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FBI Laboratory

2501 Investigation Parkway
Quantico, Virginia 22135

REPORT OF EXAMINATION

To: Charlotte
Wilmington RA
SA J. Shane Taylor

Date: March 26, 2013

Case ID No.: 44A-CE-96671

Lab No.: 120502003 TO AEL

Reference: Communication dated April 24, 2012

Your No.:

Title: JASMINE [redacted] (Deceased),
JAHMESHA [redacted]
TRAEKA [redacted] - VICTIMS;
JAMES [redacted] - SUBJECT;
312 EAST 3RD AVENUE,
CHADBOURN, NC
CR

Date specimens received: May 2, 2012

The following specimens were received in the Firearms/Toolmarks Unit:

ITEMS FROM JAMES [redacted] BEDROOM

Q1-Q3 Three test fired cartridge cases from K1 rifle (NCSCL Item K-2)

ITEM FROM COLUMBUS REGIONAL HOSPITAL

Q4 Metal fragment (1B2, E03998715, Item 2)

ITEM RECOVERED FROM K1 BY CHADBOURN P.D.

Q5 Cartridge case (1B2, E03998715, Item 1B)

ADDITIONAL ITEMS FROM JAMES [redacted] BEDROOM

Q6	Federal Ammunition box (1B5, E03998718, Item 10; NCSCL Item K-2)
Q7	Tray from Q6 (1B5, E03998718, Item 10; NCSCL Item K-2)
Q8-Q17	Ten cartridges from Q6 (1B5, E03998718, Item 10; NCSCL Item K-2)
Q18	Tray from Q6 (1B5, E03998718, Item 10; NCSCL Item K-2)
Q19-Q28	Ten cartridges from Q6 (1B5, E03998718, Item 10; NCSCL Item K-2)
Q29	Federal Ammunition box (1B5, E03998718, Item 10; NCSCL Item K-2)
Q30	Tray from Q29 (1B5, E03998718, Item 10; NCSCL Item K-2)
Q31-Q40	Ten cartridges from Q29 (1B5, E03998718, Item 10; NCSCL Item K-2)
Q41	Tray from Q29 (1B5, E03998718, Item 10; NCSCL Item K-2)
Q42-Q44	Three cartridges from Q29 (1B5, E03998718, Item 10; NCSCL Item K-2)
Q45	Case (1B4, E03998717, Item 9)
Q46	Window blinds (1B8, E03998721, Item 22)
Q47	Window screen (1B7, E03998720, Item 21)
K1	Remington rifle, Serial Number G6867695, with scope (1B1, E03998714, Item 1-A; NCSCL Item K-1)
NE1-NE2	Two compact discs containing images
NE3	Compact disc containing images (1B3, E03998716, Item 3)
NE4	Compact disc containing images (1B3, E03998716, Item 4)

The results of the fircarms examinations, National Integrated Ballistic Information Network (NIBIN) searches and Gunshot Residue examinations are included in this report.

Results of Examinations:

Specimens Q1 through Q3 are .308 Winchester caliber cartridge cases that bear the headstamp of Federal ammunition. Specimens Q1 through Q3 were not examined further.

Specimen Q4 is a metal fragment that has no marks of value for comparison purposes.

Specimen Q5 is a .308 Winchester caliber cartridge case that bears the headstamp of Federal ammunition. Specimen Q5 was identified as having been fired in the K1 rifle.

Specimen Q6 is a box of .308 Winchester caliber ammunition that contains the Q7 and Q18 plastic trays. The Q7 and Q18 plastic trays contain specimens Q8 through Q17 and specimens Q19 through Q28. Specimens Q8 through Q17 and specimens Q19 through Q28 are .308 Winchester caliber cartridges that bear the headstamp of Federal ammunition that are loaded with 150 grain soft point bullets. Specimens Q8 through Q17 and specimens Q19 through Q28 have design characteristics that are physically consistent with functional ammunition.

