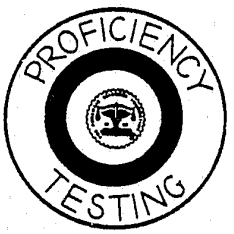
LABORATORY PROFICIENCY TESTING PROGRAM

REPORT NO. 21

FIREARMS EXAMINATION



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NCJRS Acquisitions / SNI

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The enclosed 21 reports are to be added to the data base, made available on loan and included in the microfiche collection. The final report that includes this data will be printed in the near future. Lavonne Wimke will be in touch regarding the SNI announcement. SNI could should indicate the availability of these documents - for those wishing further detail. Thanks

John Conrad

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FOREWORD

The analysis summarized in this report is the twenty-first of a series that will be made in conjunction with this proficiency testing research project.

In the course of this testing program participating laboratories will have analyzed and identified different samples of physical evidence similar in nature to the types of evidence normally submitted to them for analysis.

The results for Test Number Twenty-one are reflected in the charts and graphs which follow.

The citing of any product or method in this report is done solely for reporting purposes and does not constitute an endorsement by the project sponsors.

Comments or suggestions relating to any portion of this report or of the program in general will be appreciated.

May 1977

BACKGROUND

This laboratory proficiency testing research project, one phase which is summarized in this report, was initiated in the fall of 1974.

This is a research study of how to prepare and distribute specific samples; how to analyze laboratory results; and how to report those results in a meaningful manner. Information is being collected for research and statistical purposes only. Such information will not be revealed or used for any other purpose. Information furnished by any person or agency identifiable to any specific person or laboratory will not be revealed or used for any purposes, other than the research and statistical purposes for which it was obtained.

Participation in the program is voluntary. Accordingly, invitations have been extended to 238 laboratories to share in the research. It is recognized that all laboratories do not perform analyses of all possible types of physical evidence. Thus, in the data summaries included in this report, space opposite some Code Numbers (representing specific laboratories) may be blank, or marked "No Data Returned".

Additional evaluations of individual tests will be published in a separate report.

The Project is under the direct control of the Project Advisory Committee whose members' names are listed on the Title Page. Each is a nationally known criminalistic laboratory authority.

Supporting the Project Advisory Committee in their efforts is the Forensic Sciences Foundation with additional support from the Collaborative Testing Services, Inc., Vienna, Virginia in the area of statistical presentation.

SUMMARY

In this test, each of 123 laboratories were sent firearms examination samples consisting of three bullets which were marked as noted in Table 1. Participants were asked:

> Which, if any, of the three projectiles were fired from the same gun?

Of the 123[1] laboratories, 88 responded with data, one laboratory does not perform firearms examination, and 35 did not respond. This represents a participation rate of 71%.[2]

The information contained in the tables consists of the following:

Table 1 - Firearms Sample Characteristics
Table 2 - Referee Laboratory Response
Table 3 - Summary of Responses to Question 1
Table 4 - Summary of Laboratory Responses

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[1]Laboratories who previously indicated they did not perform Firearms Examinations were not sent samples thereby reducing the roster for this Test Sample to 123.

[2]Participation Rate Calculation:

$$\frac{\text{Number Responses With Data}}{\text{Total Number of Samples Sent} - \text{Number of "Do Not Do" Replies}} \times 100 = \text{Participation Rate (\%)}$$

ANNEX A

FIGURE 1.

LAB CODE _____

☐ CHECK HERE (AND RETURN) IF YOU DO NOT PERFORM FIREARMS EXAMINATION

DATE RECEIVED IN LABORATORY_____

DATE PROCESSED IN LABORATORY_____

DATA SHEET

PROFICIENCY TESTING PROGRAM
TEST #21

FIREARMS EXAMINATION

Examine according to your normal laboratory procedures and complete portion(s) below which complies with your laboratory policy.

All bullets are marked with a letter on the base; the wrapping for each bullet is also marked with the same letter as appears on the base of the bullet.

1. BULLET COMPARISONS

   a. Which, if any, of the three projectiles were fired from the same gun?

