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| | Document Manager: Andrew Carriveau | Approved By: Ryan Larrison |

6.0 National Integrated Ballistic Information Network (NIBIN™)

6.1 Introduction

Integrated Ballistics Identification System (IBIS) is a computerized database and imaging system that captures digital photographs of fired cartridge cases. IBIS captures digital images of breech face, firing pin and ejector marks on fired cartridge cases. After the image(s) has been captured the information is then stored in the database. Through a process of technical algorithms, IBIS uses data filters such as caliber, firing pin shape, and date of incident to create a list of viable candidates. A Forensic Technician or Firearm Examiner can then view the images and compare the images to the other candidates. Exhibits shall be entered in a timely manner. In most cases this will require the technician to make daily entries. If the examiner who is processing a case is trained in NIBIN acquisitions he or she shall enter the exhibit(s) as soon as possible. Correlated images shall be viewed within 48 hours of entry to not create an unnecessary delay in identifying a possible association. If a possible association is found during this screening process, a NIBIN Investigative Lead form shall be completed. If the submitting agencies find it necessary to confirm the lead information, a Firearms Examiner, utilizing traditional comparative microscope techniques will then compare the evidence and generate a report.

6.2 Safety Considerations

Examinations performed in the Firearm and Tool mark Section are inherently hazardous. These examinations involve hazardous chemicals, firearms, ammunition, and power tools. All hazardous procedures must be performed in compliance with the Laboratory Operations Manual and the Health and Safety Manual.

6.3 Preparation

Specimen Preparation - Preparation techniques will be followed in accordance with the Laboratory Operations Manual.

6.4 Instrumentation

IBIS BrassTrax HD3D

IBIS MatchPoint +

6.5 Minimum Analytical Standards and Controls

6.5.1 Standards

Entry standards are in accordance with the IBIS BrassTrax HD3D training guide.

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6.5.2 Controls

- A quality control cartridge (2P3214 SRM2461-024 see The National Ballistics Imaging Comparison Project) is acquired and correlated as necessary to verify the system algorithm.
- User performance may be tested using internally created samples of various caliber fired cartridge cases. Users will be asked to enter a sample or samples to be checked against standards entered by the Technical Leader or designee.

6.6 Procedure for the acquisition of fired cartridge cases into IBIS

Fired cartridge cases from semiautomatic pistols and rifles collected from crime scenes or through test firing firearms submitted to the laboratory are entered into the IBIS/NIBIN database. There are times when the main purpose for submitting the fired cartridge cases is for IBIS entry only. Typically, these cases do not involve a suspect and victim. Many times, there is an associated victim but the suspect remains unknown. There are also cases where the court proceedings have concluded and the complete analysis of a case is no longer necessary, but entry into the NIBIN database may provide information in an unrelated case. In these instances, entering a representative item from submitted fired cartridge cases may provide a link to a possible suspect or suspect firearm and timeliness of entry and a confirmed association are the most important functions the Firearms Unit can perform.

When cases, have no suspect or no suspect and victim listed on the RFLE or have no associated firearm submitted for comparison, the Firearms Examiner shall complete an IBIS Only Exam. Additionally, if the case submitted has a suspect listed but a full analysis will not be necessary for court purposes, the examiner shall select an IBIS Only Exam as the most appropriate procedure. This decision is in accordance with LOM 4.1.2.2.4. This exam will not provide the agency with any definitive conclusions..

Considering the total number of fired cartridge cases submitted and through a process of evaluating the class characteristics which include the caliber, firing pin shape, aperture shape, ejector shape and position, gross breech face impressions or marks, and other marks or characteristics that the Firearms Examiner determines to be of value, an item or items may be submitted for entry into the NIBIN database.

Fired bullets submitted in cases where an IBIS Only Exam is being used should not be processed unless approved by the unit supervisor. For cases where no suspects are listed and the only evidence submitted is fired bullets, the same process applies.

6.6.1 IBIS Only Exam

- Firearms Examiner receives the case and determines if it meets any of the below criteria for an IBIS Only Exam:
 - IBIS only request by submitting agency, and:
 - Has no suspect listed
 - A complete exam is not necessary for court purposes
 - Has no previously submitted fired evidence or firearms of the same caliber
 - All cases with no suspect listed on the RFLE, regardless of file class
 - All cases with a file class of 9800-8, Found Property

