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Our Ref: DSTL/LR122033  
Your Ref: DSTL/TR117685

Date: 30 March 2020

Dear [REDACTED],

## **TASER 7™ Assessment: Comments on performance observations**

### **Summary:**

Assessment of, and observations on, the TASER 7™ have previously been reported to stakeholders by Dstl [1][2]. In addition, the College of Policing has conducted a short trial to assess the implications of the Dstl work [3]. Information from these sources will be used by:

- The College of Policing to develop an updated training package for the TASER 7™
- SACMILL to assess the medical implications surrounding use of the TASER 7™

As a result of this work the College of Policing has developed a training package that includes:

- modified tactics to address the different operational range with the TASER 7™ compared to other devices,
- the acceptance and actions in the event of trapped ejectors,
- the acceptance and mitigation of free-flying probes,
- accounting for the increased safety lever and trigger forces.

The reduced accuracy of the TASER 7™ is accounted for in training and qualification in that users will still have to prove a level of accuracy and the police are likely to accept a greater dispersion of probes.

In addition, previously noted errors in the labelling of devices for the UK market seemed to have been addressed.

### **Background**

Home Office SSI tasked Dstl to conduct an assessment of the TASER 7™. The full assessment is provided in Reference [1] and a number of observations of concern were

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provided to the stakeholders at Reference [2]. These observations, identified during the testing, had the potential to affect the performance of the TASER 7™ in operational use. Additionally, if considered as part of a Scientific Advisory Committee on the Medical Implications of Less Lethal Weapons (SACMILL) assessment, these observations were judged by Dstl as risking unfavourable comments in comparison with the current systems in use. To understand the issues further, the College of Policing conducted a trial to examine whether mitigation of the issues highlighted in Reference [2] was possible. The College of Policing trial is reported in Reference [3] and this letter report provides a Dstl assessment of the residual concerns to the successful introduction of the TASER 7™ into UK policing service. The following paragraphs summarise each observation starting with a precis of the issue followed by a discussion of the mitigation and current position. Each paragraph closes with a comment, in bold text, on whether the observation has been addressed and the mitigation that is proposed.

#### **Operational range:**

*At a firing distance of 3 m, the TASER 7™ fitted with the Close Quarter cartridge showed a higher miss rate than the X2™. This was in part due to the increased probe separation of the TASER 7™ increasing the likelihood of the lower probe missing the legs of the target coupled with any twisting of the device being amplified by the greater separation. The Close Quarter cartridge will provide a greater chance of achieving NMI than the X2™ at ranges less than 2 metres but without mitigation it could reduce the comparative effectiveness at ranges greater than approximately 3 metres due to the increased risk of failing to achieve a two probe strike.*

At the recent National Police Chiefs' Council (NPCC) Covert CED meeting the College of Policing proposed that officers could mitigate this problem by dynamically closing the distance between the target and the officer and emphasising in training the different operational probe spreads. Reflection of this in the final training package provided to SACMILL may provide the re-assurance that this particular issue has been addressed.

**Dstl comment: This observation was not intended to be addressed in the College of Policing trial. Mitigation will be via an updated training package from the College of Policing.**

#### **Accuracy:**

*A high proportion of users reported accuracy issues where the bottom probe did not impact the laser point of aim. It was established that this was not due to the intrinsic accuracy of the devices and is likely to be due to the interface between the firer and the weapon.*

The College of Policing trial contrasted female and male officers and left- and right-handed officers and also compared two trigger activation methods (using either the 'pad' or 'crook' of the trigger finger) to assess whether these differentially affected firing accuracy. The College of Policing trial did not replicate the detailed observations made in the Dstl trial (**Reference [3] Key Findings 1, 3, 4 and 6**), however a greater dispersion of the TASER 7™ probes are noted and the X2™ probes were shown to be more consistent than the TASER 7™ probes. This contrasts with the findings of the Dstl trial where the consistency of grouping of TASER 7™ and X2™ probes fired from bench-mounted devices at 3 m was found to be similar. The College of Policing contend that the TASER 7™'s accuracy would still be acceptable in the hands of a user who has been assessed as being competent in the qualification shoot. (**Reference [3] Key Finding 2**).

