SUBJECT	SERIAL NUMBER RESTORATION PROTOCOL

14.0 Serial Number Restoration Protocol

14.1 Make note of the position of the serial number area on the firearm.

14.2 Search for areas on the firearm that may have duplicate or hidden serial numbers.

14.2.1 Use available reference material such as the Firearms Reference Collection and Firearm Serial Number Structure Guide (contained in the BATF Serial Number Restoration Course Manual) to assist in locating any duplicate or hidden serial numbers and in determining the possible serial number format (i.e. number and type of characters expected).

14.3 Examine the obliterated serial number area visually and microscopically.

14.3.1 Note the method of obliteration.

- Scratched
- Gouged
- Ground/sanded/other abrasive
- Drilled
- Engraved
- Punched
- Peened/hammered
- Other

14.3.2 Note any discernible characters and the position of these characters prior to any processing.

14.4 Processing

14.4.1 If necessary, use a rotary grinding tool with a soft polishing stone attached (or other appropriate method) to polish/smooth out the obliterated area.

- Note any discernible characters and the position of these characters after polishing/smoothing.

SUBJECT	**SERIAL NUMBER RESTORATION PROTOCOL**

Initials_____

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14.4.2 Determine the serial number medium physical property (i.e. magnetic or non-magnetic) and select the appropriate restoration method to use:

Magnetic Particle Inspection Method

- The Magnetic Particle Inspection Method is a non-destructive technique and should be utilized first, if appropriate.
- Using a plastic pipette, apply magnetic particle solution (Magnaflux bath) to the serial number area while applying a magnetic field through the use of either the horseshoe magnet or electro-magnetic yoke.
- It may be necessary to use magnetic particle method in conjunction with chemical processing to effectively restore the serial number.
- Note the method(s) used, any characters that become discernible, and the position of these characters.

Chemical Processing Method

- Refer to the following guide for the appropriate chemical solution:

For Use on Magnetic Media (i.e., steel):

- Fry's Reagent
- Turner's Reagent
- Davis Reagent
- 25% Nitric Acid

For Use on Non-Magnetic Media (i.e., aluminum):

- 10% Sodium Hydroxide
- Ferric Chloride

- Acidic Ferric Chloride
- 25% Nitric Acid

Dilute the chemical solution with distilled water as necessary depending on metal composition and hardness.

- Test the strength of the chemical solution in an area adjacent to the polished serial number area. Ideally, the solution should not bubble or fizz when it comes in contact with the metal, but the area should slowly darken due to oxidation. Increase or decrease the concentration of the solution as appropriate.

- Apply the solution slowly by pipette, cotton-tipped swab, or other appropriate method. Gently rub across the area with a cotton-tipped swab as necessary.

- If characters appear, distilled water may be applied to the area to slow and/or stop the oxidation process and allow for examination.

- Note the method(s) used, any characters that become discernible, and the position of these characters.

14.4.3 Continue processing until the complete serial number is restored or the examiner concludes that no serial number or no complete serial number can be restored.

14.5 If a serial number is restored, the examiner should have the restored serial number searched through the National Crime Information Center (NCIC) Stolen Gun Files.

14.5.1 If an entry is found that matches the description of the firearm (make, caliber, model, etc) and the restored serial number, the examiner should, in the lab report, notify the submitting agency that a possible hit was made in the NCIC Stolen Gun Files and that the submitting agency should contact the agency that made the entry into NCIC and confirm or not confirm the possible hit.

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