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Documentation Photography: An Integrated Process

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This paper is a review of my experiences with digital photographic documentation of artefacts from 1996 to the present, focusing on the current seven year project at the Bata Shoe Museum, and I will discuss how, over the last two decades, our reliance on the increasingly high quality of digital photographs has impacted the way we use artefact collections and the way museum professionals, approach their work.

Today we, as a society, have quickly adapted our senses to a highly visual means of communicating in movies, television, social media, advertising and more. Digital image technology has changed so much in the last few years that it is amazing to review its history a bit further back and see how far we've come, and how much we demand from images today.

In the early days of digital photography the quality was NOT very good in the mid-price range equipment category, and so I often opted to use traditional film because the resolution of film media (i.e. transparencies and negatives) is "infinite" whereas the data on digital files is finite and this limited the uses for which the image files could be used. Back in the 1990s when I started taking digital images with the more affordable, readily available digital cameras, they showed pixilation at minor zoom levels, and so, their use was limited to printing at the size and resolution for which they were shot (for example, 4" x 6" size). In those early days, cameras had the capacity to record less than a half of a megapixel in each shot. (A single megapixel means that 1 million pixels make up the image in the file, so today's 18 megapixel cameras have 36 times the resolution of my first digital camera.)

So, in those early years I continued to shoot with film for the most important shots, thinking that digitally scanning the film would be the most adaptable solution in future as I felt the turn to digital was inevitable. Looking back, I can't say that either option, digital or film, was more successful in this period of transition, but it does confirm for me that our collective eye wasn't as sophisticated at that time. In continuing to shoot with film, I encountered the need to scan that film as digital printing started taking over the industry shortly after the turn of the millennium. Here are some examples of images of the same

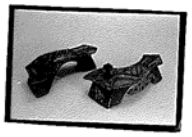
artefact from the earlier years (all shot by staff in-house): below, left, an in-house scanned slide image showing the problems of static and dust; in the middle, showing the scanned shot after it's been enhanced with PhotoShop, and on the right a shot taken with our current Canon EOS 5D in 2009.

The problem with slides was the static electricity that encouraged dust and hair to cling to the film. Once the slide was scanned, this dust and hair was part of the image and was hard to remove. Professional scans were not really an option as the cost was (and is) prohibitive.

The shot on the right hand side, above, shows the answer to the dilemma I was having prior to 2007. Shot with the 5D, which shoots 12 megapixels per image, I had the resolution I needed without the bother of having to scan traditional film, and none of the dust.

With current resolution levels, we can actually use the images rather than the artefacts themselves to do a good deal of research as magnification of the image is possible. The ability to zoom into the image is like working with a magnifying glass. Of course, actual inspection of the artefact will likely never be replaced by images, but the clarity and magnification abilities of current digital photography adds greatly to how we use images in research. The image above, and the detail to the right, is an example of the zoom capability possible in a photograph taken with a regular 50mm lens. Photos taken with a 100mm lens offer even closer images and more detail.

At the Bata Shoe Museum we have always kept a photographic record of every artefact in the collection. In 1979 the original system of shooting black and white documentation slides was started. This image was printed to a contact sheet and then glued onto the artefact's datasheet.



ID No:	**P82.0166.AB**		
Object:	Sandals	**Category:**	Footwear
SubType/Title:			
Gender:	Female		
GeoPol:	Oceania, Indonesia, Java, Cirebon		
Date:	1800 1899	**Murdoch:**	OE2
Culture:	Indo-Australasian		
Tribe:			
Maker:			
Wearer:			
Description:	Relief carved and painted bird shaped sole top has two solid broad stilts. Relief carving joins stilts on outer side. Stilts are completely coated, except for bottom, in a dark red paint. Gesso shows beneath paint losses. The sole top is painted in red, blue, green, yellow with gilded highlights in stylized rendering of a bird showing feathers, eyes and beak. The toe knobs (height: 2.3cm) are of dark brown unpainted wood - 2 concentric circles are carved in knob top. Centre terminates in tiny round finial.		
Material:	Wood, gesso, paint, gilding		
Measure:	L:21.7 W:10.1 H:9 cm		
ISBN/ISSN:			
Languages:			

