidence is recovered from the scene.

This section outlines initial and subsequent actions to ensure control, preservation and the collection of all potential forensic evidence at serious crime scenes.

Scene examination process

This table outlines the process for examining crime scenes. Not all steps will apply to every case and they may not always apply in this order.

| Step | |
|------|---|
| 1 | Ensure your own safety and then give priority to preserving the life of any victim(s). Ensure any necessary medical attention is provided. |
| 2 | Follow the procedures in <u>Serious crime - initial action</u> . Remember to: <ul style="list-style-type: none"> • clear people from the scene and establish boundaries to protect the scene from interference or destruction • establish a scene headquarters and a safe arrival and assembly point • guard, control and preserve the scene. <p>The actions of the first officer at the scene vitally affect the inquiry and forensic evidence capture potential.</p> |
| 3 | Establish a common approach path to the scene. Take care not to use the route taken by the offender. |
| 4 | Carefully enter the scene taking care to avoid contaminating or destroying evidence. Consider using <u>stepping plates</u> , the hot, warm and cold <u>zoning method</u> and establishing a common approach path into the scene. |
| 5 | If it is an outside scene, consider: <ul style="list-style-type: none"> • how to contain the area and protect from elements, tide, animals etc • if additional equipment / services including generators for lighting, caravans / tents for staff areas and equipment storage may be needed. |
| 6 | Make a <u>reconnaissance</u> (i.e. gather information about the crime and the scene). <p>When scenes are outside, depending on their location and crime's severity, consider:</p> <ul style="list-style-type: none"> • aerial photography to show the whole location • conducting the reconnaissance by air when the search area is large. |
| 7 | Carry out an initial assessment of the crime scene (a <u>preliminary reconstruction</u>). |
| 8 | Plan a <u>strategy</u> for a forensic scene examination (plan of action). |
| 9 | <u>Brief staff</u> . |
| 10 | <u>Photograph</u> and fingerprint the scene and collect other forensic evidence according to your strategy. |
| 11 | <u>Make appropriate records</u> with a scene log (who, what, where, when, why, how) and a sketch plan. Note anything and everything that could be potential evidence. |
| 12 | <u>Search approaches</u> , entry and exit points and seats of activity. |

| | |
|----|---|
| 13 | Carry out further <u>reconstructions</u> when required according to the evidence located. |
| 14 | Call for assistance and specialist attendance when necessary. |
| 15 | Brief staff. |

Reconnaissance

A reconnaissance is:

- the preliminary inspection or survey made to get an overall picture of the scene without disturbing the evidence
- an assessment providing information allowing you to make or formulate:
 - a preliminary reconstruction
 - an appreciation
 - a plan of action.

Making a reconnaissance

Follow these steps to ensure a reconnaissance is meaningful.

| Step | Action |
|------|---|
| 1 | Gather all available information from the staff present and from preliminary interviews with the complainant and witnesses. |
| 2 | Create a common approach pathway and look over the whole area without touching or disturbing it. This requires concentration so do not allow any interruptions. Consider using stepping plates for hard shiny surfaces where there may be shoeprints. Use the appropriate protective clothing to minimise contamination by way of fingerprints, DNA and trace evidence. |

| | |
|---|--|
| 3 | <p>Sketch the scene and briefly note anything of significance. Do not worry about including detail at this stage. The sketch will:</p> <ul style="list-style-type: none"> • help in forming a <u>plan of action</u> • be a reference for staff briefings and court proceedings. Consider making an enlarged version as an exhibit • record the allocation of staff to search areas. |
|---|--|

| | |
|---|---|
| 5 | <p>Reconsider and confirm (or if necessary extend) the scene's boundaries. Consider the priorities of the scene examination. (Note climatic and lighting conditions that may influence scene examination priorities).</p> |
|---|---|

Reconstruction

A reconstruction is a theory about what took place in a given area over a relevant period of time and how it is likely to have happened. It is formed by logically piecing together all information gained from examination and enquiry.

Making a reconstruction

Make a preliminary reconstruction as soon as sufficient information is available and further reconstructions whenever new information is obtained. Only finalise a main reconstruction after all information is gathered.

Follow these steps to make a reconstruction after the interpretation, recording and collection of evidence is completed.

| Step | Action |
|------|--|
| 1 | Assess all information, including witnesses' statements, members' job sheets and inventories. Do not make a final reconstruction until all the available facts are considered. There may be more than one theory and additional or different information may alter the reconstruction. |
| 2 | Question the significance of all physical evidence found and details noted at the scene and make deductions from these. |
| 3 | Assess photographs, plans and maps. |
| 4 | Consider the scene's physical aspects at the time of the crime (e.g. lighting, weather, access and security, and the presence or absence of vehicles, traffic or people in the area). |
| 5 | Consider: <ul style="list-style-type: none"> • what happened and how the activity occurred • if there a <u>modus operandi</u>? |
| 6 | Consider specialist and other opinions and test their theories. |
| 7 | Experiment with theories at the scene to check their feasibility. Do not have a fixed position or be influenced by others without your own decision making. Otherwise you risk developing 'tunnel vision' and may mislead the examination's direction. |

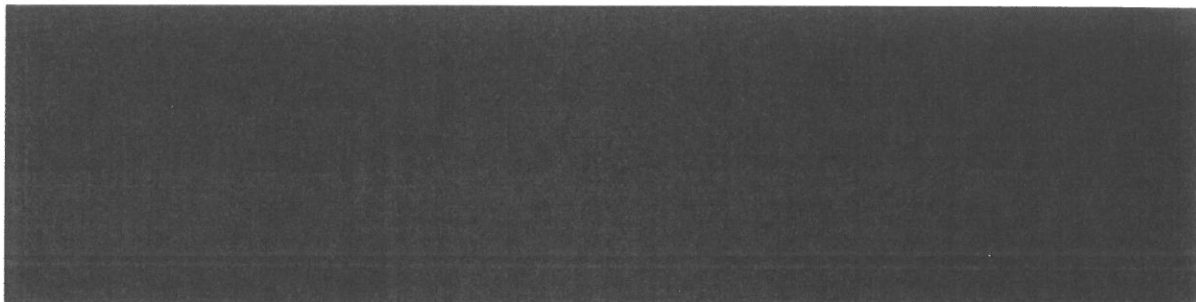
Making an appreciation

Make an appreciation, either mentally or in writing, to decide on the best course of action. Consider all known and assumed factors including:

- staff availability and any limitations in time and daylight hours
- weather conditions and protecting the scene
- seriousness of the offence
- type and size of the area
- what communication, equipment, transport and specialists will be required
- logistics, such as meals and accommodation
- priorities (e.g. where to search first or deterioration of exhibits)
- your powers to search, e.g. is a search warrant under section 198 of the Summary Proceedings Act 1957 required?

Modus operandi

Modus operandi is the Latin term meaning "method of operation". This relates to the personal signature or characteristic way of committing a crime (when, where and how). Physical evidence located at a crime scene can be instrumental in establishing a potential pattern of MO.



Analyse factors present

There is no single classification method that will support the varied circumstances of crime scenes. It requires intuitive and experienced personnel to apply analytical means to interpret the factors presented.

Once the location is determined, the sequence of events is established, and the physical evidence identified, the crime scene examination and forensic process can begin.

Developing an examination strategy

Investigators begin developing and documenting a forensic examination strategy (plan of action) as soon as they arrive at the scene. A strategy allows scene examiners to target their examination in line with the investigation's priorities at an early stage.

The strategy must be continually reviewed throughout the investigation to keep abreast of any developments and any changes to the strategy documented.

Strategy aims

The aims of the strategy are to:

- set objectives
- identify resources to implement the strategy
- appoint the forensic examination team, including a scene manager / co-ordinator to manage the forensic strategy on a day-to-day basis and be responsible for its delivery
- develop a scene examination plan
- monitor forensic actions
- ensure exhibit reviews are conducted in support of interview strategies and lines of enquiry
- prioritise sequential examinations, including fast-tracking examinations and standard submissions with internal and external forensic service providers.

What should be included in the strategy?

Make sure the strategy covers:

- the starting place (e.g. the offender's entry point)
- a logical and systematic search method (e.g. begin with 'approaches' and follow with the 'point of entry', 'interior' and 'point of exit')
- likelihood of evidence deteriorating (e.g. explosives and blood samples that require DNA profiling) -clear a path to it, so it can be examined immediately
- any specialists required
- individual tasks and area of responsibility for each member. (It is better to assign one member to one area to ensure that nothing is overlooked through distraction or mistake. Mark divisions of these areas on your sketch plan)

- the recording system to be used, such as inventories, an exhibit schedule or searchers' job sheets.

Strategy examples

See:

- [Examination strategy example](#)
- [Scene forensic strategy document](#).

Briefing staff

Regularly brief staff giving:

- a summary of the situation and all background information
- the aim of the examination, plan of action and how it should be executed
- an outline of tasks and areas of responsibility for each O/C, officer and group
- information on:
 - timing
 - boundaries
 - scene security
 - when conferences will be held
 - what to do if they find an exhibit (refer to Forensic evidence processing in the Police Manual)
- administrative and logistic details
- signalling and communication arrangements.

While briefing, use maps, sketch plans, diagrams and photographs when possible.