There are a number of potential reasons why the outcome of the two trials is different, but the key inference from the College of Policing trial is that it should be possible for officers to achieve an acceptable accuracy with a laser-sighted TASER 7™ and this is something that

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can be confirmed by way of both the qualification testing and appropriately designed scenario-based assessments. The Dstl trials also conducted a mix of unbraced single-handed firing positions and braced firing positions – the College of Policing tests only conducted braced firing positions and the College propose that single handed firing would not be encouraged by them. Once the College of Policing has updated the TASER 7™ training underpinning the qualification shoot and scenario exercises, and has provided a rationale for the changes introduced in the update, this should form part of the pack of information provided to SACMILL. Looking forward, and given that a number of potential reasons exist for greater dispersion of the TASER 7™ probes, it may be useful to prospectively analyse trainees failure of the qualification shoot or scenario-based assessment. This may be based on objective measures of hand size and grip strength and supported by the subjective comments of trainees.

**Dstl comment: This accuracy observation was addressed by the College of Policing trial. Mitigation will be via an updated training package from the College of Policing and officers being required to demonstrate they can achieve the accuracy required in the qualification shoot.**

**Trapped ejectors:**

*Trapped ejectors result in the potential of disconnection/obstruction problems (observed at least 1 in every 42 firings or 2.4%).*

The College of Policing trial showed a similar rate of trapped ejectors (1 in 43) **(Reference [3] Key Finding 7)**.

The College of Policing already train officers to be prepared to use other tactics should the CED fail to be effective. Flagging that a trapped ejector could be one reason for the TASER 7™ failing to be effective would highlight this to officers during training and may help them understand that a trapped ejector may be one of several reasons why effectiveness is reduced.

**Dstl comment: This observation was reinforced by the College of Policing trial. Some mitigation will be provided via an updated training package from the College of Policing but the NPCC have indicated they will accept any residual risk.**

**Free flying probes:**

*Probes detaching from the wire at full extension producing an additional risk to bystanders (including other officers), a risk that is not present with the X2™ or X26™.*

[REDACTED]

It is difficult to quantify the risk posed as it will be affected by a number of factors such as where the (un-aimed) probe hits on the body and the probe's kinetic energy when it hits. Dstl understand that the College of Policing already train on how to manage backdrop issues when using conventional firearms and the less lethal impact round launcher. The College of policing has indicated a suitable training package will be developed to deal with this issue for the TASER 7™ and will form part of the information passed to SACMILL (nevertheless this is an injury mechanism not present with other TASER®s and likely to be identified by SACMILL as a novel injury risk: this may require detailed explanation). **(Reference [3] Key Finding 9)**.

**Dstl comment: This observation was not addressed by the College of Policing trial. Mitigation will be provided via an updated training package from the College of Policing.**

[REDACTED]

[REDACTED]

**Stiff safety lever and trigger:**

*The safety lever was observed to be difficult to operate in some cases during the Dstl assessment. There were also negative comments on the trigger.*

This was also observed during the College of Policing/NPCC testing with the majority of participants making negative comments. **(Reference [3] Key Finding 8).**

The College of Policing observe that a positive safety mechanism may be a desirable feature reducing the chances of unintentional discharges and that training and repetition will familiarise officers with the stiffness of the trigger and safety switch. As with the comments on accuracy above, if the College of Policing Qualification Shoot is designed to test the accuracy of officers and they are able to pass the qualification shoot this will go a long way to providing reassurance to SACMILL that the issue is being addressed.

**Dstl comment: This observation was reinforced by the College of Policing trial. Mitigation may be via an updated training package from the College of Policing and officers being required to demonstrate they can achieve the accuracy required in the qualification shoot.**

**Incorrectly labelled laser:**

*The laser warning label shows the laser to be Class 2, measurements by Dstl show the power output of all 3 lasers to fall within Class 3R, the label should therefore be amended.*

The TASER 7™ handles delivered for the College of Policing trial bore the correct laser labelling so this issue has been addressed.

**Dstl comment: This observation has been addressed. However, purchasers should ensure that items are correctly labelled.**

In summary, there has been a degree of mitigation identified for all the observations reported by Dstl which will be reflected in the updated training pack that is being developed by the College of Policing. The information underpinning this will need to form part of the information that will be submitted to SACMILL and feed into their considerations around the medical implications surrounding use of the TASER 7.

Yours Sincerely,

[REDACTED]

[REDACTED]  
Project Technical Authority

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References:

- [1] [REDACTED], [REDACTED], [REDACTED], [REDACTED], Physical Assessment of TASER 7™, DSTL/TR117685, 13/3/20
- [2] Dstl findings and observations: TASER 7™ Vs TASER X2™. CCEDWG 23/1/20
- [3] [REDACTED], College of Policing. T7 Supplementary accuracy testing report. V1.0 26.3.2020 [REDACTED]
- [REDACTED]