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FORENSIC TESTING PROGRAM

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Shooting Reconstruction - Angle Determination
Test No. 25-5620 Summary Report

Each participant received a sample pack containing a section of partition wall with one entrance hole (labeled "A") and one exit hole (labeled "1"), along with an up arrow to distinguish the orientation of the box. Participants were then asked to determine the entrance hole, the direction of travel, and calculate the angles using their existing protocols. Data were returned from 137 participants and are compiled into the following tables:

This report contains the data received from the participants in this test. Since these participants are located in many countries around the world, and it is their option how the samples are to be used (e.g., training exercise, known or blind proficiency testing, research and development of new techniques, etc.), the results compiled in the Summary Report are not intended to be an overview of the quality of work performed in the profession and cannot be interpreted as such. The Summary Comments are included for the benefit of participants to assist with maintaining or enhancing the quality of their results. These comments are not intended to reflect the general state of the art within the profession.

Participant results are reported using a randomly assigned "WebCode". This code maintains participant's anonymity, provides linking of the various report sections, and will change with every report.

Manufacturer's Information

Each sample set contained a section of partition wall with one entrance hole and one exit hole. Participants were asked to determine the entrance hole, the direction of travel, and calculate the angles.

SAMPLE PREPARATION: Each box was prepared by stamping an up arrow to distinguish the orientation of the box. During production, each box was placed into a fixed angle set-up (jig). The firearm was locked into a gun rest, placed in front of the jig, and a digital angle finder was used to confirm angles.

SAMPLE PACK ASSEMBLY: After shooting each box, one "A" label and one "1" label were placed on opposite sides of the box to assist participants with reporting the entrance/exit holes and direction of travel. Each box was then placed into a pre-labeled sample pack box and sealed.

VERIFICATION: Predistribution and verification results were consistent with each other and the manufacturer's preparation information. All of the Horizontal and Vertical angles fell within ± 5°.

Entrance Hole	Exit Hole	Bullet Directionality	Horizontal Angle (Azimuth)	Vertical Angle	Gun Make/Model
A	1	Right - Left, Upward	67°	23°	Glock 34 (Gen 5) 9mm

Summary Comments

This test was designed to allow participants to assess their proficiency in shooting reconstruction, with a focus on angle determination. Participants were supplied with a section of partition wall with one entrance hole (labeled "A") and one exit hole (labeled "1"). Refer to Manufacturer's Information for preparation details.

ENTRANCE HOLE: All 137 responding participants identified the side labeled "A," where two of those participants did not provide a response in Table 1: Entrance Hole but did report and identify the entrance hole in Table 4: Conclusions section.

DIRECTIONALITY: Of the 137 responding participants, 135 (99%) reported both a right-to-left and upward direction of travel. The remaining two participants reported a left-to-right and upward direction of travel.

ANGLE DETERMINATION: Reported angles are reviewed using CTS' uncertainty factor of ±5° from the manufacturer's preparation values.

HORIZONTAL: Any reported horizontal angles that fell outside of the following ranges were marked as inconsistent: ±5° from perpendicular of the prepared value of 23° (18 to 28°), ±5° from right-to-left of the prepared value of 67° (62 to 72°), or ±5° from left-to-right of the prepared value of 113° (108 to 118°). Of the 121 responding participants that reported horizontal angles, 118 (98%) reported angles that fell within the ranges described above and three reported angles that fell outside of these ranges.

VERTICAL: Any reported vertical angles that fell outside of the following ranges were marked as inconsistent: ±5° upward from the prepared value of 23° (18 to 28°) or ±5° downward from the prepared value of 67° (62 to 72°). Of the 121 responding participants that reported vertical angles, 118 (98%) reported angles that fell within the ranges described above and three reported angles outside of these ranges.

CTS is aware that some labs will only report directionality and will not report any angle measurements.

Entrance Hole

Which label on the box represents the entrance hole?

TABLE 1

WebCode	Character	WebCode	Character
2B2JUH	A	9BWGZ6	A
2CW9U6	A	9CB6ZB	A
2HH274	A	9HWZ3Z	A
2LZMDH	A	9YJG7W	A
2UGRVH	A	A67G7A	A
2YLVC4	A	A7277W	A
3ANDN8	A	AC4DKZ	A
3FB7Y7	A	ACQNJ9	A
3FVYKG	A	AQPTNY	A
4729CE	A	AU47Q8	A
4DHW3A	A	B3WXC7	A
4TTFYG	A	BDWNVT	A
4ZRY2C	A	BF7DLW	A
662FBZ	A	BJJF68	A
69FCDG	A	BT94ZA	A
6TPCMG	A	BVCZLX	A
6VUZ28	A	C4LLAR	A
6YFK8B	A	CADX8A	A
6ZB39C	A	CE6ZDU	A
722NF9	A	CP34F3	A
7B39G2	A	CXFV62	A
7KTUMY	A	D2U3Q7	A
7NQDMC	A	D43ZDV	A
7P8AFC	A	DY8BU3	A
7RDXTG	A	ENML93	A
8QCGVA	A	F9M2AQ	A
8XVK3C	A	FD2ECY	
94HR3W	A	FDKDD4	A

TABLE 1 - Entrance Hole

WebCode	Character	WebCode	Character
FQMRQU	A	P8F4TD	A
FU6BBN	A	PB3HHM	A
G22772	A	PEKLPT	A
GKU7XX	A	PFWHWH	A
GMKBQ6	A	PQVDUD	A
GWMQEN	A	PR8TLU	A
GWTZE2	A	PW6CNR	A
HBNNYZ	A	PXEG2F	A
HY9ULL	A	Q4VE6U	A
J8YW3N	A	QLF64T	A
J9UE6P	A	QYZK8T	A
JD9VW3	A	RC9KJC	A
JELPEM	A	RF77AE	A
JHZ68Z	A	RG2PCG	A
JPE74N	A	RM4XGN	A
JTLG6Y	A	RNYGHP	A
L4DWXR	A	RVL6FF	A
LCNVUN	A	RXQQBT	A
LMNQQY	A	RYLFBF	A
LQ8GEH	A	T3EW2E	A
M89ZBW	A	T3V9MQ	A
MDDN6X	A	TBA2UF	A
MGDRWK	A	TDAAYQ	A
MGJ3WX	A	TFNEWN	A
MNV48Z	A	TJ3C4B	A
NBKATT	A	TQ2RXP	A
NKBVYQ	A	U44PBN	A
NNAALG	A	U9ZC6C	A
NPQ7EF	A	UTHJEK	A
P4FTXD		VCRZXN	A

TABLE 1 - Entrance Hole

WebCode	Character	WebCode	Character
VYPAJB	A		
W2CBZJ	A		
W776WK	A		
WMQVWJ	A		
WN6G88	A		
WQTWWG	A		
WUUVFL	A		
X963KH	A		
XFN9HP	A		
XULFBK	A		
Y22F7M	A		
Y2K366	A		
YEPHPF	A		
YTCKFK	A		
YXZCGL	A		
Z6EF4E	A		
Z86JWL	A		
ZH78NJ	A		
ZKRQTM	A		
ZRQDM8	A		
ZYQXMH	A		

Response Summary

Participants: **137**

Which label on the box represents the entrance hole?

Character:	A	1	No Response
Total:	135	0	2
Percent:	98.5%	0.0%	1.5%

Direction of Travel

What is the direction of travel of the bullet through the box? (check all that apply)

TABLE 2

WebCode	Left / Right	Upward / Downward
2B2JUH	Right to Left	Upward
2CW9U6	Right to Left	Upward
2HH274	Right to Left	Upward
2LZMDH	Right to Left	Upward
2UGRVH	Right to Left	Upward
2YLVC4	Right to Left	Upward
3ANDN8	Right to Left	Upward
3FB7Y7	Right to Left	Upward
3FVYKG	Right to Left	Upward
4729CE	Right to Left	Upward
4DHW3A	Right to Left	Upward
4TTFYG	Left to Right	Upward
4ZRY2C	Right to Left	Upward
662FBZ	Right to Left	Upward
69FCDG	Right to Left	Upward
6TPCMG	Right to Left	Upward
6VUZ28	Right to Left	Upward
6YFK8B	Right to Left	Upward
6ZB39C	Right to Left	Upward
722NF9	Right to Left	Upward
7B39G2	Right to Left	Upward
7KTUMY	Right to Left	Upward
7NQDMC	Right to Left	Upward
7P8AFC	Right to Left	Upward
7RDXTG	Right to Left	Upward
8QCGVA	Right to Left	Upward
8XVK3C	Right to Left	Upward
94HR3W	Right to Left	Upward
9BWGZ6	Right to Left	Upward
9CB6ZB	Right to Left	Upward

TABLE 2 - Direction of Travel

WebCode	Left / Right	Upward / Downward
9HWZ3Z	Right to Left	Upward
9YJG7W	Right to Left	Upward
A67G7A	Right to Left	Upward
A7277W	Right to Left	Upward
AC4DKZ	Right to Left	Upward
ACQNJ9	Right to Left	Upward
AQPTNY	Right to Left	Upward
AU47Q8	Right to Left	Upward
B3WXC7	Right to Left	Upward
BDWNVT	Right to Left	Upward
BF7DLW	Right to Left	Upward
BJJF68	Right to Left	Upward
BT94ZA	Right to Left	Upward
BVCZLX	Right to Left	Upward
C4LLAR	Right to Left	Upward
CADX8A	Right to Left	Upward
CE6ZDU	Right to Left	Upward
CP34F3	Right to Left	Upward
CXFV62	Right to Left	Upward
D2U3Q7	Right to Left	Upward
D43ZDV	Right to Left	Upward
DY8BU3	Left to Right	Upward
ENML93	Right to Left	Upward
F9M2AQ	Right to Left	Upward
FD2ECY	Right to Left	Upward
FDKDD4	Right to Left	Upward
FQMRQU	Right to Left	Upward
FU6BBN	Right to Left	Upward
G22772	Right to Left	Upward
GKU7XX	Right to Left	Upward
GMKBQ6	Right to Left	Upward
GWMQEN	Right to Left	Upward

