

Historic Military Establishment of Upper Canada
Black Powder, Tactical & Encampment
Safety Regulations
PURPOSE

These safety regulations are intended to ensure that events and activities remain a safe and valuable part of the Historic Military Establishment of Upper Canada. (HMEUC)

These regulations are to govern the conduct of current members and outside groups or individuals using black powder weapons, participating in tactical demonstrations/battle re-enactments and encampment activities planned and organized by the HMEUC.

SAFETY OFFICER

The HMEUC board of directors will appoint a Safety Officer that will be responsible for the enforcement of black powder, tactical and encampment safety regulations which involve activities and special events sanctioned by the HMEUC.

The appointed Safety Officer should have at least three years experience in handling, firing and demonstrating historic weapons and handling of black powder.

The Safety Officer shall have the authority to assign assistant Safety Officers during special events and activities to aid in ensuring that proper safety procedures are being upheld.

The Safety Officer and assigned assistants will ensure the prevention of any activity taking place, which by virtue of their training and experience, they determine to be unsafe.

The Safety Officer and assigned assistants must be trained and experienced in the safe handling of the appropriate class of historic weapons, black powder handling and the type of activities to be carried out during HMEUC activities and special events.

Only appropriately trained and knowledgeable people are permitted to handle historic weapons or ammunition, or to participate in historic weapons activities. It is the responsibility of the Safety Officer and assigned assistants to interview any participant unknown to the HMEUC or suspected of safety violations and verifies their level of training and knowledge.

The Safety Officer will assign the appropriate number of competent assistants devoted exclusively to the supervision of activities during tactical demonstrations and battle simulations.

The required number of safety assistants will be determined by the Safety Officer depending on the scenario and the number of military, artillery, naval, militia and native units involved.

The Safety Officer and assistants have the authority to shut down a battle tactical or re-enactment demonstration or tactical at any time that deviates from HMEUC safety regulations.

Personnel devoted to the safety of the event will be used exclusively for that purpose. They will already have their hands full with safety and supervising activities with re-enactors.

BLACK POWDER

All black powder explosives must be transported in accordance with the Transportation of Dangerous Goods Act and any associated regulations and recommendations made by Transport Canada.

All black powder explosives must be stored in accordance with the Explosives Act and with regulations and recommendations made by the Explosives Regulatory Division of Natural Resources Canada.

Black powder should be brought to the event in pre-made cartridges.

Cartridges should be stored in a secure location and returned there after each demonstration unless alternate arrangements have been made with HMEUC Safety Officers.

Cartridges will not be prepared at events unless approved by the Safety Officer and only in approved designated locations.

Any theft of black powder should be reported immediately to the Safety Officer whether actual, suspected or attempted.

Black powder is the only approved propellant at HMEUC events and activities.

Blank cartridges for small arms will be of paper, rolled in an 18th or 19th century manner, folded or tied, without staples, glue or tape.

Blank cartridges for artillery will be made of a double wrapped heavy-duty aluminum foil, rolled and formed with a distinct bottom and top. Triple wrap is preferred for larger caliber guns over 3lbs.

Paper used for musket cartridges must be heavy enough to withstand damage before use or accidental ignition by stray sparks. Facial or toilet tissue and newspaper are not acceptable.

Cartridges for flintlock muskets should not exceed 120 grains of black powder.

WEAPON ACTIVITIES & TACTICAL DEMONSTRATIONS

Historic weapons activities and tactical demonstrations may only be carried out with the knowledge and express permission of the Safety Officer.

Attendance by field commanders, senior N.C.O.'s or a unit representative at briefing sessions is mandatory. Any unit that does not send a representative will not be allowed to take part in any tactical demonstrations or battle re-enactments.

The safety of the audience and participants is paramount and will be the governing factor in determining the location and extent of tactical demonstrations and battle re-enactments.

All individual participants must be part of an organized living history or re-enactment unit. Individuals who are not part of an organized living history or re-enactment unit must report to the Safety Officer for a weapons inspection and safety review. Where possible individuals will be placed with existing units that agree to take them under their command. If no organized unit will accept responsibility for an individual, participation is not guaranteed.

During any opposed side demonstration, all weapons will not be deliberately aimed at "opposing" forces.

Firing will cease within a minimum of 25 meters of two opposing sides.