   ☐ None

   ☐ Projectiles fired from same gun
   (List letters)

   _____

   _____

   _____

   ☐ Inconclusive
   Explanation of inconclusive answer:

2. Additional Comments:

Table 1

Firearms Sample Characteristics

The firearms sample can be characterized according to the sample manufacturer as follows:

"The copper-jacketed bullet (marked on the base with any one of the following letters assigned on the basis of random selection: A, B, C, D, E, F, G, H, J, K, L, O, P, Q, R, S, T, U, V, Y) was fired from a Wilkinson .25 Auto pistol, Diane Model, Serial Number 00386. A total of 127 rounds were fired in seven groups.

The copper-jacketed bullets (marked on the base with any one of the following letters assigned on the basis of random selection: I, M, N, X, Z) were fired from a second Wilkinson .25 Auto pistol, Diane Model, Serial Number 00113. A total of 263 rounds were fired in six groups.

The two barrels used were rifled within 10 of each other."

Note: Laboratories were sent one bullet from the group A, B, C, ...Y and two bullets from the group I, M, N, X, Z.

Table 2

Response of the Referee Laboratory

1. Projectiles fire from same gun --
   M, N

2. ADDITIONAL COMMENTS:

Specimens "C", "M" and "N" are .25 Auto caliber bullets of Winchester-Western manufacture. It is pointed out that bullets such as these have been loaded into cartridges bearing the trade names Federal and Browning.

Specimens "M" and "N" were identified as having been fired from one weapon.

Although specimen "C" bears rifling impressions such as those in "M" and "N", nothing was found to indicate that "C" had been fired from the weapon which fired "M" and "N". There are some microscopic marks of possible value on "C" for comparison purposes.

Among the weapons which produce rifling impressions such as those in "C", "M" and "N" are Astra, Colt, PAF "Junior" and Raven Arms Company.

Table 3

Summary of Responses to Question 1

Question 1: BULLET COMPARISONS - Which, if any, of the three projectiles were fired from the same gun?

Response	Number of Labs Giving Response	% of Labs Giving Response
Identified only the two projectiles which were actually fired from the same gun	57	64.7
Correctly identified the two projectiles fired from the same gun. Inconclusive on the third projectile.	18	20.4
Stated all three projectiles were fired from the same gun.	5	5.7
None	3	3.4
Inconclusive	5	5.7
Total	88	100

Table 4

Summary of Laboratory Responses

Lab Code	Response	Lab Code	Response
003	X, I Inconclusive G	462	Inconclusive
010	N, X	464	M, N
014	X, M Inconclusive R	481	X, Z
026	I, N	482	Z, I
039	X, N	485	I, N
069	I, Z	486	N, X
112	X, N	513	Z, X
118	X, M	525	I, N Inconclusive F
123	M, N	527	X, N Inconclusive R
136	X, N	532	I, X Inconclusive B
149	None	545	X, I Inconclusive D
180	X, M	556	M, X Inconclusive D
187	M, X Inconclusive P	568	N, M Inconclusive J
190	N, X	583	I, X
202	I, X	595	M, X
218	N, X	603	X, Z
225	X, Z	613	I, X
239	X, Z	625	I, O, N
269	X, Z	628	Inconclusive
306	M, I	629	F, X, Z
314	M, Q, Z	633	X, Z
321	M, X Inconclusive L	634	Inconclusive
333	Inconclusive	648	X, Z
334	Inconclusive	658	M, X
349	I, M	680	X, I
350	M, N	690	X, N
351	I, Q, X	711	None
362	N, X	726	N, M Inconclusive F
372	X, Z	745	X, M Inconclusive R
410	I, Z	748	X, M
424	N, M	751	N, Q, X
429	M, N	762	X, M Inconclusive D
434	N, X Inconclusive R		

Table 4 (Continued)

Lab Code	Response
763	X, N
767	N, X
789	N, X
795	M, X Inconclusive V
796	None
808	N, X
827	M, N
832	X, I Inconclusive H
842	N, X
852	N, X
853	X, N
857	Z, X
865	M, N
905	M, X
922	X, M
926	X, Z
931	M, X
933	I, M
942	N, X
959	M, N Inconclusive U
968	X, M
980	M, X Inconclusive D
991	X, Z