

MISSILE WEAPONS -BOWS AND CROSSBOWS

Part 1 Training and Supervision

Introduction

It has always been recognised that bows and crossbows are potentially lethal weapons, and that of all the weapons on the field they are most likely to injure members of the public by virtue of their intrinsic characteristics. The following guidelines are designed to minimise the risk posed by such weapons to all, by promoting what is current best practice.

Please note that the Guidance notes relating to Combat and Drill Rules, Disciplinary Action, Accident Records, Equipment storage and transport and the Review Process, in the NAReS Drill and Training Guidelines, are as relevant to missile weapons as to other weapons. The following guidelines are designed specifically for bows and crossbows.

Initial Training

Before being allowed to use any weapon without supervision, either in a training session, combat display, or drill display, members should be assessed to ensure that they have achieved a satisfactory level of safety with that weapon. All training and assessments should be supervised by a recognised training officer, who has been certified as competent to conduct training by the officer in charge of archery training for the society.

This assessment may be carried out informally, but must be completed by an appointed training officer who is competent to judge the safety of the candidate. The assessment requirements must be made known to the candidate in advance, and in particular they should be given an explanation of how the assessment will be conducted, and what actions will result in the candidate failing to pass the assessment.

It is very helpful if the criteria for success and failure are clearly understood as it enables the trainer and the trainees to work towards a specific goal. Some guidance identifying common faults and weaknesses and how they can be analysed and resolved are produced by some groups.

Repeat Assessments Candidates who have been assessed and ruled to have failed to meet the standard required should be given the opportunity to repeat the assessment as many times as is necessary. Between assessment attempts, it is expected that some remedial training will be undertaken to attempt to correct the faults found in previous assessments.

Training should be conducted using the equipment which will be used during displays. This should be of a design which is accurate for the period portrayed, within safety limits. The use of equipment which is heavier/lighter, more durable, or safer than that to be used in displays should be limited to an introductory period. It should also be done using the same clothes if that influences the shooting (some clothes lead to restricted movement for example) and if sight correction is needed it should only be worn in the same manner as allowed during shows.

All new members of re-enactment societies should be supervised at all times by a competent person, and should be trained in the use of any weapon they elect (or are allowed) to use. New members should also be supervised by an appropriate person when using any bow type with which they are not familiar, regardless of their experience with other bows.

Prohibitions

At no time should an untrained member, or any non-member including members of the public, be allowed to use any bow, either against a reenactor or other target, or in a public space. Members should take care to prevent the taking and use of weapons by the public, and especially by children. Unless this is part of a properly organised and controlled "Have a Go" feature of the show within the confines of the range / arena, agreed with the show organisers.

Training for Target and Combat archery

Societies conduct target archery and combat archery practices. The equipment, techniques and training required for these may differ widely. Target archery is usually conducted at a 'soft' target (straw or foam) at a fixed distance using sharp arrows and employing a target style. Combat archery will be conducted against other re-enactors at widely varying distances and using blunt arrows and potentially employing a warbow style at long distance or a chest draw style or half-draw at short.

Specific training should be conducted to prepare the archer for participation in these different forms. In combat archery the dangers to other re-enactors and the public are potentially far greater and it is essential that the trainee archer is assessed rigorously in the context in which combat takes place. Awareness of the crowd line, overshoot distances and ability to make sound judgements in combat should be considered in the assessment of an archer's competence.

Societies should have a clear set of commands for shooters an understanding of which should be part of the basic archery qualification.

Basic Safety Rules for Target shooting.

- Never nock or shoot an arrow until the Field Captain has signalled permission to start.
- Never go in front of the shooting line until the Field Captain has signalled permission - he will only do this after he has ensured that everybody has finished shooting.
- Never nock an arrow onto the bow unless you are on the shooting line. Do not nock an arrow or draw an empty bow on the shooting line until the field captain has signalled permission to start.
- Never draw a loaded bow except in the direction of the target.
- Always shoot arrows towards the designated target; never shoot arrows straight up into the air, or where you cannot be certain of their fall. Particular attention must be made of the effect of winds not obvious at ground level.
- Always inspect your equipment before use.