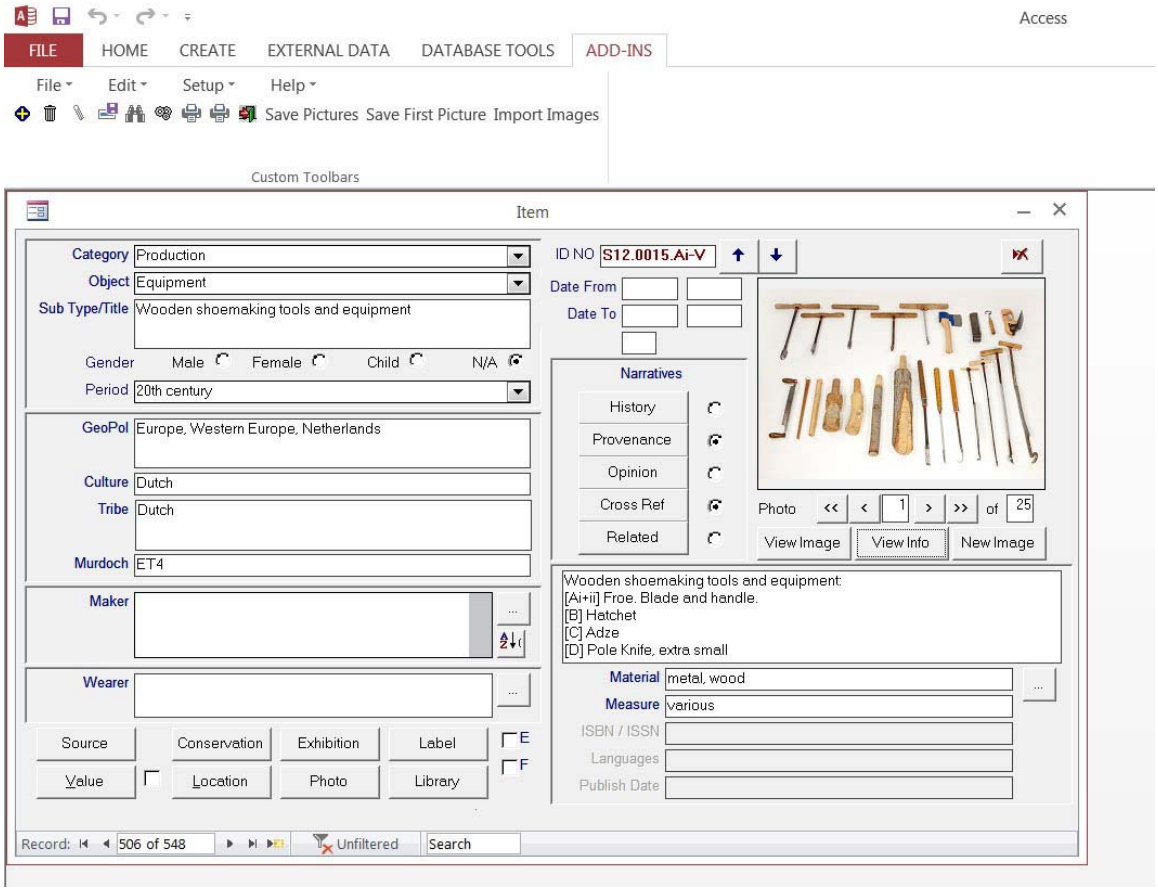
That system was used until 2007 when I felt the time had come to take advantage of the newest digital photography and replace the black and white slides with colour digital images that could be uploaded to the Artefact Database, streamlining the cataloguing process. Eight years later we are still working to complete photography of the entire 13,000 piece collection, and we are almost there: we are about 85% complete. The new datasheet has been improved many-fold by the inclusion of this colour image.

ID No: S12.0166.AB
Print Date: 19-Aug-14

Object: Stirrups **Category:** Athletic
SubType/Title A pair of stirrups
Gender: N/A
GeoPol: South America, Chile
Date: 1969 CE 1969 CE **Murdoch:** SG1
Culture: Chilean
Tribe: Chilean
Maker:
Wearer:
Material: wood, leather, metal, thread
Measure: L:48.5 W:15 H:19 cm
Description: A pair of carved wooden stirrups that enclose the foot. The metal stirrup supports are decorated with several columns of small crosses and ends at the top of the stirrup in a rosette-shaped bolt. The roller connects with light brown stitched leather straps with a metal fastening ring on the other end. A white leather thong is woven around the straps close to the axel.

NARRATIVE
History:
Provenance: This pair was used in a Bata Shoe Organization fashion show at World Shoe Con 1969 of complete

The improved appearance of this datasheet is really just the beginning. Yes, it does aid the curatorial team in keeping the datasheet with the correct artefact in the storage room, but in using the database, the benefits exist for the entire staff. Every staff member has access to the artefact database at his/her desk.