Searching scenes

Search patterns

The scale, timing and type of scene search depends on circumstances and the availability of resources. However a small scale search will be conducted as part of most crime scene examinations.

Determine the search pattern or method used after assessing the scene and considering:

- nature / severity of the crime
- nature of the physical evidence
- location and known facts.

This table describes common search patterns.

| Search type | How the search is started |
|---------------|--|
| Grid search | Divide the scene into grids and search each square within the grid. |
| Lane search | Divide the scene into lanes and search each lane. |
| Spiral search | Start from a central point and search spiralling outwards. |
| Zone search | Divide the scene into zones (e.g. rooms or paddocks) and search each zone. |

Planning the search

It is good Police practice to obtain the consent of the victim or property owner before you embark on any examination. You may need to obtain a search warrant specifying the evidence you are seeking. (Refer to the Search chapter in Police Manual).

Conduct the examination in the best possible conditions (e.g. daylight) and protect the scene from adverse weather. Keep the number of searchers to a workable minimum (a team of two officers is usually ideal for a confined interior search). Because searching for evidence can destroy other evidence, set priorities and determine the sequence the search will take.

Conducting the search

For information about:

- how to conduct the search, refer to the Search chapter in the Police Manual

Preserving scene and evidence integrity

Chain of evidence

The 'chain of evidence':

- includes the receipt, control, security, continuity and co-ordination of all exhibits and their subsequent movements and examinations. The chain must be accurately recorded for each exhibit
- demonstrates all individuals who have had custody of the exhibit and the integrity and storage of that exhibit (in serious scenes, exhibit details must be recorded in the exhibits register).

All exhibits must be collected, packaged, stored, submitted for further examination (if applicable) and presented in line with good practice. This protects the integrity and admissibility of the evidence from the crime scene to the court room.

Contamination

Contamination is when 'evidence' has been added to an exhibit post-incident. This could be deliberate or inadvertent and could adversely affect the laboratory examination, findings and interpretation compromising the evidence.

Potential contamination of physical evidence can occur at the crime scene, during collection, packaging and storage and during further examination away from the scene. Contamination usually occurs through the actions of the personnel within the scene.

Internationally, contamination of physical evidence has been highlighted in several high profile cases. Police services need to get personnel and equipment into a scene and exhibits out with the minimum of post incident contamination. As personnel and equipment attend many scenes, sometimes on the same day, the risk of cross contamination is always a threat to forensic evidence. All serious scene equipment and individuals must be decontaminated between scenes and records kept to show this.

Risk of contamination higher with small samples

Advances in forensic science provide more sensitive DNA analysis techniques (e.g. LCN DNA analysis) to develop DNA profiles from samples previously too small. However as the sensitivity of DNA analysis increases, the size of the sample required reduces but the risk of contamination increases significantly.

Minimising contamination risks

To minimise contamination risks go back to basics and get the basics right. Follow these steps.

| Step | Action |
|------|---|
| 1 | Preserve and control the scene. |
| 2 | Use <u>stepping plates</u> and adopt a <u>decontamination zone</u> (hot, warm, cold approach). |
| 3 | Use protective clothing, including face masks and double gloves, removing the outermost gloves between the handling of each exhibit. |
| 4 | Use new, clean packaging materials (sterile containers are required for some evidence types). |
| 5 | Keep accurate scene activity and exhibit seizure <u>records</u> . |
| 6 | Keep records of personnel attending and examining scenes. |
| 7 | Avoid examining associated serious crime scenes (including the victim) and the suspect. Use different staff to deal with suspects and victims. The person |

| | |
|---|--|
| | dealing with the suspect should not have been to the scene or dealt with the victim. |
| 8 | Ensure <u>exhibit integrity</u> , continuity and anti-contamination procedures with correct <u>recording, packaging, sealing and labelling</u> . |
| 9 | Obtain elimination fingerprints, footwear impressions and DNA swabs when necessary from individuals who could have inadvertently contaminated the scene. |

Sequential examinations

If a number of different examinations or treatments are to be carried out (either for different forensic evidence types or sequential treatments to enhance one evidence type) there is a danger the evidence and / or the actual item will be contaminated, jeopardised, compromised or destroyed.

Consult the relevant experts (e.g. Forensic Photographer, ESR Scientist, Fingerprint Officer, ESR Firearms Scientist, Pathologist, SOCO, Document Examiner, etc) to ensure all potential evidence is collected. Make decisions based on the relative evidential importance of the analysis to the enquiry.

Recovering, preserving and packaging evidence samples

Refer to the Investigation > Forensic evidence section in the Police Manual for detailed information about recovering, preserving and packaging specific types of forensic samples with integrity.

Stepping plates

Stepping plates (held in all districts) should be used when entering a major scene especially if it likely foot traffic may interfere with evidence.

Plates have these advantages over plastic or paper rolled onto the floor:

- they protect and cover evidence with minimum disruption
- paper or plastic has a large contact area and walking on it causes it to move and damage potential evidence such as shoe impressions, trace evidence and blood patterns
- evidence is difficult to see because it is covered
- evidence can be stuck to paper and plastic when its lifted, and lost.

You still need to determine a common approach path and use protective clothing. Take care using the plates as they can slip on smooth surfaces.

Clean plates to avoid contamination

A scene's integrity should never be put in jeopardy because stepping plates have not been cleaned properly after the last job. Always, while wearing gloves, thoroughly clean plates between scenes by:

- hosing them down
- washing in 10% bleach solution and rinsing with water
- drying the plates prior to repacking.

Stepping plate containers or bags must not be taken into the crime scene hot zone.

Maintain records and an audit trail regarding the use and cleaning of stepping plates.

Decontamination zones

Decontamination zone model described

Adopt the zone model outlined in the tables below for all major scenes to prevent contamination.

| Zone | Description |
|-----------|--|
| Hot zone | That part of the scene requiring examination and evidence collection. |
| Warm zone | A transition zone to enable scene examiners to put on and take off protective clothing, access equipment and process exhibits. |
| Cold zone | A place within the outer cordon for meetings, meals, scene guards etc. |

Benefits of the zonal system

The major benefits of the zonal system are that it:

- establishes a set procedure for evidence and personnel protection
- controls access to the scene
- gives you a framework for accounting for your processes
- ensures liaison between disciplines and consistency in contamination minimisation.

Warm zone

The warm zone is often a tent with the floor covered with a new disposable tarpaulin. The tent should have two doors providing for movement between cold and warm as well as between warm and hot zones.

This table shows areas within the warm zone and the functions carried out in each.

| Area within zone | Functions or purpose |
|---|---|
| Transition area <ul style="list-style-type: none"> • establish as close as possible to the hot zone • must be clearly marked. | <ul style="list-style-type: none"> • Enables scene examiners to exit from the hot zone without removing their protective clothing to: <ul style="list-style-type: none"> - access equipment stored in the warm zone and return to the hot zone - transfer exhibits from the hot zone to a temporary holding area within the warm zone - discard rubbish - remove and store protective clothing. • Provides a place where examiners: <ul style="list-style-type: none"> - can change their clothing - should cross as they put on protective footwear (this keeps the scene clean of dirt and debris that might be tracked into the hot zone) • Keep a clipboard in this area to log movements into the hot zone. |
| Wash -up station and rubbish bins (establish close to the transition area) | Allows rubbish to be conveniently discarded from the transition area into biohazard containers accessible by all. |
| Designated areas for examiner's own protective clothing and equipment | <ul style="list-style-type: none"> • Store protective clothing in paper sacks or cardboard boxes (easily purchased as ready to assemble units). • In dirty scenes it may be desirable to regularly discard protective clothing following exiting from the HOT ZONE. |

| | |
|--|---|
| (e.g., SOCOs, ESR, CIB, Photography, Fingerprints, | Note: Wherever possible, do not take equipment carry cases into the HOT ZONE. |
| Exhibit transit and processing area | Enable O/C exhibits to collect together and document exhibits prior to transfer to the police station or laboratory. Note: exhibits should be suitably packaged and sealed in the hot zone. |

Hot zone

This table outlines areas in the hot zone and the functions carried out in each.

| Area within zone | Functions or purpose |
|-------------------------------------|--|
| Exhibit examination and photography | Set up a table covered with white paper for the preliminary examination and photography of exhibits (where trace or fragile evidence was not an issue). Note: this area can also be established in the transition area of the warm zone. |
| Secondary warm zones | If the nature of the scene makes it difficult to fulfil all the functions of the warm zone in one place, consider establishing secondary warm zones bordering the hot zone. Use these to store equipment and exhibits if it makes the scene examination more efficient without compromising the integrity of the evidence being collected. |

Destroying used equipment

Used scene forensic equipment (e.g. gloves, oversuits) should be incinerated unless there is a possibility of trace evidence transfer to protective clothing. In this case, retain the item as an exhibit.

The crime scene coordinator / manager is responsible for supervising the destruction of equipment and must certify it has taken place.

Logging movements

Log movements into zones as follows:

| Movements into... | Action |
|-------------------|--|
| Hot zone | Each examiner must log their movements in and out of the hot zone. Hang a clipboard for this purpose near the transition between the warm and hot zones. |
| Cold zone | Scene guard logs movements in and out of the cold zone. |

Dress to protect evidence

The need for evidence protection changes as the scene examination's focus becomes established and proceeds through to its conclusion.