TABLE 2 - Direction of Travel

WebCode	Left / Right	Upward / Downward
GWTZE2	Right to Left	Upward
HBNNYZ	Right to Left	Upward
HY9ULL	Right to Left	Upward
J8YW3N	Right to Left	Upward
J9UE6P	Right to Left	Upward
JD9VW3	Right to Left	Upward
JELPEM	Right to Left	Upward
JHZ68Z	Right to Left	Upward
JPE74N	Right to Left	Upward
JTLG6Y	Right to Left	Upward
L4DWXR	Right to Left	Upward
LCNVUN	Right to Left	Upward
LMNQQY	Right to Left	Upward
LQ8GEH	Right to Left	Upward
M89ZBW	Right to Left	Upward
MDDN6X	Right to Left	Upward
MGDRWK	Right to Left	Upward
MGJ3WX	Right to Left	Upward
MNV48Z	Right to Left	Upward
NBKATT	Right to Left	Upward
NKBVYQ	Right to Left	Upward
NNAALG	Right to Left	Upward
NPQ7EF	Right to Left	Upward
P4FTXD	Right to Left	Upward
P8F4TD	Right to Left	Upward
PB3HHM	Right to Left	Upward
PEKLPT	Right to Left	Upward
PFWHWH	Right to Left	Upward
PQVDUD	Right to Left	Upward
PR8TLU	Right to Left	Upward
PW6CNR	Right to Left	Upward
PXEG2F	Right to Left	Upward

TABLE 2 - Direction of Travel

WebCode	Left / Right	Upward / Downward
Q4VE6U	Right to Left	Upward
QLF64T	Right to Left	Upward
QYZK8T	Right to Left	Upward
RC9KJC	Right to Left	Upward
RF77AE	Right to Left	Upward
RG2PCG	Right to Left	Upward
RM4XGN	Right to Left	Upward
RNYGHP	Right to Left	Upward
RVL6FF	Right to Left	Upward
RXQQBT	Right to Left	Upward
RYLFBF	Right to Left	Upward
T3EW2E	Right to Left	Upward
T3V9MQ	Right to Left	Upward
TBA2UF	Right to Left	Upward
TDAAYQ	Right to Left	Upward
TFNEWN	Right to Left	Upward
TJ3C4B	Right to Left	Upward
TQ2RXP	Right to Left	Upward
U44PBN	Right to Left	Upward
U9ZC6C	Right to Left	Upward
UTHJEK	Right to Left	Upward
VCRZXN	Right to Left	Upward
VYPAJB	Right to Left	Upward
W2CBZJ	Right to Left	Upward
W776WK	Right to Left	Upward
WMQVWJ	Right to Left	Upward
WN6G88	Right to Left	Upward
WQTWWG	Right to Left	Upward
WUUVFL	Right to Left	Upward
X963KH	Right to Left	Upward
XFN9HP	Right to Left	Upward
XULFBK	Right to Left	Upward

TABLE 2 - Direction of Travel

WebCode	Left / Right	Upward / Downward
Y22F7M	Right to Left	Upward
Y2K366	Right to Left	Upward
YEPHPF	Right to Left	Upward
YTCKFK	Right to Left	Upward
YXZCGL	Right to Left	Upward
Z6EF4E	Right to Left	Upward
Z86JWL	Right to Left	Upward
ZH78NJ	Right to Left	Upward
ZKRQTM	Right to Left	Upward
ZRQDM8	Right to Left	Upward
ZYQXMH	Right to Left	Upward

Response Summary

Participants: 137

What is the direction of travel of the bullet through the box?

Direction:	Right to Left	Left to Right	Upward	Downward
Total:	135	2	137	0
Percent:	98.5%	1.5%	100.0%	0.0%

Angle Measurements

TABLE 3 - Angles (in degrees)

WebCode	Horizontal (Azimuth)	Uncertainty	Vertical	Uncertainty	Scale (Optional)
2B2JUH	69	5	25	5	0-180
2CW9U6	72	5	26	5	
2HH274	21.5	5	25	5	
2LZMDH	68	5	26	5	0-180
2UGRVH	70		26		
2YLVC4	66	5	25	5	
3ANDN8	110	5	26	5	
3FB7Y7	69	5	26	5	
3FVYKG	-69	5	25	5	0-90
4729CE	71	5	25	5	0-90
4DHW3A	69	5	26	5	
4TTFYG	68	5	25	5	
4ZRY2C	68.5	2.6	23.7	2.6	90-0-90
662FBZ	70	5	64	5	90-0-90
69FCDG	68	5	27	5	
6TPCMG	68	2	25	2	
6VUZ28	71	5	25	5	
6YFK8B	68.2	2.6	25.5	2.6	0-90
6ZB39C	70	5	25	5	
722NF9	68	5	25	5	0-180
7B39G2	66		25		0-180
7KTUMY	70	5	25	5	
7NQDMC	110	2	26	2	0-180
7RDXTG	68	5	25	5	0-180
94HR3W	22	5	25	5	90-0-90
9BWGZ6	69	5	22	5	0-180

TABLE 3 - Angles (in degrees)

WebCode	Horizontal (Azimuth)	Uncertainty	Vertical	Uncertainty	Scale (Optional)
9CB6ZB	70		25		0-180
9HWZ3Z	67	5	25	5	
9YJG7W	70	5	25	5	
A67G7A	110	5	22.5	5	
A7277W	70	3	65	3	0-90
AC4DKZ	19	3	25	2	90-0-90
AQPTNY	70	5	25	5	
AU47Q8	68.5	2.6	24.9	2.6	90-0-90
B3WXC7	70	5	26	5	0-180
BDWNVT	67	5	64	5	0-90
BF7DLW	20	1	27	1	0-180
BJJF68	68	3	24	3	90-0-90
BT94ZA	70	8.77	27	2.74	
BVCZLX	70	3	25	3	
C4LLAR	73	0.5	65	0.5	0-180
CADX8A	110		25		0-180
CE6ZDU	68		64		0-180
CXFV62	70	5	24	5	0-180
D2U3Q7	23	5	25	5	
D43ZDV	24		26		
DY8BU3	70		-25		
F9M2AQ	21	5	26	5	90-0-90
FD2ECY	69	5	26	5	
FDKDD4	20	5	23	5	0-180
FQMRQU	64	0.6	121	0.6	0-180
FU6BBN	71	5	65	5	0-180
GKU7XX	71	5	24	5	

TABLE 3 - Angles (in degrees)

WebCode	Horizontal (Azimuth)	Uncertainty	Vertical	Uncertainty	Scale (Optional)
GMKBQ6	69	1	24	1	0-180
GWMQEN	68	5	27	5	0-180
GWTZE2	69	5	26	5	
HY9ULL	70	5	65	5	0-180
J8YW3N	70		24		0-90
J9UE6P	68	5	25	5	
JD9VW3	21	3	26	3	
JELPEM	137	5	27	5	0-180
JPE74N	20		24		90-0-90
JTLG6Y	67	5	23	5	
L4DWXR	67	5	26	5	0-180
LCNVUN	71	1	65	1	90-0-90
LMNQQY	68	5	23	5	
LQ8GEH	68	5	27	5	0-180
M89ZBW	68	5	25	5	0-180
MDDN6X	25	5	25	5	
MGDRWK	110		25		0-180
MGJ3WX	70	5	26	5	90-0-90
MNV48Z	69	5	26	5	
NKBVYQ	70	5	27	5	0-180
NNAALG	69	5	64	5	0-90
NPQ7EF	68	5	64	5	0-180
P4FTXD	70		25		
P8F4TD	68	5	25	5	
PB3HHM	70		25		
PEKLPT	69	5	63	5	
PFWHWH	70		25		

TABLE 3 - Angles (in degrees)

WebCode	Horizontal (Azimuth)	Uncertainty	Vertical	Uncertainty	Scale (Optional)
PQVDUD	-23	5	28	5	90-0-90
PR8TLU	115	5	35	5	0-180
PW6CNR	68.3	2.6	26.1	2.6	0-90
PXEG2F	68	0	113	0	0-180
Q4VE6U	72		25		90-0-90
RC9KJC	68	5	65	5	0-180
RF77AE	70	5	25	5	0-180
RG2PCG	25	0.3	21	1	
RM4XGN	69	5	-25	5	0-180
RNYGHP	68.9	2.6	24.2	2.6	
RVL6FF	22	5	24	5	
RXQQBT	67		24		
RYLFBF	68	5	64	5	0-180
T3EW2E	22		24		
T3V9MQ	69		26		
TBA2UF	15	5	25	5	90-0-90
TFNEWN	68.2	2.6	24.4	2.6	0-90
TJ3C4B	68	5	64	5	0-180
TQ2RXP	68	5	27	5	
U44PBN	69	5	28	5	
U9ZC6C	69		62		0-180
UTHJEK	67	5	26	5	
VCRZXN	72		23.7		0-90
VYPAJB	68	5	27	5	0-90
W2CBZJ	111	5	25	5	0-180
W776WK	69.6	2.6	26.1	2.6	0-90
WMQVWJ	69	5	-25	5	0-180

TABLE 3 - Angles (in degrees)

