



### **F22 A Modified Method for Bitemark Overlay Fabrication**

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After attending this presentation, attendees will learn an alternative method for fabricating bitemark overlays. Attendees will determine if this method is valuable in bitemark analysis and expert witness testimony.

This presentation will impact the forensic science community by providing an alternative method and a useful tool for bitemark overlay fabrication.

The method of acetate overlay fabrication is a critical part of bitemark analysis and expert witness testimony. It began as a magic marker tracing of teeth edges over models made from impressions of a suspected biter and progressed to the more current usage of graphic editing program software and other similar computer programs. The purpose is to accurately represent the biting edges of teeth. The overlay has undergone much study. An error in fabrication can lead to disastrous mistakes in assessing innocence or guilt. In addressing a jury, the forensic dentist should make his or her opinions clear and easy to duplicate. Because many innocent people have found themselves behind bars due to inaccurate forensic analyses, odontologists need to be meticulous and exact in their analyses and their presentations in the courtroom.

There are several methods of overlay fabrication. No one method is always better than another. The method described in *Digital Analysis of Bitemark Evidence* by Raymond J. Johansen, DMD and C. Michael Bowers, DDS, JD is one of the most comprehensive to date (*Forensic Imaging Services, 2000*). This presentation will make use of instructions from this text when fabricating the alternative overlays. Several cases will be shown utilizing this method and comparing it to the traditional method.

Traditional overlays display the edges of the incisors, canines and bicuspid. These are then placed on top of a photograph of the bitemark for comparison. This can be done with a hard copy, or acetate transparency, over the actual photograph, or else performed on a computer software program. Either method is usually acceptable in court. The jury has to imagine that the elliptical or rounded area is the incisal edge of a tooth. This alternative method will reflect the entire tooth over the bitemark photograph. It will help the odontologist, as well as members of a jury, visualize the entire tooth over the bitemark.

A step by step presentation of the alternative method of bitemark overlay will be presented. By the end of the presentation, each attendee should then have the expertise necessary to reproduce this method and the understanding of whether this method is applicable to his or her forensic cases.

#### **Overlay, Bitemark, Expert Witness**