

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

**EMERGENCY HANDLING GUIDELINES  
FOR MUSEUM OBJECTS**

**RISK**

Any of the Royal Armouries collection could be affected by a disaster large or small.

**Flooding:** caused by: burst pipes, leaking roof or guttering, blocked drains, water from fire hoses, kitchen accidents.

**Fire:** caused by electric faults, gas leaks leading to explosion, kitchen accidents, smoking, arson, lightning strikes.

Others may include: damage from theft attempt, vandalism, earthquakes, bomb blasts, civil strife, war

**ACTION**

If you happen to be present during such an emergency before help arrives, there are steps which you can take to reduce the damage to the collection.

1. **Raise the alarm**
2. **Evacuate** the building if necessary
3. **Wait** for emergency services to allow access to affected area. (In this situation Conservation and Collections staff should be on site and may require your assistance.)
4. If necessary wear **protective clothing** (PPE) e.g. overalls, Wellingtons, gloves, dust masks, hard hats, etc.
5. **Beware of hazards** to yourself and others, e.g. electrical outlets in a flood, broken glass, slippery floors etc. In case of **chemical attack** clear the area of all persons. Do NOT touch object, chemical or chemical container and do NOT breathe in the fumes.
6. **Think** about what type of objects are at risk (eg paper, textiles, metals) and consider how fragile they might be (remember objects may be more vulnerable when wet or damaged than they appear)
7. If items are in danger (eg from soot or water), but cannot be moved **protect** by covering with plastic sheeting if possible.
8. If objects are in danger and it seems possible to **move** them, take them to the nearest **'safe' area**.
9. **When help arrives** tell them what action has been taken and where the items have been moved to.

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

**Safe Areas** will be decided at the time of the incident and will be identified with consultation with the security officer, duty manager, registrar and emergency services(if appropriate). Point to be considered;

1. Avoid moving wet material into an area containing unaffected objects
2. The area should be secure, clean, dry and its use should not cause an obstruction
3. It should be far enough away from the danger area not to be affected

**Emergency Supplies**

Protective clothing, boxes, polythene sheet, Plastazote foam and flood absorbents are available in; Conservation and, RA Loading bay. More limited supplies are available in all stores, and the NFC

<b>Location</b>	<b>Supplies</b>	<b>Access</b>
Conservation	Protective clothing Plastic and card boxes Polythene sheet Plastazote Flood absorbents General supplies; scissors, tape etc. Trolleys Tables, lights, chairs Fan, extension leads	Collections Care Staff Security Graeme Rimer Technicians
G16	Plastazote Gun bags Plastic sheeting Tissue paper Blankets Chest freezer Trolleys	Collections Care Curatorial Security
Stores 1,2,3	Mops and buckets	Collections Care

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

	Flood absorbents	Curatorial Security
Loading bay Emergency box	Protective clothing Plastic sheeting Torches Flood absorbents	Security
NFC	Limited protective clothing Flood absorbents	NFC staff Security
Building Services	Water pump	Building Services staff
Cleaning cupboards	Mops and buckets	Cleaning staff Front of House Security

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

**Telephone Numbers**

**Security**                               **1984**  
**Conservation Leads**               **1936/1807**  
**Registrar**                             **1960**

**For numbers of staff out of hours please speak to Security**

**External Assistance and Supplies**

<b>Leeds Resource Centre</b>	<b>01132141548</b>	<b>Freezer and assistance</b>
<b>Conservation Centre</b>	<b>01514784866</b>	<b>Freezer</b>
<b>Igrox Pest Management</b>	<b>01977678008</b>	<b>Pest advice</b>
<b>Key Industrial</b>	<b>0161 7458745</b>	<b>Packing Supplies</b>
<b>Costco</b>	<b>01132042920</b>	<b>Latex Gloves</b>
<b>RS Components</b>	<b>01132311211</b>	<b>PPE</b>
<b>Anchor Export Services</b>	<b>01132526544</b>	<b>Packing crates</b>
<b>Arco Ltd</b>	<b>01924276391</b>	<b>Plastic sheeting</b>
<b>Stewart Plastic</b>	<b>01816862231</b>	<b>Small plastic boxes</b>
<b>Klober Plastics Ltd</b>	<b>01934853224</b>	<b>Tyvek sheeting</b>

