H87 Lost and Found: Forensic Anthropology and the Recovery of a 21-Year-Old Plane Crash

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Learning Overview: After attending this presentation, attendees will understand how forensic anthropologists can assist medical examiners and forensic pathologists in complex scene recoveries involving skeletal remains.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by highlighting the expertise forensic anthropologists provide in recoveries of highly fragmented skeletal remains that may be found in medicolegal death investigations.

This presentation will review the case of a 21-year-old plane crash in which the Medical Examiner of Mackinac County, MI, consulted with forensic anthropologists for the recovery of highly fragmented human skeletal remains. The remains were presumed to be Mark and Janet Davies, a married couple who disappeared on September 14, 1997, when their personal plane left Drummond Island, MI, with the intention of traveling to the Livingston County Airport, MI. The forensic anthropology teams from Northern Michigan University and Western Michigan University Homer Stryker M.D. School of Medicine assembled in St. Ignace, MI, on August 7, 2018, at 8:00 a.m. to partake in a planning meeting with teams representing the United States Forest Service, Mackinac County Medical Examiner's Office, Mackinac County Sheriff's Office, Federal Aviation Administration, National Transportation Safety Board, and Piper Aviation. The scene, discovered by United States Forest Service interns conducting a tree survey, was located within the Hiawatha National Forest, approximately half a mile from the nearest trail.

The plane was dismantled in sections from the top working down and the various teams of investigators cooperated to ensure that everyone had the opportunity to meticulously collect evidence relevant to their respective disciplines. Skeletal elements were recovered from the control panel and footwell of the cockpit, as well as from the soil just outside the fuselage. The anthropology team, accompanied by deputies from the Mackinac County Sheriff's Office, returned on August 8 to continue the recovery and excavated additional skeletal material from the surrounding soil. The remains were transported to Western Michigan University Homer Stryker M.D. School of Medicine's Forensic Anthropology Laboratory, where skeletal analyses were performed. Evidence of blunt force trauma consistent with a plane crash was present, including a compression fracture of the first cervical vertebra, spiral fractures, and butterfly fractures of various skeletal elements. A minimum number of two individuals was established based on repeated elements. Commingling was resolved by separating repeated elements and comparing sexually dimorphic size differences in the elements recovered. Taphonomic analysis revealed animal scavenging activities and weathering. Comparative dental radiography confirmed the decedents to be Mark and Janet Davies. After the completion of the skeletal analyses, the remains were returned to Mark's and Janet's next-of-kin. Remains that could not be reliably associated with either Mark or Janet Davies due to extreme fragmentation were slated for cremation together, an arrangement that was agreed upon by both families.

This unique case highlights the need for interdisciplinary teams within the forensic sciences. As forensic anthropologists are experts in the recovery and analysis of human skeletal remains, they can be valuable in difficult cases where fragmentary skeletal remains need to be located and recovered. In this case, the forensic anthropologists provided expertise in the search and recovery of highly fragmented skeletal remains, the analysis of skeletal trauma, the resolution of commingling, and the positive identification of the victims.

Forensic Anthropology, Scene Recovery, Forensic Science

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