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# Ron Smith & Associates, Inc.

## Testing Division

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# Summary Report

**CS Shooting Incident Documentation Proficiency Test #20640SID**
**Issued: December 31, 2020**

On August 17, 2020, Ron Smith and Associates, Inc. (RS&A) shipped the Shooting Incident Documentation Test #20640SID. Participants were required to submit their responses no later than November 9, 2020 in order for them to be included in this summary report.

A total of 22 tests were ordered and shipped, with 15 participants returning their responses. **This summary report is based on 150 individual responses (15 participants returning 10 responses each).** The test included one item for shooting incident documentation.

The results presented in this report reflect whether or not the participants' submitted results agree or disagree with the assigned values garnered from pre-distribution testing and outlined in ***The Manufacturer's Report*** (Appendix 1). The primary purpose of a Summary Report is to provide an overall documentation of all the submitted responses. It is RS&A's intention to go a step further by providing more meaningful statistical results through analyzing the submitted responses in relation to the demographics obtained from each of the analysts participating in this proficiency test. All results and statistics for this test will be outlined through graphs and charts found in the remainder of this report.

Prior to distribution of this test, all the expected responses were determined, by internal and external consensus, and verified through unanimous agreement. In designing this proficiency test, the item utilized two labels "Top" and "Front", so that the participant could determine the correct orientation of the box before attempting to measure these angles. The entry/exit holes utilized two labels, a number (i.e. "1") and a letter (i.e. "A") on each side to help distinguish the bullet path/direction of travel. It is understood that sometimes the bullet defect can have a small variance based on the deformation around the entry/exit holes themselves. To satisfy this condition, a range of ±5 degrees will be considered acceptable for the participant. If a participant's answer does not fall within this ±5 degree range, it will appear as an inconsistent response in this summary report and be incorporated as such in the statistical analysis. It will be up to each agency to decide if the participant's response qualifies as being acceptable under their policies and procedures.

RS&A strives to maintain the confidentiality of all its clients and participants. All results are obtained and published using randomly generated test codes. RS&A will not release the identity of any participant without the written consent of the participant and/or the agency involved.

For any questions or further information, please contact our Proficiency Testing Coordinator by emailing testing@ronsmithandassociates.com or by calling toll free at 1-866-832-6772.

# Appendix 1

## Test Manufacturer's Information

**CS Shooting Incident Documentation Proficiency Test #20640SID**

This proficiency test consisted of one 7x7 wood box labeled as Item #1 and consisted of two bullet paths similar to those normally encountered in shooting incident documentation casework. The participant was required to determine which side contained the entry hole and document the horizontal and vertical angles of the bullet path using appropriate measurement techniques. The assigned values are as follows:

| Item #1 | Entry Side | Horizontal Azimuth (Accepted Range) | Horizontal Direction | Vertical Angle (Accepted Range) | Vertical Direction |
|---|---|---|---|---|---|
| Defect #1 Acute Angle | Side "1" | 66° (61°-71°) | Right to Left | 88° (83°-93°) | Up to Down |
| Defect #1 Obtuse Angle | Side "1" | 114° (109°-119°) | Right to Left | 92° (87°-97°) | Up to Down |
| Defect #2 Acute Angle | Side "B" | 76° (71°-81°) | Left to Right | 81° (76°-86°) | Down to Up |
| Defect #2 Obtuse Angle | Side "B" | 104° (99°-109°) | Left to Right | 99° (94°-104°) | Down to Up |

The assigned values were determined through the ground truth information and verified through unanimous agreement during pre-distribution testing. All participant pre-distribution laboratories reported horizontal and vertical angles within +/- 2 degrees.

**Firearm used:** Glock G43 9mm semi-automatic
**Ammunition used:** PPU Handgunline 9mm Luger 115grain Full Metal Jacket

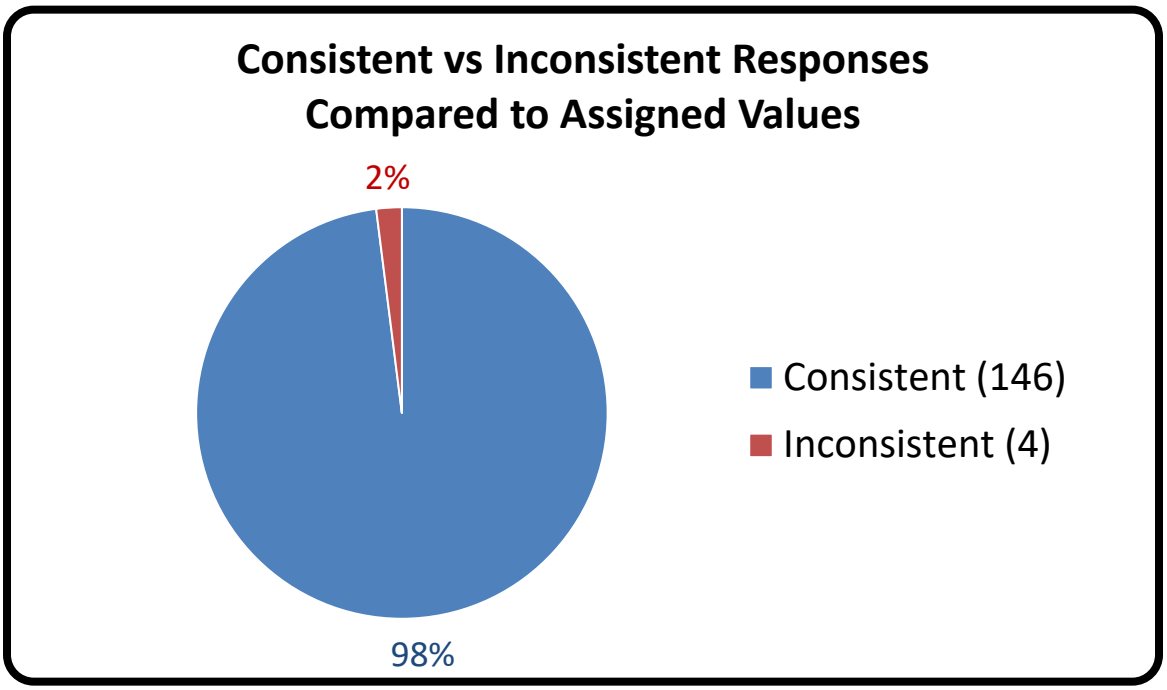
Individual reports will be provided to participants by mid December 2020. The final summary report for this test will be posted on the Ron Smith and Associates website by late December 2020 using the following link: www.ronsmithandassociates.com/proficiency/crimesceneprocessing.html

It is recommended to postpone evaluating an individual's performance until after you have received the statistical averages contained in the summary report.