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

**GENERAL HANDLING GUIDELINES**

- **Only move an object if it is really necessary**
- **Do not move an object until you know where it is to be moved**
- **Before lifting, consider if and how the object can be handled safely**
- **Do not lift more than you can handle**
- **Examine the object before you lift in case it is held to a mount or another object.**
- **Use both hands and only lift one object at a time. Use one hand to support the underside and the other hand and arm to support the sides.**
- **Wear clean cotton or latex gloves. Remove rings or watches that may scratch the object.**
- **Use crates, trolleys, trays or boxes to move small objects whenever possible, do not overload. Line containers with Plastazote or tissue paper. If items are fragile (and not wet) support them packing materials.**
- **Label containers with original location and a list of accession numbers**
- **If an object is broken, collect all the pieces no matter how small and keep in a clean container.**
- **Keep wet, partly wet and dry objects separate**
- **Remove wet tissue paper immediately from objects**
- **Do not crowd or stack objects**
- **Do not use bubble wrap directly next to the object as it can mark the surface.**

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

**ITEMS IN SHOWCASES AND CUPBOARDS**

1. Is the showcase giving temporary protection? If so cover with plastic sheeting and rescue other items first. If items inside case are in **immediate danger** gain access using keys available from security and where necessary twist stick from Conservation.
2. Do not go near the case if there is electric circuitry (e.g. internal lighting), which may be in contact with water.
3. Beware of broken glass. If the contents of a case are endangered by soot or water penetrating the break protect by polythene sheeting or parcel tape over the gap.
4. If emptying a case look at how the mount works. Pliers or a screwdriver may be required. (available from main emergency supply kits)
5. In rising water lower drawer and shelves should be unloaded first. Beware of a unit becoming top heavy.

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

**LEAKING ROOFS OR PIPES**

Water may be rising, falling or both. Try to stop or contain the water e.g. buckets positioned, absorbent mats in place and stopcocks turned (contact building services).

1. If objects are at risk or damaged move them to the nearest safe place
2. Cover shelves, racking and objects that cannot be moved with polythene sheeting.
3. **If safe to do so** unplug electrical equipment to prevent shorts and subsequent fire damage. **Do not** go near electrical circuitry or water if the water is near or in contact with the power supply.
4. **Contact conservation** to report damage to object
5. **Contact registrar** to report movement of object

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

**ARCHIVAL MATERIAL, DOCUMENTS, PHOTOGRAPHS E.T.C**

<b>Item</b>	<b>Priority</b>	<b>Warning</b>	<b>Action (once moved)</b>
Maps, large prints and manuscripts in flat storage	Protect with plastic sheeting	Remove whole drawers if necessary. Do not attempt to lift plans out of drawers unless they are in plastic sleeves. Keep horizontal. Do not stack.	Separate wet from dry. If wet place between blotting paper. Replace blotting paper when damp. If can't air dry interleave with freezer or wax paper. Support in sturdy containers 90% full and freeze.
Maps, large prints and manuscripts in rolled storage	Move if in danger. Protect with plastic sheeting	If horizontal keep horizontal, if vertical keep vertical. Do not stack.	Separate wet from dry. If wet, place between blotting paper and air dry. Replace blotting paper when damp.
Boxed archive material	Move if in danger. Protect with plastic sheeting	If in wet boxes, support base in case collapses. Lift with both hands. Boxes may be heavy.  Try to keep contents in order.	If interior dry, blot excess water from outside of box. Air dry. If interior wet, remove contents and treat appropriately. Remove object from damp/wet tissue paper. If can't treat for 24 hours, pack and freeze.
Vellum and Parchment	Move if in danger	Support any pendant seals.  Do NOT freeze if gilding present.	If wet controlled drying required. Lay on blotting paper, face up with edges weighed and tension checked every 15 minutes. If no risk of dye transfer and nearly dry can be placed between blotting papers and weighted.
Loose items on paper	Move if in danger. Keep in order as found.	Keep horizontal. Lift supporting underside. Do NOT unfold or separate sheets if wet. Do not stack.	Separate wet from dry. If wet place between blotting paper and air-dry. Turn regularly unless water-soluble ink. Replace blotting paper when damp. If can't air dry interleave with freezer or wax paper. Support in