In consultation with the relevant experts, the crime scene coordinator should establish and document a dress code that:

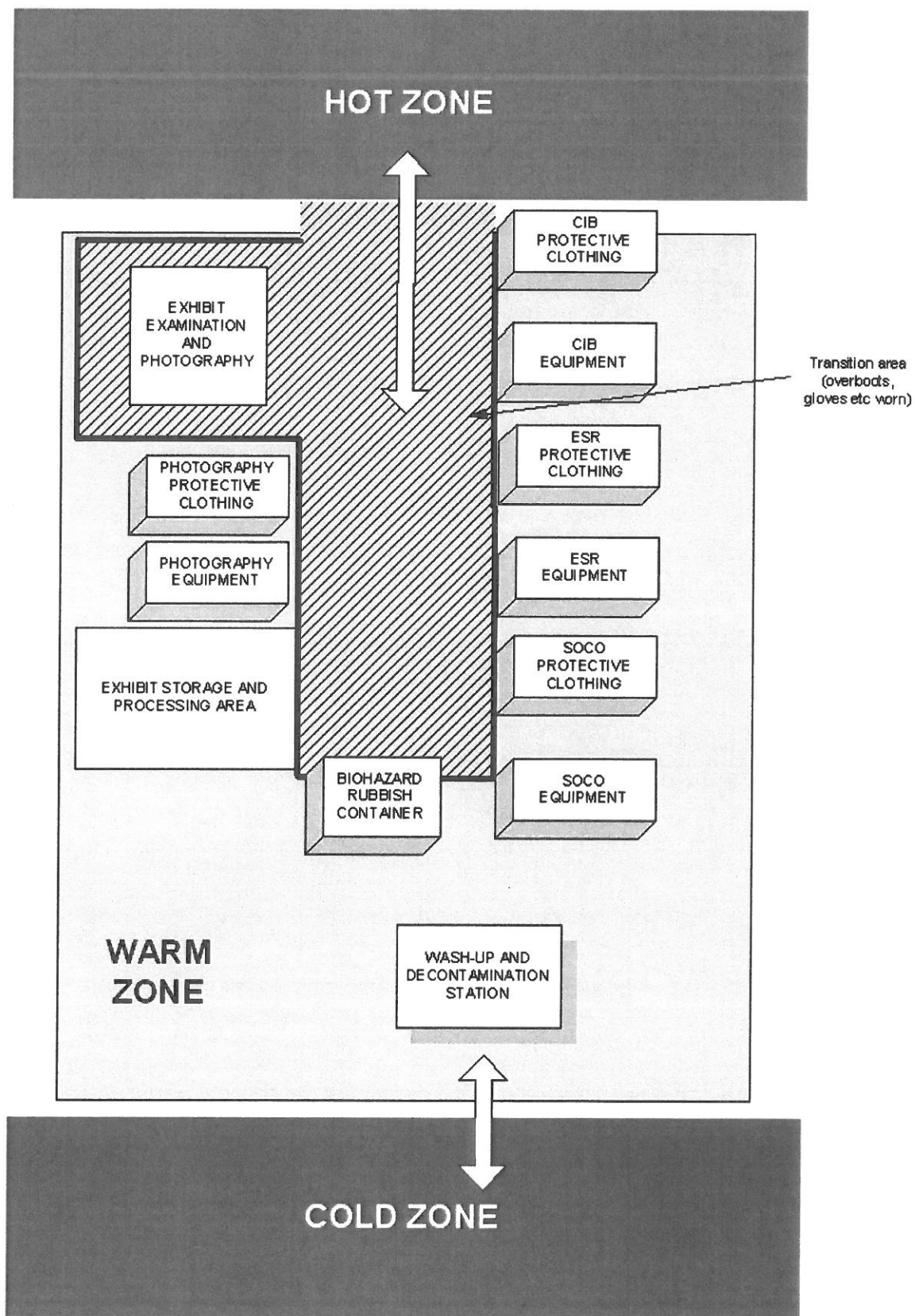
- reflects the standard of protective clothing appropriate for that investigation stage (there may be less demands of the scene or a drop in the concentration of scene examiners)
- is clearly communicated to all relevant parties
- is conveniently displayed in a notice in the warm zone.

Dress code example

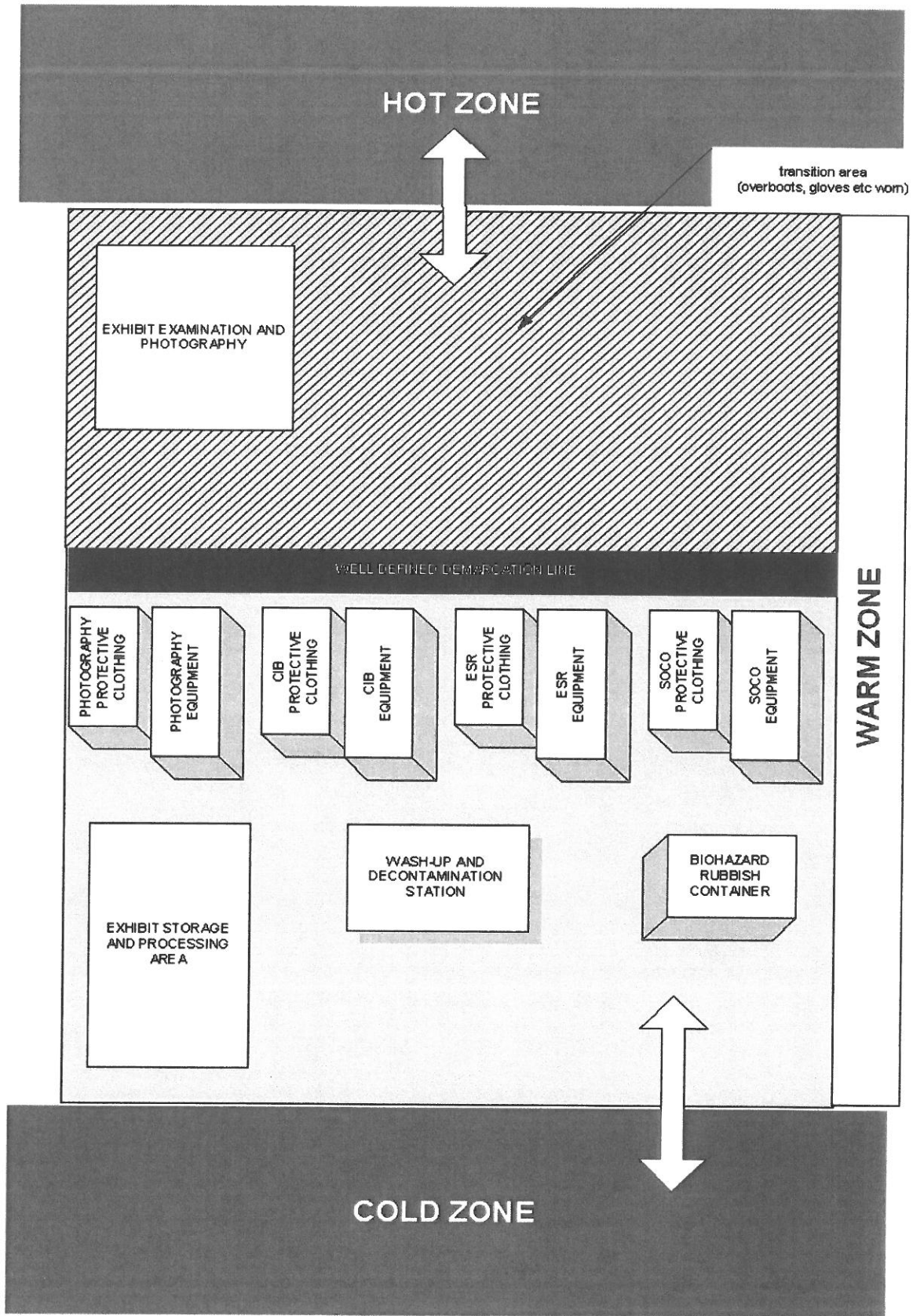
This table gives an example of appropriate dress codes and access to scenes during scene examination stages.

| Level | Stage of scene examination | Dress of the day | Access to hot and warm scene zones | Access to cold scene zone |
|-------|--|--|--|--|
| 1 | No scene protection measures taken. | Overalls, gloves and foot coverings. Masks and haircaps may be required. | No access by any personnel, except for the purpose of establishing scene protection measures | Access to any relevant enquiry staff and approved additional personnel |
| 2 | <ul style="list-style-type: none"> Basic scene protection measures (boundary tape, stepping plates etc) in place. Evidence collection about to start or in process. | Overalls, gloves and foot coverings. Masks and haircaps may be required. | Access restricted to essential scene examiners, noted by scene log | |
| 3 | <ul style="list-style-type: none"> Ground/floor access areas searched and all relevant evidence collected (e.g. footwear prints) Trace evidence collection complete. | Overalls, gloves and foot coverings | Access restricted to essential scene examiners, plus approved additional personnel (e.g. lawyers, senior Police) | |
| 4 | Remaining evidence collection and scene examination complete | No minimum standard – appropriate protection of personnel in “dirty”, bloody scenes recommended. | No access restrictions. | |

Zone example 1



Zone example 2



Exhibits

Packaging

Follow these steps to package exhibits as they are taken.

| Step | Action |
|------|---|
| 1 | Package, seal and label exhibits as soon as they are taken. Note: Where possible take the packaging to the item and not the item to the packaging. Do not reuse packaging and other containers. |
| 2 | Securely seal all packaging and containers with adhesive tape on all edges and sign across the tape. (Staples should not be used). Ensure the packaging is appropriate for the item. For example, items for fingerprinting should be packaged so that the item surface does not rub against the inside of the package. Do not reopen after sealing until examination stage. |
| 3 | The finder of the exhibit attaches an exhibit label to the outside of the item's packaging including these details: <ul style="list-style-type: none"> • exhibit number • description of item collected • location of the item • time and date found / collected • name of person from whom exhibit was seized (if applicable) • by whom collected. |
| 4 | Store and transport control samples and items from each suspect / victim / scene in separate outer containers (e.g. large paper sacks). |

Exhibit numbering

Exhibit numbering differs from district to district. Whatever the numbering system used, it needs to:

- be consistent for the duration of a case
- use unique numbers and eliminate the chances of duplication of numbers
- be simple, efficient and meaningful
- be easy to delegate
- cope with multiple scenes
- be compatible with technology
- cover all exhibits (including medical examination kits, reference blood samples and photographs).