WebCode	Horizontal (Azimuth)	Uncertainty	Vertical	Uncertainty	Scale (Optional)
WN6G88	68	5	62	5	
WQTWWG	69	5	25.8	5	0-180
WUUVFL	70	5	25	5	0-90
X963KH	110	0	-25	0	0-180
XFN9HP	68	5	24	5	0-90
Y22F7M	70	5	25	5	
Y2K366	68	5	64	5	0-180
YEPHPF	71	5	27	5	
YXZCGL	67	5	24	5	0-180
Z6EF4E	69	5	26	5	90-0-90
Z86JWL	67	5	25	5	
ZKRQTM	66	2	27	2	
ZRQDM8	21		24		
ZYQXMH	67	5	25	5	90-0-90

Response Summary **Reporting Participants: 121**

Angle Ranges

Horizontal (Azimuth)	Participants	Vertical	Participants
62-72	94	18-28	101
18-28	16	62-72	17
108-118	8		

Conclusions

TABLE 4

WebCode	Conclusions
2B2JUH	The trajectory was found to be from A to 1, right to left at an angle of approximately 69 degrees and upwards at an angle of approximately 25 degrees
2CW9U6	Trajectory was established by using a probe inserted through two sequential holes made by the same projectile. Once the probe was inserted, I measured the vertical ancle (upward or downward) in relation to the horizontal plane, and the azimuth (horizontal angle). The azimuth angle is reported as left to right or right to left, based on the shooter's perspective. Projectile Trajectory #1: Projectile entered the surface marked 'A' upward at 26° (±5°) and from right to left at 72° (±5°), based on the shooter's perspective.
2HH274	The box has sustained perforating damage caused by a bullet entering side A and exiting side 1. The track is right-left and upwards.
2LZMDH	The bullet passed through the box by face A to 1. The entry hole is face A and the exit hole is face 1. The trajectory of the bullet is from the right side to the left with a 68 degree angle between the wall of the box and the rod (when facing the entry hole face A). The upward component of this path is 26 degree.
2UGRVH	The fired bullet traveled in a right-to-left and upward direction and went through the box, entering side "A" and exiting side "1".
2YLVC4	A wooden box on a table in the Crime Scene area had one apparent bullet hole. The trajectory of the bullet that created this hole was right to left when facing the front side, side A to side 1, and upward. The trajectory was determined using a trajectory rod and the angle was determined using a protractor and inclinometer.
3ANDN8	For the purpose of this report "H" represents holes that were generated when a bullet and/or debris punctured an object. The letter "T" represents trajectories that were established. A single trajectory was established: T1 = H1 (side A) to H2 (side 1), originated from side A, continuing through the partition wall in a left and upward direction, and perforated side 1.
3FB7Y7	Trajectory 1 (T1): A to 1 (Originates from the right and moves left in an upward direction, enters Side "A" in the lower right quadrant of the section of partition wall (A) and exits Side "1" in approximately the middle of the section of partition wall (1).
3FVYKG	The projectile impacted the wall at an ascending angle, traveling from right to left, entering at "A" and exiting at "1".
4729CE	The bullet damage at defect A is consistent with an entry defect. A corresponding exit defect is observed at defect 1. The bullet flight path is right to left and upward, with an azimuth angle of 71 degrees and a vertical angle of +25 degrees.
4DHW3A	The bullet entrance hole on the wall is on the side marked A. The bullet struck the wall at a 26° ± 5° upward angel and right to left angel of 69° ± 5°.
4TTFYG	The entrance hole is situated on side A, the exit hole on side 1. The slightly oval entrance hole has a sharp destinct edge. The angle measured is 68° or 22° NATO (+- 5°) left to right. The vertical component of the trajectory is determined to be 25° (+-5) (upwards).
4ZRY2C	There was a perforating entrance bullet defect to Side A of the wooden box. The bullet exited Side 1. The direction of travel associated with this defect was right to left and upward. The trajectory was measured with a vertical angle of 23.7 degrees (± 2.6 degrees) upward and an azimuth angle of 68.5 degrees (± 2.6 degrees) from the right side of the box.
662FBZ	Through analysis and inspection of a section of a wooden partition wall, and a evaluation the physical characteristics of the perforation, the following was determined: That it is consistent with the passage of a bullet projectile having been fired. 1. The perforation identified with letter A shows a trajectory from right to left and from bottom to top, exiting as described in item 1. With an angle of impact of 51 degrees, a vertical angle of 64 degrees, and a horizontal angle of 70 degrees.
69FCDG	I observed what appeared to be a perforating impact point (Marker B) on a section of partition wall. The probable projectile path is from front (Side A) to back (Side 1), right to left, with an upward direction. The horizontal angle is 68 degrees (+/- 5 degrees), and the vertical angle is 27 degrees (+/- 5 degrees).

TABLE 4

WebCode	Conclusions
6TPCMG	Examining submitted Item #001: --one (1) sealed box labeled: "2025 CTS Forensic Testing Program, TEST NO. 25-5620: SHOOTING RECONSTRUCTION - ANGLE DETERMINATION Sample Pack: AD" and written in apparent blue ink "A", and item description reading: "Sealed box containing a section of partition wall." Upon opening the box, I observed --one (1) wooden block labeled with a black arrow in apparent marker on the left vertical side of the block, indicating the correct orientation for the block; --one side labeled "Test No. 25-5620 A" with apparent perforating defect consistent with damage from a fired projectile entering this surface - marked with Scale #A, --corresponding exiting perforating defect observed on side of block labeled " Test No. 25-5620 1" - defect marked with Scale #A1. Apparent path of travel is upward and right-to-left from entrance at Scale #A. illustrative purposes.
6VUZ28	The submitted wall piece had one apparent bullet defect, with the entry side on the "A" side of the wall and the exit on the "1" side of the wall. A trajectory of upwards at 25° ±5° and a right to left azimuth angle of 71° ±5° was observed.
6YFK8B	A perforating bullet defect was in the wooden box. The bullet entered on side A and exited on side 1. The directionality of the bullet was upwards and right to left. The azimuth angle measured 68.2° (±2.6°) in the right to left direction, and the vertical angle measured 25.5° (±2.6°) in the upward direction.
6ZB39C	A trajectory rod placed through defects A and 1 has directionality from right to left, upward.
722NF9	Exhibit 1 was labeled “A” on one side and “1” on the opposite side. A ballistic impact was observed on each of these sides (BI-A and BI-1, respectively). BI-A is an entry ballistic impact and BI-1 is an exit ballistic impact. The trajectory of the bullet that created BI-A and BI-1 was from Side A to Side 1, from right to left , and upward .
7B39G2	Side A of the section of wall had what appeared to be an entry hole. Side 1 had what appeared to be an exit hole. Assuming the holes were made by one bullet, the bullet was traveling upward from right to left into side A of the wall. The vertical angle was approximately 25 degrees (upward), and the azimuth angle was approximately 66 degrees (right to left).
7KTUMY	The defect was observed to be slightly elliptical in shape, with "A" being the entrance and "1" being the exit. The direction of travel would be in an upward direction and right to left. The Horizontal angle has a measurement of 70 Degrees with a (+) or (-) of 5 degrees uncertainty. The Vertical angle has a measurement of 25 Degrees with a (+) or (-) of 5 degrees uncertainty.
7NQDMC	Considering that the shooter stands in front of the side (A), we can there for say that the shot goes from side A to side 1, from the right to the left with an angle of 110 ° and from the botom to the tol of the item, with an angle of 26°.
7P8AFC	Pathway A (including impacts A, A1) is consistent with a bullet traveling from side "A" to side "1", right to left, and in an upward direction.
7RDXTG	A projectile entered side A traveling right to left at an approximate 68° horizontal angle ±5° and an approximate 25° upward vertical angle ±5°.
8QCGVA	Pathway A (including impacts A, A1) is consistent with a bullet traveling from side "A" to side "1", right to left and in an upward direction.
8XVK3C	Investigators have requested Trajectory Analysis on a section of a partition (Exhibit 1) wall which was removed from a shooting scene. Suspected bullet holes were observed on both sides of the partition which have been prelabeled by the agency as "side 1" and "side A." Trajectory analysis indicated that one shot struck the partition where the bullet entered side A and exited side 1. This is consistent with the shooter being located on side A shooting right-to-left and upward into the partition. No bullet was recovered from this shot. This laboratory does not report out angle measurements of shots.
94HR3W	The path of travel of the bullet was right to left and at an upward angle.
9BWGZ6	Trajectory analysis (T1) indicates that a projectile entered the side of the block marked “A” (designated as defect A1), traveling right to left and upwards and exited the side of the block marked “1” (designated as defect A2).