**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

			sturdy containers 90% full and freeze.
Wet photographs	Move if in danger. Keep in order as found.	Do NOT touch emulsion or image. Keep photographs from contact with adjacent surfaces or each other.  Priority: Ambrotypes, daguerreotypes, tintypes, silver gelatine glass plate negatives, wet collodion glass plate negatives, cyanotypes.	Separate wet from dry. Rinse with clean water as necessary by placing in shallow tray of distilled water and agitating. Place on plastic sheet or hang with clips on non-image to air dry. If wet can keep wet in clean water no more than 48 hrs. If can't air dry interleave with freezer or wax paper. Support in sturdy containers 90% full and freeze.
Glass plate negatives	Protect with plastic sheeting. In raising water situation. Rescue dry plates first before rescuing those wet or partly wet.	Handle with care. Do NOT touch emulsion or image. Do NOT freeze.	Air-dry only
Partly wet Photographs (except microforms)	Move if in danger. Keep in order as found.	Do NOT touch emulsion or image. Keep photographs from contact with adjacent surfaces or each other.	Separate from wet and dry photographs. Lay on blotting paper or hang with clips on non-image to air dry. Replace blotting paper when damp.
Dry Photographs	Move if in danger. Keep in order as found.	Do NOT touch emulsion or image	Keep separate from wet and partly wet photographs.
Wet Microforms and negatives	Remove and place in plastic trays. Cover with plastic sheet	Do not attempt to unroll or separate. Do not touch emulsion image	Microfiche and negatives: Remove from sleeves. Lay flat on polyethylene sheeting or hang with clips on non-image to air dry. Can keep wet up to 4 hrs. If necessary

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

			freeze in shallow crates, keeping to one layer. Microfilm and films: Keep wet in crates or bags. Contact a microfilm lab or film processor for washing.
Fire damaged photographs	Move only if in immediate danger	Do NOT touch or blot surface.	Slide onto rigid card or plastic to move.
Sound and video recordings	Remove from danger	Handle by edge only	Remove case, rinse tape in clean water whilst wound. Air dry on blotting paper. Reassemble and make copy ASAP.
Floppy discs and CD's	Remove from danger	Handle by edges only.  Do NOT Freeze CD's	Floppy disc: Remove from casing, rinse and blot dry. Insert into new casing. Freeze if can't treat within 72 hours. CD's: Remove from enclosure, air dry.

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

**BOOKS**

<b>Item</b>	<b>Priority</b>	<b>Warning</b>	<b>Action (once moved)</b>
Wet books	Move to dry area.	<p>Push from shelves, don't pull. Lift with both hands. Lift one at a time. Bindings will be under strain. If open leave open, if shut leave shut.</p> <p>If spine, title plates etc are detached, place in polyethylene bag.</p> <p>Do not let Vellum and leather over dry.</p>	<p>Separate wet and dry books. If necessary rinse with clean water whilst holding book closed. Place on plastic sheeting. Can interleave with blotting paper if not coated paper and no more than 20%. Replace interleaving as gets damp.</p> <p>If too many to air dry in 48 hrs, individually wrap in polythene, stack spine down in rigid container and freeze.</p>
Partly wet books	Move to dry area as soon as possible	<p>As above. Remove dust jackets. Do not stack.</p>	<p>Stand on top or bottom edge at 60-degree angle.</p> <p>Air dry. Can make tent with polythene sheeting and use table fan to increase air-drying.</p>
Dry books	Move to dry area as soon as possible or protect with plastic sheeting.	<p>Lift carefully with both hands. Lift one at a time. Do not pull on spine.</p>	<p>Keep separate from wet or partly wet books.</p>

