



Questioned Documents Section - 2015

J19 Computer-Scored Test Answer Marks, A.K.A. Bubble Marks: How Individual Are They?

Janet F. Masson, BJ, 908 Town & Country Boulevard, Ste 120, Houston, TX 77024*

After attending this presentation, attendees will better understand what can and cannot be determined from the examination of bubble marks. Attendees will also learn how to make an examination of such marks.

This presentation will impact the forensic science community by presenting the results of research about examinations of marks not previously studied but coming under scrutiny in recent lawsuits.

Over the years, many document examiners have inspected standardized tests on which handwritten answer marks are used. In these cases, there is commonly a concern about whether cheating has occurred. This cheating can take many forms, including, but not limited to: (1) the use of impersonators (a student sending in a proxy or impersonator to take the exam on his/her behalf); (2) swapping of tests and answer sheets by two persons in the same room; or, (3) making after-the-fact changes to specific answers or completing unanswered blanks on an answer sheet in order to increase a student's or school's score. In fact, a survey of newspaper articles written over the last few years reveals numerous reports of alleged large-scale cheating on standardized tests across the country.

Standardized answer sheets are used for obtaining information in a format that allows answers to be counted or scored electronically. While such forms are often used to obtain answers on standardized tests, they are also sometimes used for surveys and ballots. The pencil marks made to indicate answers or choices on these forms are called grid marks, bubble marks, or simply answer marks.

Typically, when a document examiner receives one or more standardized answer sheets for examination, the document contains at least some general handwriting, possibly one or more signatures, and often handwritten numeric calculations. Examination of this writing is a typical, straightforward process discussed in many textbooks on document examination and covered by relevant standards in the field. Furthermore, considerable research has been conducted regarding identification of signatures, hand printing, and numerals. Yet sometimes the questions about a test answer sheet, survey, or ballot can only be resolved by the evidence in the answer marks themselves.

The literature on document examination contains little if any discussion of the limited subject of handwritten answer marks on standardized tests as well as those on ballots and surveys. This project was designed to study these answer marks or "bubble marks" from the perspective of the forensic document examiner.

In this project, samples of answer marks were obtained from more than 100 participants. The questions studied were: (1) how answer marks should be examined; (2) whether any or all writers have a consistency in making answer marks; (3) whether answer marks have individuality; (4) what conditions need to exist in order to reach a meaningful opinion about these marks; and, (5) what opinions can be reached from the evidence found in answer marks.

Handwriting, Bubble Marks, Standardized Test Answer Marks