



F55 Flight 3407: Lessons Learned

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Upon completion of this presentation, participants will appreciate the importance of forensic odontology in a mass disaster identification effort, understand the importance of full body radiographs, recognize the importance of altering work flow to optimize efficiency in a mass disaster identification effort, and learn the procedural changes made during the Flight 3407 identification effort which resulted in increased efficiency.

This presentation will impact the forensic science community by explaining why in a situation where family members have experienced personal loss, it is critical to have an identification process that runs efficiently and accurately in order for family members to have timely closure.

On February 12, 2009, Continental Connection Flight 3407 left Newark, New Jersey on route to Buffalo, New York. It never reached its destination. The purpose of this abstract is to identify lessons learned from the recovery and identification operation.

In the case of Flight 3407, odontology and finger printing were the two most expedient forms of identification. DNA was also used to make identification; however, the results took several days to several weeks and incineration adversely affected the quality of the tissues for sampling.

The recovery operation was completed in less than one week. The processing of remains was completed in nine (9) days. The identification operation started on February 13, 2009 and continued as an ongoing process for weeks in an attempt to identify the victims. After all efforts were exhausted 49 out of 50 victims were positively identified.

What made this operation run efficiently? In the early stages of the identification process, a traditional process was followed with remains being moved from one station to the next in a pre-determined series. There were three (3) stations. Station #1 was full body radiology, Station #2 was examination, and Station #3 was odontology. In Station #2, there were multiple tables on which different forensic activities were performed. Thus remains were moved from station to station, and within a station, from table to table.

Moving a set of remains sequentially from station to station was not efficient because at any given station the processing of an individual's remains could be delayed and thus the whole identification operation would come to a stop. Some stations would take a lot more time than others and in some cases, a station was not needed at all (i.e., there was no finger print evidence or odontology evidence). Moving from station to station in a predetermined series was therefore a very inefficient process.

Moving from table to table within a station also required moving remains from one table to another. For example, in Station #2 there were 3 tables. Table #1 was personal effects, photography, and finger printing. Table #2 was pathology and Table #3 was anthropology and DNA. The process of transferring each set of remains from one table to the next was very time consuming and labor intensive.

To increase efficiency, teams of pathologists, anthropologists, odontologists, DNA experts and Personal Effects/Photography started to move from table to table. Remains, therefore, were situated in one place while in Station #2. What eventually evolved during this process was a triage system where teams of forensic professionals circulated through the tables in Station #2. If there was, for example, dental evidence present, a member of the odontology team would resect the dental evidence, clean the dental evidence, re-bag the material and label the bag as dental with the case number. The bag was placed with the rest of the remains.

It should be noted that full body radiography was essential in this triage process. Through the full body radiographs, the anthropologists and odontologists could quickly identify dental evidence. This was critical for two reasons. First as dental evidence was recognized, the dental evidence was recovered and not displaced or separated from the victim. Second, when the remains with the dental evidence bag reached the odontology station, the exam, x-rays and charting took in a fraction of the time. By triaging the remains in the exam room, if there was no dental evidence for identification, the flow sheet would be signed by the triage person and the remains would then bypass the odontology station. The remains then moved immediately on to the next station. This also worked very well for finger printing.

Forensic Odontology, Victim Identification, Flight 3407