Options for numbering

This table outlines some of the options for numbering exhibits.

| Numbering method | Example |
|-----------------------|--|
| Code indicates source | <p>Victim ("Some Body" has the initials "SB"):</p> <ul style="list-style-type: none"> • victim's jacket SB1 • victim's jumper SB2 • victim's trousers SB3 • swab of stain, left trouser leg SB3.1 <p>Suspect ("Any Body" has the initials AB):</p> <ul style="list-style-type: none"> • suspect's jacket AB1 • suspect's trousers AB2 • tapings from left sleeve of jacket AB1.1 • tapings from rear of jacket AB1.2 |

| | |
|---|--|
| | Items from Kitchen @ 20, High St Control glass sample from POE (point of entry) KHS1 |
| Using collector's initials and those of the body (Scene Examiner: "Yet Another Body") | <ul style="list-style-type: none"> • Control glass sample from POE YAB1 • Photographs YAB2 • Photograph 1 POE YAB2.1 • Shoe impression lift YAB3 |
| Incorporate collector's initials and the time and date (method adopted by serious crime squads overseas) | AB2210230707 (Seized by AB at 10.10pm on 23/07/07) |
| Incorporating job number for that year with scene examiners initials and the exhibit number (when you attend many scenes) | 1AB1 (First job of 2007 for scene examiner with initials AB and the first exhibit collected at that scene). |
| Issuing blocks of numbers for serious crime scenes | 1001 - 2000 (scene 1) 2001 - 3000 (scene 2) 3001 - 4000 (victim) 4001 - 5000 (suspect 1) etc |

Suffixes

Use numerical suffixes rather than alphabetical ones as letters are often used by the defence.

Exhibit schedules

Prepare a schedule of exhibits in cases with many exhibits (example below). The schedule must be exhibited.

Exhibit schedule example

| Exhibit ref no | Description | Location | Seized by | Time & date | Exhibit movements | Time and date |
|----------------|---------------------|------------------------|--------------------|---------------------|-------------------|-----------------------|
| AB1 | 1 X pair blue jeans | 1 High Street, Dunedin | Constable Any Body | 25/07/07 1025hrs | O/C Exhibits | 25/07/07 1045 hrs |
| | | | | | ESR | 26/07/07 0930 hrs. |

Recording crime scenes

Tools for recording crime scenes

A comprehensive record, notes, photographs and sketches of a scene examination is a prerequisite to the future reporting, evaluation and presentation of the information developed during an investigation.

The main recording methods are:

- documentation
- photogrammetry
- photography
- sketch drawing
- video.

Documentation and notes

Effective documentation of the crime scene begins on arrival. Scene notes:

- provide a repository for details, a basis for the report and supplement sketches and photographs
- reflect the 'when', 'who', 'what', 'where, and 'how' of the investigation
- serve as documentary evidence for the investigator, especially in court
- may assist in answering questions and definitely corroborate other forms of documentation (photos, sketches) and testimony or statements.

Notes must be legible, accurate and relevant and alterations initialled.

All details of a forensic scene examination should be recorded on the crime scene examination report attachment in NIA. (Refer to Crime scene report in the NIA Manual for detailed information about completing the report).

What should notes cover?

There are no set absolute procedures for crime scene note taking but this table outlines some minimum requirements.

| Subject /type | Examples of what to cover |
|--------------------------|--|
| Notification information | <ul style="list-style-type: none">• Case (event) file number related to job• Mode (phone, personal contact, e-mail, Comms entry)• Dates and times• Information received (type of case, victims(s), address, case number, officer in charge, scene personnel, assigned tasks)• Identity of person doing the informing (full name, rank, contact details (cell or phone number)• Identity of any other staff you liaise with. |
| Arrival information | <ul style="list-style-type: none">• Transportation mode and any intermediate stops (e.g. secondary scenes which may relate to assertions of cross contamination)• Date and time• Address of scene and examination• Personnel already at the scene, e.g. witnesses, Police, victim(s), emergency staff (this information may be important later to gather fingerprint, DNA and shoe impression elimination samples)• Notifications made or to be made to fire departments, crown solicitor(s), pathologist etc. |

| | |
|---|--|
| Description of scene | <ul style="list-style-type: none"> • Weather (rain, sun, approximate heat, wind etc) • Location (interior / exterior, floor number, ground floor, single level dwelling, garage, office building etc) • Description of scene (messy, organised, blood like marks, broken glass, other descriptions relating to why no other witnesses are available, e.g. house 50 metres from roadside front boundary lined with high trees and side and rear boundary has 6 ft fence) • Vehicles, buildings or other major structures or observations at the scene • Evidence easily identified (prior to preliminary scene search) e.g. sights, sounds, smells, light switches on, victims' words, fumes from gunshot etc. |
| Description of victim(s) (if present) | <p>If the victim is alive, note information pertinent to the investigation, e.g. offender description, activity of crime, objects foreign to the scene, objects definitely moved etc.</p> <p>If the victim is dead, note position / location, lividity or rigidity, wounds, clothing (presence or absence), identification present (wallet, necklace, tattoos etc), weapons at scene.</p> |
| Crime scene team | <ul style="list-style-type: none"> • Assignments / tasks to personnel • Information from scene personnel (from first responder/officer attending account) • Start and end times for scene duties • Evidence processing, collection, packaging and transportation / storage. |
| Examination process | <ul style="list-style-type: none"> • Examination methods • Photographs taken • Crime scene sketch plan • Exhibits collected • Chain of evidence log. |
| More detailed, additional notes about crime scene | <ul style="list-style-type: none"> • Location, i.e. specific room, walls, ceiling (remember a room is essentially a box with six surfaces that may hold evidence) • Points of entry / exit and paths of travel (doors, windows etc) and their condition (e.g. window open, closed or smashed; lights on or off; surfaces clean or bloodied) • Appliances and utilities • Ashtrays / rubbish (e.g. recent, soiled or used by person, could include last meal) • Clothing, visible or disturbed • Furniture, e.g. interaction with scene, overturned? |

Photogrammetry

Photogrammetry is remote sensing technology in which geometric properties about objects are determined from photographic images. For example, the three-dimensional coordinates of points on an object are determined by measurements made in two or more photographic images taken from different positions.

Common points are identified on each image. A line of sight (or ray) can be constructed from the camera location to the point on the object. The intersection of these rays (triangulation) determines the three-dimensional location of the point. More sophisticated algorithms can exploit other information about the scene that is known a

priori (e.g. symmetries) in some cases allowing reconstructions of 3D coordinates from only one camera position.

Photography

Photography is a useful tool for recording crime scenes, and preliminary photographs should be completed before crime scene specialists start working on the scene. Coordinate more detailed photography with the sketch plan drawer and other evidence recovery staff (e.g. scene examiner, scientist or fingerprint officer).

| Type /subject | Purpose and actions to take |
|---|---|
| Environmental photography (i.e. the street and surroundings) | Consider aerial photographs to show the scene's extent and the scene within its broader environment. |
| General scene photography | Show the scene's overall appearance, including a panorama of the scene and paths taken through it. |
| Photography of victims (including bodies), crowd and vehicles. | <ul style="list-style-type: none"> • Photograph a body from several different angles using medium range shots. • Take close-up photographs of any injuries evident on the body. • Photograph the area underneath the original position of the body after removal. • include numbered markers to locate items of interest. |
| Photography of items of evidence | <ul style="list-style-type: none"> • Use medium range and close-up coverage and measurement scales where appropriate. • Note these shots can be used to unambiguously record the location of items of interest while still in situ. |
| Technical photographs | <ul style="list-style-type: none"> • Assist identify and process physical evidence by using filters, illumination techniques, macroscopic/ microscopic photography. • Photography of latent fingerprints prior to enhancement, lifting and / or casting. This will demonstrate position, size and orientation. |
| Photography of fingerprints, shoe impressions, tool and tyre marks, body fluid distribution | <ul style="list-style-type: none"> • Photography prior to enhancement, lifting, casting or collection demonstrates position, size, and orientation. |
| Closer range photographs | <ul style="list-style-type: none"> • Use to record size. |

Note: it is essential a scale is also added to the field of view and photographed.