TABLE 4

WebCode	Conclusions
9CB6ZB	OBSERVATIONS AND INTERPRETATIONS: A perforating bullet hole (labeled A1) was in one side of a wooden box. A corresponding perforating bullet hole (labeled A2) was in the opposite side of the wooden box. PROCESSING RESULTS: Photographs were taken to document the scene. A trajectory rod was inserted through the bullet path (labeled A). The bullet path entered the wooden box at an upward angle and traveled from right to left.
9HWZ3Z	One trajectory was reconstructed in the Item 1 box. The projectile entered Item 1 at Hole/ Side A traveling up and to the left and exited the opposing side of Item 1 at Hole/Side 1.
9YJG7W	[No Conclusions Reported.]
A67G7A	One shot, entering side A and exiting side 1. The bullet traveled right to left, at an upward angle.
A7277W	Taking the origin of the shot (from the shooter's point of view), the trajectory was ascending, with an angle of 65°, moving from right to left, and a drift of 70°. All results carry an uncertainty of ±3°.
AC4DKZ	[No Conclusions Reported.]
ACQNJ9	Pathway A (including impacts A, 1) is consistent with a bullet traveling from side "A" to side "1", right to left, and in an upward direction.
AQPTNY	T1 HA to H1 Though the Item 1 section of wall, entered lower right corner of side A and exited near upper center of side 1, traveled in an upward and leftward (right to left) direction.
AU47Q8	A perforating entrance bullet defect was to Side A of the wooden box. The bullet exited Side 1. The direction of travel for the bullet associated with this defect was right to left and upward. The trajectory was measured with a vertical angle of 24.9 degrees upward (+/- 2.6 degrees) and an azimuth angle of 68.5 degrees (+/- 2.6 degrees) from the right side of the box.
B3WXC7	A perforating defect, consistent with a defect produced by a fired bullet, was observed in the submitted wall portion. An examination of the defect was conducted in an attempt to establish the trajectory of the fired bullet's path. The following trajectory was established: Measurements and examinations of the perforating defect in the wall indicate that a fired bullet entered side A of the wall and exited side 1 of the wall at an approximate 26 degree (+/- 5 degree) upward angle and at a approximate 70 degree right to left (azimuth) angle.
BDWNVT	Through analysis and inspection of the wooden block (evidence piece) and evaluation of the physical characteristics of the perforation, the following was determined: That it is consistent with the passage of a fired bullet projectile. Number 1 in Trajectory: from left to right, downward. It presents an impact angle of 61.27, a vertical angle of 80, and a horizontal angle of 80. 1. A circular perforation in a wooden surface, with physical characteristics such as a "pinch point," "leading edge," and defined edges. Located on the side of the wooden block, identified by the letter A, penetrating into the side of the wooden block, identified by the number 1, in a wooden surface, with an irregular shape, with physical characteristics such as wood peeling, and irregular edges.
BF7DLW	The projectile traveled in an upward direction from the right side to the left side of the box. The side labeled as 'A' appeared to be an entry due to the wood going inward. The side labeled '1' appeared to be an exit due to the wood coming outward and there being more damage in the area. The box was 5 7/8 inches tall by 5 13/16 inches wide by 2 7/8 inches thick. Hole 'A' was measured to be 2 3/16 inches up from the bottom of the box going to the center of the entry hole and 1 15/16 inches going from the right side of the box towards the center of the entry hole (3 15/16 inches going from the left to the hole). Hole '1' was 3 11/16 inches up from the bottom of the box going towards the center of the exit hole and 3 inches going from the left side of the box towards the center of the exit hole (2 7/8 inches going from the right to the hole). Trajectory angles: 20 degrees to the left of the vertical plane and 27 degrees below the horizontal plane (with protractor). Angles were also collected with a digital angle finder at 25 degrees and an Accu-angle finder at 25 degrees. Report statement: Measurement uncertainty was calculated for the following equipment used to determine and report trajectory measurements: +/- 0.06" for the tape measure, +/- 1 degree for the protractor(s), and +/- 0.3 degrees for the digital angle finder.

TABLE 4

WebCode	Conclusions
BJJF68	The entrance bullet hole defect is situated on side A of the wood partition box and the exit bullet hole defect on side 1 of the wood partition box. The bullet pathway through the wood partition box is at an upward vertical angle of approximately 24 degrees (+/- 3 degrees) and from right to left at approximately 68 degrees (+/- 3 degrees) when the azimuth angle is measured from right to left.
BT94ZA	I utilized a trajectory kit to obtain trajectory measurements of Item A. Item A – apparent bullet hole located in wood. Measurement: 27 degrees upwards, 70 degrees right to left.
BVCZLX	The bullet have entered the surface marked "A" in an upward trajectory (25 degrees), from right to left (70 degrees), and exited on the surface marked "1".
C4LLAR	A perforation in the wooden surface circular in shape with physical characteristic such as a "Pinch Point", a defined edge located on the side identified with letter A, with a trajectory from right to left upwards, which passes through in irregularly shaped with physical characteristic such as wood detachment located on the side identified with #1. The bore width .3320in and the length is .3495in; resulting in an impact angle of 71.79. The vertical angle is 65 degrees, and the horizontal angle is 73 degrees.
CADX8A	Examined visually and with stereomicroscopy. Defect A entrance (1/4 inch diameter) located on side A of the section of partition wall, 3 5/8 inches below the top edge and 2 1/4 inches left of the right edge. No fouling was observed visually. Powder grains were observed visually and with stereomicroscopy. A wipe-off rim was observed visually. The presence of powder grains and a wipe-off rim at defect A entrance supports that defect A entrance is an entrance bullet defect. Defect A exit (1/4 inch diameter) located on side 1 of the section of partition wall, 2 1/4 inches below the top edge and 3 3/8 inches left of the right edge. No fouling was observed visually. No powder grains were observed visually or with stereomicroscopy. No wipe-off rim was observed visually. The bullet perforated the section of partition wall, entering on side A and exiting on side 1. The direction of travel of the bullet was right to left and upward.
CE6ZDU	Bullet Trajectory Reconstruction Defect 1A: Vertical angle 64 degrees, Horizontal angle 68 degrees Defect 1B: Vertical angle 64 degrees, Horizontal angle 68 degrees Note: all trajectories are opinions. All vertical and horizontal angles were measured from the baseline OR all measurements are approximate. Bullet trajectory reconstruction angle measurement analysis is not a service accredited by ANAB.
CP34F3	[No Conclusions Reported.]
CXFV62	I examined the evidence for this proficiency test on 10/02/25. I was asked to examine a section of a partition wall from a location in which a shooting took place. I was asked to conduct my analysis using my laboratory's procedures. I photographed both sides of the wall for general documentation purposes. I also photographed the wall with a trajectory rod in place to approximate the horizontal (azimuth) and vertical angles. Side A appears to contain the bullet hole entrance based on the deformation of the wood and possible bullet wipe around the bottom of the hole. Side 1 appears to contain the bullet hole exit based on the deformation of the wood. A trajectory rod was placed through both bullet holes to estimate the bullet trajectory measurements. I used a digital inclinometer to measure the vertical angle, which was approximately 24.8 degrees in an upward trajectory. I used a protractor and a plumb bob to visually measure the horizontal (azimuth) angle. The horizontal (azimuth) angle measured approximately 70 degrees from right to left facing side A (entrance hole). I printed the photographs to estimate the same trajectory measurements and used them to measure both angles. The vertical angle measured 24 degrees in an upward trajectory. The horizontal angle measured 69 degrees from right to left facing side A (entrance hole). I took the average of both vertical angle measurements (24.8 + 24)/2 = 24.4 degrees, reported as 24 degrees up. I took the average of both horizontal (azimuth) angle measurements (70 + 69)/2 = 69.5 degrees, reported as 70 degrees right to left. The trajectory will be reported as: 1. Side A contains the bullet entrance hole. 2. The bullet traveled in a right to left, and upward trajectory through the wall. 3. The vertical angle is approximately 24 degrees up. The horizontal (azimuth) angle is approximately 70 degrees from right to left.
D2U3Q7	Projectile entered side "A" with an upward direction of 25 degrees +- 5 degrees from horizontal and a right to left direction of 23 degrees +-5 degrees from orthogonal. The projectile exited side "1".

TABLE 4

WebCode	Conclusions
D43ZDV	The section of partition wall (item 1) is a wooden box ~ 5 ¾" tall by 6" wide and 3" deep. I observed a hole on the front side and on the back side of item 1. The front side hole has characteristics of a bullet hole entrance, and the back side hole has characteristics of a bullet hole exit. The entrance hole tested positive in a presumptive chemical test for lead; copper was not detected. The center of the entrance hole is ~ 2 ¼" from the bottom edge of the box and ~ 2 ¼" from the right edge of the box. This hole is ~ 7/16" top to bottom and ~ 7/16" side to side. The center of the exit hole is ~ 2 ¼" from the top edge of the box and ~ 2 ¾" from the right edge of the box. This hole is ~ ¼" top to bottom and ~ ¼" side to side. The vertical (elevation) and azimuth (horizontal) angles were measured using a fiberglass trajectory rod, a zero-edge protractor, a plumb bob, and an angle finder. The path of the bullet was upward and right to left. The vertical angle component is upward, 26 degrees upward from horizontal. The horizontal angle component is right to left, 24 degrees from perpendicular to the surface of the wall. The reported measurements are used for descriptive purposes only and are not considered a quantitative forensic test result.
DY8BU3	The bullet entered in hole A and traveled upward and to the left. The bullet exited out of hole 1.
ENML93	Pathway A (including impact A, A1) is consistent with a bullet traveling from side "A" to side "1", right to left, and in an upward direction.
F9M2AQ	The two bullet hole defects were examined for trajectory purposes and found that the projectile entered side "A" of the wooden box and exited through side "1" traveling upward at approximately 26° ±5° and approximately 21° ±5° right to left off the perpendicular.
FD2ECY	The bullet entrance hole on the wall was the strike marked A. The bullet struck the wall at an approximate 26° upward angle and a right to left angle of approximately 69° ± 5°.
FDKDD4	The wood box contained one apparent entry hole on side A and one apparent exit hole on side 1. Based on the measurements of the azimuth and vertical angles, the bullet traveled from right to left at a 20 degree angle (+/- 5 degrees) and upward at a 23 degree angle (+/- 5 degrees).
FQMRQU	The submitted sample contains a section of the partition wall with one entrance hole and one exit hole. The entrance hole is labeled as position A on the box. The exit hole is labeled as position 1 on the box.The bullet traveled from right to left in an upward direction. The measured angles are as follows: the horizontal (azimuth) angle is 64 degrees with an uncertainty of ±0.6 degrees, and the vertical angle is 121 degrees with an uncertainty of ±0.6 degrees. The protractor model used for measuring azimuth angles follows the 0–180 degree convention.
FU6BBN	Through analysis and inspection of the wooden block and evaluation of the physical characteristics of the perforations, the following was determined: The perforations are consistent with the passage of a fired bullet projectile. Letter A indicates the trajectory, from right to left and upwards. It shows an impact angle of 68 degrees, a horizontal angle of 71 degrees, and a vertical angle of 65 degrees. It penetrates by perforating as described in number 1.
G22772	Pathway A (including impacts A and A1) is consistent with a bullet traveling from side A to side 1, right to left, and in an upward direction.
GKU7XX	One section of a partition wall; one side labeled "A" and the opposite side labeled "1". A bullet entry hole (A1) was observed on side A and a corresponding bullet exit hole (A2) was observed on side 1. A trajectory determination was performed and the path of the bullet was determined to be generally from right to left in an upwards direction.
GMKBQ6	[No Conclusions Reported.]
GWMQEN	In my opinion the shot was fired from right to left in an upwards direction with A being the entry hole and 1 being the exit hole
GWTZE2	In my opinion, the trajectory of the fired bullet path was determined to be from Side A to Side 1, from right to left at approximately 69 degrees, and upwards at approximately 26 degrees.
HBNNYZ	Pathway A (including impacts A, 1) is consistent with a bullet traveling from side A to side 1, right to left, and in an upward direction.