Weapons will be lowered to a forty-five degree angle towards the ground when opposing forces are within 30 meters or when a situation would dictate for safety reasons.

No objects or projectiles may be thrown during opposed side demonstrations.

No weapon is to be discharged towards or over the audience.

Units ending a demonstration must conduct a safety check to ensure that all firearms are unloaded before leaving a tactical demonstration or battle re-enactment area.

All units are encouraged to check their area or range for live cartridges and other potentially harmful objects at the conclusion of all tactical demonstrations and battle re-enactments.

Safety lines and public viewing areas will be established. Artificial barriers such as rope or tape will be used to mark these lines and wherever possible will coincide with natural features. No unit or individual may cross the safety lines or public viewing areas for any reason at any time during a tactical demonstration or re-enactment

Only reproduction historic firearms will be fired at events held or organized by the HMEUC.

Ramrods are not to be used during any opposed line tacticals.

No projectiles or wadding is to be fired from muskets at any time.

The minimum age to carry and use a historic weapon in a historic weapons activity is 14 years of age under proper supervision.

MOUNTED UNITS AND CALVARY

All mounted units must keep their horses under control and secure at all times

Only mounted units that have battle trained horses will be allowed to participate in tactical demonstrations and re-enactments.

Mounted units that demonstrate a tendency to bolt, become scared or frightened during tactical demonstrations and re-enactments will be removed and barred from future HMEUC activities and events.

HAND-TO-HAND DEMONSTRATIONS

Any hand-to-hand combat must be pre-approved by the HMEUC Safety Officer.

Any approved hand-to-hand combat must be pre-planned, practiced and presented to the Safety Officer ahead of time in order to be potentially approved.

No objects or projectiles may be thrown during hand-to-hand demonstrations.

Hand-to hand combat will only take place either at the beginning or nearing the end of a tactical demonstration or battle re-enactment.

Only personal that have practiced the pre-approved hand-to-hand combat scenario will be allowed to take part. Re-enactors not included in the practiced scenario will not take part and re-enactors not part of the practiced scenario will not be engaged.

During a tactical demonstration or battle re-enactment hand-to-hand combat will only commence with the approval of the Safety Officer or appointed assistants.

WEAPONS, ACCOUTREMENTS AND EQUIPMENT

The Safety Officer and assigned assistants are responsible for ensuring all historic weapons are in an acceptable condition for the activity or events being undertaken.

All equipment and accouterments should be of good working and safe condition.

All edged weapons shall have appropriate sheaths or protective covers.

Powder horns must not be used for loading and cannot contain powder at any time.

Projectiles including bows and arrows, tomahawks and crossbows of any type may only be used on an appropriate range or area approved by the Safety Officer.

In the absence of specific regulations for certain types of historic weapons it is the responsibility of the Safety Officer to ensure the activity can be carried out with the utmost safety.

FIREARMS

Only firearms, which pass inspection by HMEUC safety officials, will be used HMEUC activities and events.

Firearms will only use black powder in pre-made cartridges.

All firearms used in tactical demonstrations and activities shall be right handed with the touch hole discharging to the right. No left handed muskets with their touch holes discharging to the left will be permitted at HMEUC events.

No member of the public is to handle or fire any firearms.

No firearm shall be pointed at another person including visitors or re-enactors, whether loaded or unloaded.

Firearms will not be discharged towards or over any people except in a supervised and approved opposed line demonstration.

All firearms must be secure at all times, either held in hand or locked away.

All firearms must have frizzen covers to prevent accidental discharge.

Flash guards fitted to all priming pans are mandatory.

Ramrods are not to be used during any opposed line tactical.

No projectiles or wadding is to be fired from firearms at any time.

ARTILLERY

Only artillery pieces passed by the HMEUC Safety Officer or assistants will be used during HMEUC events and activities.

Safety Officers and assistants will inspect its bore to ensure it does not have pits or crevices that can harbour sparks or burning debris.

Under no conditions will an artillery piece be used by less than two persons.

Firing intervals is once every 2 minutes; there are no exceptions to this rule. Black powder in any form must not be placed in the bore until two minutes have passed from the previous firing.

All artillery blank charges will be made of a triple wrapped heavy-duty aluminum foil, rolled and formed with a distinct bottom and top. No other material can be used for this purpose.

