



Physical Anthropology Section – 2008

H1 A Small Plane Crash With (Unforeseen) Large Legal Consequences

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Viewers of this presentation will be better able to utilize forensic anthropology in sorting potentially commingled remains, and recognize the importance of radiology, both as an analytic tool and a permanent record.

This presentation will impact the forensic community by emphasizing the value of radiology of remains as a means of analysis and interpretation, as well as permanent documentation in case unforeseen questions should arise.

A small plane crash resulted in the death of three individuals: the owner (who was a licensed pilot), his son, and the pilot employed by the plane's owner.

The remains of one individual, who was later identified as the professional pilot, were fairly intact and collected in one body bag.

The mangled and fragmented remains of the other two men, later identified as the owner and his son, were put into two separate body bags.

Each set of remains was quickly and positively identified by comparison of antemortem and postmortem dental radiographs and returned to the two families.

The authors' anthropological services were not used, inasmuch as the identifications appeared to be straightforward and provided rapid closure for the families.

Unfortunately, some time later, as aircraft and other insurance claims were being processed, a dispute arose between multiple opposing law firms as to whether or not the non-pilot son of the owner might have been flying the aircraft at the time of the accident, rather than one of the two licensed pilots aboard.

The authors were called in at that belated point and were asked to answer the following questions: (1) was there commingling of remains within the body bags? and (2) could they help determine who was flying the plane (who was at the controls at the time that the plane crashed)? Fortunately, the Coroner's Office involved had a policy of always taking full body radiographs - in this case full body bag radiographs.

The forensic anthropology procedures used to answer these seemingly simple questions are discussed in this presentation. They include determination of relative ages of the commingled body fragments, and identification of trauma to the extremities - using the available body bag radiographs.

The remains of the hired pilot could be excluded from consideration, because his remains were found relatively intact and at some distance from the other two "sets" of remains. The radiographs of the single body bag containing the remains of the pilot showed no signs of commingling. This was a helpful starting point, because he was approximately 20 years old at death - about the same age as the non-pilot son.

Age differences provided the main basis for determining that the fragmentary remains of the father and the son were indeed commingled within the two other body bags, inasmuch as the father was approximately 45-years-old at death and the son was approximately 20-years-old at death.

These findings were based primarily on radiographic evaluation of joint surface configuration and the presence or absence of persistent lines of density suggesting recent epiphyseal union (sometimes called "growth plate scars" and not to be confused with the "Harris lines" associated with growth arrests followed by growth augmentation).

The disarticulated and severely fractured feet were those of the older individual (the father, who was a licensed pilot), although they were located within the body bag containing other remains identified dentally as being those of the son. The damage present was consistent with that found in individuals "working" control pedals in both automobile and airplane crash situations. The foot of the younger individual (the son) showed minimal damage.

Aircrash, Anthropology, Radiology