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Jean Sequencing


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Abstract

The digital imaging team at Digital Revolution describes tips and techniques used to capture over 12,000 images from the clothing archives at Levi Strauss and CO. Learn how a creative combination of cameras, computers and lasers turned a daunting task into a stunning visual library in record time. Also discussed is their approach to photographing and restoring glass plate negatives, transparencies, as well as manuscripts and artifacts.

Keywords

archiving, artifacts, photography, metadata, DAM, glass plate negatives

Digital Revolution of San Francisco brought quality and quantity together for an epic photo challenge.



Jean Sequencing

Documenting 140+ years of archived clothing for Levi Strauss & Co.

Around San Francisco there are lots of companies cataloging genes. But only one that's been working with jeans for over a century: Levi Strauss & Co. In their Archives at Levi's Plaza the company has thousands of garments produced over the last 140+ years — almost back to the Gold Rush. It's an amazing physical record of the evolution of clothing styles from this iconic brand.

When Historian Tracey Panek joined the company she realized that this collection represented a valuable asset, especially if it could be accessed easily — not just for historical reference but as a rich source of inspiration for the company's clothing designers.

Building a digital archive

Panek envisioned a digital asset management (DAM) system that would catalog everything in the Levi Strauss & Co Archives - from images of clothing to catalogs, advertising, and marketing materials. With this online resource, designers and others at the company could

search for and view specific items anywhere in the world. To accomplish this the entire archival collection would need to be captured digitally.

A special challenge would be photographing thousands of items of clothing in a way that would be both detailed enough for designers to study yet economical enough for a realistic budget. For that Panek turned to Digital Revolution - a local media preservation company she'd worked with before.

Shooting 12,000 photos efficiently

The photography team at Digital Revolution, Jeff Hurn and Jack Schaeffer, have extensive experience with catalog photography which helped them design a workflow that streamlined the process and avoided the pitfalls associated with clothing photography. They knew that the size and value of the collection meant they'd have to bring the studio to the archive, not the other way around.

Clothing can be fussy to lay out neatly - especially if you're working on valuable older items that are extremely delicate. With so many pieces to photograph, a comfortable work surface at table height was critical. But that meant the camera would need to be positioned over the table, eight feet in the air. With the camera just a few inches below the ceiling, it would not be possible to look through the viewfinder to aim. To deal with that issue the team brought in a heavy-duty Foba Camera Stand. Its precision bearings allowed the camera to be returned to the exact shooting position whenever it was lowered for adjustments or battery changes.

A Nikon DSLR with a 24 megapixel sensor served as the main overhead camera. Its high pixel density coupled with a flat-field macro lens yielded richly detailed images. The camera was tethered to a computer running image capture software which could trigger the shutter remotely and then display the resulting image almost instantly. The team would enter metadata descriptors for each image as they were captured.

Color fidelity was important so the garments were lit by Speedotron studio strobes which produce precisely repeatable color on every pop. For complete accuracy the team customized the camera's pre-set white



balance to match the strobe light. As a check a MacBeth Color-checker Card was photographed periodically throughout the day. For an extra margin of security all photos were captured in “RAW” format which allows great latitude in color correction without image loss. It proved to be unnecessary as the color rendition was spot-on right out of the camera.



The shooting surface was covered with thick foam core which not only provided a pure white background but also allowed the archivists to pin down unruly clothing parts when necessary.

In addition, the table was rigged with a small construction laser that indicated the exact center of the photo frame. This ensured that garments would be positioned consistently throughout the shoot.

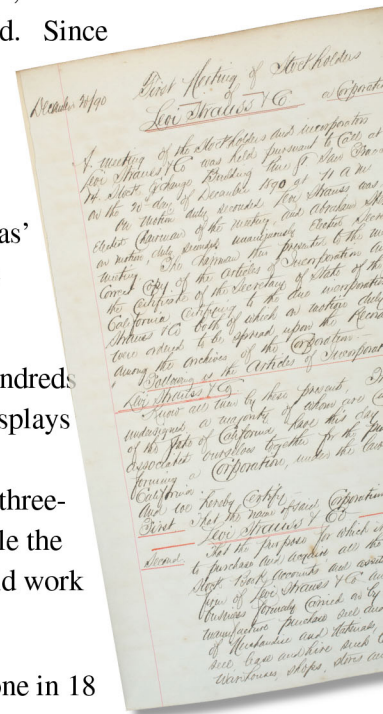
Along with top-down front and back shots of each garment, the designers wanted close-ups of any unique details such as closures, tags, wear patterns, and the

like. For that a second Nikon camera was used handheld. Since this camera was not tethered to the computer, the captured images were recorded to its on-board SD card and later combined with the computer file. To make sure these close-ups appeared with the matching

overview shots in the final database, the cameras' internal time clocks were synchronized and the shots were sorted by time-of-day.

The Levi Strauss & Co Archives also house hundreds of physical artifacts, from point-of-purchase displays and an Olympic torch, to historic books and manuscripts. To make the switch from flat to three-dimensional photography as efficient as possible the team designed a versatile light set-up that would work for both situations without a lot of adjustment.

Using this set-up close to 12,000 shots were done in 18 days.



Metadata is the challenge

With this photographic infrastructure in place, capturing images was fast and accurate. What really determined the pace of the project was the effort of entering metadata for each image. Fortunately the photo

team was assisted by several experienced archivists whose encyclopedic knowledge of the Levi Strauss product line was invaluable.

The image capture software simplified some repetitive work by allowing the team to program custom buttons for common keywords but still the effort of typing specific detailed metadata was the most time consuming aspect of the project. A little pre-production time spent conferring with designers, archivists and DAM designers to establish a glossary of keywords, descriptors and physical locations is well worth the effort!

Repairing the ravages of time

Levi Strauss & Co has imagery going back to the very birth of photography and some of the most interesting items in the Archives were old glass plate negatives. These were produced with primitive chemistry that yielded negatives much denser than modern film. Standard film scanners do not work well with these images. To make matters worse some plates were cracked or broken.



The photo team developed a re-photography protocol using their digital cameras that could tease out a better contrast range from the dense negatives, yielding beautiful black and white prints. By employing the “stitching” routines in high-end image-editing software that are normally used for creating panoramas, they reconstructed complete images from broken plates.

As the digital archive takes shape, Panek sums it up this way: “Levi Strauss is a company whose brand identity is closely tied to its heritage. Beyond the inspiration this will provide for our designers, these digital assets offer countless storytelling opportunities around the company's legacy and its place in fashion history.”

Digital Revolution is a full service Multi Media facility in San Francisco. From legacy video, audio and film digitizing and preservation to video creation, post production and authoring, Digital Revolution has served corporations, educational institutions, non-profits, film companies and government agencies since 2004.

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