Only authorized equipment of good working condition will be used. The sponge must be covered by sheepskin or wool carpentry with a significant nap. The sponge should be well fitted to the bore; it must be able to thoroughly swab the entire breech of the gun. All crews must have a spare functional sponge. A sock on a stick is not acceptable.

Artillery crews will double worm and triple swab for all blank firings.

Priming tubes, quills or friction primers are the only means used for ignition.

Artillery that is loaded or has misfired will remain in position until the situation is resolved.

All gun crews firing black powder artillery shall wear only natural fiber, long sleeved outer garments or uniforms including thumb stalls as protection.

Use of artillery and ordnance is the responsibility of the relevant visiting units and they must ensure that only trained personnel are involved in the firing procedures and handling of ammunition.

Earplugs or hearing protection is strongly recommended.

Artillery charges will be prepared according to gun caliber.

STANDARD LOADING SEQUENCE MUZZLE LOADING ARTILLERY

No matter which periods drill is used, the following loading sequence must be respected at all times:

Clean the vent

Stop the vent

Worm the bore (twice)

Inspect the bore to make sure there are no debris left in the bore

Wet sponge the bore (Three Times)

Load powder - At least 2 minutes must have elapsed since the explosion of the previous charge as measured with a watch that can measure seconds or with a stopwatch.

Prick the charge

Prime

Fire the gun

PROPER TECHNIQUES

The following proper techniques must be respected at all times:

Worming

Worm twice using a tool with two sharp steel points with coil(s) well sprung.

Give two complete turns of the worm at the breech each time to pick up any cartridge remnants and loosen powder residue.

The worm should fit closely the diameter of the bore so the points will pick up debris easily.

Sponging

Seat the wet sponge against the breech with hand pressure and give two full rotation of the shaft. Withdraw the sponge half-length, twist, then re-seat against the breech and give another two rotations.

Remove the sponge. If any powder container remnants or unburned powder comes out with the sponge, repeat the entire process, starting with step III: Worm.

Ramming

Stand to the side of the barrel with as much of your body as possible behind the face of the muzzle.

Grasp rammer underhand, with one hand, thumb-to-the-side.

Seat the charge lightly by pushing the rammer smoothly, moving your hand along the rammer as necessary. Do not throw the rammer to seat the charge or pound the rammer against the charge.

Upon feeling the charge reach the breech, remove the rammer, one hand, underhand, thumb-to-the-side. At no time should more of the body than absolutely necessary be forward of the muzzle face and never in front of it.

Except when you absolutely need better control of the rammer, you should not have both hands on the rammer.

STANDARDS FOR ARTILLERY TOOLS

The following standards for artillery tools must be respected at all times. Defective or worn-out tools must be replaced immediately before a demonstration can take place or resume its normal course. Spare tools in good condition should be available.

Sponge

The sponge must be tight-fitting into the bore of the gun.

The head of the sponge must be covered with lambs wool or 100% wool carpeting with a nap long enough to easily wipe the bore surface and pick up any small remains of the cartridge.

The head must be strongly affixed to a shaft at least one foot longer than the bore.

The shape of the head must conform to the shape of the face of the breech (flat or curved).

Worm

The worm must have two sharp steel points slightly bent outward with coil(s) well sprung so they will scrape the face of the breech and easily pick up debris.

The worm should fit closely inside the diameter of the bore.

In cases where the breech face is curved or has a rounded junction with the bore walls, the diameter of the worm should be such as to allow it to reach the face of the breech and not just stop on the junction or shoulder where the bore becomes the breech face.

MAXIMUM AUTHORIZED CHARGES FOR SMOOTH BORE ARTILLERY

The maximum charges listed apply to smooth-bore artillery only.

If rifled artillery is used, the appropriate maximum authorized charge will be established as the standard.

The charges listed are maximums. Under no conditions are they to be exceeded. Smaller charges are permitted, provided they can be safely handled and fired.

The maximum charge for any artillery piece over a 9 pdr not listed herein is 25% of the historical service charge. Charges for pieces less than 9 lbs. and not listed must be approved in writing by the Safety Officer.

NATURE OF ORDNANCE

MAXIMUM AUTHORIZED CHARGE

Guns

Lbs.