Note on Crossbows

The above rules also apply to crossbows with suitable amendment for that weapon. Please note that it is relatively easy to 'point' a crossbow in the 'wrong direction' due to the nature of its construction, especially short stocked crossbows!

Crossbows should be treated as a firearm and once cocked should always be pointed safely down range at the target even before loading a bolt. They should never be placed cocked on the ground, whether loaded or not.

Supervision

The Training Officer should ensure that training is conducted in a safe and appropriate place. Specifically, obstacles such as cars, spectators, buildings, tents, etc should not encroach on the training area, to prevent injury or damage to property. At all times, environmental conditions should be considered. This should include, but not be limited to, the temperature, footing conditions, and wind speed. Where conditions are deemed to exceed safe parameters, training should not be permitted.

The supervising Training Officer must have clear sight of all areas down range which are within the reasonable range of the bows being used – specifically, there should be no areas into which someone might shoot that are so obstructed as to allow other persons to approach and enter unseen.

A halt must be called immediately if the range is encroached upon.

Training Location

When considering a safe and appropriate place for training or displays the following may be taken into account.

The advice for longbow shooting with sharp arrows for modern conventional target practice recommends that the total range length should be the shooting distance

plus fifty yards, with a total minimum distance of 110 yards. The distance from the target to the sideline should be twenty yards. This is only really achievable on a large sports field.

Many practice indoors, usually at ranges of twenty yards or less. There should be adequate space behind the shooting line for equipment. Back-stop netting is essential and placed one or two metres behind the targets. It should never be strung taut but 'gathered' so that it can absorb the impact of the arrow. Sharp bodkins can penetrate even well laid out netting and their use ought to be carefully supervised.

If blunt arrows are used then although the lethality of projectile is very significantly reduced, it is still a danger and should be treated as such. Blunt arrows with slow flight fletchings have significantly different performance from sharp fast flight arrows and this is investigated in Appendix 2. Blunt arrows are used in combat at human targets and their use is considered in the section on combat.

Shooting at events

At some venues there will be known agreed safe venues for archery. It is still essential that the officer in charge of archery should ensure for himself that the allocated space is safe and suitable.

The following should be considered by the organisers of events as well as the shooting officer when target shooting.

Back-stop provision. What will stop the arrows if they miss the target? The field captain should consider the angle between the archers and the target at the ends of the line as well as the centre. This will significantly alter the possible placing of the back-stop and overshoot pattern.

- *Overshoots.* Where will arrows go if they miss the back-stop? How far will they fly?
- *Number of archers on the shooting line.* How many archers can safely shoot in the available space? The rule of thumb is that archers should be placed a bow width (about 6ft) apart, although closer formations are certainly possible. The skill and experience of the archers may determine where the archers are placed on the line.
- *Field Captain.* The officer in charge should place himself in a position which enables him to supervise the archers as well as ensure that the range itself is safe. The Field Captain should not be shooting, but should be supervising only.
- *Target types.* As with other items of equipment the choice of targets is a matter of authenticity and safety. The current target face was prescribed by the Prince Regent at the end of the eighteenth century and is not suitable for the Middle Ages. Wands, shields, garlands and popinjays are all appropriate

for different periods but the key feature of all is that they should avoid ricochets.

Public access.

Outdoor

Public access must be controlled, in the same way as for other combat demonstrations, with a double tape/rope barrier and suitable signage. On occasion there will be 'dead ground', such as a moat which will not be visible to the field captain. It is essential that observers are placed to supervise such areas throughout the practice or demonstration.

Indoor

Access to the indoor range must be strictly controlled with suitable signs displayed. There should be no access to the range from fire-doors etc.

Practice

Practice, regular and structured to the demands of re-enactment is the key to safe and successful archery. It is the responsibility of the society and the archer that he/she practices regularly. At events the designation of a practice ground for archers is essential if archers are to be used on the field and it can also be used as a space for displaying to the public.

Archers should also be given the opportunity to practise on the ground and in the context that the public battle takes place.