Sketch plans

Photographs alone do not record a crime scene adequately. A sketch plan should also be routinely made to:

- refresh investigator's memory
- record exact location of evidence found in relationship to pieces of furniture or fixed objects and numbered markers
- provide a permanent record
- assist everyone's understanding
- supplement photographs and notes.

Types of sketches

Crime scene locations present different types of sketching problems. The type of sketch chosen is not important. What is important is that the resulting drawing best and most easily depicts the crime scene.

This table outlines the most common types of sketches used for recording crime scenes.

| Type of sketch | Description / use |
|---|---|
| Overview, floor plan, or bird's eye view sketch | <ul style="list-style-type: none"> Used in nearly all crime scene situations where the items of interest are located on one plane. It is the: <ul style="list-style-type: none"> simplest and most common sketch for diagramming crime scenes easiest for laypeople, e.g. jury members, to comprehend. |
| Elevation drawing | Used when the vertical, rather than the horizontal, plane is of interest. E.g. if a wall of a house had bloodstains present, the elevation drawing of the wall would be used to depict this scene. |
| Cross projection, or exploded view | A combination of the preceding two types. It is similar to the floor plan sketch except the walls have been folded down into the same plane as the floor. |
| Perspective drawing | Depicts a three-dimensional drawing of the scene. Although the final drawing will be very clear if done properly, this type of sketch requires a fair amount of artistic skill and therefore is generally not recommended. |

Drawing rough sketches

This table outlines the steps for drawing rough sketches at crime scenes.

| Step | Action |
|------|---|
| 1 | Decide what is to be sketched. Include all key features and essential items in the drawing. |
| 2 | Begin sketching: <ul style="list-style-type: none"> as soon as the investigating officer has attended to the essential tasks of aiding the injured, protecting the scene, securing witnesses and making arrests after a preliminary search of the scene but before the removal of evidence (where objects must be removed from the scene before the sketch is completed, the exact location of those items should be outlined with a marking device). |
| 3 | Indicate North on the sketch. (Use compass if necessary.) |
| 4 | Take and record measurements in your drawing of all key items and features. If possible have them verified by another person. Take: <ul style="list-style-type: none"> two separate sets of measurements when noting a body's position - one set from the head and another from the feet indoor measurements from fixed objects, e.g. walls, room corners, door and window frames, bathroom fixtures outdoor measurements from fixed objects, e.g. corners of buildings (record |

| | |
|---|--|
| | Even though measurements may appear to clutter the image, they provide perspective to the drawing and help you to answer questions later in court. |
| 5 | <ul style="list-style-type: none"> • Use drawing and charting symbols to locate all objects accurately and identify them by numerals or letters. Draw "stick" figures to represent bodies. • Include a legend on the sketch listing and explaining the symbols and notations used (refer to examples of sketches for details). |
| 6 | Include the position of doors and windows and the direction of opening. |
| 7 | <p>Try to make all corrections to the sketch while still at the scene. Don't rely on your memory.</p> <p>Note:</p> <ul style="list-style-type: none"> • Your sketch doesn't have to look like a draftsman or architect completed it. • You may be called to court to interpret it. |
| 8 | <p>Record in a title block:</p> <ul style="list-style-type: none"> • complainant's name and file number • location sketched • date and time of sketch • sketcher's name and names anyone assisting with measurements • sketch's scale or a notation that the sketch is not to scale. |

Finished drawings for court

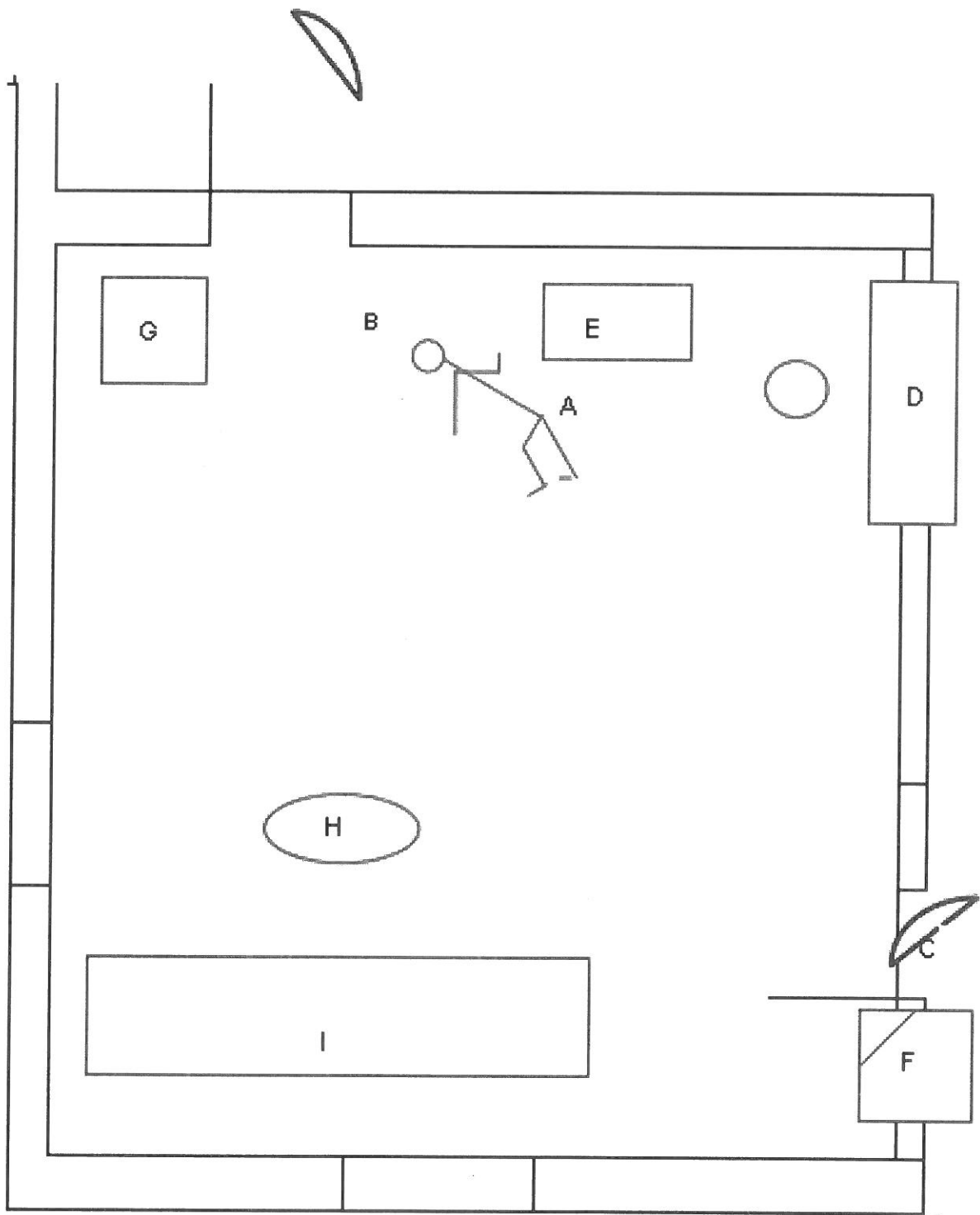
A finished or formal drawing is usually prepared for courtroom presentation based on information recorded in the rough sketch. Unlike the rough sketch, the formal drawing is drawn to scale and embodies all the fine points of accepted drafting techniques.

The finished sketch can be as simple or complex as the need requires. Items pertaining to the investigation may be added to the drawing by means of transparent plastic overlays. Different colour inks may be used to attract attention to certain locations or items.

This drawing needs to be exhibited.