1.	10 in.	3 lb.
2.	8 in.	
a)	65 and 60 cwt.	2 lb. 8 oz.
b)	52 and 60 cwt.	2
3.	68 pdr.	
a)	113 cwt.	4 lb. 8 oz.
b)	95 cwt.	4 lb.

c)	87 cwt.	3 lb.	8 oz.
4.	56 pdr.	3 lb.	8 oz.
5.	42 pdr.		
a)	84 cwt.	3 lb.	8 oz.
b)	75 cwt.	3 lb.	
c)	67 cwt.	2 lb.	10 oz.
6.	32 pdr.		
a)	63, 58, 56 cwt.	2 lb.	8 oz.
b)	50 and 48 cwt.	2 lb.	
c)	45 cwt.	1 lb.	12 oz.
d)	46, 42, 41, 40, 39 cwt.	1 lb.	8 oz.
e)	32 cwt.	1 lb.	4 oz.
f)	25 cwt.	1 lb.	
7.	24 pdr.		
a)	50 and 48 cwt.	2 lb.	
b)	41 cwt.	1 lb.	8 oz.
c)	33 cwt.	1 lb.	
d)	20 cwt.		10 oz

NATURE OF ORDNANCE

MAXIMUM AUTHORIZED CHARGE

Guns

Lbs.

8.	18 pdr.		
	a) 42 to 38 cwt.	1 lb.	8 oz
b)	22 to 20 cwt.		12 oz.
c)	15 cwt.		8 oz.
9.	12 pdr. (Iron and bronze)		1 lb.
10.	9 pdr. (Iron and bronze)		1 lb.
11.	6 pdr. (Iron and bronze)		10 oz.
12.	3 pdr.		8 oz.
13.	1 pdr.		

Howitzers

14.	10 in.	1 lb.	12 oz.
15.	8 in.	1 lb.	
16.	32 pdr.		1 lb.
17.	24 pdr.		1 lb.
18.	5 1/2 in.		8 oz.
19.	12 pdr., 6 1/2 cwt.		4 oz.
20.	4 3/4 in., 2 1/2 cwt. Coehorn		4 oz.

Mortars

21.	13 in.	2 lb.	4 oz.
22.	10 in.	1 lb.	
23.	8 in.		8 oz.
24.	5 1/2 in. Royal		4 oz.
25.	4 3/4 in. Coehorn		4 oz.

Carronades

26.	68 pdr.	1 lb.	4 oz.
27.	42 pdr.		14 oz.
28.	32 pdr.		11 oz.
29.	24 pdr.		8 oz.
30.	18 pdr.		6 oz.
31.	12 pdr.		4 oz.
32.	6 pdr.		4 oz.

RANGE DIAGRAMS

The distances described herein are based on the assumption that physical conditions are ideal. It must be recognized that less-than-ideal physical conditions can create a dangerous situation, even if the stated distances are observed. Wind direction, for example, may dictate greater distances between an artillery piece and adjacent structures in order to prevent roof fires.

Common sense and a cautious attitude should rule.

The diagrams contained herein deal only with the firing of field guns in the case of artillery.

Other situations, such as the firing of garrison guns, or firing small arms in block formation, should be dealt with on an individual basis. In such cases, diagrams showing minimum distances to be adhered to should be researched and approved by the Safety Officer. The distances specified in the diagrams contained herein can be used as a guide.

OUTSIDE GROUPS AND INDIVIDUALS

It is the responsibility of the Safety Officer to ensure that any historic weapons activities carried out by an outside group or individual conforms to the standards of safety set by the HMEUC.

Individual field units have the authority to impose stricter safety regulations to meet their specific requirements. All such activities must be under the direct and immediate supervision of a competent individual, trained on the class of historic weapon being used, appointed by the historic weapons supervisor.

Only re-enactment units or individuals that have been invited by the HMEUC, that have proven their competence, and that have been inspected and approved by the Safety Officer can participate in a tactical demonstrations or re-enactment events.

Individuals or units that “just show up” at an event or activities without pre-registering may be barred from participating.

It is the responsibility of outside groups and individuals to ensure that appropriate protective clothing and equipment are designated, provided and used by those participating in historic weapons activities.

Standard ranges for small arms and artillery described in the safety document will be respected at all times.