Part 2 Equipment

Archery techniques and authenticity

Different societies/periods may choose to use different styles/techniques appropriate to their period. The 'chest' draw is associated with the earlier periods and the 'full draw' to the ear or further, to the later. Archery GB is the UK national body for archery and runs courses at a wide range of levels for training archery teachers and coaches. The styles it teaches are of course employed for current archery practice rather than being historically appropriate. The British Long Bow Society, the English Warbow Society and the Society for the Promotion of Traditional Archery are enthusiastic proponents of a range of styles and equipment that might be relevant to a society.

It is the responsibility of the individual society to define what it considers authentic equipment for archery. There has been a mass of detailed historical research published in the last few decades which should inform decisions as to the

appropriateness of particular items of equipment. The research includes details of the ancillary equipment, such as quivers, bracers, bow bags etc. Important health and safety considerations include a consideration of the reliability of 'authentic' string materials compared to modern and the use of a bracer or arm guard to protect the bow hand. 'Authenticity' must never compromise safety.

Draw weights

Current good practice recommends a maximum draw weight of 30 or at most 35lbs for 'wooden' bows for some eras and 45lbs for later eras, where longer range shooting is required. Draw weight of course is dependent upon draw length, most bowyers assess the draw weight of their bow when the string is drawn to 28 inches. The following factors may be taken into account:

- Draw weights of wooden bows can alter, usually diminish, over time or due to warm weather or during use.
- Draw weights will change according to the style used. The same bow used with different techniques will produce very different velocities.
- The cast of the bow will depend very much on the skill of the bowyer and the materials used. For example, fibreglass recurve bows of the same draw weight as an ash longbow produces much higher velocities.

The Arrow

Combat archery

- Arrows should be fitted with a standard blunt head approved by the society. **Under no circumstances should a blunt head be fitted over a sharp point.**
- The number and shape of fletchings should be of a single style approved of by the society. In the appendix to this document is attached the result of trials using a range of different fletchings.
- The shaft should be of a standard length to assist accuracy and avoid arrows being overdrawn. The diameter used by most societies is either 11/32 or 3/8ths of an inch.
- Arrows that are correctly spined and made from recognised materials such as ash or port orford cedar are readily available from archery suppliers. They will be both accurate and reliable. In general the use of correctly spined shafts is recommended. Commercially available dowels can vary in weight and above all else spine. Dowels can also be finger jointed as well as varying in roundness. This can compromise accuracy and safety especially if the bow and arrow are not matched.

Target Archery

- For target archery purposes the style of arrow should be the decision of the archer in line with the authenticity and safety guidelines of the society.

Equipment Inspection

Before shooting, inspect your equipment for the following:

- Inspect your bowstring. If it is frayed or if any strand of the string is broken, replace the bowstring. Make sure that it is securely in its nocks, and not twisted.
- Check the serving on your bowstring. If it is unraveling, tie it off, have it re-served, or replace the string.
- Inspect your bow. If there is a crack in the limbs, do not shoot your bow. The back of the bow can suffer from *lifts* and the belly from compression fractures or *chrysalis*. If in doubt have a bowyer inspect it. A cracked bow could break at full draw and cause an injury.
- Check the bracing height, the gap between the string and the belly of the bow. A simple rule of thumb, and the derivation of that phrase id to use the *fistmele* (simply the height of a clenched fist with the thumb upraised) as a rough guide. If the brace height is too low the bowstring might slap your wrist. If the bow is 'highly strung' you may again lose performance and endanger the bow. Please take advice from your bowyer as to the correct bracing height for your bow.
- Inspect your arrows. Wood arrows with cracks should be broken into two and discarded. Never keep a damaged arrow, someone is sure to shoot it. Break an arrow and save a bow.
- Inspect your arrows' nocks. A damaged nock can slip off the string before release. Discard the arrow and do not endanger the bow.
- Check the front of the fletching. It should be preferably tied in; if it is not, set it aside for repair.
- Wooden arrows are prone to breakage from stress as the shaft passes over the hand, particularly if nocking points are set too low. Regularly check for lateral cracking about 4" to 7" below the fletches as well as elsewhere.
- Check that the point is fixed securely or if a blunt is fitted that the head is intact without any of the wooden shaft poking through.