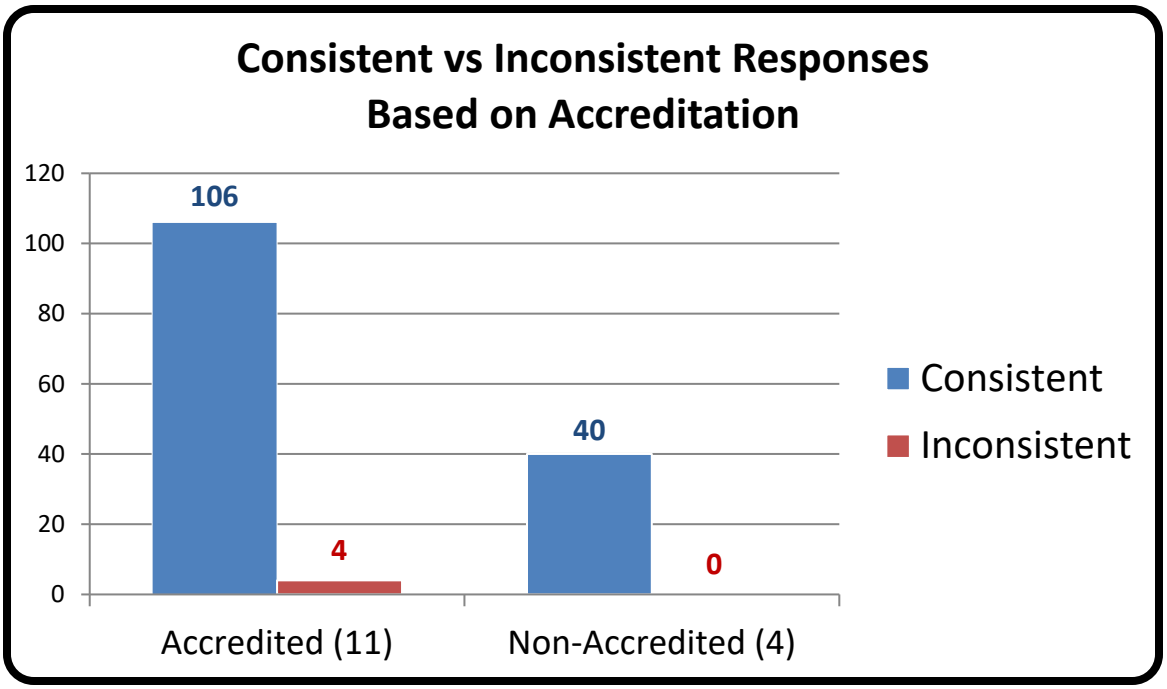
For any questions or further information, contact the Proficiency Testing Coordinator by emailing testing@ronsmithandassociates.com or call toll free at 1-866-832-6772.

**Authorized by:** Ron Smith, President
**Issue Date:** November 25, 2020

## Appendix 2



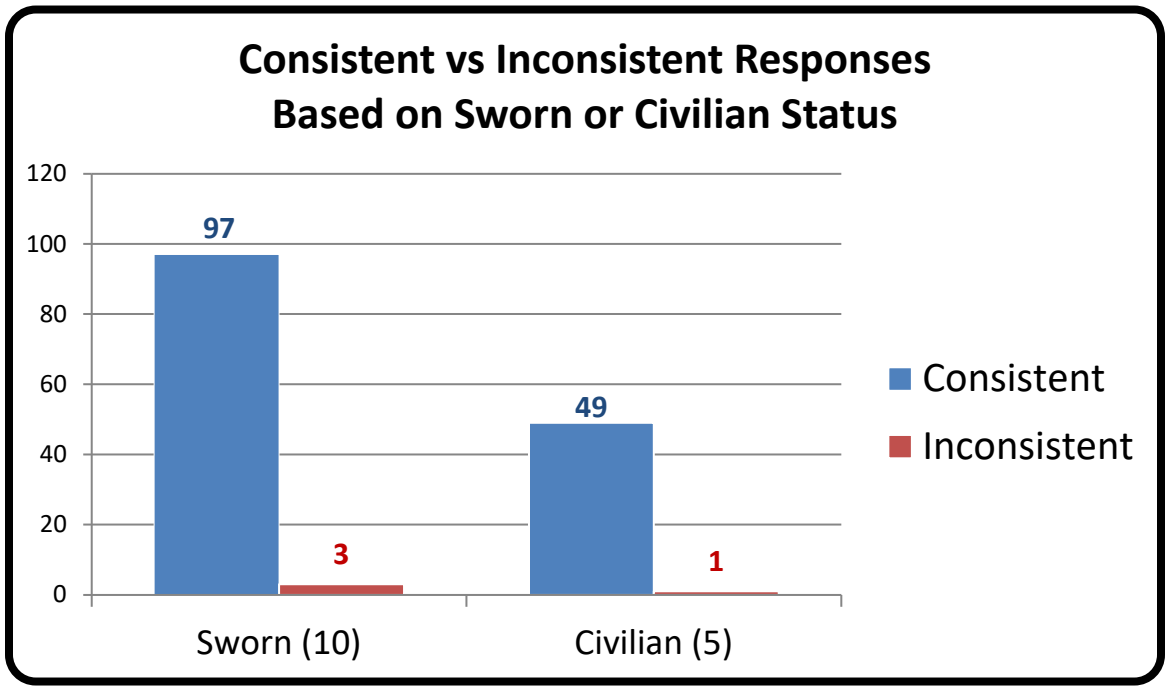

## Appendix 3



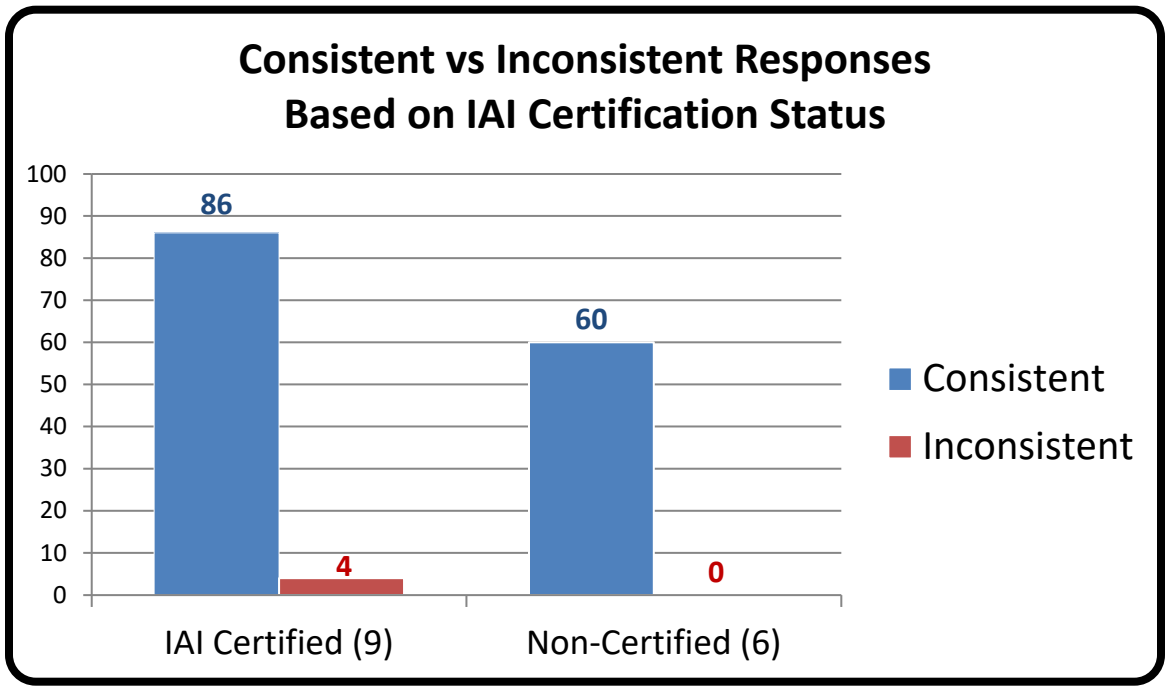

*Numerical values shown are based on **15 participant submissions, each with 10 responses, equaling 150 total responses**.