All outside groups and individuals who attend and take part in HMEUC activities and events must hold valid 3rd person liability insurance. Proof of valid 3rd person insurance may be required.

Outside groups and individuals who do not hold valid 3rd person liability insurance will purchase temporary 3rd person insurance through the HMEUC.

There will be a scripted scenario describing the main phases of the battle re-enactment. All units and individuals participating in scripted scenarios are to follow the planned activities to the best of their ability. Deviations from the scripted plan must be approved by the Safety Officer and overall Commanding Officer in charge of the scenario.

Outside groups and individuals must agree to uphold all rules and regulations outlined in the HMEUC safety regulations. Outside groups and individuals may be asked to sign a written contract for certain events and activities.

Any failure to comply with the safety rules, criteria and regulations established by the HMEUC rules contained within this document by an outside group or individual is to be considered as a major disregard for safety. Violations or sanctions may be applied.

VIOLATIONS AND SANCTIONS

Safety infractions will be treated seriously. Any violation of these rules will result in the immediate expulsion from the event being held or during the remainder of any program in progress. Any individuals or units that do not abide by the rules or control their members will not be invited to future activities and events organized or held by the HMEUC.

It is the responsibility of the HMEUC board of directors, upon recommendation from the Safety Officer, to take proper corrective or disciplinary actions or sanctions against any individual who does not respect all the regulations contained in the HMEUC safety rules and regulations.

Any failure to precisely adhere to timing standards and loading procedures outlined in the HMEUC safety guidelines and regulations for artillery firings will be considered a major safety violation and will be subject to sanctions.

If after review, the Safety Officer deems it warranted, they may recommend to the HMEUC board of directors that the offending outside group or individual be barred from any future activities or events organized or held by the HMEUC.

If deemed necessary due to the nature of the hazard associated with an accident or safety violation, the Safety Officer may order the suspension of any or all related historic weapons activities until the hazardous condition or safety violation can be corrected.

ENCAMPMENT RULES

Straw will not be provided anymore at HMEUC organized events. Straw is an extreme fire hazard. Please make other arrangements for bedding if you planned on using straw.

Permission to stay on the Island before the official encampment begins or after it finishes must be pre-authorized by the HMEUC organizing committee.

Garbage and recycling will be picked up at designated spots and times each day. Times will be provided upon registration. Please have any garbage materials dropped off before this time.

Please try and keep fire pits to a minimum and sharing fire pits with other re-enactors is greatly encouraged. Please save and replace the grass sod as to help lower the lawn impact on the site. Please remove garbage and metal before replacing the sod.

Also remember that no fires should be left unattended. Any fires left unattended will be immediately extinguished by park staff or event volunteers.

All animals must be leashed at all times and the leash can be no longer than 2 meters in length. You must clean up after your pets and dispose of waste in proper ways.

If your pet is afraid of loud noises, bites, does not like crowds, or is very noisy in nature, it is recommended that your pet did not attend.

SMALL ARMS MUSKET INSPECTION CHECKLIST

Date of Inspection _____

Name of Safety Officer _____

Physical Description or Type _____

Weapon Serial Number _____

Weapon Owner _____

Overall

- The weapon is confirmed to be unloaded by springing the hammer.
- Your overall first impression favourable.

The Stock

- No cracks or splits.
- All inlet items such as butt plates, trigger guards, barrels, escutcheon plates, etc. should fit tightly with no cracks evident that would allow powder accumulation.
- No burrs on butt plate or trigger guard screw heads that would snag clothing or hands.
- If band springs, they work smoothly (not bound by wood).
- If pin-fastened, pins all there, wood not splintered.
- No burns around the top of the lock.
- Generally, no splinters or rough edges.
- Two-piece stocks have sections securely joined.

The Lock

- Lock works smoothly.
- The hammer or cock fits tightly on the tumbler.
- All the positions are firm and solid.
- The half-cock (safety) position works properly.
- When trigger pulled, it does not catch on half-cock.
- Trigger pull is proper; not too heavy, not "hair" trigger.
- If a set trigger, it is adjusted properly and works smoothly.
- Lock fits properly into the stock and snugly against the barrel.
- The striking face of the percussion hammer is not battered.
- It strikes the cap or cone squarely and in the center.
- A flintlock's cock screws works smoothly; jaws grip flint securely.
- There is a proper leather or lead flint cap.
- The flint is in good condition and set at a proper angle.
- The frizzen spring of a flintlock is of the right tension.
- The frizzen is in good condition and not gouged.
- The pan of a flintlock is clean and in proper relationship to the touch-hole of the barrel.