Specimen Q29 is a box of .308 Winchester caliber ammunition that contains the Q30 and Q41 plastic trays. The Q30 and Q41 plastic trays contain specimens Q31 through Q40 and specimens Q42 through Q44. Specimens Q31 through Q40 and specimens Q42 through Q44 are .308 Winchester caliber cartridges that bear the headstamp of Federal ammunition that are loaded with 150 grain soft point bullets. Specimens Q31 through Q40 and specimens Q42 through Q44 have design characteristics that are physically consistent with functional ammunition. Specimens Q31 through Q39 were consumed during testing in the Laboratory.

Specimen Q45 is a camouflaged, soft gun case. The interior of the Q45 gun case was microscopically examined and chemically processed for gunshot residues, and none were found.

Specimen Q46 is a vinyl window blind. The Q46 blind was microscopically examined and chemically processed for gunshot residues, and none were found. Given the absence of gunshot residue on the Q46 blinds, no estimate of muzzle-to-target distance is being provided. Further, current standard operating procedures do not permit this type of estimate to be based solely on the amount of damage to the blinds. Additional tests were conducted on similar blinds for muzzle-to-target and maximum distance; however, the vinyl material of the blinds is

not a suitable substrate for determining muzzle-to-target due to the nitrites inability to adhere to the vinyl. Additional tests in fabric determined that the maximum muzzle-to-target distance for nitrites and vaporous lead deposited by the K1 rifle using the submitted ammunition to be six to eight feet and one to two feet, respectfully.

Specimen Q47 is a wood framed, metal mesh window screen. The Q47 screen was microscopically examined and chemically processed for gunshot residues. Lead and/or copper residues consistent with the passage of a bullet were found surrounding a hole in the screen. No other residues were detected.

Specimen K1 is a .308 Winchester caliber Remington rifle, Model 700, Serial Number G6867695. The K1 rifle functioned normally when test fired at the Laboratory. A test-fired cartridge case from the K1 rifle was searched against the NIBIN region that includes North Carolina. No associations were found at this time.

Specimens NE1 and NE2 are compact discs. No examinations were performed.

Specimens NE3 and NE4 are compact discs. No examinations were performed.

Methods: Firearms and NIBIN

The make, model and caliber of a firearm are normally determined by directly observing manufacturer markings on the firearm in question. When these are not present, published materials and firearms in the Laboratory's Reference Firearms Collection may be used to make determinations.

Unless otherwise noted, submitted firearms are test fired:

1) in the condition they are received in the Firearms/Toolmarks Unit,
2) with ammunition from the Laboratory's Reference Ammunition File,
3) in a manner that allows for testing of available modes of fire such as manual safety engaged, manual safety disengaged, single action, double action, semi-automatic, fully automatic, etc. When a NIBIN entry request is received with a submitted firearm, a single test-fired cartridge case from that firearm is entered in the NIBIN system. Entries are searched against the appropriate regional database, and correlation results are viewed to determine possible associations.

Association examinations compare the class characteristics of evidence items such as ammunition components. An association conclusion is reached if the observable or measurable physical dimensions and design features of two items are in agreement, or are "physically

consistent." If these dimensions and features are clearly different, an elimination conclusion is reached. If there is a lack of observable design features or measurable dimensions, the result is inconclusive. Submitted cartridges are reported as being "consistent with functional ammunition" if the observable components of the cartridge are all present, in normal condition, and appear to be assembled to normal dimensions.

Methods: Cartridge Cases

Two cartridge cases, either two evidence items or one evidence item and one cartridge case test-fired in the Laboratory, undergo two stages of comparison. First, the cartridge cases are examined to determine and compare their class characteristics. The class characteristics of fired cartridge cases include caliber, shape of firing pin impression, shape and orientation of breech face marks, and relative locations of extractor and ejector marks. If the class characteristics of the two cartridge cases are not clearly different, the examination moves to a second stage using comparative microscopy.