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- Adjudicated case with a plea or guilty verdict. Cases dismissed prior to any analysis are not eligible. Refer to 4.1.7.1.2 of the Laboratory Operations Manual.
- The evidence is recorded in Forensic Advantage and marked in accordance with 4.3.1 of the Laboratory Operations Manual.
- Fired cartridge cases are evaluated based on class characteristics, number of submitted fired cartridge cases and/or other marks that the Firearms Examiner determines to be relevant.
- If, during the evaluation process, the Firearms Examiner finds it necessary to microscopically examine and evaluate differences or similarities in individual characteristics for the purposes of either separating items into groups or to include all items in a single group a complete firearms comparison examination shall be completed.
- Upon completion of the evaluation, the Firearms Examiner may have one or more groups of fired cartridge cases. A single item from each group that displays sufficient characteristics for entry into the NIBIN database will be submitted to the IBIS Technician or NIBIN trained Firearms Examiner for entry.
- The information from the evaluation shall be recorded in a worksheet in Forensic Advantage. It shall be clearly communicated in this worksheet that the items were evaluated for IBIS entry only and that no comparison examination was conducted.
- The Firearms Examiner shall complete an IBIS Only Exam report. The content of the report can be found in the Firearms/Tool marks Procedure Manual, section 11.0 Reporting of Results.

6.6.2 Firearms examiner

- Firearms examiner receives firearms and/or fired cartridge cases
- Firearms evidence is examined
- Firearms are test fired
- Fired cartridge cases and/or test shots are turned over to Forensic Technicians or NIBIN trained Firearms Examiner. An electronic Chain of Custody shall be maintained in Forensic Advantage for all items transferred to storage for NIBIN entry. If the entry is made in conjunction with the case processing, and in the presence of the examiner, a notation in the worksheet for the date and time of entry will be sufficient.
- Selected fired cartridge cases will be acquired.

6.6.3 Forensic Technician

- Forensic technician receives firearm or a single fired cartridge case
- Firearms are test fired
- Class characteristics and head stamp markings for the single fired cartridge case are recorded in a "Not Analyzed" worksheet in Forensic Advantage
- Fired cartridge cases and/or test shots are evaluated for entry into IBIS BrassTrax 3D
- Cartridge cases must have sufficient individual characteristics within the firing pin impression and/or within the breech face marks to be able to make an identification
- Selected cartridge cases are acquired

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- Correlations lists that result in a NIBIN Lead being sent, or a hit confirmation where no lead was sent are printed, dated, initialed, and placed into the Object Repository. Correlations lists that do not result in a NIBIN Lead or hit confirmation do not need to be retained. Note that whoever approves the items in the OR does not have to initial them as the electronic approval is sufficient.

6.7 Procedure for test fired ammunition

6.7.1 Definition Test Fired Ammunition (Test Shots)

Test fired ammunition (Test Shots) constitutes all components of ammunition (e.g. fired bullets, fired cartridge cases) that have been discharged in a suspect firearm

6.7.2 Definition Test Fired Ammunition as Examination Documentation

All test fired ammunition components generated within the laboratory are to be considered evidence and documented within Forensic Advantage. This documentation will include the date and time the test shots were created and the Container and Item identifiers. This will create a complete Chain of Custody. As such, the above items will be marked with Laboratory number, initials and a unique identifier, protected from loss, cross transfer, contamination and/or deleterious change (during the current examination process). After completion of the current examination process, test fired ammunition components will be sealed, initialed, and stored in a secured area. Test fired ammunition used for comparison purposes shall be identified in the report with the Item Number of the firearm the test fired ammunition was obtained from.

6.7.3 Test-fired ammunition return

All test-fired ammunition generated within the laboratory are to be placed into the appropriate test-shot envelopes, sealed with evidence tape, initialed and returned to the submitting agency. Test fired ammunition should be retained, at a minimum, until the NIBIN correlation is complete. To reduce the turnaround time in confirming a potential association it may be necessary to retain the test shots locally for a period, not to exceed 6 months.

6.8 NIBIN Investigative Lead

6.8.1 Definition

A NIBIN Investigative Lead is information of an unconfirmed association of exhibits entered into the database that is identified as the result of the normal correlation process. This information is used by the investigating agencies for informational purposes only and cannot be used for any court purposes or as probable cause for search or arrest warrants. Leads remain unconfirmed unless the Investigating Officer from one or both cases requests that they be confirmed. The resubmission of evidence is the responsibility of the investigating officers. If the cases being confirmed are from two different agencies, the requesting agency is responsible for coordinating resubmission of all evidence.

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Agency requests for 1 to 1 comparisons, requests where another item is a suspected “hit”, reviewing a previously viewed correlation due to additional information on a possible association or any time where the Match Point system is used to compare two specific items do not qualify as investigative leads. In these instances, a NIBIN Investigative Lead form shall not be sent. A traditional comparison by a qualified firearms examiner shall be completed for these types of requests.

