

Forensics: Gangster Shooting

Introduction

Horatio Leafbottom, a newly-initiated member of Gangster's Union Local #219, was shot in the shoulder at a recent union meeting for refusing to apologize after making strong comments on the topic of the superiority of cats as pets. Luckily, the bullet traveled straight through Leafbottom's shoulder. He will make a full recovery. Because of the chaos at the time, however, Leafbottom cannot make a confident determination of the shooter's identity. Police investigators have narrowed the suspect field to the three candidates who were armed and in the room at the time.



Janice Jackson, a small-time software pirate, was found carrying a .38 Special. Aloisus Datarcy, a suspected weapons dealer, was found with a .45 Automatic Colt Pistol (ACP). Merv Redwood, suspected money launderer, was apprehended with a .357 Magnum. All three guns had been fired recently.

Neither the bullet nor the shell casing was found at the crime scene. However, based on Leafbottom's testimony, you can pinpoint where in the room Leafbottom was standing when he was shot. Further, the emergency doctor's report indicates definitively that, based on entry and exit wound locations, the bullet emerged from Leafbottom's shoulder with a perfectly horizontal velocity. The bullet left Leafbottom's shoulder 1.6325m above the ground. The hole in the wall was centered 1.627m above the ground, 5.5mm below Leafbottom's exit wound and 3m behind Leafbottom.

Potential Scenarios:

1. Janice Jackson shot Leafbottom with a .38 Special.
2. Aloisus Datarcy shot Leafbottom with a .45 ACP.
3. Merv Redwood shot Leafbottom with a .357 Magnum.

Background Information:

FBI Firearm Expert Lorenzo Nofingers has provided you with the following table showing estimated muzzle velocities based on the firearms confiscated from the suspects. Further, ballistics testing indicates that passing through Leafbottom's shoulder would slow each bullet down to 30% of its initial muzzle velocity. You may reference this information in your final report.



FBI Muzzle Velocities

Firearm	Muzzle Velocity (m/s)
.357 Magnum	442
.38 Special	300
.45 ACP FMJ	250

Your Assignment:

You must assist the police in identifying the shooter, and provide a detailed justification in your report for the police, the district attorney, and for the lead editor of "Gangster Today" magazine.