Projection sketch example



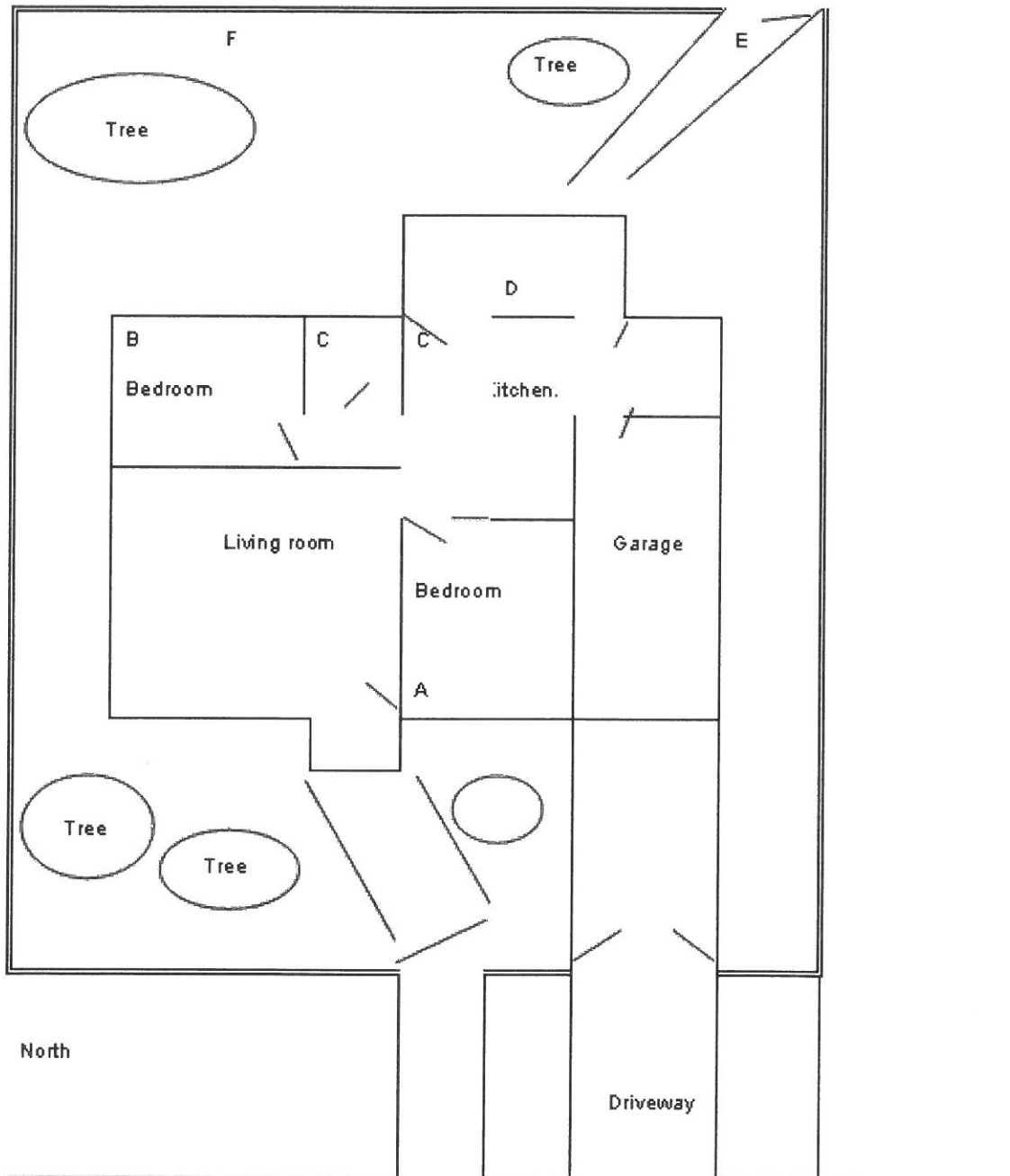


Legend:

| | | | |
|---|------------------|---|-------------------|
| A | Body | F | Corner cabinet |
| B | .38 cal revolver | G | Chair and ottoman |
| C | Handkerchief | H | Cocktail table |
| D | Piano and stool | I | Sofa |
| E | Television | | |

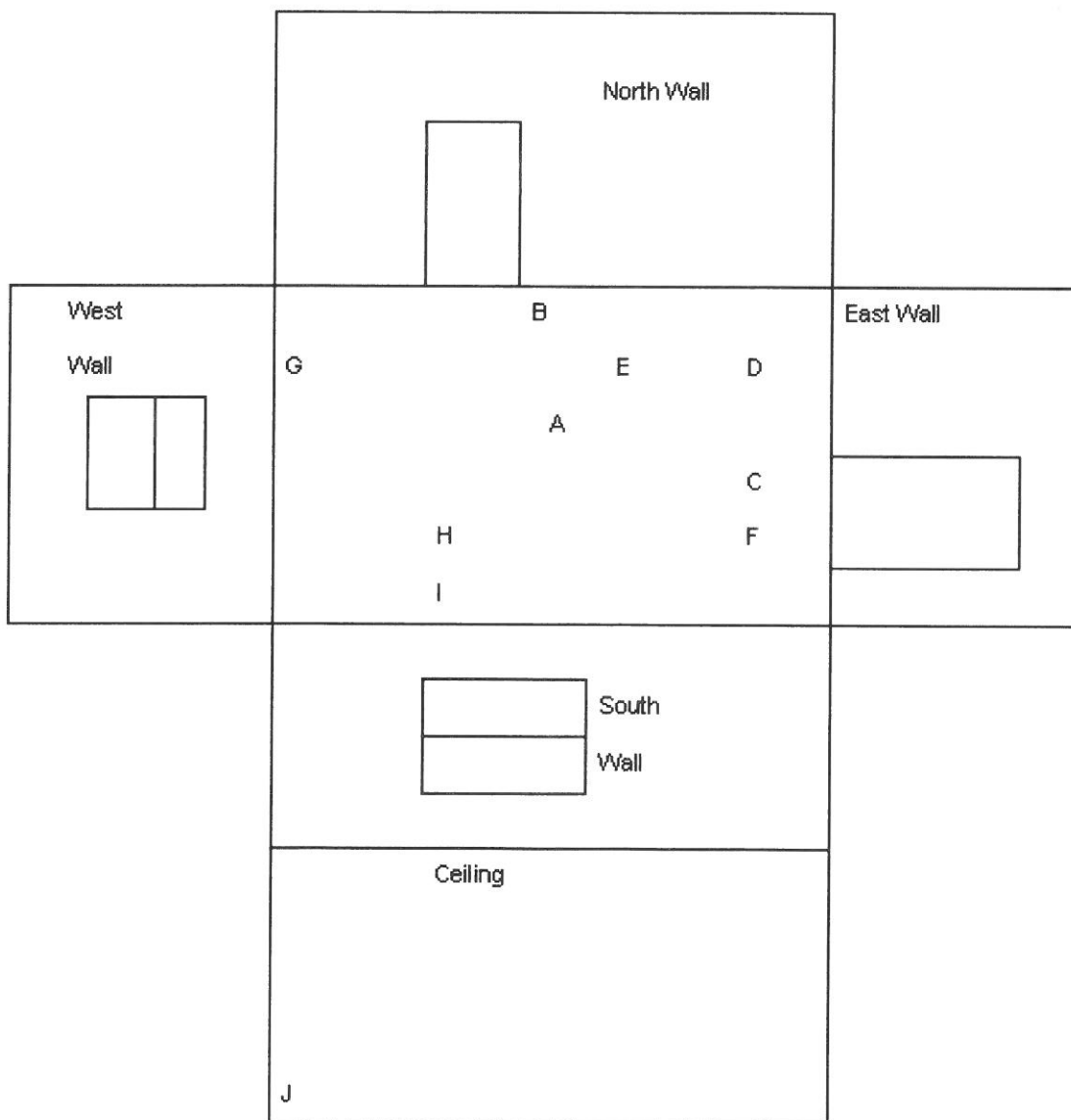
Sketch of grounds example

Unnamed alley



| | |
|---|--|
| <p>Legend:</p> <p>A Smashed window</p> <p>B Missing money</p> <p>C Fresh blood</p> <p>D Missing bicycle</p> <p>E Open gate</p> <p>F Wallet</p> | <p>Title:</p> <p>Case: BX -1113 123 A Body Sometown, NZ</p> <p>Oct 2, 2008 124 YA Body Sometown, NZ</p> |
|---|--|

Cross projection sketch example



| | |
|----------------|-------------------|
| Legend: | |
| A | Body |
| B | .38 cal revolver |
| C | Handkerchief |
| D | Piano and stool |
| E | Television |
| F | Corner cabinet |
| G | Chair and ottoman |
| H | Cocktail table |
| I | Sofa |
| J | Bullet hole |

Video recording

Videos supplement (rather than replace) still photography by recording the overall appearance of the scene and the position of items within it.

The advantages of video recordings are:

- a narrative description can be added
- a number of items or a large scene may be viewed to show a perspective or relationship between items and movement may be recorded (e.g. following a road or track or an individual performing an activity as part of the reconstruction of events).

Procedure when video recording

Follow these steps when recording videos at scenes.

| Step | Action |
|------|--|
| 1 | Begin filming: <ul style="list-style-type: none"> • indoor scenes outside • outside scenes with a pan view. |
| 2 | Include in the narrative: <ul style="list-style-type: none"> • an introduction • the speaker's name • time, date, location • case reference / operation name, and other pertinent identifying information. |
| 3 | Ensure other personnel remain silent during recording as their voices may be picked up, distracting and sometimes compromising when the tape is used as evidence. |
| 4 | <ul style="list-style-type: none"> • Show/ contain a scale when recording small items of evidence and evidence of significance close-up. • Show relative location and position when panning and zooming in on items. |
| 5 | Do not edit or erase the master tape to maintain integrity. |

Safety at crime scenes

Introduction

The tasks involved during crime scene examination are potentially hazardous. The work is often carried out under pressure in less than ideal surroundings. Individual scenes may present different hazards and each should be managed from a safety perspective through a process of risk management. This will ensure:

- hazards are identified
- safe systems of work are developed
- risks are minimized.

