

**Numbering Methods applied on artifacts in some museums and
cultural heritage institutions**

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Abstract

Museums are designed for collecting, interpreting, displaying and the most important reason is for preserving rare artifacts for the longest possible period of time. When a new artifact arrives to a museum, it should have a special code or number called inventory number. These numbers are used to uniquely identify items and to add it to the data base. These numbers should serve as short hand for longer item descriptions. Sometimes numbers are applied on inaccessible places like the base or the back of big objects. Add to that the diversity in text shapes, colors and handwritings.

Numbering is a vital process in museums; it provides a unique identification for each object. The number applied on an object refers to a catalogue number or accession number. Without numbering, objects cannot be tracked or utilized in a museum. When a cultural object enters a museum, it is given an accession number which is a unique number for each object. This number is connecting the object with its own other information such as; documentation, description and current condition of the object. The number on an object allows the curator to track it easily and retrieve information quickly. Numbering and labeling of cultural heritage artifacts has developed through years. There are several numbering and labeling methods. The numbering type applied on artifacts is depending on the type of materials needed to be marked. Some institutions are still holding on traditional practices although they include some flaws and may cause some problems. Nowadays, a range of new numbering techniques appeared and practiced in many museums beside the traditional ones or in some cases replace them. This paper will point out and focus on some new numbering methods applied in some museums and cultural heritage institutions. Besides reviewing some traditional methods still in used and their effect on artifacts.

Introduction

Numbering is the process of adding a special number to object in order to identify it or distinguish it from other objects. This special number is connected to a data base contains all the related information about this object which can be accessed using the number.

Numbering methods could be added directly on in directly on objects and differs according each case and type of artifacts. Numbering process can be known also as marking or labeling process. ⁽¹⁾

Numbering is applied on cultural objects for three main reasons:

1- Identification purpose, the number applied on object is the museum inventory number. Each object in a museum has a unique number and can be easily identified by it.

2- Facilitating management of the collection, new technologies can be used for automatic identification such as bar codes.

3- Security to prevent theft.

Numbering technique must be applied according to specific conditions and rules. First, if numbers will be added directly on objects, it should be applied on the most durable and well condition part. In case of fragile objects, numbers should be in shape of tied labels. Numbers must be added in accessible hidden place with a limited handling of objects.

Numbers added to objects should be readable but small to avoid distraction, from 2-5 mm on small to medium objects and 10 mm on large ones. ⁽²⁾

Methods of numbering

Numbering and labeling of cultural heritage artifacts has developed through years. There are several numbering and labeling methods. The numbering type applied on artifacts is depending on the type of materials needed to be marked. Some institutions are still holding on traditional practices although they include some flaws and may cause some problems. Nowadays, a range of new numbering techniques appeared and practiced in many museums beside the traditional ones. The following paragraphs will focus on the most common techniques applied in museums and cultural heritage institutions.

(1) A Simple Guide to Labelling Museum Objects,

https://maas.museum/app/uploads/2017/02/A_Simple_Guide_to_Labelling_Museum_Objects.pdf

(2) TIP SHEET - How to Label Historic

Artifacts, https://saskmuseums.org/files/How_to_Label_Historic_Artifacts.pdf.

1. Direct handwriting on cultural heritage artifacts

a. Direct writing with pencil

This is a manual method and suitable for paper, paper products, books and prints. It demands a good handwriting and very sensitive hand. The number is applied on the verso side or on margins with minimum pressure. The graphite pencil must match paper type; soft graphite pencil is suitable for soft surfaces. Firm papers demand the using of harder pencil.

Numbers must be revised before applied on paper. The fault in this type is any wrong application of numbers will leave traces on paper even after erasing. Some types of pencils tend to smudge by accidental touching, even more it could fade after a while.

b. Direct writing with wax pencil

This is a manual method and suitable for coated papers, photographs and waxed objects. It requires good hand writing as well. Wax pencil types used for this method are Schwan Stabile 8046 wax pencil or Schwan Stabilo 8052 wax pencil.

c. Permanent

This method is non-reversible applied directly on the object, involves using of inks or engraving. For these reasons, this method is used rarely.