*For further information, please read ***Manufacturer's Additional Observations*** on the final page of this report.

## Appendix 4




## Appendix 5

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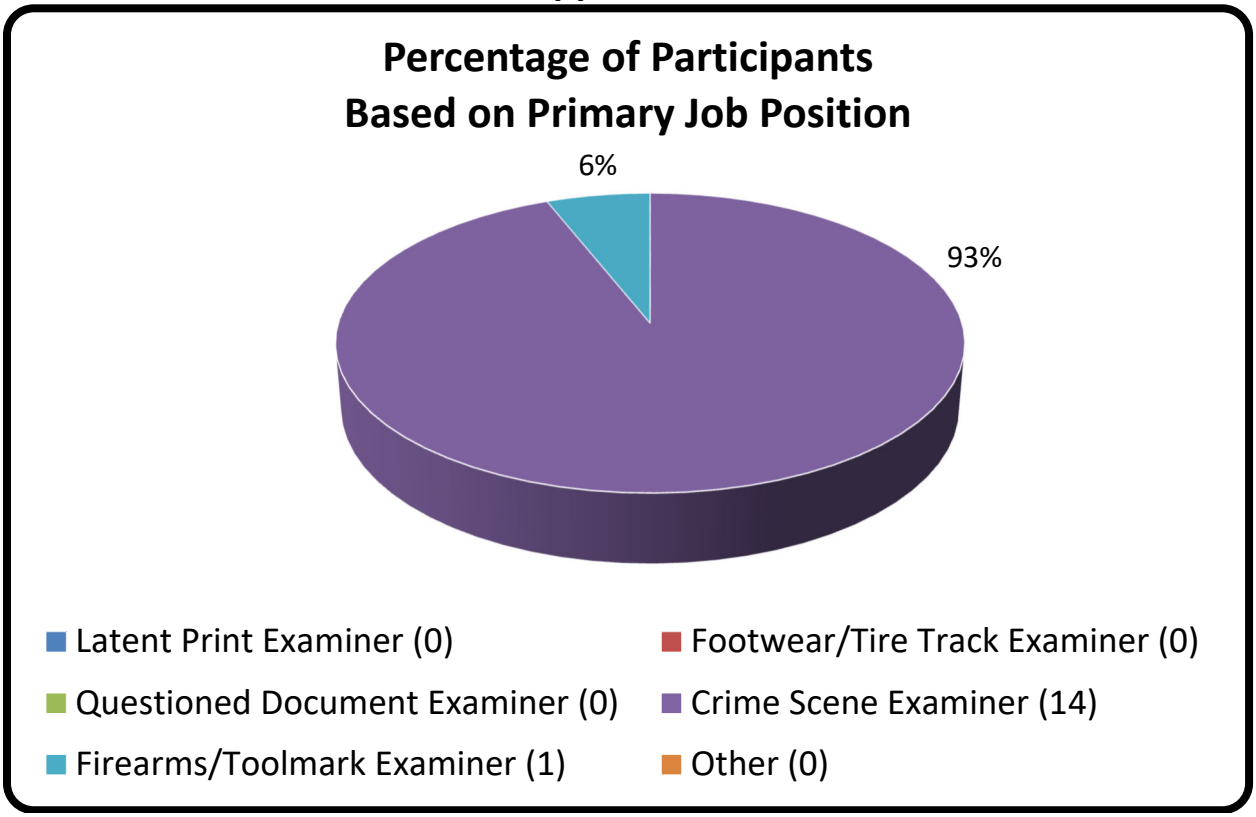
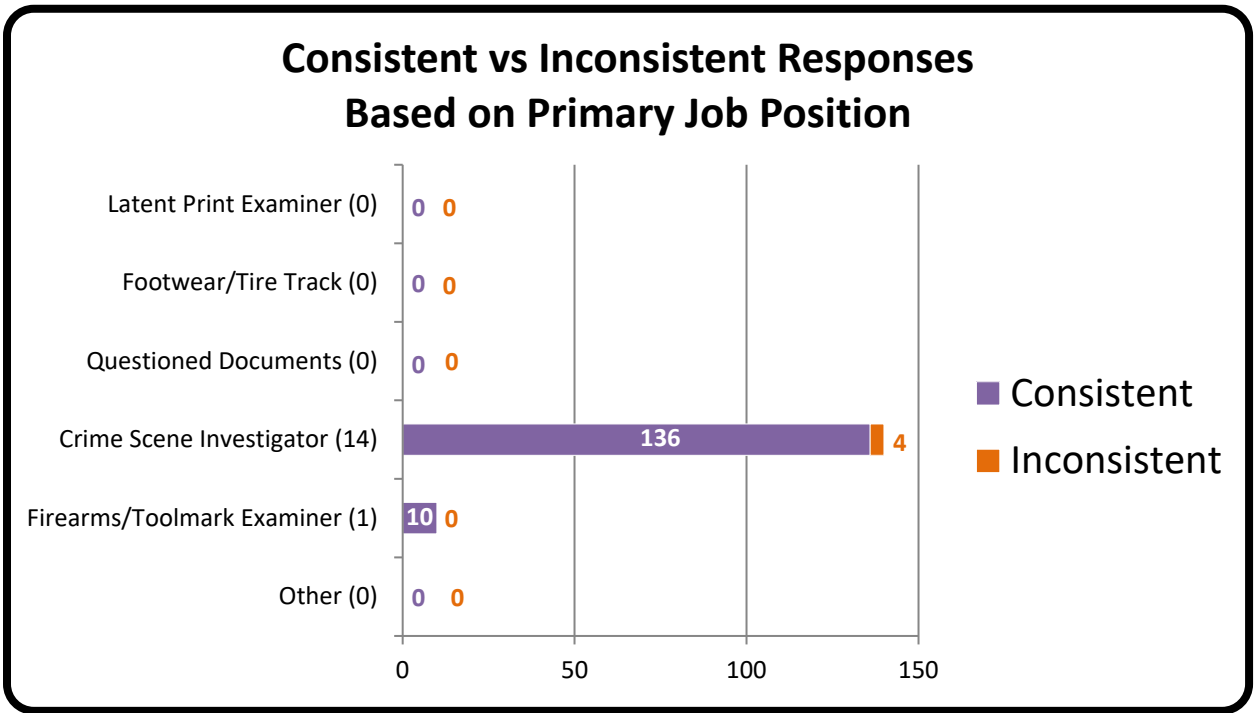
# Appendix 6