Legislation and policy

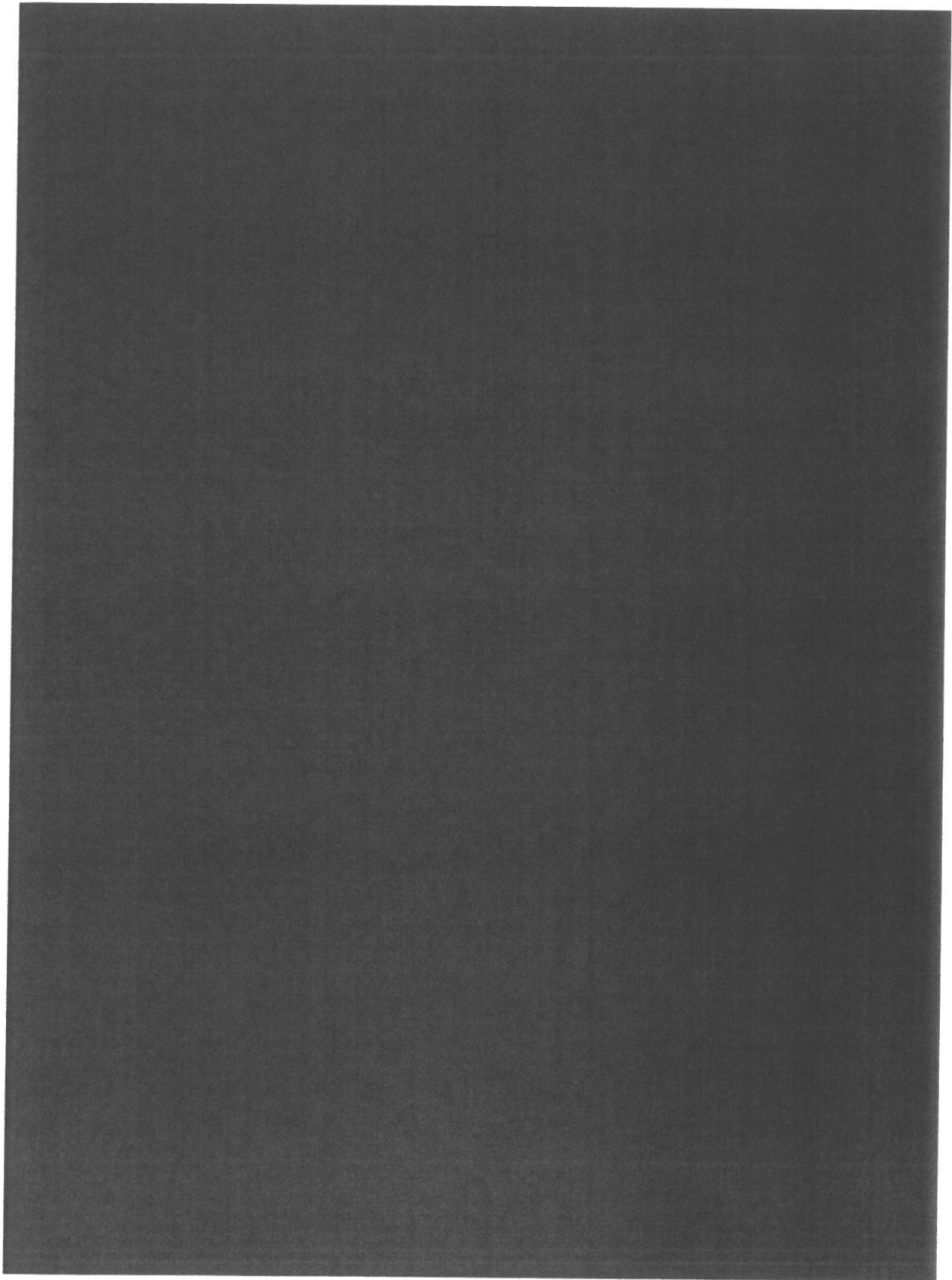
- Health and safety policy (New Zealand Police)
- Health and Safety in Employment Act 1992

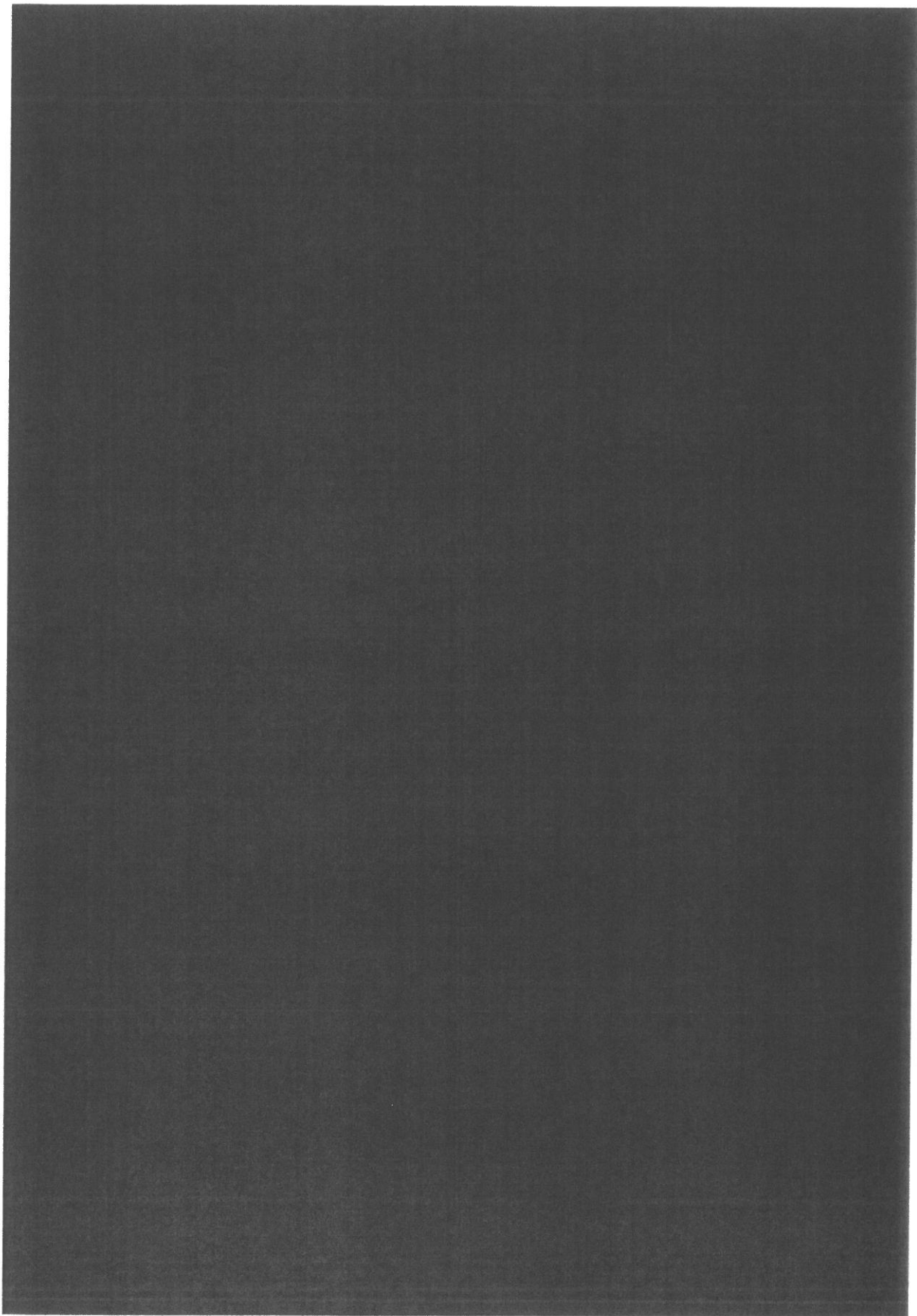
Safety precautions

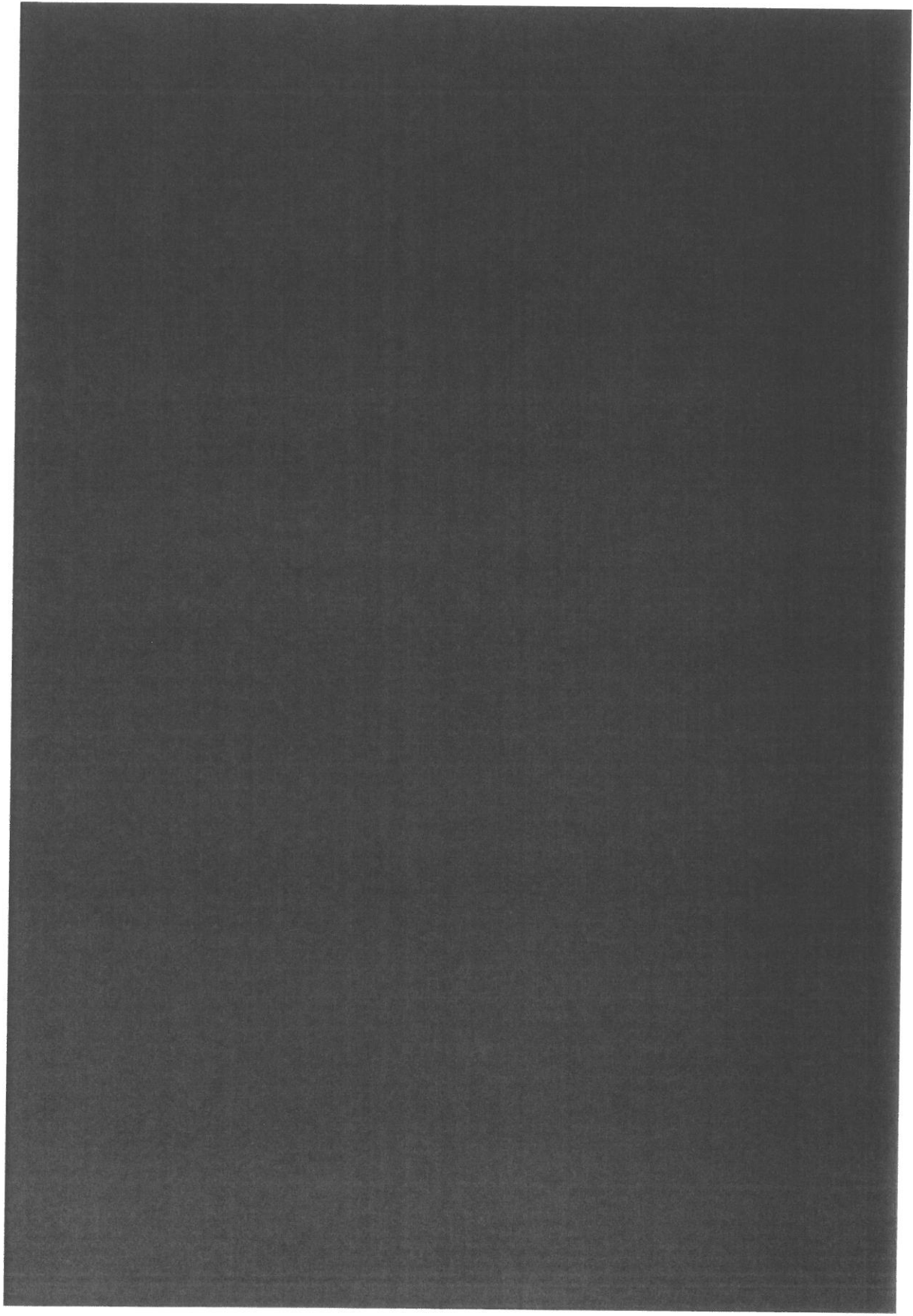
This table outlines some safety precautions which can be taken to ensure the safety of employees and others.

