Comparison of Paper Matches  Name:

From time to time a forensic laboratory may be asked to see whether a torn-out paper match comes from a partially used book, usually taken from an accused person.

Cursory examination of any matchbook will reveal that it contains two pieces of cardboard secured in the book with a staple. The individual match body is formed by a series of partial cuts in this cardboard; thus each layer of matches was originally a single piece of cardboard.

The obvious first attempt to match a torn-out match to a partially filled matchbook requires physically fitting the torn edges of the match to the corresponding portion of the torn book. Barring success in this attempt, a forensic examiner will then try to compare the suspect match with matches remaining in the book in order to establish an adjacent relationship.

Such a comparison can be conducted under a stereoscopic microscope. The most significant features to look for in the comparison of paper matches are:

1. Color, width, and thickness
2. Most matches are made from reprocessed cardboard. Examination of the match edges may reveal inclusions consisting of a large variety of colored fibrous material, aluminum foil, and other contaminants that were involved in the production of the cardboard. A side-by-side examination of matches for comparable inclusions is probably the easiest and most significant feature to look for in match comparisons.
3. Another feature for comparison is the presence of continuous fibers between adjacent matches. These fibers may exist on the upper and lower surfaces of the matches.

Crime Scene

A burglary has been committed, and, apparently, in addition to the burglars inside the building, a lookout was posted. The detective at the scene noticed a few cigarette butts by the back door, as well as a few paper matches. He picked these up as possible evidence. A few days later three suspects are apprehended. A search of the clothing in their apartments yields a book of matches in the trouser pocket of each of the suspects. Your job is to see if the match found at the back door is from one of the books recovered from the suspects.

Suspect A: John Smetnick
Suspect B: Steven Borsnack
Suspect C: David “Briggs” Davis

Method

1. You will have access to the three matchbooks and the match found at the crime scene.
2. Wear gloves anytime you take the evidence out of the evidence bags. All matchbook evidence goes from the bag to the microscope and then immediately back into the bag.
3. Look at the match under the microscope and describe what you see and sketch the torn edge below.
4. Under the microscope, compare the match to each of the suspect matchbooks and look for comparisons. List matching characteristics in the table below.
5. Based on your comparisons, decide if the crime scene match can be linked to any of the matchbooks. Write an explanation of your conclusion below.
Evidence match drawing and characteristics

<table>
<thead>
<tr>
<th>Match Book</th>
<th>Similarities to evidence match</th>
<th>Difference to evidence match</th>
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</thead>
<tbody>
<tr>
<td>A</td>
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<td>B</td>
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<td>C</td>
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Final Conclusion and Explanation of Evidence