2. Indirect writing on artifacts sandwich technique

This method consists of three main layers. The base coat or the sealing layer is applied to protect the surface from direct writing or damage. Then after full dryness the number is written with ink as the second layer. Finally, the number is sealed with the third layer to prevent accidental erasing of the number.

3. Labeling

There are many types of labels used according to material type and shape. They could be Temporary, Semi-Permanent or Permanent. Each type is used for specific purpose and will be explained as follow;

(3) Muros, & Chayes, & Gleeson, *Inks and Barcodes: Methods of Labeling and Tracking*, 10.13140/RG.2.1.3518.6004.

a. Direct applied label of Japanese paper

This method is considered easier and safer on objects with porous surfaces or no hard surfaces. Direct tissue label is suitable for unglazed pottery or ceramics, wood, leather or furniture. However, it is considered less secure than direct numbering as it could fall off in case of direct accidental rubbing. In this method the number can be printed on the tissue paper by laser printers then cut with scissors. Apply a base coat on the object then the label is adhered to the object and finally sealed with acrylic coat.

b. Direct applied cloth label or sewn label

This method is suitable for textiles, costumes, fans, hats, rugs and basketry. Cloth labels must be made of 100% cotton and pre washed. After full dryness the number is written with a suitable marker and then left to dry. For sewing the label to the textile, 100% cotton threads should be used in sewing. White thread is suitable for light colored pieces. Black thread is suitable for dark pieces.

Colored threads are used if black or white threads are too obvious as long as it made of 100% cotton and colorfast (be able to keep the same color even if washed or placed in light).

To fix the label on the textile, first make three backstitches on the cotton label instead of using a knot. Then the label is attached to textile by least number of whipstitches all around the label. The sewn process must be applied between textile fibers and never to pierce them. Magnifying glass can be used to see the gaps between fibers. Finally, finish with three more backstitches on the label only to secure stitches without using locking knots. In case of fine basketry, number can be written on cotton lace and then wrapped around a stable point then the two ends of the lace can be attached together with stitches to form a loose loop. Textiles in bad condition can never use this method.⁽⁴⁾

c. Tie on label

This method is suitable for very porous materials, severely corroded metal artifacts, fine basketry or leather. The label must be made of acid free paper and 100% cotton string or tape. This method shouldn't be used alone as the label can be easily distorted or lost. The object must be well examined to find the strongest point to attach the label. In case of artifacts with weak condition, label must lie separated next to the artifact. Sometimes label can be tied on holders, hangers or even mounts of held objects.

(4) Alten, H., Labeling Ethnographic objects, pp. 18-21.

4. Very small and fragile objects

In case of very small objects and bad conditioned artifacts, numbers can be added on the housing or the boxes which hold artifacts.

5. New techniques

a. Barcoding

It is an optical readable method that consists of parallel lines with different spaces in between. This method is widely used in libraries. To read the code or track collection, special scanners are used. They are known as "barcode readers". Nowadays, interpretive software can be easily downloaded on mobile phones for scanning and reading barcodes. Some museums adopted this technique for the sake of tracking collection during transporting. The only problem in this method is barcodes are large and too long to be applied on objects. This method can be used on holders, boxes, drawers and mounting, see figure (1).

Data matrix coding (DM)

This is a two dimensional method consists of two main colored cells; black and white arranged in specific pattern. The amount of saved data in each pattern reaches to 2kb. The advantage in this method that can be formed in small sizes as 3x3 mm. it can be read by application on mobile phone or special readers. This method is applied in the Centre for the Studies of Archaeological and Prehistoric Heritage (CEPAP) of Universitat Autònoma de Barcelona, DM codes are printed on labels made of polypropylene. Then it covered with Paraloid B72 and attached to objects with the same adhesion material.

