

APPENDIX K

smokers. Consequently, I believe that there is a real possibility that the results obtained on the femoral sample may be higher than the carboxyhaemoglobin concentration that was actually present in the femoral vein at the time of death.

When a person breathes in carbon monoxide in an atmosphere containing a relatively high concentration of carbon monoxide, it takes a finite length of time for the concentration of carbon monoxide in blood to reach equilibrium. The rate at which carbon monoxide rises in blood depends on a variety of factors including the carbon monoxide concentration in the atmosphere and the rate at which the individual is breathing. The rate at which the individual breathes is very largely dependent on the amount of work they are doing. Small, rapidly metabolising, animals, classically, of course, canaries, will develop high concentrations of carboxyhaemoglobin in their blood much more rapidly than will humans in an atmosphere containing carbon monoxide.

The dynamics of the crash are that the deceased driver would have had very little time to complete taking a breath during the process of the crash. As soon as the collision started to occur, as the vehicle decelerated, he would have moved forward relative to the position of the steering wheel. As the process of deceleration proceeded his chest would have been compressed with air being forced from his lungs rather than him breathing in. As the vehicle came to rest, his spinal transection would have meant that it is unlikely that he could have voluntarily taken further breaths. However, the elastic recoil of the bones of his chest, even in the presence of rib fractures, may have meant that there could have been some involuntary inhalation. My understanding of the current data available as to the concentration of carbon monoxide likely to have been present within the cabin during and immediately after the impact is that it would not have been particularly high. The carboxyhaemoglobin concentration in the blood of the deceased male passenger was low, which implied that there was no a general increase in the carbon monoxide concentration in the atmosphere within the vehicle's saloon. Even if the deceased driver came to rest with his mouth and nose in close proximity to the vents in the airbag, and was able to complete taking a breath at that point, the concentration of carbon monoxide present in the airbag would probably have been less than the concentration of carbon monoxide typically present in cigarette smoke. Consequently, I do not believe that a single inhalation, even directly from the gases present within a fully inflated airbag, could have accounted for an increase the carboxyhaemoglobin