Addressing Safety Concerns in HM Prisons: A New Safer Kettle Design

Introduction

The provision of kettles in our prisons is a subject of growing concern, with reports highlighting safety risks and misuse. While kettles are now considered a standard issue item for prisoners, their weaponization, tampering, and misuse for cooking have led to significant challenges.

This paper outlines the main issues associated with kettles in prisons and presents an innovative design that addresses these concerns through enhanced safety features, controlled heating, and tamper-resistant construction.

1. Issues

- **Weaponization Risks** – Boiling water has been used in assaults, often mixed with sugar to create a highly viscous, scalding liquid that causes severe burns and life changing scars.
- **Excessive Temperature** – Standard kettles used in prisons, heat water to 100°C, leading to immediate destruction of epidermis and dermis, with nerve damage occurring upon contact.
- **Tampering and Misuse** – Prisoners frequently remove lids to throw boiling water, cook food inside kettles, heat and 'freebase' drugs to make them more powerful and modify heating elements, leading to breakages and safety hazards.

2. The New Design

The new safer prison kettle (Worldwide patent applied) incorporates several key safety features to mitigate risks:

- **Reduced Temperature** – The kettle automatically shuts off at 90°C, preventing continuous boiling. This temperature is sufficient for tea and coffee while reducing the severity of burns.
- **Sealed Lid** – The redesigned permanent lid allows direct filling from a tap, eliminating the need to remove the lid and prevents sugar being added to boiling water. The specifically designed aperture stops large volumes of boiling water from being thrown and reduces weaponisation risks.
- **Reduced Capacity** – The kettle holds only one standard cup (250 ml), limiting the volume of hot liquid that could be used dangerously.
- **Reducing cost** - The reduced amount of water needing to be heated will also use far less energy – therefore saving circa £1.5M per annum on electricity and saves 1,000 tonnes of CO2, which will have an extremely positive impact on the impact on the environment.
- **Tamper-Resistant Materials** – Constructed from transparent, heat-resistant polycarbonate, the kettle allows visibility into its contents and is impact-resistant.
- **Simplified Construction** – The kettle consists of only four main parts, reducing mechanical failure points:
    1. Transparent boiling chamber.
    2. Transparent outer sleeve.
    3. Moulded, non-removable lid (fusion welded).

4. Base with a concealed (electrics) heating element, switch and thermostat.

4. Safety and Operational Benefits

The new design offers significant advantages over traditional kettles:

- **Prevention of Severe Burns** – At 90°C, blistering may occur, but damage to dermis and nerve endings is significantly reduced.
- **Elimination of Weaponization** – The sealed lid and reduced capacity will help prevent and reduce the impact of boiling water attacks.
- **Delay mechanism** – The kettle cannot be reused for 8 minutes after boiling to ensure that individuals do not accumulate boiling water in another vessel to use in an attack.
- **Tamper-Proof Heating System** – The flat heating element is sealed and inaccessible, designed to break if tampered with.
- **Operational Efficiency** – The compact, tapered shape reduces mechanical failures, while features like boil-dry protection, thermal cut-off, and a cool-touch sleeve enhance safety and usability.

5. Conclusion

The introduction of this safer kettle represents a critical step forward in addressing safety concerns, misuse, and financial inefficiencies in prisons. By reducing burn risks, preventing weaponization, and ensuring tamper-resistant construction, this design offers a practical, cost-effective solution to an ongoing issue.

Jason Swettenham MBE

12th September 2025