It's fair to say that DM method is more accurate and fast than manual numbering, see figure (2)

c. Radio Frequency Identification (RFID)

This method automatically identifies objects and store data remotely on RFID tags. This method uses electromagnetic coupling in the radio frequency portion of the electromagnetic spectrum. The RFID system consists of RFID tags (chip + antenna), interrogators (Antenna+ Reader), middle ware and business application software. This method had main types such as: passive type with an external electromagnetic field for signal transmission initiation. ⁽⁵⁾

(5)Muros, & Chayes, & Gleeson, Inks and Barcodes: Methods of Labeling and Tracking, 10.13140/RG.2.1.3518.6004.

The Active type of The RFID system demands a battery and transmits signals when an external source identified. The (RFID) method demands no direct contact with objects. It can be applied on housing or backing or on a frame, see figure (3)

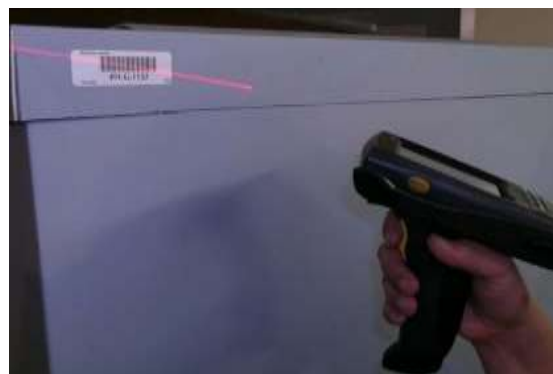


Figure (1) shows the barcoding method applied on a handling box of an artifact, Muros, 2011

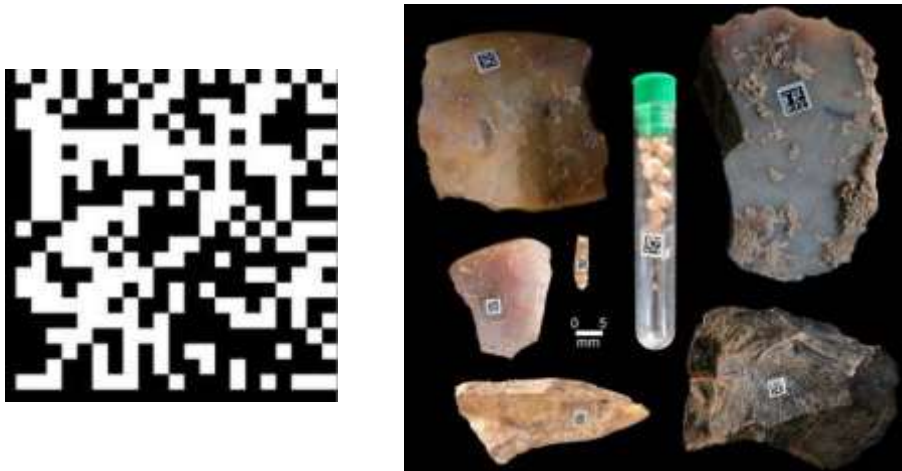


Figure (2) shows the Data matrix coding (DM) method, Muros, 2011



Figure (3) shows the passive and active types of Radio Frequency Identification (RFID) method, Muros, 2011.

Conclusion

Numbering is a vital process for Identification or distinguishing objects. It also facilitates management of collections. Numbering is an important method to secure artifacts and preventing them from theft. Numbering could be applied directly or indirectly on artifacts. Some institutions still hold on using old methods of numbering while others seek for new technologies.

Some old methods appeared to harm artifacts permanently. As they are non-reversible, require the direct application on objects and involve using of inks or engraving. For these reasons, these methods were replaced or rarely used recently.

All agree that numbering methods applied must be safe and shouldn't cause any harm to objects surface. As new methods of numbering rise, many museums tend to change numbering methods to keep up with new trends of technologies. but problems seem to appear like the method could be large and too long to be applied on objects in the case of Barcodes. Or methods could be expensive or requires regular maintenance such as Radio Frequency Identification (RFID) method. Therefore, it's fair to say numbering methods should be selected according to object type, condition plus the economical state of the museum or institution. In order to create durable and safe numbering methods for objects.

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