

Paraffin Test Unreliable

➤ THE PARAFFIN TEST, used by police to find out whether or not a suspect has fired a gun recently, was called "completely unreliable" in the Warren Commission Report on the assassination of President John F. Kennedy.

Since gunpowder residues contain nitrates, the test is used to measure the presence of nitrates on the skin.

The test, which was administered to Lee Harvey Oswald during questioning by Dallas police after the assassination, has often been erratic in its findings, however.

Although tests on Oswald showed that there were traces of nitrates on the skin, experts pointed out that contact with tobacco, cosmetics, kitchen matches, fertilizers or soils, among other things, could also cause a positive reaction in the test.

The unreliability of the paraffin test was also shown in FBI tests. In an experiment before the assassination, paraffin tests were performed on 17 men who had just fired five shots with a .38-caliber revolver.

Eight of the men tested showed no traces of nitrates in both hands. Three showed traces on the idle hand and none on the firing hand. Four showed nitrate traces on both hands. Only two of the 17 tested had signs of nitrates on the gun hand and no traces on the idle hand.

In a second experiment, paraffin tests were given to 29 persons—20 of them had

not fired a weapon. All 29 persons, however, tested positive on either or both hands.

In an experiment after the assassination, an FBI agent was given the paraffin test after firing three rounds of ammunition using Oswald's C2766 rifle. The test showed no trace of nitrates on either hand nor on the right cheek.

To perform the test, first liquid paraffin is painted on the suspect's skin. As the paraffin hardens to form a cast, its stickiness picks up any dirt or foreign material on the skin surface.

The cast is then taken off and processed with diphenylamine or diphenylbenzidine, chemicals that turn blue in the presence of nitrates. If blue dots appear on the cast, the suspect supposedly recently fired a weapon.

The problem is, however, that diphenylamine or diphenylbenzidine will react not only with nitrates from gunpowder residues, but also nitrates from many other sources. In addition, the Warren Commission Report states, the mere handling of a weapon may leave nitrates on the skin.

Also, when a person fires a revolver, nitrate-bearing gases escape through a space between the cylinder and the barrel. In a rifle, however, there is no gap between the chamber and the barrel, thus no escape for nitrates. This means that if a person fired a rifle recently, it may not show up on a paraffin test.

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