Sharp arrow safety

Where sharp arrows are used in a display these should be kept separate from blunt arrows at all times, and should be completely removed from the area before any subsequent activity.

Where sharp arrows are used, these should be counted into and out of the display area to ensure that none remain behind. Sharp arrows must never be carried during combat training or during a battle re-enactment.

It is strongly recommended that whenever possible separate easily identifiable quivers are used for the two types of arrows.

Weapons and the Law

Bows and crossbows are potentially lethal weapons and the advice on Weapons and the Law provided by NAReS is as relevant for missile weapons as for edged

weapons. There is legislation relating specifically to crossbows which are important for members to be aware of.

Crossbows Act 1987

A person under the age of eighteen who has with him

- (a) a crossbow which is capable of discharging a missile, or
- (b) parts of a crossbow which together (and without any other parts) can be assembled to form a crossbow capable of discharging a missile,

is guilty of an offence, unless he is under the supervision of a person who is twenty-one years of age or older.

Purchase and hiring

- A person who sells or lets on hire a crossbow or a part of a crossbow to a person under the age of eighteen is guilty of an offence, unless he believes him to be seventeen years of age or older and has reasonable ground for the belief.
- A person under the age of eighteen who buys or hires a crossbow or a part of a crossbow is guilty of an offence.

The crossbow itself cannot be carried in public and a common sense approach should be adopted when transporting a crossbow.

(This Act does not apply to crossbows with a draw weight of less than 1.4 kilograms).

Part 3 Combat

Introduction

Societies conduct combat in accordance with the history of the period they are re-enacting. The use of the bow and the types of bow and crossbow changed significantly over time. Individual societies are responsible for determining what is and what is not appropriate for their particular period /scenario. The following notes are for guidance and reflect current good practice.

In some contexts shooting at human targets is deemed permissible for this as discussed earlier specific training and strict rules should apply. In other contexts archery may involve lofting the arrows high or shooting at designated non-human targets.

Personal Protective Equipment

This is an area that is clearly primarily the responsibility of individual societies as different periods used different forms of protection. It is considered by some but not all societies that head protection must be worn by all those engaged in combat or who could possibly be the recipient of a misjudged arrow. It is the responsibility of

individual societies to develop combat systems that satisfy the requirements for authenticity and safety. If full face protection is not provided for combatants, the greatest care should be taken in the supervision of archers, which should be reflected in their training as outlined earlier in these guidelines.

The choice of padded armour, mail or plate is of course a matter for individual societies to decide. Note should be taken of the impact forces of different bow and arrow combinations at different distances as found in the Appendices. Bracers or arm guards are deemed essential in current archery practice and there are good historical grounds for their use, although their style, material and decoration varied widely. Where authenticity does not permit the wearing of bracers then sleeves may be tight fitting enough to offer some level of protection. It is also worth considering the use of finger tabs and gloves as appropriate.

Each society must decide what role their archers should play and whether they can be engaged in hand to hand combat. Archers are sometimes considered as non-combatants for the purposes of hand to hand fighting. If they do engage in hand-to-hand combat they must have completed the appropriate tests etc. for such participation and wear suitable protective equipment.

Command and Control

Archers should be commanded by an experienced and authorised officer who will advise the battlefield commander of the capabilities of the archers and all health and safety considerations relating to their employment. At smaller events where space is restricted for arenas there should be an assessment as to whether missile weapons are still appropriate to be used at all – keeping one or more sides clear of an audience gives better safety if missiles are restricted to shooting towards the clear side only.

He or she should be present to supervise the display and delegate responsibility for the bodies of competing archers to suitably trained and authorised officers where appropriate.

All archers should be made aware of their specific role and their part in the overall scenario by the authorised archery officer who should also coordinate the archery of both sides in an engagement.

Skirmishing

Societies from the dark Ages and early middle ages often employ their archers as a skirmish line, as part of or in front of the battle line. Please note the importance of suitable training and assessment for such archers as found earlier in this document. In such a fluid battle the individual archer is primarily responsible for 'taking the shot', although the archery officer should still be present to supervise and advise.