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

**ARMOURS AND OTHER METAL OBJECTS**

<b>Item</b>	<b>Priority</b>	<b>Warning</b>	<b>Action (once moved)</b>
Metals on open display	Dismantle and move only if in danger. Protect with plastic sheeting.	If dismantling take care to examine which piece is attached to what. Use both hands. If dismantling armour work in a pair especially for back and breast plate. Do not lift if too heavy.	Keep wet and dry material separate. Rinse with clean water as necessary, sponge and blot. Place on plastic or Plastazote sheeting, air dry. Do not crowd or stack objects. Keep flaking surfaces horizontal.
Exposed metals damaged by heat with blistered and flaking finishes	Move only if in danger.	Handle with care. Leather straps may have given way leaving the piece in a number of parts. Avoid rubbing surface of object.	Place on plastic sheeting. Keep separate from other materials. Do not cover objects. Do not crowd or stack objects. Do NOT rinse off or blot. Keep flaking surface horizontal. Air dry.
Armours and metals in cases	Cover case in plastic sheeting. Only remove from case if in danger.	If dismantling take care to examine which piece is attached to what. Beware helmets may not be attached. Use both hands. If dismantling armour work in a pair especially for back and breast plate. Do not lift if too heavy.	Keep wet and dry material separate. Rinse with clean water as necessary, sponge and blot. Place on plastic or Plastazote sheeting, air dry. Do not crowd or stack objects. Keep flaking surfaces horizontal.
Heavy metal items such as elephant/horse armour	Protect with plastic sheeting. Move only if in danger and with enough assistance.	As above.	As above

- **When carry swords, long arms, bayonets etc be aware of the point of the object at all times.**
- **Do not sit closed helmets on neck lames either rest on bowl on skull or place on stand.**

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

**FIREARMS AND COMPOSITE OBJECTS**

<b>Item</b>	<b>Priority</b>	<b>Warning</b>	<b>Action (once moved)</b>
Heavy metal items such as machine guns or cannon	Protect with plastic sheeting. Move only if in danger, if possible and with enough assistance.	If dismantling take care to examine which piece is attached to what. Use both hands. Do not lift if too heavy. Do not crowd or stack objects.	Keep wet and dry material separate. Stand on plastic sheeting. Rinse non-flaking surfaces with clean water as necessary, sponge and blot. Air dry. Keep flaking surfaces horizontal.
Composite items	Protect with plastic sheeting. Move only if in danger.	Place in lined container. Do NOT use tissue if item wet or partly wet. Do not over crowd. Separate objects with padding. Do not use bubble wrap directly onto the object. Keep swords in scabbards and guns in holsters/box. Lift with both hands, support underneath. Look for how attached to mount or other objects.	Keep wet and dry material separate. If wet cover with plastic sheeting to avoid drying out, until can deal with. Rinse with clean water as necessary, blot surface and air dry. Painted surface: Do not rinse or blot if blistered or flaking. Air-dry slowly. Veneers: Hold in place whilst drying with weights or clamps with plastic sheeting in-between. If white haze develops, okay this can be treated later.

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

**ORGANIC MATERIAL AND TEXTILES**

<b>Item</b>	<b>Priority</b>	<b>Warning</b>	<b>Action (once moved)</b>
Items on open display	Protect with plastic sheeting. If in danger move.	Examine how object attached to mount or other objects. Support with both hands.  Avoid touching wet painted surfaces.	Keep wet and dry items separate. Support shape of object with Plastazote if necessary. Support loose or hanging parts. Rinse with clean water, blot and air dry slowly. If can't treat in 48 hours, separate with plastic sheets to avoid dye transfer, pack and freeze.
Items in cases	Protect with plastic sheeting. Move only if in danger.	As above	As above
Items with feathers	Move if in danger. If headdress keep on mount if possible.	Feathers are often very fragile and poorly fixed. Do NOT hold object by feathers. Do NOT place plastic sheeting over object if will damage feathers.	Keep headdress upright. Support hanging parts. Rinse with clean water if necessary, air dry slowly.
Buff coats, leather and clothing	Protect with plastic sheeting. Move only if in danger.	Examine how object attached to mount or other objects. Support with both hands.	Keep wet and dry items separate. Support shape of object with Plastazote if necessary. Support loose or hanging parts. Rinse with clean water as necessary to remove heavy dirt. Blot and air dry. If semi-tanned or fur, manipulate often to keep supple.
Flat textiles	Protect with plastic sheeting. Move if in danger. In store will probably be	May need to loosely roll to carry	Keep wet and dry textiles separate. If wet unroll in clean area and lie on plastic sheeting. Rinse with clean water, blot with cotton sheets, support

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

	boxed.		shape, air-dry using fans. If can't treat within 48 hours, separate with plastic sheeting to avoid dye transfer, pack and freeze.
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**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

