

# Analysis of Bullet Wipe Patterns on Cloth Targets<sup>1</sup>

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After attending this presentation, the participant will understand: (1) how to identify bullet wipe patterns, (2) the results of firing different bullet styles at different angles into white cotton fabric to produce bullet wipe patterns, and (3) the interpretation of bullet wipe patterns on fabric. Bullet wipe is a dark gray or black ring around the circumference of an entrance bullet hole that results from bullet lubricant, propellant combustion by-products and traces of metal from the bullet. Some bullet wipe patterns are elongated and characteristic of a bullet striking the surface at an angle. However, the degree of elongation in the bullet wipe pattern may not be a reliable predictor of the bullet path. The estimation of these angles and understanding of bullet wipe patterns can assist the investigator in analyzing and reconstructing the events in a crime scene investigation. Investigators can evaluate the bullet wipe pattern to determine if the pattern is consistent with other physical evidence at the crime scene. A model 686 Smith & Wesson revolver with a four-inch barrel was used to produce bullet wipe patterns by firing .38-caliber ammunition into cloth targets at distances from 1.02 m (5 feet) to 9.14 m (30 feet). Tests were conducted with different styled bullets into samples of 100% white cotton fabric targets at a muzzle-to-target distance of 3.04 m (10 ft). Also, white cotton fabric targets were set at different angles to produce bullet wipe patterns for this study.

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