A microscopic comparison examination consists of a search of the impressed and striated toolmarks present on two cartridge cases to determine if patterns of similarity exist. At the completion of these examinations, one of the following four opinions is issued:

1) Exclusion

If two cartridge cases have clearly different class characteristics, an Exclusion opinion is rendered.
Exclusion opinions based on a measured class difference or the physical comparison of a discernible difference in class characteristics cannot be reported unless a second qualified firearms/toolmarks examiner has examined the items in question and reached the same conclusion.

2) Identification

If the following conditions are met during the comparison of microscopic marks, an opinion of Identification is rendered:

a) The degree of similarity is greater than the examiner has ever observed in previous evaluations of cartridge cases known to have been fired in different firearms.

b) The degree of similarity is comparable to that normally observed in cartridge cases known to have been fired in the same firearm.

An Identification opinion cannot be reported unless a second qualified firearms/toolmarks examiner has examined the items in question and reached the same conclusion.

3) Inconclusive (No Conclusion)

If the conditions required for an Exclusion or Identification are not observed and the impressed and striated marks present are of poor quality, an opinion of No Conclusion is rendered.

4) Nothing Found to Indicate

If the conditions required for an Exclusion or Identification are not observed and there is no significant correspondence found in the impressed and striated marks, an opinion of Nothing Found to Indicate is rendered.

Methods: Gunshot Residue

Items submitted for gunshot residue testing are examined visually and microscopically for the presence of suspected bullet holes, for physical effects from a firearm discharge such as singeing or tearing of fabric, and for embedded particles of gunpowder, lead and copper. If some or all of these conditions are noted, a series of chemical tests for the presence of nitrites (a component of gunpowder), lead and copper may be performed. Each of these tests are chemically specific and produce a colored reaction when in the presence of the specific chemical. The tests used for nitrite compounds, lead and copper are the Modified Griess Test, the Sodium Rhodizonate Test and the Dithiooximide Test, respectively.

If a suspect firearm and ammunition are submitted, test-fired exemplars are created at a variety of muzzle-to-target distances, are visually examined and chemically processed in the same manner as the evidence, and are compared directly with the submitted evidence. When test results at specific distances are distinctly different than the results on the submitted evidence, this is used as the basis for excluding an appropriate range of distances ("could not be reproduced at a distance of four inches or less").

When no suspect firearm and/or ammunition is submitted, results are more general and are based on common maximum distances for the deposition of gunshot residues ("residues like those found on the Q1 shirt are rarely deposited at a distance of six feet or greater").

If the only reaction produced in testing is a small ring of lead and/or copper around a suspected bullet hole, this is considered consistent with the passage of a bullet, but no distance determination can be made.

Limitations: Firearms and NIBIN

The results of firearms function examinations describe the operating condition of the firearm as it was received in the Firearms/Toolmarks Unit.

Due to a number of variables regarding image capture and data entry, NIBIN searches may not always locate entries that were fired in the same firearm.

Association examinations are used to determine if two items are from a restricted group source (such as the same brand and type of ammunition) and cannot be used to determine whether two items are from a unique source (originally sold in the same ammunition box).

Limitations: Cartridge Cases

Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value.

Due to possible changes in firearm operating surfaces from wear, corrosion and ordinary fouling and differences in ammunition design and construction, cartridge cases fired in the same firearm are sometimes not identifiable as such. Additionally, some firearm manufacturing methods routinely produce working surfaces that leave limited microscopic marks of value on fired cartridge cases.

Limitations: Gunshot Residue

While firearms are known to produce consistent gunshot residue pattern results under controlled conditions, variables including shooting environment, barrel condition and ammunition design can all influence the results of tests conducted on the submitted evidence and test-fired exemplars. Accordingly, gunshot residue test results are primarily used to exclude particular muzzle-to-target ranges and should only be considered valid for the particular combination of firearm and ammunition type used during testing in the Laboratory. The use of the phrase "consistent with" in this report is meant to indicate physical effects that are commonly found in a given shooting environment. No conclusions can be drawn when residues are absent due to the possibility of intervening objects or environmental and handling conditions.