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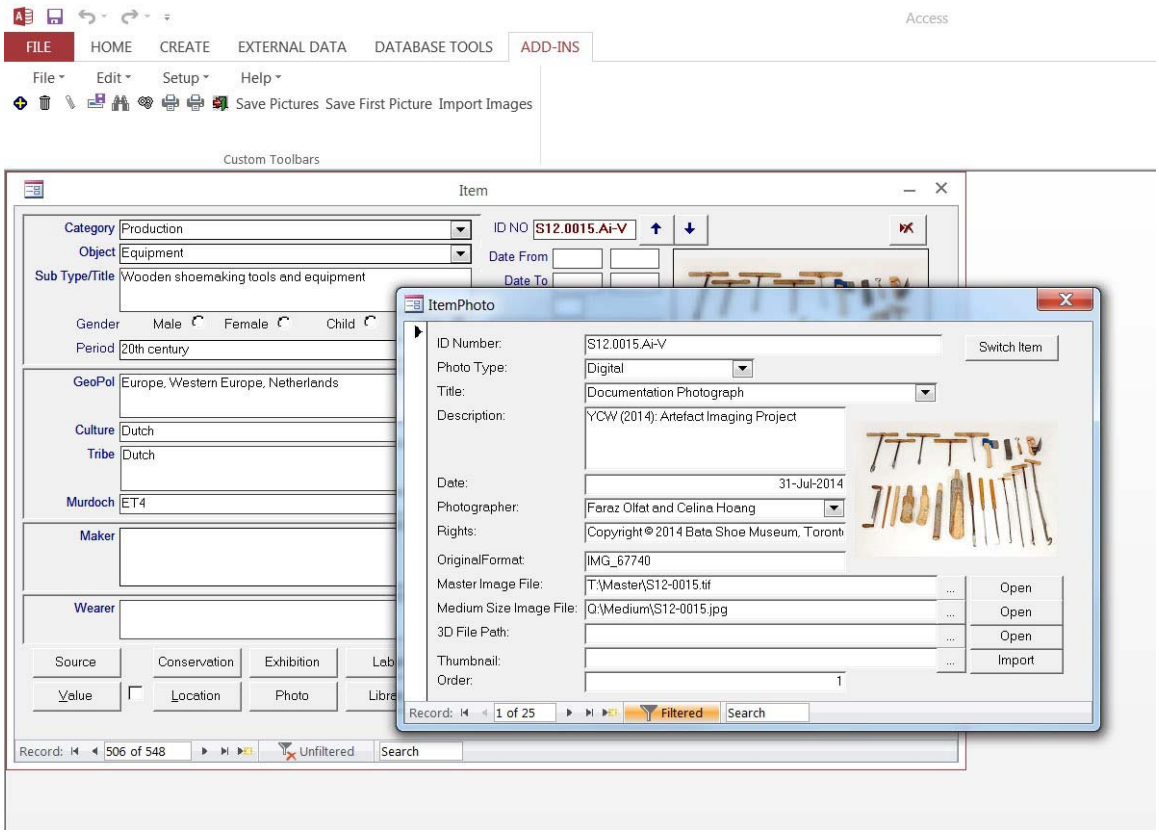
In the following image, you can see the function of the Image feature opened in the database, which brings up the associated image metadata and additional views of each object.



SO how did I get here? What is the integrated process that guarantees this object's data was successfully fused to its image's metadata?

It is the process of preparing the artefact, photographing it and processing the image files that I want to tell you about. The Bata Shoe Museum has holdings of approximately 13,000 footwear and footwear-related artefacts. This project's goal is to create and archive several shots of each object. Generally we are taking a '3/4' view that shows the entire artefact with all of its component parts, then a side view of one shoe, and finally a shot of the bottom of the shoe.

If the artefact has special features that we would like views of, we take more photos, and if more detail shots are needed, we then use a macro lens (100mm) that lets us get very close to the object.

These 'documentation shots' are used primarily for documentation of the collection and are linked to the Artefact Database, however that is not their only function. They are also used for inventory, as a record for insurance, as reference for our in-house research, in

our own publications, and for other publications through our Image Sales department. Because we have so many uses for these images, we realized from the beginning that we needed to capture versatile high quality files that featured even lighting, a white background, few shadows, great detail, crisp focus and lots of resolution. Our photography studio set up is simple and we have a small budget.

We shoot with a Canon EOS 5D, a model which was launched in 2007 and heralded in the era of affordable high-quality digital photography. Today this particular model is becoming obsolete because Canon is not producing new drivers for it, and it is therefore not recognizable to Windows operating systems 7 and 8. I can see the purchase of a new camera body in my future, but this camera has performed well for us over the years.

The camera is tethered to a Windows XP laptop, on which we review the images as we shoot and we save the image files. The camera settings are adjusted to "fluorescent lighting" to correct for the lighting we have.

Studio lighting can be a very expensive investment and as I mentioned we are on a strict budget. The studio lighting we have is the least expensive option available: Compact Fluorescent bulbs (also called CFLs) with basic white diffusers over them. We have five lamps. Besides being inexpensive, we like these lights because they run cool and that is best for both us and the artefacts. The colour change that is created by the lights needs to be corrected in two steps of the process: in the camera settings and in the PhotoShop processing.