6.8.2 Reporting

If, during the correlation process, the Forensic Technician identifies a possible association, a Firearms Examiner shall be consulted. If it is determined that the characteristics of the items exhibit sufficient similarities, the Technician shall:

- Complete an MSP NIBIN Investigative Lead form. The Technician and Examiner shall sign the form.
- Electronically send the completed form to the Investigating Officer for all agencies that have a possible association listed. And to the Bureau of Alcohol, Tobacco, Firearms and Explosives.
- The form shall be sent the same day that the lead is identified.
- Upload a copy of the form into the Case Object Repository and note in either the Communication Log or Case Details in Forensic Advantage that a NIBIN Lead has been identified.
- Link the exhibits in the NIBIN database and note each as being an "Unconfirmed NIBIN Lead".

6.9 Hits

6.9.1 Definition

A hit happens when a Firearm Examiner, using a traditional comparison microscope, confirms a possible association between two separate case exhibits that were identified through the IBIS process.

6.9.2 Reporting

- A report shall be generated for all comparisons whether the items were identified, eliminated or deemed inconclusive by the Firearms Examiner.
- Reports should list the local ATF Crime Gun Intelligence Coordinator as a carbon copy recipient.

6.10 Calibration

- Calibration automatically performed on a default schedule is as follows:
 - After 50 acquisitions for the zoom
 - After 300 acquisitions for the zoom backlash
 - After 300 acquisitions for the camera gain
- The test and calibration results are available in the Test and Calibration folder electronically stored in BrassTrax 3D

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6.11 Logs

6.11.1 Hit

- An electronic hit log will be kept recording all hits determined to be an identification by a Firearms Examiner
- The log will include lab number, agency number and exhibit numbers for the reference and evidence.

6.11.2 Support and Technical Issues

- A support and technical issues log will be kept recording any issues related to IBIS. The log will include the person initiating the phone call, the date, time, HEAT ticket number, the technician assigned to the problem, what type of issue(s) are causing the problem, what actions were taken and what day and time the issue(s) was resolved

6.11.3 Cartridge case entry log

- A log will be kept documenting all fired cartridge cases entered into IBIS BrassTrax HD3D
- The log will include date acquired, lab number, exhibit number, caliber, initials of acquiring technician, date correlated and the initials of the technician performing the correlation

6.11.4 NIBIN Lead

- A log will be kept documenting all NIBIN Lead forms that have been sent. This may be a paper or electronic log.
- If the Technician chooses to keep a paper log, it should include each individual log form sent. If an electronic log is kept, an FS-112 may be used and no copy of the original lead is needed. Whichever method is chosen, the log should be separated by month.

6.12 IBIS User Performance Monitoring

Performance monitoring for IBIS users will consist of utilizing the Proficiency Test feature of the Brass Trax/Match Point Plus system. Internally created exhibits will be entered into the database by the Technical Leader and Users will enter one or all of the same exhibits. Areas that will be scored automatically by BrassTrax and/or Match Point are:

- Outline
- Region Similarity
- Relative Translation
- Relative Rotation
- Light
- Focus

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The samples for entry will be provided to the user by the Technical Leader or designee. Once the User has completed the entry or entries, the Technical Leader or designee along with the user will review the case.

The following procedure shall be followed by each user in completing the test.

Entry

1. Case Number will be your lab alpha prefix followed by "Evaluation", year, and your initials.
2. Event Type will be "Quality Control".
3. Supervisor can be either blank or yourself.
4. Occurrence Date should be today's date.
5. For the Originating Agency information:
 - a. Name: Unknown
 - b. Contact: FTI
 - c. Reference: blank
6. Comments can contain information you feel appropriate or left blank
7. Cartridge Case Details:
 - a. Exhibit Number: "EX-MSP PROF" plus the corresponding number and your initials.
8. Caliber, Make and Firing Pin Shape should be reflective of the item you're entering.
9. Submit and Synchronize your case.

Setting User Exhibits

1. The reference exhibits are stored in the data concentrator. Once your exhibits are entered, the second portion of the evaluation will be completed in MatchPoint.
2. Within your evaluation case in MatchPoint, right click on the exhibit to be used and select "Set as Proficiency Test Exhibit".
3. Locate the corresponding MSP PROFICIENCY case (1, 2, 3...) and expand it to view the exhibit(s)
4. Right click the corresponding exhibit (EX-MSP PROF #) and choose "Set as Proficiency Test Reference Exhibit".
5. Click the red proficiency test icon (red ribbon) in the top menu bar. The Proficiency Test window should open and your name should be in the Student Name Section. If not, you must log out of MatchPoint and log back in with your own credentials.
6. Select Generate, then Print.
7. Review your results with the Technical Leader or designee.

Note that the term "Proficiency Test" used within this section is done to be consistent with terminology used by Ultra Forensics within the Brass Trax and Match Point Plus systems.

6.13 References

IBIS BrassTrax HD3D

IBIS Matchpoint+