TABLE 4

WebCode	Conclusions
HY9ULL	The perforation identified by the letter A on the surface of the wood, oval-shaped, with physical characteristics: Pinch Point, a bruised ring with apparent soot, defined edges and detachment of wood located on the front of the partition box, right side, near the bottom, continues its final trajectory, passing through the perforation identified by the number 1, irregularly shaped, to an "irregular exit", with physical characteristics: irregular edges and detachment of wood, located in the middle area of the rear part of the partition box. Through partition box Analysis and Inspection, and the evaluation of the physical characteristics of the perforations, it was determined that they are consistent with the passage of a bullet projectile. The letter A, in trajectory, from front to back, right to left, and upward passes through as described above, through number 1. It has an impact angle of 52.58°, a vertical angle of 65°, and a horizontal angle of 70°.
J8YW3N	The bullet path is consistent with a bullet that entered side A of the wall partition (Item AD) and exited Side 1 with an upward angle of approximately 24 degrees from horizontal and traveling right to left at an angle of approximately 70 degrees from wall surface. The distances and angles reported are used as descriptors and are not meant to be interpreted as quantitative forensic test results.
J9UE6P	Originated from the right side of the partition wall where it perforated the wall (H1/Side A) at an upward angle and then exited the wall on the opposite side (H2/Side 1)
JD9VW3	The projectile entered the box at point "A" and left the box at point "1." The projectile traveled from right to left and from bottom to top.
JELPEM	The bullet hole defect entered on Side A. The entry defect shows bullet wipe and a leading edge on the left portion of the defect. The long axis of the entry defect was oriented at approximately 47 degrees below the left horizontal line (or azimuth angle of ~137 degrees) The bullet impacted the target at approximately 58 degrees* from the surface of the target and traveled right to left and upward ~27 degrees**. *The angle of impact was calculated using both measurements (W/L)sin-1 and the rod and protractor method. **The upward angle was found using a rod and an angle finder.
JHZ68Z	A section of a partition wall with two suspected bullet holes (labeled A and 1) was submitted to the laboratory for trajectory analysis. Shot A/1 - One bullet entered into the partition wall at hole A and exited at hole 1. The trajectory of this shot is consistent with a bullet traveling from right to left in an upward direction. No bullet was recovered from this shot. This laboratory does not report out angle determinations.
JPE74N	The bullet traveled through the partition wall from side A to side 1 at an upward angle of approximately 24 degrees from the horizontal and at a right to left angle of approximately 20 degrees from the perpendicular of the wall surface. The reported measurements are for descriptive purposes and are not quantitative forensic test results.
JTLG6Y	The direction of travel of the projectile through Item 1 was determined to be from side A to side 1, right to left and upward. As measured from entrance side (side A), the vertical angle was determined to be 23 degrees (upwards). As measured from the right edge of side A towards the left side, the horizontal (azimuth) angle was determined to be 67 degrees.
L4DWXR	Defect 1: Partition wall This bullet perforated the wooden wall at defect A (primary impact) and traveled upward perforating the wooden wall at defect 1 (secondary impact). The bullet path had a vertical angle of 26 degrees and a horizontal angle of 67 degrees.
LCNVUN	1. The physical inspection of the wooden box was carried out and it shows an entry and exit hole, with a ballistic trajectory towards its anterior surface "A", from right to left at 71°, angle of incidence from bottom to top 65° degrees of angle of incidence.
LMNQQY	The section of submitted wall was found to have a pair of defects. A single bullet likely perforated this section of the submitted wall on surface “A” and exited from surface “1”. The trajectory, from an observer facing surface “A”, was estimated to be 23° ± 5° upwards and 68° ± 5° right to left.
LQ8GEH	The bullet travelled from right to left, entering the partition wall on the side labelled 'A' and exited from the side labelled '1'. The trajectory of this bullet was at an upward vertical angle of approximately 27 ±5 degrees or approximately 63 ±5 degrees measured from bottom to top, with the bottom being 0 degrees. The azimuthal angle of this bullet was approximately 68 ±5 degrees measured from right to left (viewed facing side 'A') along the horizontal plane, with the right side being 0 degrees.

TABLE 4

WebCode	Conclusions
M89ZBW	Side A appears to contain the bullet hole entrance based on the deformation of the wood and possible bullet wipe around the perimeter of the hole. Side 1 appears to contain the bullet hole exit based on the deformation of the wood. A trajectory rod was placed through both bullet holes to estimate the bullet trajectory measurements. The vertical angle measured approximately 26 degrees in an upward trajectory. The horizontal (azimuth) angle measured approximately 66 degrees from right to left facing side A (entrance hole). I printed the photographs to estimate the same trajectory measurements and used them to measure both angles. The vertical angle measured 24 degrees in an upward trajectory. The horizontal (azimuth) angle measured 69 degrees from right to left facing side A (entrance hole). I took the average of both horizontal (azimuth) angle measurements (66 + 69)/2 = 67.5 degrees right to left. I took the average of both vertical angle measurements (26 + 24)/2 = 25.0 degrees up. The trajectory will be reported as: 1. Side A contains the bullet entrance hole. 2. The bullet traveled in a right to left, and upward trajectory through the wall. 3. The horizontal (azimuth) angle is approximately 68 degrees from right to left. The vertical angle is approximately 25 degrees up.
MDDN6X	The trajectory is described regarding 3 references planes: horizontal plane (parallel to top and bottom faces), transversal plane (parallel to 1 and A faces), longitudinal plane (perpendicular to both other planes). The bullet progressed through the box from face A (entrance hole) to 1 (exit hole) on an axis oriented upward with an angle of 25° from horizontal plane, and from right to left when following the bullet path with the angle of 25° from the longitudinal plane.
MGDRWK	On September 30th, 2025 at approximately 16:00, I arrived at the [Laboratory] as requested by Forensic Scientist [Name] to assist with a shooting investigation. The scene entailed a hollow wooden box with holes on two of the sides. Overall photographs were taken of the wooden box. The holes appeared to have been created by an object moving through the box and were on the sides previously labeled "A" and "1". The impact entry point appeared to be in side A of the wooden box. The exit appeared to be in side 1 of the wooden box. The object struck the wooden box moving from right to left in a upward direction. All photographs were uploaded to a secure imaging system. Evidence requiring forensic laboratory analysis may be submitted to the appropriate forensic laboratory upon request.
MGJ3WX	Item 001-1 is a section of a partition wall with labels on three sides: Side 1, Side A, and a directional arrow indicating the top. Sides 1 and A each have an apparent bullet hole while the “Top” label is for orientation purposes. Side A has apparent bullet wipe material around the hole. Side 1 exhibits displacement of substrate material in and around the hole with no apparent bullet wipe. Side A is consistent with an entrance bullet hole while Side 1 is consistent with an exit bullet hole. I placed Item 001-1 on a level surface and inserted a trajectory probe through the entrance and exit holes. I measured the vertical angle using a digital inclinometer and determined the upward angle to be ≈ +26° (±5°). I used a zero-edge protractor to measure the horizontal (azimuth) angle and determined the right to left angle to be ≈ 70° (±5°). I also photographed Item 001-1 and verified the vertical and horizontal angle measurements using the printed photographs and a zero-edge protractor.
MNV48Z	The trajectory for the item is 69 degrees right to left and 26 degrees ascending. There is a plus/minus 5 degree of uncertainty. The entrance to the box is labeled A, while the exit to the box is labeled 1.
NBKATT	Pathway A (including impacts AA and A1) is consistent with a bullet traveling from front (Side A) to back (Side 1), right to left, and in an upward direction.
NKBVYQ	Lab Item #1 (section of the partition wall) was examined on 09/04/2025. I observed a perforating defect on side "A" with an associated defect on side "1". The perforating defect on side “A” contained apparent bullet wipe indicating the trajectory originated from side “A” and exited side “1”. The vertical angle for the defect was measured at 27 degrees (± 5 degrees) upward and the horizontal (azimuth) angle was measured at 70 degrees (± 5 degrees) right to left.
NNAALG	After examining the provided partition wall, using my training and experience as an expert shooting reconstructionist, I was able to determine the following findings: The side marked with A is the entrance hole, clearly defined. The direction of travel is upward, and right to left. The exit hole is defined on the 1 side. The horizontal azimuth is at 69Degrees. The vertical angle is at 64Degrees

