H27 Gooney Birds and Rocky Clouds: Perimortem Trauma in World War II C-47 Crashes From Papua New Guinea

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After attending this presentation, attendees will observe multiple cases of extreme perimortem skeletal trauma and understand possible explanations of why different individuals may suffer different patterns of trauma from the same type of aircraft crash.

This presentation will impact the forensic community and/or humanity by demonstrating detailed description of trauma patterns from one particular class of aircraft crashes which will allow a better understanding of the variability observed in current and historic aircraft incidents.

This paper will present several cases of extreme perimortem trauma observed in aircraft crashes. By focusing on one type of aircraft, the C-47 Dakota (also known as the Gooney Bird), and one type of crash, collisions with terrain in Papua New Guinea (P.N.G.) it will control for some of the variability that may underlie the different trauma patterns observed in different aircraft crashes. The primary incident considered occurred in P.N.G. in 1944. The aircraft involved was carrying four crewmembers and one passenger. One wing was torn off upon impact with a mountain peak, and the remainder of the airplane fell several hundred feet down slope. All five individuals were recovered by the Central Identification LaboratoryHawaii (CILHI) and Joint POW/MIA Accounting Command (JPAC) over the course of three missions, in 1981, 1982, and 2004. The extensive perimortem trauma observed in these individuals was compared to the patterns seen in two other C-47 recoveries from P.N.G. Traumas were recorded by region; because of the fragmentary condition of many of the remains, midshaft fractures of the lower legs and arms were recorded by limb, rather than bone, treating the radius and ulna as one unit and the tibia and fibula as another. Most notable was the high incidence of complete, generally comminuted, fractures of the femoral shaft. As the largest and strongest long bone, the femur is also the most resistant to fracture, and femoral fractures generally result from high energy events, such as motor vehicle crashes. Of thirteen individuals with at least one observable femur, seven exhibited a perimortem midshaft fracture, and of 20 observable femora, 14 were fractured. The humerus exhibited a similar incidence of complete midshaft fractures, with seven of 13 individuals exhibiting such trauma, and nine of 18 bones fractured. Forearms and lower legs were also frequently broken. Eight of ten individuals exhibited complete forearm fractures, and four of ten complete lower leg fractures. Victims were divided into two groups by seating position, comparing pilots and copilots to all others. Although sample sizes were small, there was one statistically significant difference: Seven of ten humeri from pilots were fractured, while only two of eight from passengers and other crew were. Pilots also exhibited a slightly higher incidence of broken forearms, although this was not statistically significant. One possibility is that the higher incidence of arm fractures in pilots is a result of impact with the dashboard. Leg fractures occur at a similar frequency in both groups, as their legs were not subjected to different forces at impact.

Perimortem Trauma, Skeletal Pathology, Aircraft Crashes

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