**SADDLES**

<b>Item</b>	<b>Priority</b>	<b>Warning</b>	<b>Action (once moved)</b>
Saddle (upholstered)	See textiles	Lift from underneath. Do not lift by back or front sections	Sponge with clean water to remove heavy dirt, Blot with cotton cloth to remove excess water. Replace when damp. Support shape with Plastazote. Air-dry slowly. If semi-tanned or fur, manipulate often to keep supple.
Saddle	Move only if in danger. Protect with plastic sheeting	Lift from underneath. Do not lift by back or front sections	As above



**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

**JAPANESE AND ORIENTAL ARMOUR**

<b>Item</b>	<b>Priority</b>		<b>Action (once moved)</b>
Item in cases	Cover case in plastic sheeting. Only remove from case if in danger. Keep on armour mounts.	May be heavy if wet. Support all plates, as braid might not be able to take weight. Helmet may be loose and are often best moved separately. Avoid rubbing surface. Do not stack or over crowd objects.	Keep wet and dry items separate. Support shape of object with Plastazote or armour stand if necessary. Only use tissue if object dry. Support loose or hanging parts. Place plastic sheeting between layers of wet or soiled areas to separate them from other areas. If necessary rinse with clean water, drain and blot. Air dry with fans. If can't dry in 48 hrs separate lames with polythene to avoid dye transfer. Wrap, pack and freeze.
Item on open display	Cover in plastic sheeting. Remove if in danger.	As above. Examine objects to see how attached to display.	As above. A spare armour stand can be used for support if available.
Item in store	Cover shelving in plastic sheeting. Move if in danger, either on stand or in draw as suitable.	As above	As above  Object should already be supported.
Item in store, boxed	Cover shelving in plastic sheeting. Move if in danger. Keep object in box.	If in wet boxes, support base in case collapses. Do not remove rolls from box. Lift with both hands. Boxes may be heavy.	Blot excess water from outside of box.

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

**FRAMED ITEMS INCLUDING PAINTINGS**

<b>Item</b>	<b>Priority</b>	<b>Warning</b>	<b>Action (once moved)</b>
Framed items on display.	<p>Screwdrivers are required to remove these from display. Move only if in immediate danger. Protect with plastic sheeting if possible.</p> <p>If damage has occurred, unless at risk from further danger. Leave in position.</p>	<p>Move with at least two people. Ladders may be necessary.</p> <p>Do NOT stack Do NOT touch the surfaces. Do NOT insert fingers between canvas and the stretcher. Do NOT place directly on floor, support with foam or wooden blocks.</p> <p>Move by holding the frame or stretcher bars. Use one hand under the frame and one to the side – or a hand either side of the frame.</p> <p>Do NOT carry by the top. Avoid holding the frame on decoration. If there is loose paint carry flat.</p>	<p>Paintings: If necessary lean together against a wall placed face to face, back to back. Ensure frames over lap with nothing in contact with the painted surface. Front or back. Watch for screws and wires on back of frames that may cause damaged.</p> <p>Wet glazed paintings: Remove painting from frame but not from stretcher in clean, dry area. Air dry painting horizontally, painting side up, with nothing touching painted surface.</p> <p>Glazed framed photographs and art on paper: Remove from frame in clean, dry area. Dry slowly with image side up. If stuck to glass dry, glass side down. See photographs/ paper as appropriate. If glazing is broken remove it, if can't remove tape over crack.</p>
Framed items in store	If hanging cover with plastic sheeting. Move if in danger.	As above	As above

**ROYAL ARMOURIES  
CONSERVATION DEPARTMENT**

**GLASS AND CERAMIC**

<b>Item</b>	<b>Priority</b>	<b>Warning</b>	<b>Action (once moved)</b>
Damage by impact	Isolate area from general access. Move only in danger in padded container.	Make sure all fragments no matter how small are collected. Do not touch broken edges. Use touch to check dark areas to make all fragments collected. Keep sweepings if necessary.	Place all fragments in clean transparent polyethylene bag.  Keep different objects separate.  Avoid fragments rubbing together Do NOT attempt to put pieces back together.
Inside a case	Protect case with plastic sheeting. Only remove from case if in danger. Use padded container.	Lift with both hands. Avoid cotton gloves, as will have no grip. Cracks may not be obvious and make be weak. Hold from base. Do not touch if hot.	As above
If wet	Only more if in danger	As above. May be very weak.	As above