



## Physical Anthropology Section – 2003

### H71 Roles of the Biological Anthropologist in the Response to the Crash of United Airlines Flight 93

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The goal of this presentation is to examine the multiple roles filled by anthropologists during the recovery and identification of the victims following the crash of United Airlines Flight 93 and to explore the training and skills that allowed the anthropologists to play such diverse roles.

Traditionally, medical examiners and law enforcement agencies have consulted biological anthropologists in the investigation of crimes, accidents, and mass disasters. Conventional training in biological anthropology provides the professional with a background in human anatomy and physiology, growth and development, epidemiology, genetics, and the scientific method. Biological anthropologists who specialize in skeletal biology have a unique suite of skills that is applicable to certain types of forensic investigations. An extensive knowledge of human and nonhuman bones is utilized to recognize and identify skeletal fragments and human remains and to collect biological information from those remains and fragments. In addition, anthropologists have the skills to collect biological and other evidence at scenes, using field and archaeological methods. On September 11, 2001, terrorists took control of United Airlines Flight 93, a Boeing 757 flying from Newark to San Francisco. Passengers and crew on the flight learned through telephone calls that other flights had been used to attack the World Trade Center and the Pentagon earlier that morning, and were able to thwart the terrorists' plans. However, the plane crashed into an open field in Somerset County, PA, and all those aboard (40 passengers and crew and 4 terrorists) were killed.

On September 13, the U.S. Department of Health and Human Services DMORT Region III team was activated to respond to the crash site. This team deployed six anthropologists, including the team commander, and other Regions loaned two additional anthropologists. Several of the team's anthropologists had responded to other air crashes and terrorist attacks (e.g., EgyptAir Flight 990, Executive Air, Korean Air Flight 801, Oklahoma City Murrah Building) and were thus experienced in working on mass fatality incidents with the National Transportation Safety Board and other disaster response agencies. However, due to several unusual circumstances, the anthropologists found themselves filling new roles in this response.

First, the Flight 93 crash site was considered to be a crime scene and was under the control of the Federal Bureau of Investigation; a situation the team had not dealt with previously. Prior to deployment, several of the team's anthropologists were involved in the initial recovery at the crash site. This cooperation facilitated later morgue operations by providing information about recovery strategies and the organization of remains. Collaboration between FBI and DMORT personnel in the morgue was necessary to maintain continuity throughout the processing of remains and evidence. An anthropologist assumed the role of morgue manager to assure smooth operation in the facility and to supervise protocol development for each area of activity within the morgue. These activities included triage, admitting, radiography, photography, anthropology, pathology, odontology, and DNA sampling. Protocols were written based on previous experiences and modified during the September 11 incident to reflect the medico-legal aspects of the situation. With written instructions, team members were able to work confidently in their areas, and turnovers in staffing were smooth. These standardized protocols will be made available to other disaster response teams through the DMORT website. They can be modified to reflect the circumstances of future responses.

Second, anthropologists were involved in aspects of the recovery operation and were fully integrated into the morgue operation. In addition to the initial recovery at the crash site, anthropologists visited the site to monitor the recovery of human remains. In the months following the crash, anthropologists volunteered to return to Pennsylvania several times to help recover more remains and clear the site. Anthropologists analyzed these newly recovered remains and assured that the analysis of these remains proceeded according to the protocols developed during the DMORT deployment, including triage of the remains and DNA sampling. Anthropologists further assisted the local coroner in the final reassociation of the positively identified remains. The anthropologists were able to combine electronic data from several different data sources, manipulate the data to a consistent format, and generate a final data table to facilitate the reassociations.

Third, anthropologists were assigned to staff the triage station and played a key role in the triage selection strategy. The training of the physical anthropologists in both skeletal biology and human anatomy enabled them to readily identify the fragmentary remains and make appropriate decisions regarding the processing of remains through the morgue stations. Given the high fragmentation level associated with the UA 93 crash, the majority of remains processed through the triage station were composed of fragmentary bone with some associated soft and connective tissue. The ability of the anthropologists to correctly identify these remains and assess their identification potential helped ensure that the morgue processed the human remains in a timely and efficient manner.



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The positions and responsibilities of DMORT anthropologists for the Flight 93 response included team commander, morgue management, triage, anthropological analysis, DNA sampling, protocol development, site recovery, database management, and data verification. In addition, the anthropologists were able to communicate effectively with pathologists, dentists, radiological technicians, coroner's staff, law enforcement agents, DNA specialists, and other team members. The anthropologists' training and experience made them valuable and flexible members of the disaster response team.

### **United Airlines Flight 93, Forensic Anthropology, Victim Identification**