The Barrel

- Barrel fits the stock properly.
- Free from visible dents or cracks.
- On flintlocks, the flint is not striking the barrel.
- The muzzle is not dented or worn.
- The cone of percussion pieces is well-seated and not battered.
- The hole is clear and of an acceptable size. The shoulders are not worn down.
- On flintlocks, the vent is clear and of an acceptable size.
(Max. 3/32 in.)
- No signs of heavy corrosion around the cone.
- The sights are complete and operable.
- The barrel bands hold the barrel securely.
- The ramrod is straight, fits the stock properly, and threads at the lower end are clean and free of burrs.

Safety Officer reports no problems in using the weapon.

The Bayonet

The Bayonet is clean and fits tightly on the barrel of the musket.

Additional Comments (Use back of Sheet if Necessary)

Signature: _____

MUZZLE-LOADING CANNON INSPECTION CHECKLIST

Date of Inspection _____

Name of Safety Officer _____

Physical Description or Type _____

Weapon Serial Number _____

Weapon Owner _____

Overall

Your overall first impression is favourable.

The Barrel

- Barrel is clean and free of rust, corrosion and foreign objects.
- No sign of external damage or strain (dents, cracks, etc.)
- Inside of the bore is clean and relatively smooth.
- No internal signs of damage (bulges, lodgements, pits, etc.)
- No sign of corrosion damage at breech of the bore.
- The vent is clear, of acceptable size and properly located.
- No signs of cracks or bending around the trunnions.
- No signs of weakness at the chaplets on bronze barrels.

The Carriage

- Wheels are tight and free of rot and insect infestation.
- No pieces or parts missing, cracked, bent, or broken.
- Wheels move freely.
- Elevating mechanism works smoothly and properly.
- None of the ironwork is coming loose.
- Tube rotates freely on its trunnions.
- Trunnion caps fit snugly and are properly keyed.
- Lids of side boxes and limber chests fit snugly.
- Limber chests and side boxes are clean and free of spilled powder.
- Wood generally free of serious checking and splintering.

- () Linch pin is not digging into wheel hub.

Equipment

- () All necessary equipment is present.
() Sponge is in good condition and fitted to the bore.
() Rammer head is secure and free of cracks.
() Smaller items in good condition (lint stock, thumb stall, etc.)
() Prongs of the worm are sharp and bent in a manner that allows effective removal of debris from the barrel.
() Charge carrier is clean and free of spilled powder.

Additional Comments (Use back of Sheet if Necessary)

Signature: _____

ACCIDENT INVESTIGATION GUIDELINES

Responsibility

The Safety Officer is responsible for ensuring that an effective accident investigation is carried out. For an investigation to be effective, any and all information related to the accident must be obtained and considered, and a conclusion reached concerning the causes.

The Safety Officer must also ensure that the appropriate remedial actions are taken to prevent or reduce the risk of a recurrence.

The Safety Officer and appointed assistants must carry out their investigation in as thorough and objective a manner as they can.

Phase I - Actions Following Accident

Depending on the seriousness of the accident, the scene of the accident should be isolated as much as possible. Any injured persons should be attended to immediately.

When the exact physical situation cannot be maintained for investigation, a sketch should be prepared and, if possible, photographs taken. Physical evidence such as historic weapons should be secured and their condition at the time of the accident maintained.

Historic weapons involved in a black powder accident must not be cleaned or repaired until the accident investigation is complete.

The names and addresses of all witnesses and injured parties should be obtained immediately.

If the circumstances surrounding the accident constitute and imminent danger to anyone, the apparent hazard should be removed or the program suspended without awaiting the final outcome of the investigation.

Circumstantial information should be recorded as soon as possible. This includes:

- Date, time and location of accident
- Weather conditions
- Concise narrative description of what took place
- Extent and nature of injuries, property damage and/or material loss.

7. The accident investigation should proceed as soon as possible.

Phase II - Preparation

The Safety Officer and assistants investigating the incident should ensure that they are thoroughly familiar with the laws, policies, guidelines, directives and procedures applicable to the situation.