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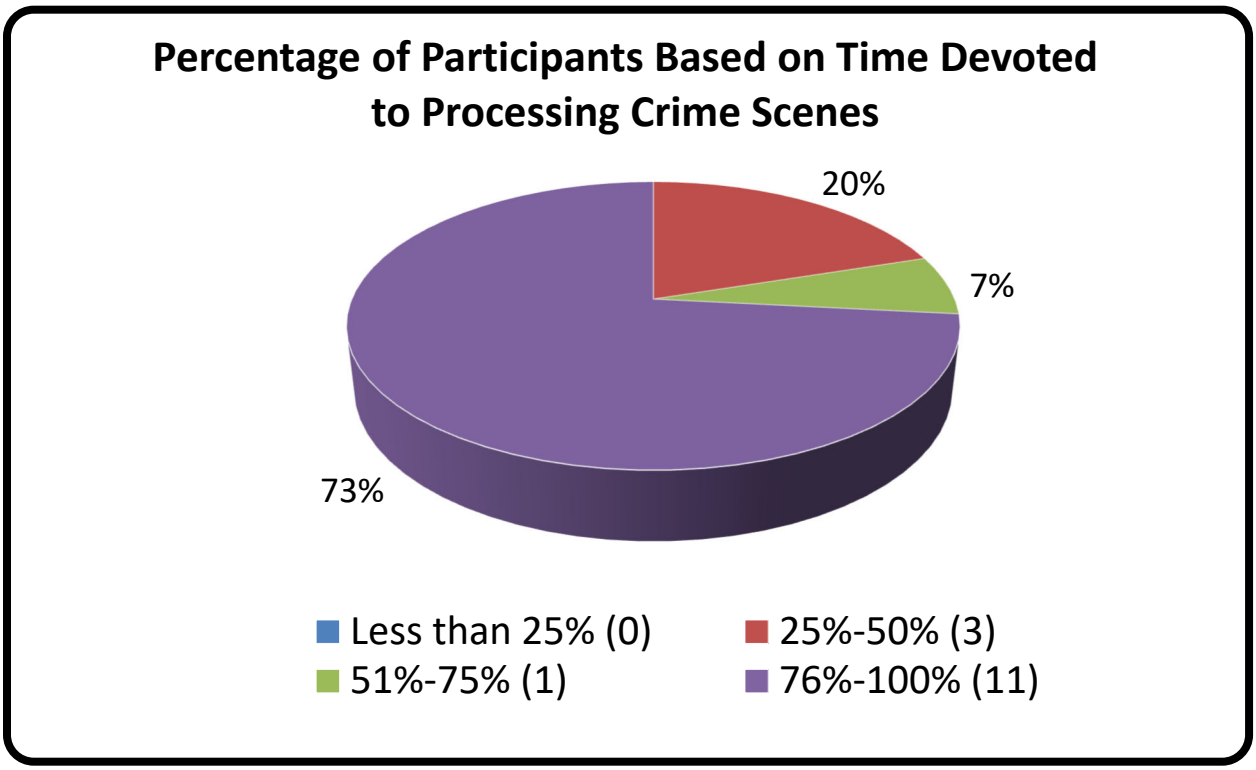
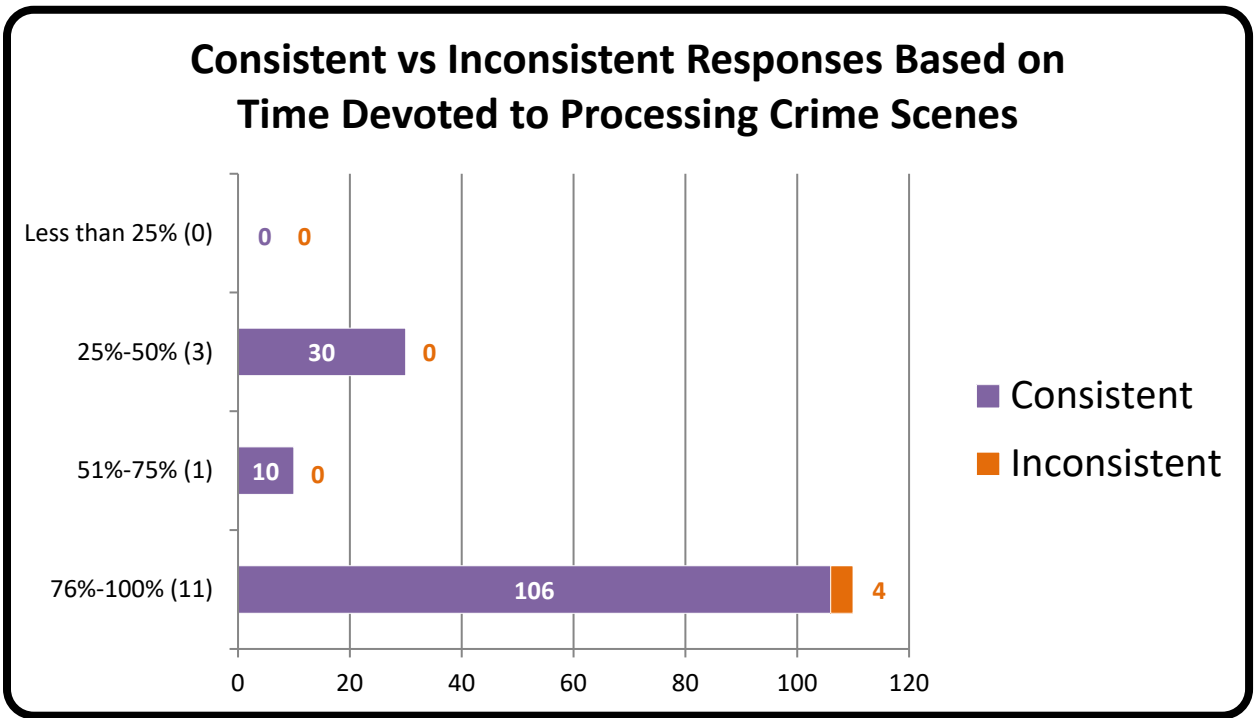
# Appendix 7