TABLE 4

WebCode	Conclusions
NPQ7EF	Through analysis and inspection of the wooden block and evaluation of the physical characteristics of the perforations, the following was determined. They are consistent with the passage of a fired bullet projectile: The letter A on a trajectory from right to left, upwards, with an impact angle of 67°, a horizontal angle of 68°, and a vertical angle of 64°.
P4FTXD	The following defect was located and documented: X: A perforating hole labeled "X" was located on the wooden box side A, located approximately 3.75" from the left edge of the box, and 2.25" up from the bottom edge of the box. The entrance hole exhibited wood pushed inwards and exhibited lead wipe from the projectile. The defect was approximately 9mm in diameter, with visual directionality from right to left and upwards. The projectile exited on the backside of the box labeled side 1, located approximately 3.5" from the left edge of the box, and 3.5" up from the bottom edge of the box. The hole was splintered with wood pushed outwards. The approximate shot trajectory was measured to be at a 25 degree incline, and traveling 70 degrees right to left. A measurement of uncertainty for the angle measurement can be calculated upon request.
P8F4TD	The trajectory of the projectile was from side A to side B, upwards (25 degrees) and from right to left (68 degrees relative to the struck surface A). All angles have an uncertainty of measurement of ± 5 degrees.
PB3HHM	One projectile originated from side A and perforated the wooden block, entering at Defect A and exiting at Defect 1. The projectile traveled at an upward angle and from right to left.
PEKLPT	[No Conclusions Reported.]
PFWHWH	Photographs were taken and angle measurements were made to conclude the following: The apparent bullet path on the box (Item AD) is consistent with a bullet travelling from Side A to Side 1 at an angle of approximately 25 degrees upward from horizontal and right to left at approximately 70 degrees.
PQVDUD	Based on the characteristics of both the entry and exit wounds, as well as the deposition of gunshot residue on side A, it can be concluded that the projectile traveled from side A to side 1, following an upward trajectory. For visualization, a rod was inserted through the perforation (see Figure 1). This demonstrates the projectile's flight path as well as the measured angles: minus 23 Degree in the horizontal plane and 28 Degree in the vertical plane. The graphical representation is provided in Figure 2. [Figure not provided by participant.]
PR8TLU	There is a single perforating bullet impact to the surface marked as "A" this is evident by the presence of bullet wipe along the lower edge of the impact. The bullet travel right to left in an upward trajectory.
PW6CNR	A perforating entrance bullet defect was to Side A of the wooden box. The bullet exited Side 1 of the box. The direction of travel of the bullet associated with this defect was right to left and upward. The trajectory was measured with an azimuth angle of 68.3° +/- 2.6°from the right side of the box and an elevation angle of 26.1° +/- 2.6° upward.
PXEG2F	I evaluated the wooden partition box provided for evaluation (#25-5620). The sealed box dimensions were as follows: length - 6.0 inches; width - 3.87 inches; height - 5.75 inches. One side of the box was labeled as follows: "Test No. 25-5620 A". There was a suspected projectile defect on the bottom right side of the box, measuring 2.13 inches from the right side of the box and 2.13 inches from the bottom. There was what appeared to be soot on the bottom right side of the projectile defect that had the appearance of lead. I tested the substance using a sodium rhodizonate kit, and the results indicated a positive presence of lead. I measured the length and width of the projectile hole (9 mm x 8 mm). The opposite side of the box was labeled as follows: "Test No. 25-5620 1". There was a corresponding exit defect from Side A, located in the upper middle portion of Side 1, measuring 2.25 inches from the right side of the box and 3.5 inches from the bottom. I noted that wood fibers were visibly protruding from the projectile hole. Also, portions of wood were missing and splintered near the location of the defect hole. I did not observe the same type of soot that was visible on Side A. I placed an aluminum trajectory rod into the Side A defect, through the corresponding defect on Side 1. Using a protractor, I made the following observations: The projectile entered the wooden surface of side A at an upward obtuse angle of approximately 113 degrees. The projectile traveled right to left at an acute angle of approximately 68 degrees, exiting through Side 1. Nothing further to report.

TABLE 4

WebCode	Conclusions
Q4VE6U	The bullet entered the font of the box at an upward angle and traveled from right to left.
QLF64T	Collaborative Testing Services (CTS) requested Trajectory Analysis on a section of a partition wall (Exhibit 1).Suspected bullet holes were observed on both sides of the partition which have been prelabeled by CTS as "side 1" and "side A." Trajectory Analysis indicated that one bullet originated from side A, passed through the partition, and exited side 1. This shot is consistent with the shooter being located on side A and shooting towards the partition at a right-to-left and upward angle. No bullet was recovered from this shot. [Laboratory] does not report out angle measurements of suspected bullet holes.
QYZK8T	A wooden block (Exhibit 1) with suspected bullet holes was submitted to [Laboratory] personnel for Trajectory Analysis. Trajectory analysis indicated that one shot was fired through the wooden block (Exhibit 1). One bullet entered Side A of the wooden block, traveled through and then exited Side 1 of the block. This trajectory is from right to left at an upward angle, and is consistent with the shooter being located on Side A shooting upward through to Side 1 of the wooden block (Exhibit 1). No bullet or bullet fragments were recovered from this shot. [Laboratory] does not report out angle measurements of suspected bullet holes.
RC9KJC	I received a square piece of unvarnished and unpainted wood composed of six sides. Where two of the sides are marked as 1 and A. Though analysis and inspection of evidence and evaluation of the physical characteristics of the perforations, the following was determined. They are consistent with the passage of a fire bullet projectile. Side A, in trajectory from right to left, upward. With a vertical angle of 65 And a horizontal angle of 68 Angle of impact 43 degree
RF77AE	Item 1 had two defects that appeared consistent with damage from a projectile. The side labeled A appeared to be the entrance, and the side labeled 1 appeared to be the exit. A trajectory rod was placed, and measurements were taken. The projectile path was right to left and upward. Vertical Angle: 25 +/- 5 degrees Horizontal (Azimuth) Angle: 70 +/- 5 degrees The reported uncertainty of measurement (+/- 5 degrees) is generally accepted in the field of shooting reconstruction.
RG2PCG	Scale A- Entry, On side A of partition box; 2.31 inches up from bottom of partition box; 3.75 inches right from left side of partition box (side with arrow) Scale 1- Exit, side 1 of partition box; 3.63 inches up from bottom of partition box; 2.75 inches left from right side of partition box (side with arrow) Trajectory: 25° below the horizontal plane and 21° right of the vertical plane A projectile traveled from the exterior of side A of the partition and entered the partition at Scale A. The projectile travelled through the partition and exited side 1 of the partition at Scale 1.
RM4XGN	The bullet entered on side A of the wood block and traveled in a right to left, upward motion through the wood block and exited on side 1.
RNYGHP	The bullet perforated side “A” of the box, approximately 91mm below the top edge and approximately 99mm to the right of the left edge and exited side “1” of the box. The vertical angle of the bullet’s trajectory was 24.2° (± 2.6°) upward, and the azimuth angle was 68.9° (± 2.6°) from right to left.
RVL6FF	Damage to the wall, Exhibit 1, is consistent with having been caused by a projectile entering Side A and exiting Side 1 traveling at an upward angle in a right to left direction.
RXQQBT	The partition wall section had two labels adhering to different surfaces of the wall and an arrow that was located on a third side of the wall indicating the up direction. The labels read as follows: Test No. 25-5620 A. Test No. 25-5620 1. The side of the wall with the label that read “Test No. 25-5620 A” had a gray comet tail pattern surrounding a splintered, approximately circular hole. This hole was determined to be the entrance hole of the projectile. The opposite side of the wall had the label that read, “Test No. 25-5620 1.” This side of the wall had a larger splintered hole without gray material surrounding it. This hole was determined to be the exit hole of the projectile. A probe was placed through these two holes to illustrate the path of the projectile. The path of this projectile was determined to be upward and from right to left as one viewed the side of the wall labeled in part ‘A.’
RYLFBF	A in the entrance hole. The path of the bullet go from right to left by 68±5 degrees, and upward by 64±5 degrees

