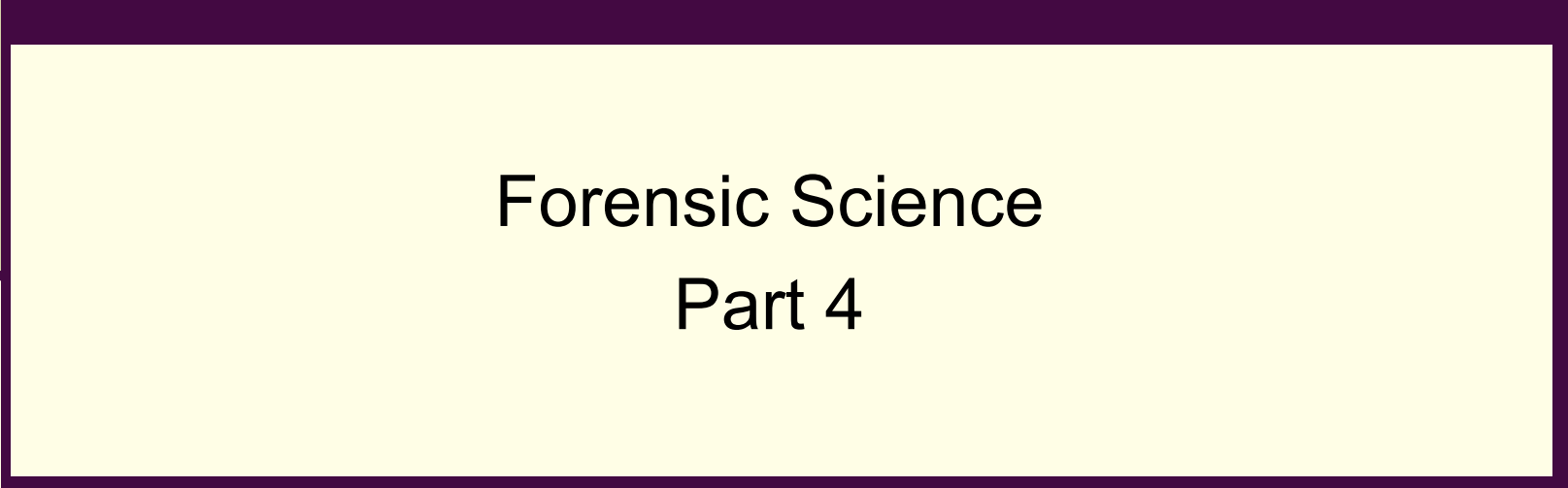




Explosive Devices



Forensic Science
Part 4

Bell-Ringer

- **Forensic Science**
- **What is the difference between high and low explosives?**
- **In two words, what is the difference between a fire (arson) and an explosion?**

Introduction

- The use of explosive devices is on the rise in our country.
- The World Trade Center bombing in New York City, the federal court house bombing in Oklahoma City, the **Olympic Bombings** in Atlanta, and the Unabomber are all current examples of the terrorist criminals using "Pay Back" for individuals and society in general.

Continued

- The criminal who would use and explosive devices is a coward who resorts to absentee and random murder.
- Explosives devices are not just limited to terrorists.
- Burglars and extortionists frequently rely on this method of destruction.

Explosive Devices

- There seems to be good and bad side with every discovery and invention.
- Man, in his search to solve everyday problems, discovers and invents amazing and powerful tools.
- Many times the discovery of tools that were meant to benefit mankind and society are turned into destructive and dangerous weapons.

Explosives Devices Continued

- One such invention is the explosive amount of gas, heat, and the consequent production of sudden pressure effects.
- Mostly used for blasting and quarrying, explosives are used in a variety of commercial applications.
- They are also used as propellants for projectiles (such as bullets), rockets, bombs and mines.

A Little History

- Gunpowder (also known as black powder) was invented by the Chinese in the 9th or 10th century and used in firecrackers.
- By the 13th Century, the formula for making gunpowder had reached England. It was the only explosive known for 500 years.
- A use was quickly found for gunpowder: Projecting Projectiles.
- Powder manufacturing plants were built in England and Germany during the 14th century.

A Little More History

- Regulations regarding the manufacture and use of gunpowder were placed into effect by the government in England in the early 1600's.
- Nitrocellulose and Nitroglycerin were both discovered in 1847 and were the first modern explosives.
- Explosive are grouped into two main classes: Low and High Explosives.

Explosives

- When an explosive device has been detonated, there are a number of factors added to the normal crime scene search.
- The investigator will need to determine if the structure is safe to inhabit after the impact of explosives by consulting with local building inspectors.
- A search will have to be conducted to determine if there are other explosive devices in the area.

Forensic Science

Bell-Ringer

- Black-Powder was invented, where? Why?
- Gun Powder was invented where?
- Who invented TNT? (Trinitrotoulene)

Therefore

- There are usually a large number of individuals who arrive at a bomb scene.
- Fire Department, rescue workers, utility company workers, on-lookers, and newspaper people all add to the confusion of an already chaotic situation.

And...

- After the injured people have been attended to, the scene will have to be secured and all unofficial individuals asked to leave.
- Witnesses and victims should be interviewed as soon as possible.
- The investigator will need large variety of tools to sift through the debris in search of evidence.

Processing the Scene

- Protective eye goggles, gloves hard hats, coveralls and heavy boots are required to protect the Forensic Science Workers.
- If other agencies are involved, there should be a command center to gather and process evidence gathered.
- The bomb scene damage should be assessed establishing a focal point where the bomb was detonated and the perimeter of the blast.

Continued

- A buffer area should be added to the perimeter and included into the search.
- The search for evidence should include items which would lead to the identity of the bomber.
- Of prime importance a piece of the bomb, a timer (if used), wire, fuses, blasting caps, batteries, or any other item which might provide useful information.

Trace

- Trace materials should be gathered which would provide information as to the type of explosives used.
- If a suspect has been found, a full search of his skin and clothing for explosive residue should be conducted.
- The search should include the suspect's vehicle, residence and place of business. An evidence log needs to be kept in detail recording location of all collected evidence.

Thanks....

- **Before your leave:**
- **A) Lab Quiz**
- **B) Bell-Ringer**
- **C) Journal**
- **D) Pre-Lab. Exp #38.**