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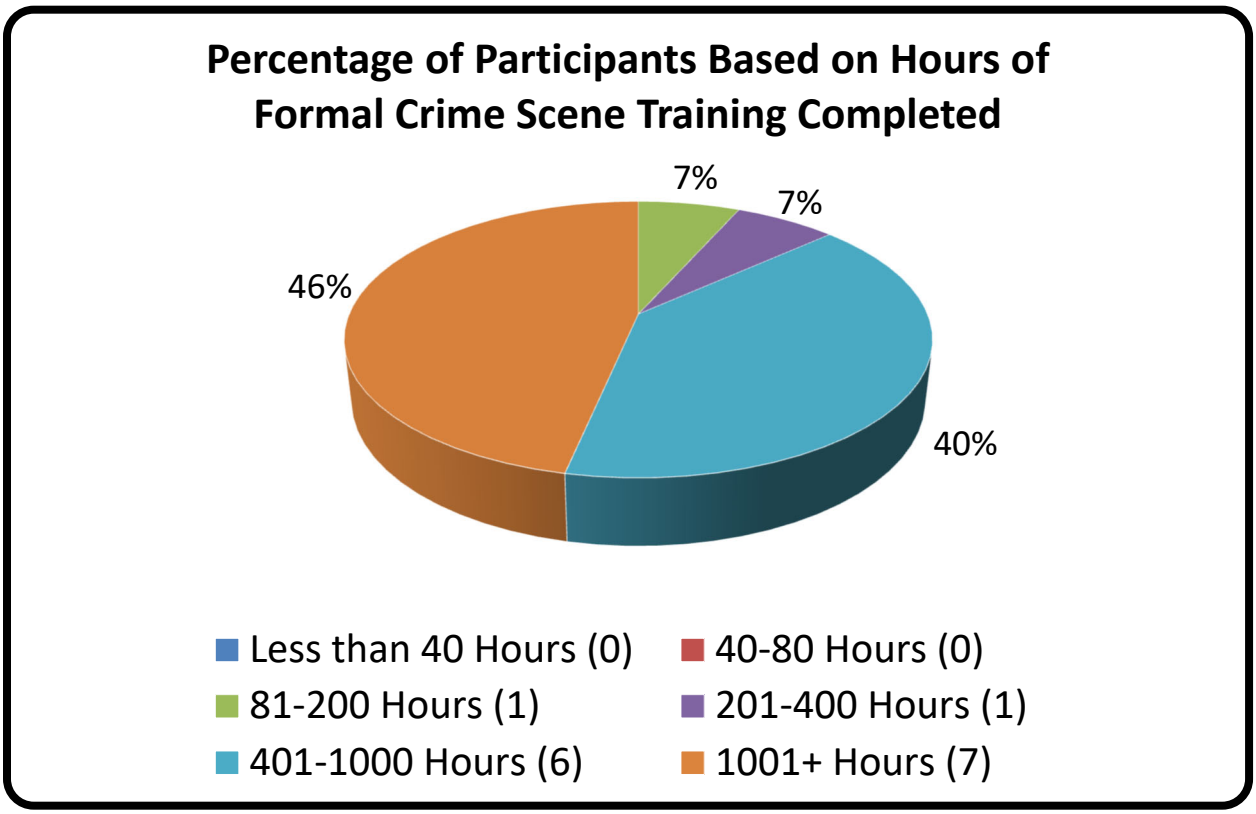
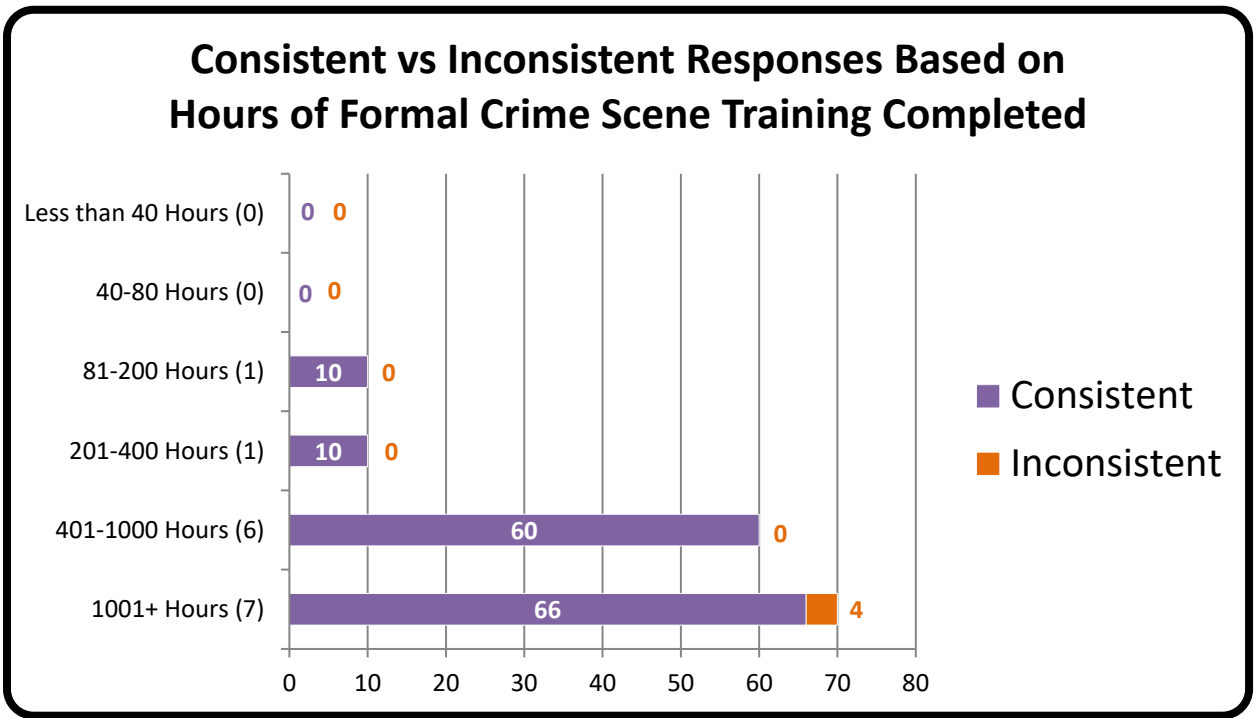
# Appendix 8