TABLE 4

WebCode	Conclusions
T3EW2E	Item AD is a wooden box with perforating bullet damage that entered on side A and exited on side 1. The bullet trajectory was upward twenty-four (24) degrees from horizontal and twenty-two (22) degrees from right to left.
T3V9MQ	The submitted section of wall (001-01) contains an entrance hole on side A. The bullet traveled through this section of wall in an upward trajectory from right to left. The horizontal (azimuth) and vertical angles of trajectory are approximately 69°and 26° respectively.
TBA2UF	The fired bullet entered in the sample and drill the hole A to exited through the hole 1. The trajectory of this bullet is upward with a 25° angle and from right to left with a 15° angle.
TDAAYQ	A section of a wall (Exhibit 1A) was submitted to the [Laboratory] personnel for Trajectory Analysis. The agency labeled the top of the wall as well as each side of the wall. Trajectory Analysis indicated that one shot was fired into the wall from the front. Shot A: One bullet originated from the front side of the wall (labeled A) and exited the back (labeled 1). This shot is consistent with the shooter being located on the front side of the wall shooting from right to left in an upward direction. No bullets were recovered from this shot.
TFNEWN	There was an entry bullet defect on Side “A” with bullet wipe around the defect. A corresponding exit bullet defect was on side “1”. The exit bullet defect had pieces of wood bending outward from the box. The path of the bullet associated with this defect was upward at a 24.4° ±2.6° angle and right to left at a 68.2° ± 2.6° angle.
TJ3C4B	Through analysis and inspection of the physical characteristics of the perforation, it was determined that is consistent with the passage of a fire bullet projectile. 1. A perforation on a wooden surface, oval-shaped, with physical characteristics of well-defined edges, located on the side identified as A, continuing through a wooden surface, irregularly shaped, with physical characteristics of irregular edge and wood detachment, located on the side identified with the number 1. The letter A follows a trajectory from right to left, upward, continuing and passing through a wooden surface identified with the number 1, with an impact angle of 62.77, a vertical angle of 64 and a horizontal angle of 68.
TQ2RXP	In my opinion: The trajectory of the bullet was: From Side 'A' to Side '1'. Right to left, at an angle of approximately 68 degrees relative to the timber box. Upwards, at an angle of approximately 27 degrees from the normal.
U44PBN	The bullet entrance hole is on the wall marked as "A", the exit hole is on the wall marked "1". The trajectory of the bullet is from right to left and upwards. The horizontal angle was measured from right to left as 69 +/-5 degrees and the vertical angle was measured as 28 +/- 5 degrees below the horizontal plane its diraction upwords is the reason for the + sighn.
U9ZC6C	Two apparent bullet defects were observed in the provided partition wall. The apparent entry defect was labeled D1, and located on Side A. The apparent exit defect was labeled D2 and located on Side 1. Trajectory reconstruction of path D1-D2 indicates vertical angle 62 degrees upward and horizontal angle 69 degrees right to left. Note: all trajectories are opinions. All vertical and horizontal angles were measured from the baseline OR all measures are approximate. Bullet trajectory reconstruction angle measurement analysis is not a service accredited by ANAB.
UTHJEK	References to projectile holes/impacts are based upon the context of the incident, their visual characteristics, and their locations. No chemical testing was performed unless otherwise stated. Any projectile holes/impacts described throughout this report are assumed to be related to the incident under investigation. Trajectory analysis was performed on reportedly a section of partition wall (wooden). An entry hole was identified on Side A, and an exit hole was identified on Side 1. The trajectory associated with this projectile’s travel is 67° from right to left and 26° in an upward direction.
VCRZXN	Bullet path, labeled A, traveled at an upward angle, from right to left.
VYPAJB	Examination of the submitted section of partition wall revealed the presence of two areas of damage consistent with the passage of a projectile. A defect with the characteristics of a bullet entry was present on side A of the wall with a corresponding exit on side 1. The path of the projectile was determined to be from right to left at approximately 68 degrees (+/- 5 degrees) from the surface of the wall and upward at approximately 27 degrees (+/- 5 degrees).

TABLE 4

WebCode	Conclusions
W2CBZJ	Trajectory measurements were determined for the bullet hole. The trajectory is side A to side 1, right to left, and upward.
W776WK	Defect A was a perforating bullet defect to side A and exited on side 1 of the wooden box. A trajectory rod was placed in defect A and the vertical angle measured 26.1 degrees +/-2.6 degrees upward and the azimuth angle measured 69.6 degrees+/-2.6 degrees to the left.
WMQVWJ	The defect in the partition wall is consistent with a bullet hole. The bullet path is from front to back (side A to side 1), right to left at 69 degrees and upwards at a 25 degree angle.
WN6G88	I examined the section of the wooden partition wall item 1 submitted and I identified two (2) holes in the partition wall. The side labelled "A" was identified as the entrance hole and the side labelled "1" was identified as the exit hole. The bullet travelled upward at a vertical angle of approximately 62 ±5 degrees with zero degrees being the base of the partition wall, and at a horizontal (azimuth) angle of approximately 68 ±5 degrees from the right to left.
WQTWWG	Bullet hole on side of box labeled "A", perforated box. Bullet is traveling from side "A" to side "1", right to left, and upward. Bullet wipe and lead in on right side of hole. Backside of hole material is blown out.
WUUVFL	Damage was observed on the section of partition wall. The nature of the damage indicates that a projectile perforated the wall, entering through the defect marked 'A' and exiting through the defect marked '1'. The projectile was travelling from right to left with upwards directionality when facing side 'A'.
X963KH	The trajectory was front to back (side A to side 1), right to left and upwards.
XFN9HP	The bullet associated with impact 1A enters on wall "A" and exits at impact 1b on wall "1". The path has an upward trajectory of approximately 24 degrees and a right to left trajectory of approximately 68 degrees. The distances and angles reported are used as a description and are not meant to be interpreted as a quantitative forensic result. Industry standard estimates a +/-5 degree variance from the stated angle measurement(s). (Haag, 2008)
XULFBK	Pathway A (including impacts A and A1) is consistent with a bullet traveling from side A to side 1, right to left, and in an upward direction.
Y22F7M	[Initials] 1 is a perforating entrance hole on side A of partition. [Initials] 1 has a vertical angle of approximately 25 degrees (+/- 5 degrees) upward and an azimuth angle of approximately 70 degrees (+/- 5 degrees) right to left travelling from side A to side 1. The projectile is travelling from [Initials] 1 (side A) to [Initials] 2 (side 1).
Y2K366	Analysis and inspection of the wooden box, and its evaluation, are consistent with the passage of a fired bullet projectile. Letter A, traveling from right to left and upward, passes through the number 1. It has an angle of impact of 59, a horizontal angle of 68, and a vertical angle of 64.
YEPHPF	A single perforating bullet hole is noted in the box. The trajectory associated with this hole is from side A to side 1 with a right to left and upward trajectory.
YTCKFK	Trajectory A: The projectile associated with Trajectory A perforated the wall (item 1). The projectile was traveling from side A to side 1 at an upward angle and from the right to the left when it struck the wall.
YXZCGL	Using a trajectory rod, I probed through the apparent bullet holes A1 and A2 to determine the apparent trajectory path. The trajectory for the apparent path (A) of the bullet had an upward angle, traveled from the right side of the wall to left side of the wall. I did not recover a bullet or metal fragment.
Z6EF4E	A bullet traveled through the partition wall, entering the side labeled “A” and exiting the side labeled “1”. The path of the bullet’s travel was upward and from right to left.
Z86JWL	Impact I-A is an entrance hole, and the bullet travelled from side A towards side 1, exiting at impact I-1. The bullet that created impact I-A travelled 25 degrees (+/- 5 degrees) upward, and 67 degrees (+/- 5 degrees) right to left from the surface of the partition. The distances and angles reported are used as a description and are not meant to be interpreted as a quantitative forensic result. Industry standard estimates a +/-5 degree variance from the stated angle measurement(s). (Haag, 2008)

TABLE 4

WebCode	Conclusions
ZH78NJ	Trajectory analysis indicated that one shot was fired into the partition wall (Exhibit 1). One bullet entered the side labeled A and exited the wall on the side labeled 1. This trajectory is from right to left at an upward angle, and is consistent with the shooter being located on side A of the wall shooting towards side 1. No bullet was recovered from this shot. This laboratory does not report out angle determinations.
ZKRQTM	A visual examination of the section of partition wall revealed a perforating defect. Lettered/ numbered scale 001-A was used to depict the location of what appeared to be an entry defect. Lettered/ numbered scale 001-A1 was used to depict the location of what appeared to be an exit defect.
ZRQDM8	I started the examination with general documentation and photographs. The sides of the box with the bullet holes were labelled “A” and “1” by CTS. The hole on side “A” was determined to be an entry hole due to the presence of bullet wipe and the clean appearance of the hole. Its relative location on the box was measured, and the approximate hole diameter was measured to be between 0.35” to 0.44”. The hole on side “1” was determined to be an exit hole based on its blown-out physical characteristics and damage to the wood. Its relative location on the box was measured. I then placed a trajectory rod through the bullet holes and measured its vertical and horizontal angle. The vertical angle was measured to show the bullet was travelling upwards at an angle of 24°. The horizontal angle was measured to show the bullet travelling leftwards at an angle of 21° as viewed from the shooter’s perspective. These measured angles were consistent with the results of the trigonometric determinations using the spatial positioning of the hole locations. The distances and angles reported are used as a description and are not meant to be interpreted as a quantitative forensic test result.
ZYQXMH	[No Conclusions Reported.]

