

"Scanner reveals previously invisible details on historic map"

Five minutes of scanning helped locate historical land demarcations that might otherwise have taken months to discover.



Summary

The United States National Park Service (USNPS) used its Contex HD4230 wide format scanner to copy a partially disintegrated 1850s linen survey map of the Chesapeake & Ohio (C&O) Canal – an important National Historical Park. The clarity of the scanned file revealed details that had long been buried by infrastructure and modern construction. This discovery saved the USNPS many months of work – and contributed to the national understanding of this historically important area.

• The challenge

Managing past and future land use – and preserving documents and data – by scanning delicate, old linen maps into high-quality image files.

• The solution

A Contex HD4230 wide format scanner (and a very long table).

• The benefits

Digital files with clearer detail than the original that can be easily handled, stored, and organized.

• The results

Discovery of important map details and savings for taxpayers, thanks to quicker, more accurate georeferencing by the USNPS.

"Looking at the scanned image was like looking at real linen – and then I saw the monuments we never knew existed."

John Hitchcock, USNPS

When John Hitchcock of the USNPS fed a 100-foot-long linen map of the C&O Canal into a Contex HD4230 scanner, he wasn't sure how well the scan would turn out. The resulting image was so detailed, it revealed markings that were not discernable on the original. What John saw were small rocks – also known as survey monuments – marking land divisions from the 1850s.

Survey monuments help the USNPS piece together the regional history of the area and compile georeference data. This data is used to plan canal reconstruction efforts by showing how it was originally built.

The challenge: scanning a delicate, large linen map

Over time, survey monuments can get buried by roads and other infrastructure, so the only way to trace historical land use is through maps. But delicate linen maps fade over time and can fall apart when handled repeatedly. So the USNPS scans the maps, creating TIFF or PDF files that can be handled more easily.

The map of the C&O Canal presented a particular challenge. Its edges were frayed and brittle – **and it was over 100 feet long.**

The solution – fast scanning with incredible detail

The USNPS division where John works uses the Contex HD4230 wide format scanner for archiving and special projects. Designed for a wide variety of large technical documents, detailed maps, and drawings, the HD4230 offers a 42" imaging area, 600 dpi optical resolution, and scanning speeds up to 12 inches per second.

The scanner can capture even the most detailed originals quickly – and John is pretty protective of it. "My official job title is Special Park Use Coordinator," he says. "But I'm also known as Caretaker of the HD4230. We scan everything from engineering drawings to photos, and if there's anything over 11"x17", we go straight for the scanner."

John continues, "The C&O Canal map was so fragile, we had to lay it out on a long table and feed it into the scanner by hand. The rollers took it in smoothly along the linear spool.

We scanned it in five sections to minimize the size of the TIFF files. It went very quickly, with each one taking only about five minutes to scan."

It wasn't until John opened the files and zoomed in that he could really appreciate the quality. John says, "The scan is incredible. We can actually see the grain in the linen and the weave of the fabric. But when we saw the monuments, we weren't 100% convinced. These had never been spotted before. So we went to check the area – and there they were."

The benefits – more time, more space and easy access

When asked about the benefits of the HD4230, John is fast to respond. "It helps the USNPS tremendously. We mainly use it for making copies of historical and precious documents. It gives us fantastic quality files, so we can use data without damaging the originals. But really, it's the US tax payer who benefits, because we can use our time and space more effectively: everything is in electronic form, so it's quick to find and easy to handle."

The results – copies better than the originals

The HD4230's 'discovery' of details that had faded on the original 150-year-old map gives a clearer idea of how the land around the canal was used in the 1850s. For the USNPS, it's a fantastic discovery.

"Development has destroyed some of the original monuments," says John. "So we only have the old maps to go on. The monuments help us develop a detailed georeference of the area – and finding these on the scanned map was a bit of a miracle, really."

The bonus – Context goes to the source

The HD4230's benefits aren't confined to the offices of the USNPS. Sometimes, John and his colleagues need to scan documents that can't be removed from the US National Archives in downtown Washington, DC. Since the Archives has no reliable wide format scanner of its own, John plans to pack up his HD4230 and take it with him when he next visits the Archives. This way he can scan what he needs and bring the digital files safely back to his offices. As a service to the Archives, John says he'll give them a copy of the scanned files too, so they can share them with others without causing more wear on the originals.



HD4230 handles large format, delicate tasks for the USNPS



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John Hitchcock, USNPS

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