CRM342 – Key Concepts – Module 3

Key Concepts of Chapter 7:

- **Source of Trace Evidence:**
  - Clothing: Trace evidence often clings through static electricity or becomes caught in the fabric
  - Footwear: Dust, soil, debris, vegetation or bloodstains may be present; footwear are also useful in shoe-impression evidence comparison
  - Body: Examples would include gun-shot residue, hairs, fibers, and debris from other individuals or the crime scene itself
  - Other objects: Trace evidence such as paint, hair, fibers, and building materials may be present on tools, weapons, and other objects.

- **Collection and Preservation of Trace Evidence:**
  - Deciding whether to remove trace evidence: If there is a trace item such as a hair or fiber which may be easily lost, whether because of the fragile nature or simply because it has a high possibility of being dislodged from the object on which it is attached, it should be collected. However, if it is small enough where it can be collected *in situ* (in its place), then collect the whole item.
  - A smaller item of trace evidence should always be double-packaged (fold/envelope, envelope/bigger envelope)
  - Control samples (or known samples depending on the evidence) will be required if any analysis is to be conducted. As examination of trace evidence is a *comparative* analysis, there must be a known sample with which to compare. Make certain that the known is packaged SEPARATELY from the evidence sample

- **Locard’s Exchange Principle:**
  - When an individual comes into contact with a person or location, certain small and seemingly insignificant changes happen. Small items such as hairs, fibers, and other types of microscopic debris might be left by the person or picked up from contact with the environment or another person. This concept is the basis for a study of trace evidence

Key Concepts of Chapter 11:

- **Flammable Fluid Evidence:**
  - The most commonly sought physical evidence in arson investigations is the presence of flammable fluids
  - Fluids may be recoverable from scenes that were wet from fire extinguishment
  - Best locations for searching for physical evidence include the area of origin, charred rags or carpeting, wood flooring samples, furniture, carpet padding, and any empty containers or broken glass jars
The fluid evidence is very volatile and must be packaged in clean metal cans with tightly sealed lids or glass jars with metal screw-cap lids.

- Paper SHOULD NEVER BE USED to preserve arson evidence.
- Amount needed for chemical analysis is microscopic so it is most likely acceptable to submit items that may only have a “drop” of fluid on it.
- In bomb investigation and evidence collection, search for parts of the explosive device(s) and other trace materials, as well as the other non-trace items such as fingerprints, tire tracks, clothing fragments, and tool marks.

Key Concepts of Chapter 3:

- Fiber evidence found at a Crime Scene:
  - Crime scene investigators know that criminals always leave trace evidence behind or take away minute material from the scene and/or victim.
  - The crime scene investigator's job is to find those traces and preserve them.
  - Fibers, a form of trace evidence, can be found anywhere within a crime scene. They may be found in body samples (such as clothing, fingernail scrapings, and head and pubic hair combings) or on objects (such as carpeting, automobile seat covers and furniture).
  - When fiber evidence is found and collected, comparisons can be made to standards that are obtained from known people or objects.
  - Fiber comparisons can often lead to identification, providing circumstantial evidence for the case investigation.

REFERENCES
