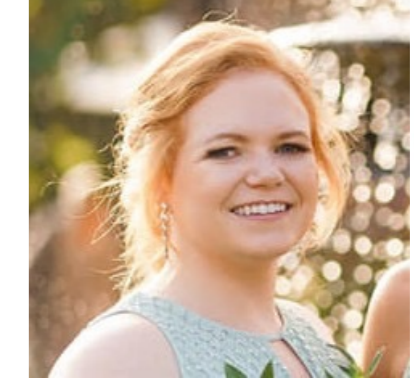




Methodology to Support the Generation of Firearm Obliteration Profiles

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Significance

This methodology was created to support the identification of firearms obliteration trends seen around the world. Having an established methodology is critical to understand the prevalence of obliteration techniques in various regions. The techniques used may reflect the forensic awareness and technical capability in an area, while the profiles allow an obliteration reference database to be established.

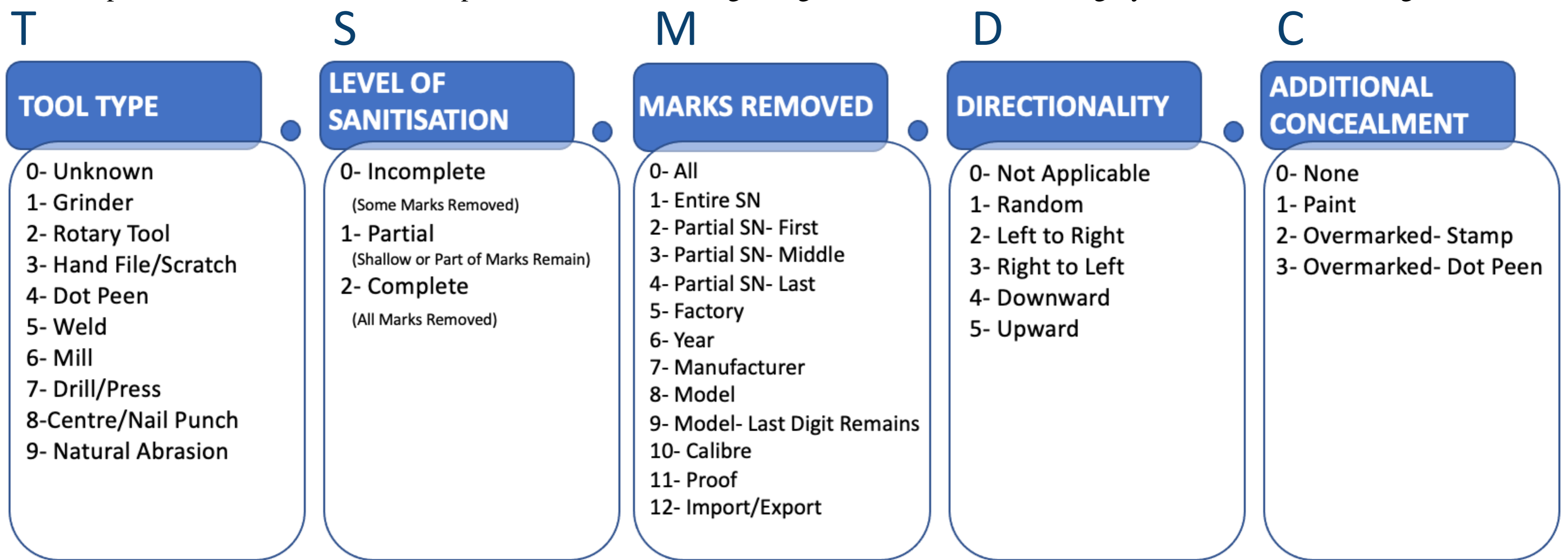
Methodology

The below flowchart methodology is proposed for this type of obliteration analysis.

1. The obliterations are separated first by tool type used to create the obliteration. These categories are denoted under the code prefix "T".
2. The level of sanitisation of the obliterations are recorded. The level of sanitisation is under the code prefix "S".
3. The marks removed must be identified. "M" is the code prefix.
4. The directionality of the obliteration, relative to the barrel, is noted under the prefix "D".
5. Any additional concealment is considered. This is denoted by "C" in the code prefix.

Considerations:

- A full sanitisation requires every identifying mark to be removed from the weapon and is considered "complete".
- Where multiple marks are removed, a "/" is placed between the designating numbers in the "M" category, which are in ascending order.



Examples

T1.S0.M2.D4.C0

The first digits of the serial number have been removed using a grinder, from the upper edge downward.

T3.S0.M1/8.D1.C0

This weapon has the serial number and model removed by scraping using a hand tool in an inconsistent (random) direction,

T1.S0.M5/9.D1.C0

The factory and model have been removed side to side with a rotary tool, however the last digit of the model and the entire serial number remain intact.

T6.S1.M1/7.D3.C0

This weapon had the serial number and manufacturer obliterated using a milling machine, from left to right.

T5.S1.M1.D2.C0

The serial number was completely removed by welding, from the left to right.

T4.S1.M1.D0.C0

This serial number was obliterated using an "X" pattern on a dot peen machine.

Conclusions

The development of the above methodology has aided the identification of obliteration profiles. Conflict Armament Research, for example, has begun implementing this coding system in their Standard Operating Procedures during obliteration investigations. This will, in turn, inform future research where obliteration trends and profiles differ around the world. There is potential that it will grow and alter as obliterations are investigated and new methods, tools, or signatures are explored. In future work, these codes will be used to create a reference library for investigators.