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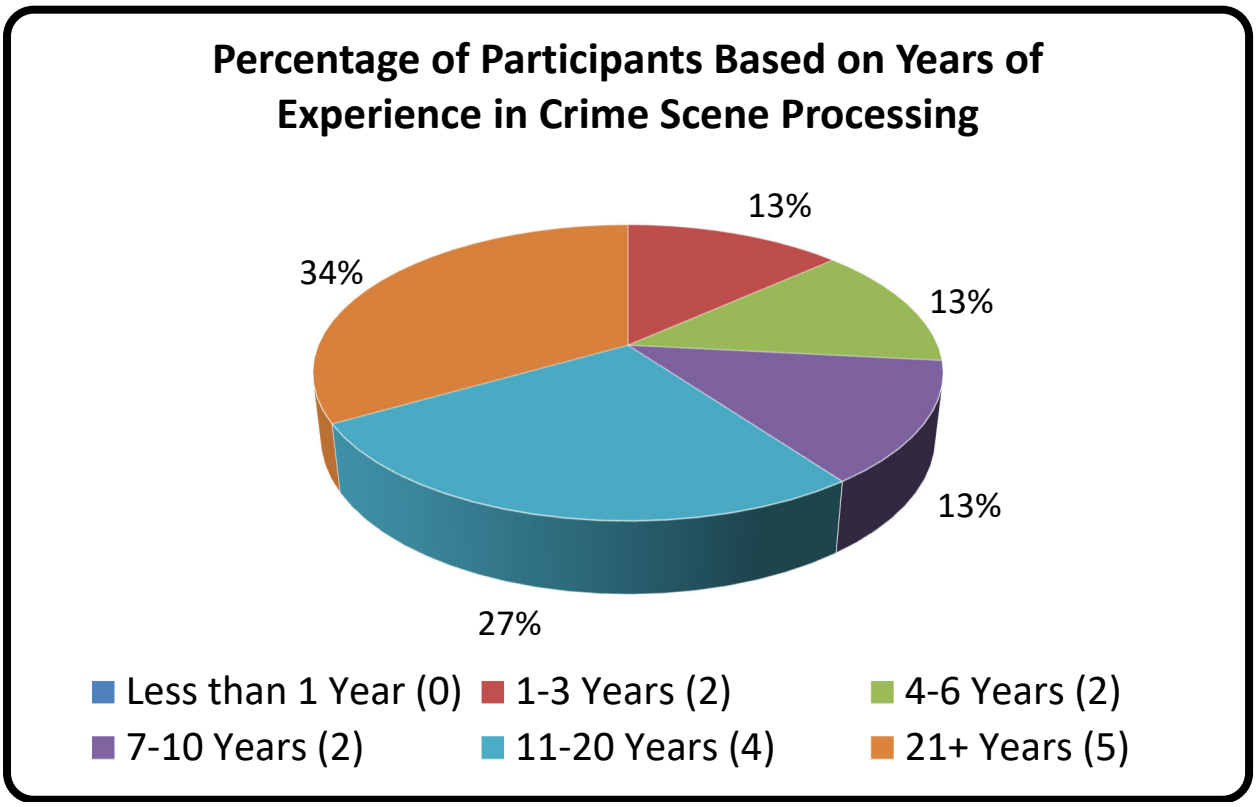
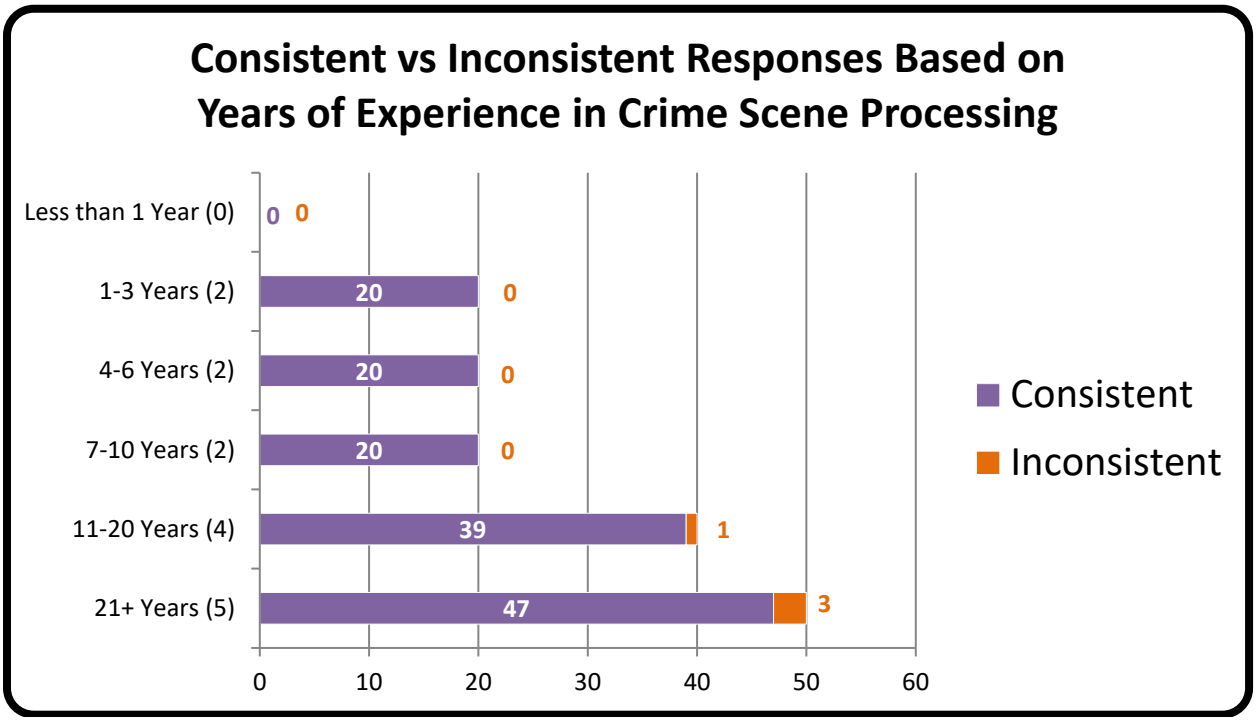
# Appendix 9

