The current method crime scene investigators use to search for metallic evidence, such as shell casings, is utilizing one of the standard geometric search patterns and the use of a metal detector. This not only takes a great deal of time, it also produces a great deal of false positives and can possibly hazardous to the searcher. A standard metal detector emits an electromagnetic field onto the target surface. Once the signal penetrates the ground, metallic objects reflect the signal back to the receiver. This receiver will then give an audible warning alerting the operator. The concern with this method is that they can be used for both heating and cooling, enabling contrast with the surroundings.

To combat the false positives produced by the metal detector, as well as convenience and possible safety concerns, the idea of using infrared thermography was proposed. Infrared thermography, also known as thermal imaging is a technology that has the capability to sense the heat emitted by any and every object. Currently, thermal imaging is very popular in both military and government projects and the construction industry. This technology has the potential to expand the search radius while decreasing the time it takes to find metallic evidence. It has the potential to help investigators find more evidence in many different environments, however, to date, it has not been used in searching for expended shell casings.

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REFERENCES