Target Areas

If human targets are to be engaged the following rules should strictly apply.

No areas above the shoulders should ever be shot at. It is not acceptable to shoot at those who are already lying on the floor. Note also the restrictions on shooting those defined as non-combatants.

- **No archer should shoot at anyone standing close to the audience as ricochets from shields and plate armour are commonplace.**
- **No archer should shoot at a target directly in front of the audience line, in case the target should move.**
- **Please note that un-aimed shots into melee can be very dangerous.**

Those receiving arrows: All combatants exposed to combat archers should be trained in receiving missiles safely (no 'batting' of missiles as control is lost, how to deflect missiles downwards, not watching incoming high shots, etc).

Volley shooting

Most Late Middle Ages societies employ their archers in blocks shooting in volleys. This has some advantages:

- It enables the Archery Officer to control the rate of shooting and choice of targets. It also helps conserve stocks of arrows.
- It produces a more impressive 'arrow storm' than the desultory shooting of a few archers.
- It enables the 'target' to prepare for incoming fire.

The problems:

- The archers must be trained to obey the commands as one unit.
- Archers must only be used in a chequer board formation, no more than two deep, so that there is no chance of hitting the archer in front with a negligent discharge.
- The bows and arrows of the participants should match, so that the arrows will arrive at the same time and in the same place.
- Arrows will fall short for many reasons and this should be taken into account.

In most cases the targets for archers on the battlefield are other formations of archers and therefore the line of flight of the arrows is well defined. If other combatants enter this zone as part of the overall manoeuvres then firing should cease.

If archers are not the target then what is a suitable mark, a flag for example, may be identified as such, with a safe impact zone around it.

Horses should never be shot at under any circumstances and all care should be taken to avoid this.

It is by far better to cease fire than to risk endangering others.

It should be made clear which portions of the battlefield are off limits. Gunners and siege crews, water-carriers, hostages etc. are generally considered to be non-combatants. It would be helpful to identify such areas clearly. This information should be included in any briefing.

Archers should not lob arrows over formations of troops towards a distant target. Arrows will often fall short or go over. The archer should always be able to spot where his/her arrow will land and if necessary make a suitable adjustment.

Equipment notes for combat

- Ensure that no sharp arrow is brought onto the field, either in quivers, arrow baskets etc.

Blunts and sharps should be kept separate at all times.

- Rubber blunts wear out, especially if used regularly, inspect them for wear every time they are used. A wooden shaft poking through the blunt head would be very dangerous.
- Battlefield arrows are subject to all sorts of mistreatment, especially at the feet of other combatants. Inspect shafts carefully for any signs of cracking before shooting them again.

Sieges

In the context of a siege the archers within the castle will almost certainly be flat shooting from the walls at their opponents outside. In turn those outside can either lob their arrows over the castle walls or flat shoot at the castle. Flat shooting presents insuperable problems if the only targets are the upper bodies and faces of the 'enemy'.

Flat shooting-Defenders. This should wherever possible be directed at a 'shield wall' protecting the attacking archers or infantry, or at a 'safe' target such as a protected siege tower.

Flat shooting-Attackers. The target for the attackers should be flags, shields or similar, which would, if hit, cheer both the archers and audience and if missed the arrows would land in a safe overshoot area. The defenders would be positioned away from the target and impact zones.

Lobbing arrows in to the castle interior is also practicable as long as the impact area is well defined and understood by all participants.

During the siege there must be a clearly understood chain of command and easily understood signals to ensure that both sides can conduct their shoot safely, pausing,

ceasing or continuing to shoot as required. Good communication between those inside and outside is essential.

These procedures should enable archers to take part in attack and defence without endangering each other.

Feedback: There should be a formal system for feedback from members and others to the Training Officer so that heavy shots, poor shots, and accidents can be reported and investigated. Unlike other weaponry, there is no physical feedback of the hit strength for a missile as there is no physical contact with the projectile once loosed. There should be a system of retraining or reassessment for archers proving to need it.

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