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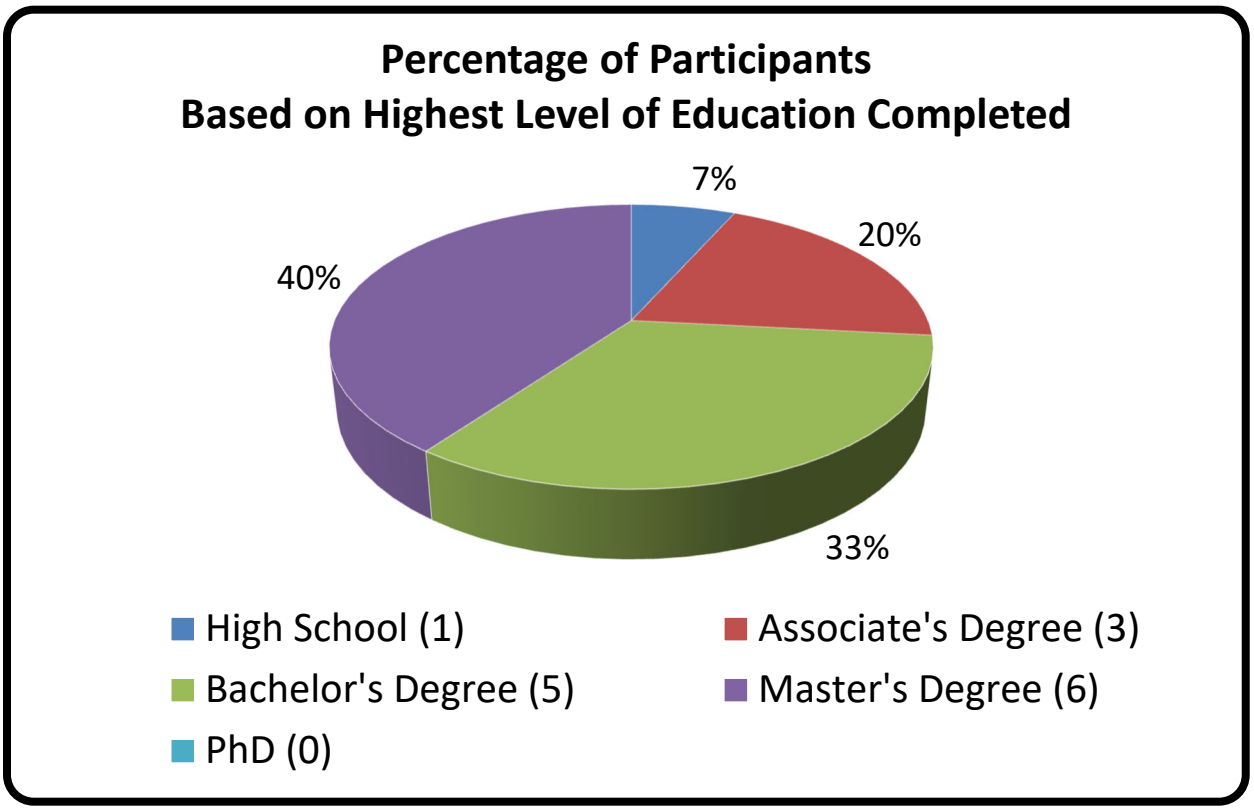
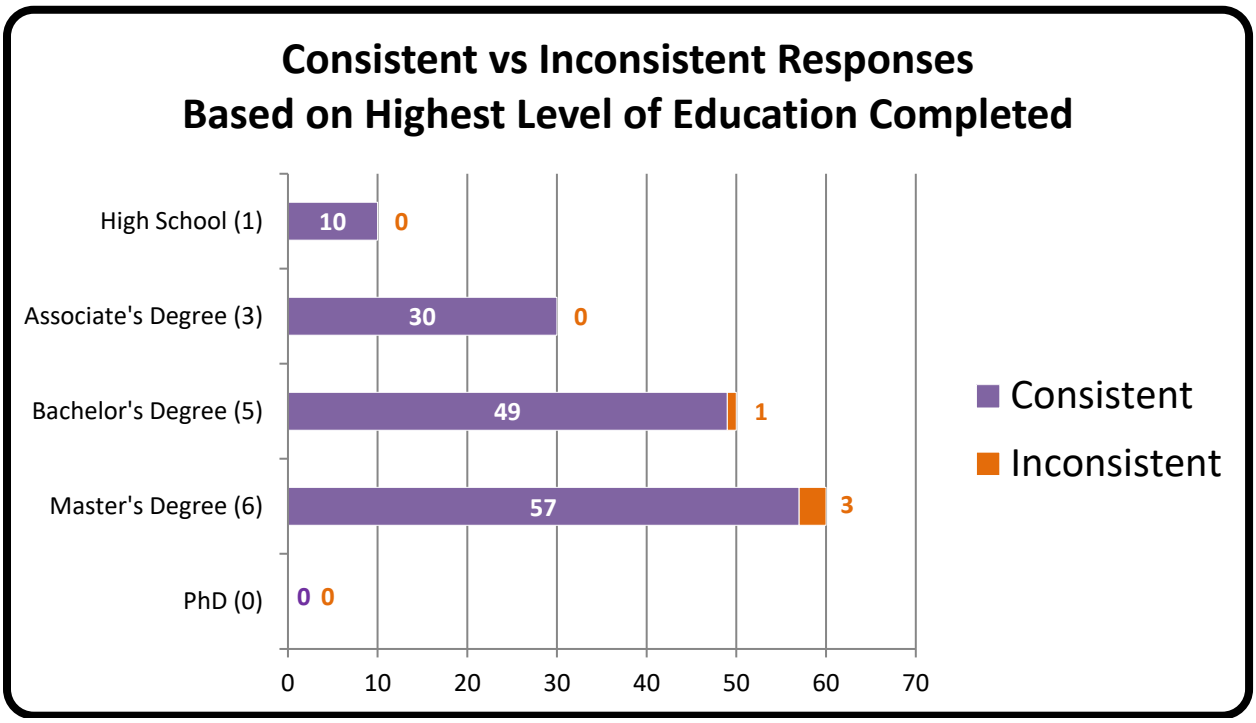
# Appendix 10

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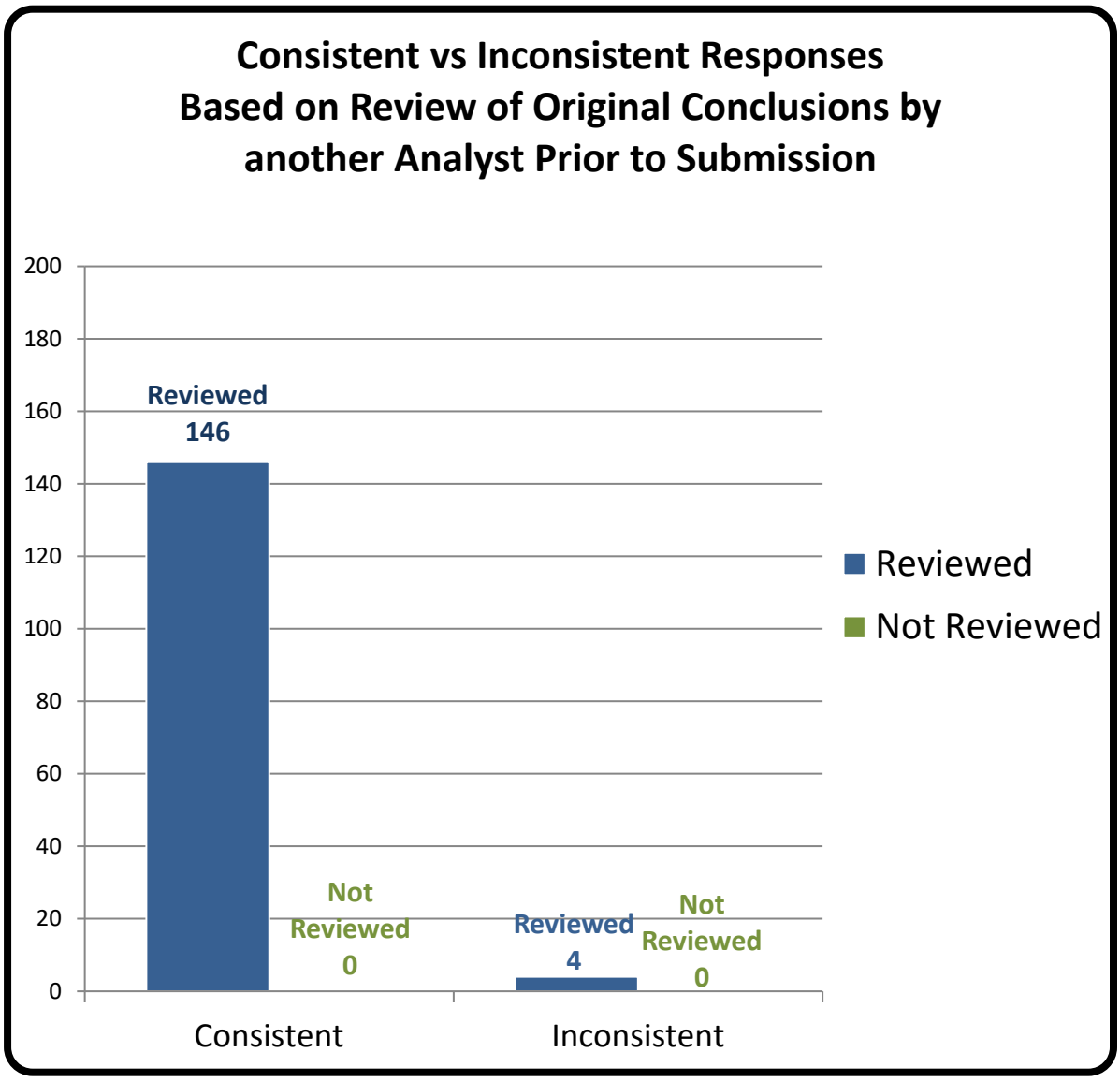
# Appendix 11