Phase III - Fact-finding

Interviews

Personnel involved in the accident, including witnesses and, if possible, the injured should be interviewed while events are still fresh in their minds.

All personnel should be interviewed individually.

All interviews must be recorded in writing or on tape.

Anyone directly involved in the accident should be interviewed first, followed by any other witnesses.

Before interviewing injured persons, the investigator must obtain assurance that the interview is medically permissible. Basic information should be obtained before the interview in order to minimize the strain on the injured person. If the injured person's answers vary considerably from known information, questioning may be inappropriate at that time.

Any person being interviewed should be reminded of the constructive purpose of the investigation. The person should be put at ease and interview conducted in a calm and unbiased manner. Remember, the purpose is to get at the facts, not to fix blame.

Interviewers should be alert to variances from approved procedures, changes in routine, distractions, etc. - Anything that may have contributed to the accident.

Information

Through interviews, examination of records and study of the physical evidence, the Safety Officer and assistants should attempt to assemble and arrange information in a way that will allow assessment of the key factors or components of the accident situation.

In the case of an accident during an historic weapons demonstration, the following components should be examined:

The Weapon

What type is it?

What condition is it in?

When it was last inspected? What were the results?

How many times has it been fired?

Include scale drawing and photograph, if possible.

The Charge

What size was it?

What grade powder was it supposed to contain?

What grade powder did it actually contain?

What was the container made of?

How old was the powder?

Who prepared the charge?

What procedure was used?

Ignition Method

What means of ignition was used?

How was the ignition/priming device made?

Equipment

What equipment was present? (E.g. rammer, etc.)

Was any equipment missing?

Was the equipment correct for the weapon?

What condition was the equipment in?

Range

Was the range clear of obstructions and distractions?

Was the range approved?

Drill

Was the correct drill used?

Was it followed to the letter?

Supervision

Who was in charge of the demonstration?

What experience have they had?

The Audience

How many people were present?

Where were they in relation to the accident?

Were there children present? Were they under control?

Were members of the audience smoking?

Gun Detachment

Who were they?

What was each individual's exact position when the accident occurred?

What experience have they had?

How long have they worked together as a gun detachment?

Were they trained and certified? By whom? When?

How much training had they received?

Do they display a good knowledge of their responsibilities and of the drill?

Is their attitude cautious? Cavalier?

Any other factors which the Investigation Team feels may be relevant to the accident situation should be studied as well.

Phase IV - Analysis and Conclusions

Once all relevant information has been collected and organized, it must be analyzed to identify possible causes of the accident. Even during the fact-finding phase, the Safety Officer and assistants should be asking themselves such questions as:

Was there any deviation from normal procedure?

Did the individuals involved display the necessary knowledge, skill and awareness?

Were there any defects in the weapons, equipment or procedures involved?

Were all the rules followed?

The analysis phase involves an intense examination of all the facts in a search for any factors or conditions that could have contributed to the accident. Safety Officers and assistants should avoid the tendency to reinforce preconceptions about what may have caused the accident, and base their analysis only on substantiated facts or on the best possible logical assumptions.

Once potential causes have been identified, the Safety Officer will be in a position to try to reach a conclusion about what factor or combination of factors caused this accident?

The Safety Officer conclusions should include a clear statement as to whether or not any law, regulation, policy directive, guideline or approved procedure was violated.

The Safety Officer should also state whether or not any of these, even if followed, contributed to the accident.

Phase V – Recommendations & Final Report

The Safety Officers recommendations and final report should address the following questions:

What action must be taken to eliminate or reduce the risk of a similar accident?

Recommendations should distinguish between changes in physical conditions (e.g. weapon, size of charge, proximity of audience, etc.) and actions (improved training, changes in a drill, etc.).

Recommendations should be worded so that they can be acted upon directly and, if possible, include the specific steps or actions required to carry them out.

No investigation is truly complete until its recommendations have been acted upon and the risk of similar accident eliminated.

The final report should follow the general outline used in this Section, i.e. information gathering, analysis and conclusions, and recommendations.

The final report is to be classified and marked as "Confidential". Its contents are not to be discussed with the media or the public unless and until specific authorization is granted by the HMEUC board of directors.