

# Kite Aerial Photography at the Kansas Veteran's Cemetery in Fort Dodge, Kansas

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*Figure 1: Aerial view of the Kansas Soldiers' Home, Dodge City, Kansas. Kansas Historical Society.*

Fort Dodge, in southwestern Kansas, was a military installation established in 1865 to provide support and protection to travelers on the Santa Fe Trail. The initial fort was located along the bank north of the Arkansas River. The State of Kansas acquired Fort Dodge in 1890 and converted it into the Kansas Soldier's Home. Figure 1 is an aerial photograph from 1961 of Fort Dodge, Kansas. To the north and across Highway 400 from the Kansas Soldier's home, are offices, a water tower, and the Kansas Veteran's cemetery (Ceymour, p. 1-3).

Interred in the Kansas Veteran's Cemetery are United States military veterans and their dependents. These burials began in the 1800's and include veterans of the Civil War, Indian Wars, Mexican War, the Spanish American War, World Wars I and II, the Korean War, and the Vietnam War (Ceymour, p.1). According to the Council of Texas Archeologists, any historical cemetery potentially contains unmarked graves. Cemetery managers have a responsibility to identify unmarked graves, particularly if people will be buried there in the future. To verify the existence and location of such graves, geophysical techniques such as GPR, resistivity, or magnetics would be used. However, aerial photography may be a useful tool to identify possible unmarked gravesites. Especially in this case, small format aerial photography might be more useful than walking surveys and larger format photography. The use of kites, as opposed to drones, provides a quiet and respectful method of obtaining such photographs at a sensitive location such as a cemetery. Further

photography in late spring may reveal useful vegetation differences not seen during the fall (Wilson-Agin, p. 68).

Photographs from Figures 2 and 3 were taken during an early October field trip in 2016 by Dr. James Aber and the Fall 2016 Emporia State University Small Format Aerial Photography class. Across Highway 400 from the cemetery, the class used a kite and a blimp to take photographs of the Fort and cemetery in the morning. Later, at the cemetery, the class used a kite to take photographs of the cemetery.

In an aerial photograph, unmarked burials appear similar to marked burials. Even after more than a hundred years, the disturbed area often displays a rounded rectangular shape and varying vegetation with a darker tone. Christian burials are traditionally oriented east-west and criminals were often aligned north-south and both have been found in the same burial area (Wilson-Agin, p. 8,73).

Figure 2 is a stitched mosaic of the study area and Figures 3 and 4 are original and processed nearly vertical low-oblique images of the area between two outbuildings and north of a boundary fence, located in the northeast portion of the study area. Virtual Studio was used to process Figure 3 and the image was converted to greyscale, brightness reduced, and contrast increased. The result is shown as Figure 4. Particularly in the unprocessed images, some linear features appearing to be disturbed soil might be lawnmower marks. In the older, eastern section of the cemetery, the tombstones of some of the graves appear to be in the center of the disturbance. In Figure 3, potential unmarked graves are indicated in yellow on photos and include areas between the two outbuildings and north of the boundary fence. The light, circular features north of the boundary fence are rodent burrows, probably prairie dog towns. Most of the proposed unmarked graves are oriented east-west, comparable to the marked graves. Outside of the fenced boundary, a few disturbed areas appear to be oriented north-south. These disturbed areas may consist of traditional Christian burials intermingled with criminal burials towards the north. Late-spring aerial photography and geophysical surveys would be needed needed to confirm the existence of unmarked graves around the area of the Veteran's Cemetery in Fort Dodge, Kansas.



Figure 2: Photo Mosaic of Kansas Veteran's Cemetery. Photos taken by kite and stitched by Brooke Molson-Moran using PTGui.

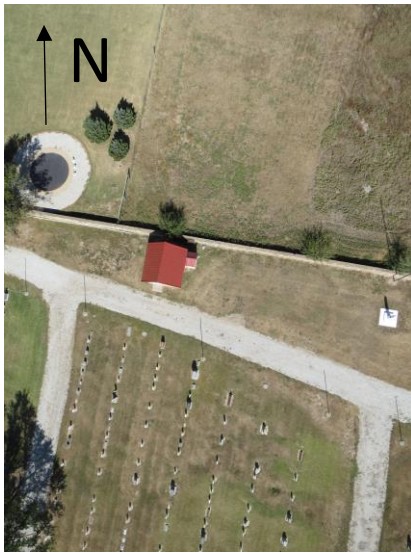


Figure 3: Original kite aerial photo showing area between outbuildings and north of boundary fence. Taken by Dr. James Aber.

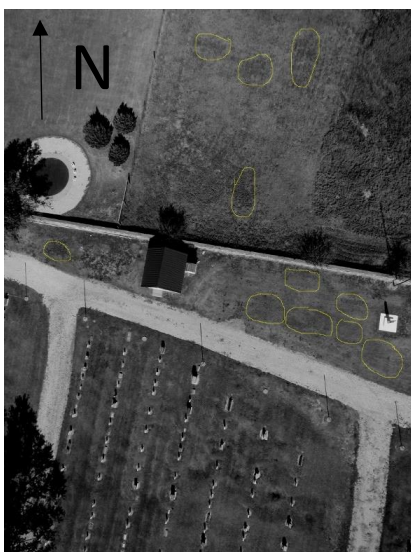


Figure 4: Processed version of Figure 3 by Brooke Molson-Moran. Yellow outlines are possible unmarked graves.

## References

Boyd, D., Feit, R., Howard, M., and Peter, D. 2009. Council of Texas Archeologists Guidelines for Identification of Historic Cemeteries and Unmarked Historic Graves. 1-4 p.

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<<http://img.kansasmemory.org/thumb500/00438707.jpg>>.

Wilson-Agin, E. 2003. Use of geophysical and remote sensing technology to locate and delineate unmarked graves in clay-rich soils of Kansas. 91 p.