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# Appendix 12

## Participant Responses Listed by Test Code

| | Assigned Values | Item #1 | | | | |
|---|---|---|---|---|---|---|
| | | Entry Side | Horizontal Azimuth | Horizontal Direction | Vertical Angle | Vertical Direction |
| | | 1 Acute | 66° (61°-71°) | Right to Left | 88° (83°-93°) | Up to Down |
| | | 1 Obtuse | 114° (109°-119°) | Right to Left | 92° (87°-97°) | Up to Down |
| | | B Acute | 76° (71°-81°) | Left to Right | 81° (76°-86°) | Down to Up |
| | | B Obtuse | 104° (99°-109°) | Left to Right | 99° (94°-104°) | Down to Up |
| Test Code | 2809S20640SID | 1 | 65 | Right to Left | 87 | Up to Down |
| | | B | 72 | Left to Right | 100 | Down to Up |
| | 8546Q20640SID | 1 | 62 | Right to Left | 2 | Up to Down |
| | | B | 74 | Left to Right | 11 | Down to Up |
| | 6419I20640SID | 1 | 64 | Right to Left | 3 | Up to Down |
| | | B | 74 | Left to Right | 9 | Down to Up |
| | 1460Y20640SID | 1 | 64 | Right to Left | 2 | Up to Down |
| | | B | 73 | Left to Right | 8 | Down to Up |
| | 6177S20640SID | 1 | 64 | Right to Left | 3 | Up to Down |
| | | B | 73 | Left to Right | 10 | Down to Up |
| | 8101Y20640SID | 1 | 64 | Right to Left | 3 | Up to Down |
| | | B | 73 | Left to Right | 10 | Down to Up |
| | 5168S20640SID | 1 | 24 | Right to Left | 2 | Up to Down |
| | | B | 16 | Left to Right | 8 | Down to Up |
| | 5739K20640SID | 1 | 63 | Right to Left | 1 | Up to Down |
| | | B | 73 | Left to Right | 11 | Down to Up |
| | 3627Y20640SID | 1 | 64.949 | Right to Left | 1.482 | Up to Down |
| | | B | 74 | Left to Right | 10 | Down to Up |

| | | Item #1 | | | | |
|---|---|---|---|---|---|---|
| | Assigned Values | Entry Side | Horizontal Azimuth | Horizontal Direction | Vertical Angle | Vertical Direction |
| | | 1 Acute | 66° (61°-71°) | Right to Left | 88° (83°-93°) | Up to Down |
| | | 1 Obtuse | 114° (109°-119°) | Right to Left | 92° (87°-97°) | Up to Down |
| | | B Acute | 76° (71°-81°) | Left to Right | 81° (76°-86°) | Down to Up |
| | | B Obtuse | 104° (99°-109°) | Left to Right | 99° (94°-104°) | Down to Up |
| Test Code | 8386K20640SID | 1 | 65 | Right to Left | 7.1 | Up to Down |
| | | B | 73 | Left to Right | 4.1 | Down to Up |
| | 5911D20640SID | 1 | 65 | Right to Left | 2.6 | Up to Down |
| | | B | 74 | Left to Right | 9.6 | Down to Up |
| | 4788U20640SID | 1 | 65 | Right to Left | 3.4 | Up to Down |
| | | B | 73 | Left to Right | 9.2 | Down to Up |
| | 8824L20640SID | 1 | 65 | Right to Left | 1.7 | Up to Down |
| | | B | 73 | Left to Right | 8.8 | Down to Up |
| | 2255K20640SID | 1 | 63 | Right to Left | 3 | Down to Up |
| | | B | 107 | Left to Right | 9 | Up to Down |
| | 3057H20640SID | 1 | 25 | Right to Left | 0 | Down to Up |
| | | B | 15 | Left to Right | 10 | Down to Up |

# Totals

| Assigned Values | Item #1 | | | | |
|---|---|---|---|---|---|
| | Entry Side | Horizontal Azimuth | Horizontal Direction | Vertical Angle | Vertical Direction |
| | 1 Acute | 66° (61°-71°) | Right to Left | 88° (83°-93°) | Up to Down |
| | 1 Obtuse | 114° (109°-119°) | Right to Left | 92° (87°-97°) | Up to Down |
| | B Acute | 76° (71°-81°) | Left to Right | 81° (76°-86°) | Down to Up |
| | B Obtuse | 104° (99°-109°) | Left to Right | 99° (94°-104°) | Down to Up |
| **Consistent Responses** | 150 | 150 | 150 | 149 | 147 |
| **Inconsistent Responses** | 0 | 0 | 0 | 1 | 3 |
| **Percentage of Consistent Responses** | 100% | 100% | 100% | 99% | 97% |

# Participant's Additional Comments

| Test ID | Comments |
|---|---|
| 2809S20640SID | Vertical angles were measured as the angle above each rod. Horizontal angles are the acute angles of each rod. |
| 5168S20640SID | 90 degrees on the protractor was used as the 0 degree point for the horizontal measurement. It should be noted that these measurements are +/- 5 degrees in accuracy. |
| 2255K20640SID | Horizontal trajectory angles are determined using the 0 degree point on the right side of the "wall". |
| 3057H20640SID | The vertical angle for Trajectory 1 was measured as 0°. However, the 'Vertical Direction' box was limited to two choices that did not permit describing the trajectory as horizontal. |

# Manufacturer's Additional Observations

Based upon a review of the submitted responses, the following observations were noted:

1. Only 4 inconsistent answers were submitted out of a possible 150. All inconsistent responses were submitted by personnel devoting 76% to 100% of their time to crime scene processing, 1001+ hours of CS training completed, 11 or more years' experience and having a bachelor's degree or above.

2. Of the 4 inconsistent answers, all 4 were submitted by personnel from accredited laboratories and all 4 answers were reviewed prior to submitting them.

**Authorized by:** Ron Smith, President
**Date of Issue:** December 31, 2020