Additional Comments

TABLE 5

WebCode	Additional Comments
3ANDN8	In the notes, the participant indicates that the horizontal angle was measured from left to right.
3FB7Y7	Horizontal angle: 111 degrees left to right or 69 degrees right to left
4ZRY2C	All reported azimuth and vertical angles were measured from fitted trajectory rods scanned using a Trimble X7 3D laser scanner. The reported uncertainty for azimuth and vertical angles measured from the trajectory rods is expanded using a coverage factor k=2 for a level of confidence of approximately 95%, assuming a normal distribution. The expanded uncertainty represents the uncertainty of the 3D laser scanning method of measuring azimuth and vertical angles from trajectory rods only.
69FCDG	Our lab uses 0-90-0 protractors.
6VUZ28	For our vertical angles we measure them where a perpendicular shot into the wall would be 0° and a shot parallel to the wall would be 90°.
6YFK8B	Bullet trajectories were assumed to have traveled in a straight line and were not considered to have been significantly affected by any intervening object. All reported azimuth and vertical angles were measured from fitted trajectory rods scanned using a Trimble X7 3D laser scanner. The reported uncertainty for azimuth and vertical angles measured from the trajectory rods is expanded using a coverage factor k=2 for a level of confidence of approximately 95%, assuming a normal distribution. The expanded uncertainty represents the uncertainty of the 3D laser scanning method of measuring azimuth and vertical angles from trajectory rods only.
6ZB39C	Our laboratory cannot report trajectory values, only directionality. The measurement of uncertainty is our unit's acceptable value, not an actual calculation.
7B39G2	Angle measurements are used for descriptive purposes only and are not quantitative forensic test results.
7NQDMC	The balistic orifice has an diameter of 6 mm on side (A).
8XVK3C	This laboratory does not report out angle measurements of shots.
9BWGZ6	Our lab doesn't report angles and therefore does not have an actual uncertainty of measurement for trajectory angles, which is why I entered +/-5 which is the generally accepted error rate.
9CB6ZB	Angles are not reported per our standard operating procedures, and our unit does not calculate uncertainty of measurements for angle determination, therefore the uncertainty of measurements fields are left blank.
A7277W	The results are shown from the point of origin of the shot and not based on the angle of incidence (which would be complementary)
AU47Q8	All reported azimuth and vertical angles were measured from fitted trajectory rods scanned using a Trimble X7 3D laser scanner. The reported uncertainty for azimuth and vertical angles measured from the trajectory rods is expanded using a coverage factor k=2 for a level of confidence of approximately 95%, assuming a normal distribution. The expanded uncertainty represents the uncertainty of the 3D laser scanning method of measuring azimuth and vertical angles from trajectory rods only.
BJJF68	Base of partition box not perfectly flat for this specific sample set. Could potentially influence accuracy of angle measurements.
BVCZLX	Surrounding the entrance hole is a gunshot residue mark in the shape of a right twisted vortex suggesting that a firearm with a right twisted barrel, (propably 6 grooves) was used to fire the bullet from a close distance.
FDKDD4	Side A of the box contains one apparent circular entry hole surrounded by apparent lead residue consistent with a bullet hole. Side 1 contains one apparent exit hole, irregular in shape, larger than the apparent entry hole on Side A, with splintering wood around the apparent exit hole, and free of apparent lead residue or bullet wipe.
GKU7XX	[Laboratory] does not currently report trajectory angle measurements.
J9UE6P	Participant noted that the horizontal angle was measured "from right edge".

TABLE 5

WebCode	Additional Comments
L4DWXR	Note: Positive vertical angles represent an upward trajectory while negative vertical angles represent a downward trajectory. In addition, horizontal angles were measured right to left (at defect A). Equipment used: Digital Protractor Model Pro 360: serial # 18071305 Plumb bob Bubble level 6" scale 1 trajectory rod Zero Edge protractor: serial # FA18
LCNVUN	There are two angles of incidence, the first in relation to the horizontal of the support plane and the second in relation to the middle line of the body (box).
P8F4TD	Bullet wipe visible on the entrance.
PFWHWH	The distances and angles reported are used as descriptors and are not meant to be interpreted as quantitative forensic test results.
PW6CNR	All reported azimuth and elevation angles were measured from the fitted trajectory rod scanned using a Trimble X7 3D laser scanner. The reported uncertainty for azimuth and elevation angles measured from the trajectory rod is expanded using a coverage factor of k=2 for a level of confidence of approximately 95%, assuming a normal distribution. The expanded uncertainty represents the uncertainty of the 3D laser scanning method of measuring azimuth and elevation angles from trajectory rods only.
Q4VE6U	The measurements of angles are not reported per our SOP. Our CSU does not calculate uncertainty of measurement for angle determination; therefore, the uncertainty of measurement fields are left blank.
QLF64T	The [Laboratory] does not report out angle measurements.
RC9KJC	Side A, Unvarnished and unpainted wooden surface, with an entrance perforation with the following characteristics. Circular hole, with regular smooth edges, in with a mark of an addition ring is observed on its edges. Side 1, Unvarnished and unpainted wooden surface, with an exit perforation with the following characteristics, circular hole irregular edges, absence and detachment of pieces around the perforation.
RG2PCG	All measurements are approximate and descriptive in nature and do not describe a test result. Measurement uncertainty was calculated for the following equipment used to determine and report trajectory measurements: +/- 0.06 for the tape measure, +/- 1 degree for the protractor(s), and +/- 0.3 degrees for the digital angle finder
RNYGHP	All reported azimuth and vertical angles were measured from fitted trajectory rods scanned using a Trimble X7 3D laser scanner. The reported uncertainty for azimuth and vertical angles measured from the trajectory rods is expanded using a coverage factor k=2 for a level of confidence of approximately 95%, assuming a normal distribution. The expanded uncertainty represents the uncertainty of the 3D laser scanning method of measuring azimuth and vertical angles from trajectory rods only.
RVL6FF	A bullet entrance hole with a diameter of 9x10mm was located on Side A of the partition wall with an associated exit on Side 1. The projectile path was determined to have a vertical angle of 24 degrees upward and a horizontal angle of 22 degrees from perpendicular traveling right to left.
RXQQBT	A larger projectile would be better suited for this type of proficiency test. A makeshift probe had to be used because the probes that came with the lab's commercially purchased trajectory kit were too large. This lab does not report measurements as an uncertainty of measurement budget has not been conducted for shooting incident measurements.
TDAAYQ	This lab does not report out angle determinations.
TFNEWN	All reported azimuth and vertical angles were measured from fitted trajectory rods scanned using a Trimble X7 3D laser scanner. The reported uncertainty for azimuth and vertical angles measured from the trajectory rods is expanded using a coverage factor k=2 for a level of confidence of approximately 95%, assuming a normal distribution. The expanded uncertainty represents the uncertainty of the 3D laser scanning method of measuring azimuth and vertical angles from trajectory rods only.
VCRZXN	Angles are not reported per our standard operating procedures. Our unit does not calculate uncertainty of measurement for angle determination; therefore, the uncertainty of measurement fields are left blank.
W2CBZJ	Measured azimuth from the left side of the trajectory rod. Vertical is 25 degrees, upward.

TABLE 5

WebCode	Additional Comments
W776WK	All reported azimuth and vertical angles were measured from fitted trajectory rods scanned using a Trimble X7 3D laser scanner. The reported uncertainty for azimuth and vertical angles measured from the trajectory rods is expanded using a coverage factor k=2 for a level of confidence of approximately 95%, assuming a normal distribution. The expanded uncertainty represents the uncertainty of the 3D laser scanning method of measuring azimuth and vertical angles from trajectory rods only.
YTCKFK	Number 3 [Table 3: Angle Measurements] was not answered because my lab does not report angle measurements.
Z6EF4E	Our agency is currently not reporting numerical angle determinations in our analytical reports.
ZH78NJ	Per our policy and procedures, our laboratory does not report angles.

-End of Report-
(Appendix may follow)

Collaborative Testing Services ~ Forensic Testing Program

Test No. 25-5620: Shooting Reconstruction - Angle Determination

DATA MUST BE SUBMITTED BY **Oct. 27, 2025, 11:59 p.m. EDT** TO BE INCLUDED IN THE REPORT

Participant Code: U1234B WebCode: 73CLUB

Scenario:
Investigators have submitted a section of a partition wall in which a shooting took place. They are asking you to conduct your analysis using your laboratory's procedures.

Please note:

-For this exercise, the partition box contains a stamped arrow on the side for orientation purposes.

-The sample has been labeled with two different characters (A and 1) in which participants can use as reference in reporting.

-Make sure to place the sample on a flat surface when measuring angles.

Items Submitted (Sample Pack AD):
Item 1: A section of the partition wall which contains one entrance hole and one exit hole.

1.) Which label on the box represents the entrance hole?

○ A ○ 1

2.) What is the direction of travel of the bullet through the box?

(Left/Right)	(Up/Down)

3.) Please record your angles below. (If the angle type below differs from your normal terminology, you may use your preferred terminology in the conclusions section of the data sheet.)

Angle Type (i.e. Azimuth, Vertical, Horizontal)	Angle Measurement (in degrees)	±Uncertainty (in degrees)
a) Horizontal (Azimuth)		
b) Vertical		

c) (Optional) If your laboratory uses a protractor model, as a type of convention scale to measure azimuth (horizontal) angles, please select the model type.

4.) What would be the wording of the Conclusions in your report?

Note: *Please use appropriate punctuation to indicate the end of sentences, sections, and statements in the free-form space below. Extra spacing and returns used for separation within your text will not transfer and may cause your information to be illegible in the Summary Report. The use of lists and tabular formats to deliver information is also cautioned against, as these do not transfer.*

5.) Additional Comments

Note: *Please use appropriate punctuation to indicate the end of sentences, sections, and statements in the free-form space below. Extra spacing and returns used for separation within your text will not transfer and may cause your information to be illegible in the Summary Report. The use of lists and tabular formats to deliver information is also cautioned against, as these do not transfer.*

RELEASE OF DATA TO ACCREDITATION BODIES

The Accreditation Release is accessed by pressing the "Continue to Final Submission" button online and can be completed at any time prior to submission to CTS.

CTS submits external proficiency test data directly to ANAB and/or A2LA. Please select one of the following statements to ensure your data is handled appropriately.

- ○ This participant's data is intended for submission to ANAB and/or A2LA. (Accreditation Release section below must be completed.)
- ○ This participant's data is **not** intended for submission to ANAB and/or A2LA.

Have the laboratory's designated individual complete the following steps
only if your laboratory is accredited in this testing/calibration discipline
by one or more of the following Accreditation Bodies.

Step 1: Provide the applicable Accreditation Certificate Number(s) for your laboratory

ANAB Certificate No.

A2LA Certificate No.

Step 2: Complete the Laboratory Identifying Information in its entirety

Authorized Contact Person and Title

Laboratory Name

Location (City/State)