The back drop is 4 foot-wide Arctic White seamless backdrop paper, which gives us a nice clean background that is easy to correct for colour and easy to 'select around' in PhotoShop.

So that is a summary of the equipment we use; now to describe the process.

I have always run this project with two people: an Artefact Handler and a Photographer. The two person team is important as each person gives their own personal perspective on the composition and clarity of the photo being captured and I believe this makes a superior product. Yes, the Artefact Handler must also look at each shot and give her opinion regarding object placement and composition. This helps the two work together as a team. And in addition, each staff has their own expertise and responsibility for their own roles. The Artefact Handler can focus on correct handling of the artefacts, and the Photographer knows that the handling, maintenance and movement of the photographic equipment is hers alone.

The Artefact Handler is in charge of artefact movement, tracking what's been shot, artefact preparation, placement on the photography surface, positioning the object for each of the three angles to be shot, replacing the internal storage supports, placing the artefact back on to its storage mounts, and returning object to storage.

Meanwhile, the Photographer is using a notebook to record the artefact number of the object being shot, and recording the image number of the best shot for each view. She is also preparing the equipment for the next shot, taking shots as the artefact on the photography surface is ready, and ensuring exposure, lighting and histogram levels are optimum. Once the session's photographs have all been taken, she then posts the RAW image files to a backup folder and also copies the images to processing folders, dividing them in two equal parts, half for each team member. The Photographer and the Artefact Handler will do post-photography processing to perfect each shot.

To backup all the work, we have an image server that holds only images: it holds these documentation shots (in a few formats and sizes) and also holds Field Images (taken on research trips), Images of past exhibition installations, Images and text of our Publications, and all of the associated metadata.

So, once the photography is complete for a set of objects, the team will process the resulting RAW files and then resize them into MASTER tiffs, MEDIUM jpgs, and THUMBnails. At this stage, the image files are also renamed according to our File Naming Protocol, which is a naming procedure we created in-house, and they are embedded with copyright information.

To process the images we make initial changes to the RAW file with Adobe's Bridge software, and then use Adobe's PhotoShop to make refinements. This process has changed a great deal over the years because of Adobe software upgrades and our efforts to learn how to best use each version. We use PhotoShop CS5 features such as Crop, Select, Hue/Saturation, Colour Balance, Levels, Curves, Healing Brush, Smart Sharpen, and Burn/Dodge to optimize the photograph's representation of the object. We have calibrated screens and use the artefact itself to colour match on-screen. Currently our time to process one image is greatly reduced over the previous year and is approximately 5 minutes for straight-forward adjustments and up to 30 minutes for complicated images such as white shoes, which are difficult to read on the white background.

I should note here that each image must be processed individually as each shot needs different adjustments depending on the white and black balance and the amount of colour in each shot. There is no way of automating this process so that all of the photographs come out looking their very best. PhotoShop DOES have an 'action record' function, but one cannot use this unchecked as each shot needs individual treatment. Much of this image processing involves selecting around the object and adjusting both the background and then the foreground. Selecting the object correctly requires time.

After the image corrections have been made, we move to the next step which is recording the metadata.

Metadata is the information about the image file, for example, the date the image was shot, with what camera and exposure. It can also include copyright information and contact information regarding the copyright holder. The metadata is uploaded and kept in

the Artefact Database with a thumbnail of the image and links to the larger file versions of the image.

The Bata Shoe Museum artefact database has the capacity to hold an infinite number of photos related to each artefact along with each images' metadata. The insertion of images and metadata can be done manually; it can also be done by an automated process, which is what we do in this project.

To prepare for the automated upload, we complete a line on an Excel spreadsheet for each photo to be uploaded.

Once a month we run the 'Upload' program on the Artefact Database using the Excel sheet. Once the data has loaded, we print off new artefact datasheets in duplicate and file them; one is stored with the artefact and the other is stored in a Master File of datasheets. And that completes the entire integrated process.

Each day on the project we average 22 completed artefacts through this entire process. The process allows care to be taken at each stage and there are several checks that occur along the way so that errors will be caught prior to the automated upload event. It is a simple system that focuses on achieving a high quality product allowing for the full integration of metadata, and the embedding of copyright information.

I have found it vital that I have two dedicated staff members working on this detailed process. Their attention to detail ensures that issues are resolved as they appear and that information can be seamlessly tracked and correctly entered. I have also found that having an artefact handler and a photographer is best-practise as their skills complement one another and working as a team they can support each other's roles when needed.

I hope that sharing my experiences regarding this long-term project will be helpful to you, my CIDOC colleagues. Please feel free to contact me during or after the conference for more information. I am pleased to share my experiences with anyone interested in pursuing a similar project.