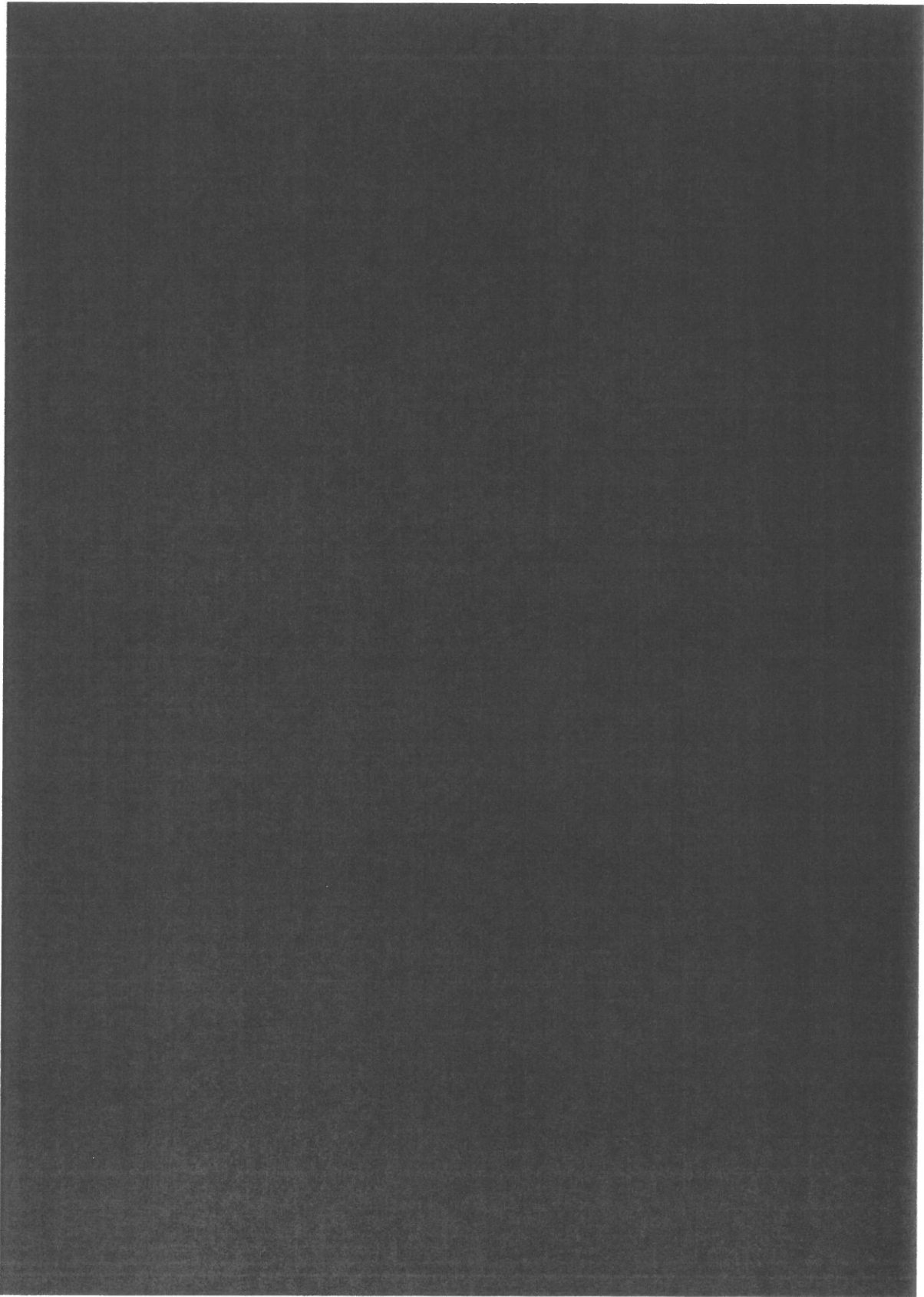
| Type of risk | Precaution |
|--------------|---|
| Personal | <ul style="list-style-type: none"> • Ensure personal protection – booster updates for tetanus and hepatitis B. • Use personal protective equipment. • Use disposable protective items. • Use masks when dusting or using chemicals and safety goggles to protect from splashes, sprays and air borne blood flakes. • Wear appropriate gloves for the task and change regularly. If you have cuts or abrasions to the hand, always wear gloves and consider double gloves for additional protection. • Personal hygiene – always wash hands before and after examinations. • Carry a first aid kit. • Do not eat, smoke or drink during a scene examination or in a laboratory environment. • Treat all hazards as dangerous. |
| Equipment | <ul style="list-style-type: none"> • Place contaminated sharps in the appropriate containers. • Decontaminate all equipment after use (10% bleach solution or other appropriate disinfectant). Soak for ten minutes, rinse with water and dry. Further precautions can be taken by hospital sterilisation. |
| Evidence | <ul style="list-style-type: none"> • Completely dry evidence containing blood or other body fluids before packaging. Affix appropriate biohazard warning labels to the outer packaging indicating a potentially infectious material may be present. • Place evidence contaminated with human blood or other potentially infectious materials in a sealed multi-wall paper sack and label with appropriate biohazard warning (this avoids direct contact and exposure to potentially infectious evidentiary materials in the courtroom). Avoid the use of plastic and sealed jars when packaging |

| | |
|------------------------------------|---|
| | <p>exhibits stained with biological material, as this will cause rapid degradation of DNA. Wet biological items can be collected, refrigerated and submitted to ESR and marked "requires urgent drying" if there are no drying facilities available. Ensure that samples are submitted to ESR within 24 hours of collection.</p> <ul style="list-style-type: none"> • Place evidence specimens contaminated with wet blood or other potentially infectious materials in a multi-wall paper sack and then in a closable, leak proof container (heavy duty plastic bag) when transporting from the crime scene to the drying location. After drying, package, label and retain original packaging as evidence. Note: consider cross-contamination issues in the handling of these types of exhibits (e.g. offender clothing should be processed completely separately from victim's clothing). |
| Engineering and workplace controls | <p>Use engineering and work place practice controls to eliminate or minimise your exposure to hazardous materials. For example:</p> <ul style="list-style-type: none"> • engineering controls include using puncture-resistant containers for contaminated sharps and adjustable mirrors for locating evidence in confined / hidden spaces. • workplace controls include hand washing and wearing personal protective equipment to reduce the likelihood of exposure when tasks are performed. |









- Control samples.

Examination strategy example

Incident / operation:

Date:

Background information / briefing

Forensic examination aims

Forensic team

(Indicate role and organisation)

Scene designation:

Each scene to be numbered and subject of 'scene forensic strategy' document and appended to this strategy.

Scene management

Scene to be scene managed by appropriate scene manager to address resourcing, preservation, contamination, health and safety and welfare issues and evidence / intelligence recovery in line with O/C case requirements. Scene Forensic Strategy document (see below) to be completed and reviewed. Scene contamination log (see below) to be completed and appended.

Resource tasking

Resources, including specialist personnel and equipment, to be tasked following consultation with O/C case or their nominated representative. (Scene manager - O/C scene / Scene co-ordinator)

Briefing: Briefing / de-briefing of scene examination team to be undertaken by the Scene Manager

Associated strategies:

Results / Forensic submissions, Interpretation and Review

To be discussed and actioned via forensic strategy meetings with O/C case

SIGNED:

(Scene manager)

(O/C case)

Scene forensic strategy document – example

Incident / Operation:

Date:

Scene of:

At:

Background information / Briefing:

Forensic examination aims:

Team personnel:

Preservation issues:

Contamination issues:

Health and safety issues / Risk assessment:

Significant results / Fast track submissions:

Review:

Signed:

(O/C case)

(Scene manager)