

Technology *Imaging*



Associated Press

Bob Melia, president of Realtime Thermal Imaging, uses an infrared camera to locate unmarked Civil War grave sites.

Thermal camera peers into history

High-tech archaeology: Infrared pictures help uncover a wealth of information from the past.

By **EMERY DALESIO**

The Associated Press

SALISBURY, NC – Infrared cameras that can peer into the ground and through walls are literally changing history.

At one of the Confederacy's most notorious prison camps, they have uncovered a startling revelation:

Fewer than half of the 11,700 Union prisoners whose names are on a monument to the camp dead now are believed to have actually died here.

Moreover, the so-called "thermal archaeologists" who made the discovery also think they know why the soldiers died

At Salisbury and other Civil War sites in Ohio, Virginia, Mississippi, Alabama, Tennessee and Louisiana, history buffs are deploying the high tech cameras with growing success.

"It doesn't replace the shovel and brush, but it narrows down the area where you have to use a shovel and a brush." Said Bob Melia, who owns Realtime Thermal Imaging of Kenner, La., and is one of the technology's pioneers.

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The cameras have proved successful elsewhere.

U.S. troops used the cameras, which read infrared rather than visible waves of light, to “see” at night during the Persian Gulf War.

Firefighters in Fort Lauderdale, Fla., and Durham, N.C., use them to navigate smoky buildings. The cameras help scientists in Alaska find polar bear dens beneath the snow. General Motors Corp. this year began offering infrared night vision aids on Cadillac DeVilles.

Woody Harrell, superintendent of the Shiloh National Military Park in Tennessee, says the new technology is superior to old-fashioned spade work.

“There’s a wealth of information, but in uncovering that information, you’re destroying the ability to do anything more with that,” Harrell said. “We can find this information and yet the site is still there, the history book is still there to read again.”

At Shiloh, the bloody 1862 battle in western Tennessee, bluffs at the center of the battlefield have been examined with ground-penetrating radar for clues to a mound-building culture that thrived about 1200 A.D.

The new technology is being deployed elsewhere in the interests of history:

In the Nevada desert, a researcher is testing equipment that senses reflected light or retained heat from aircraft to detect stone tools that might indicate American Indian settlement

University researchers are using NASA images to help resolve a dispute over how many black Union cavalymen wounded in a Civil War battle at Saltville, Va., were executed by Confederate troops.

Thermal imaging equipment is being used to root out damaging moisture within the fortress walls of Texas’ Alamo

At Salisbury prison, thousands of imprisoned Union soldiers crowded the grounds as the war dragged on and prisoner exchanges all but ended. Prisoners’ diaries describe daily rations of a half-loaf of bread and a pint of rice soup and having to dig burrows for shelter from the elements, covering the holes with anything at hand.

Time has swept away all traces of the prison but a lone log house. A cemetery remains on a small hill where the Union POWs were buried in 18 parallel trenches.

For decades, historians and the U.S. government have believed that the mass graves contained 11,700 unknown dead. That would mean that more than a third of the estimated 30,218 Union POWs who died during the war

perished at Salisbury.

In 1998, Melia, familiar with infrared technology from serving as a Coast Guard intelligence officer, flew over the Confederate POW camp with a thermal camera. He recorded areas that retained the sun’s heat at different rates than the surrounding dirt. They bore the various signatures of graves, underground water wells, a covered-over latrine and the foundations of the prison’s fence.

“We just found these pit areas that pretty well represented about 4,500 people,” Melia said.

Tossing away a Confederate quartermaster’s sketch that had been the standard reference map for the 12-acre site, Melia drew a picture that realigned the camp in conformity to diary entries.

He learned that the camp’s latrines lay just across the road from the camp’s well-water supply, suggesting that dysentery took the lives of many.

He also found a century-old burial ground for blacks outside a cemetery for whites.

That discovery created an opportunity to commemorate the city’s black heritage, said the Rev. Johnson Asibuo, pastor of Soldier’s memorial AME Church, which is named for the Union troops who liberated the city’s slaves.

Thermal maps of the graves across from Asibuo’s parsonage fueled an effort to find and record the names of the slaves and freed blacks buried there.