

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES  
OF WILD FAUNA AND FLORA

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MARKING OF RAW IVORY

The attached document\* is submitted by the Secretariat, having been supplied by the CITES Management Authority of South Africa. It describes a new method for the marking of ivory. This is referred to in document CoP15 Doc. 44.1 (Rev. 1) (*Monitoring of illegal trade in ivory and other elephant specimens*)

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\* *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat or the United Nations Environment Programme concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

### Laser Engraving

Ivory is marked at present by 'punch dye' and/ or 'indelible ink' as this becomes difficult to remove the markings and any changes can be forensically determined.

Ivory been material of layered nature and a natural fibre makes the risk of damage by both the above mentioned techniques high when dealing in artefacts or collectors tusks which require minimum defacing. (The risk of damage increases as the tusks age)

CO<sub>2</sub> Laser (Carbon-dioxide) is the most suited form of permanent marking of animal material as is burns away the material leaving a permanent mark which is clearly visible and looks as if dyed into the ivory.

#### Technique Used

1. Ivory piece has to be gripped in vice like holding to prevent movement to engrave (burn) the marking on by the CO<sub>2</sub> laser. This process means that once the ivory is removed from its original position it is impossible to again align it in that same position.
2. The laser burning is done in small layer by layer removal until the desired depth is achieved. This is to prevent the ivory from bursting if to deep a layer is vaporized by the laser. This method makes for clear layering in the ivory in the burnt away area.
3. Size and font style can be chosen and very accurate details of the measurement including the depth burned can be obtained.

#### Advantages of Laser

- a) During forensic investigations of suspected tampering the engraved (burn) markings in the lettering (see point 1 & 2 above) will show if that a different engraving took place.
- b) Should the markings be smoothed away as with any material in which heat is used to mark it the underlying parts will have different chemical changes similar to when 'punch dye' is used.
- c) Old and valuable ivory artefacts of a small size can now also be marked removing the risk imposed on the authorities of damage and unsightly markings.

Attached is a photograph of the work done in Port Elizabeth as a trial test on the process.

I hope that this will help explain the process in layman's terms without doing away with the advantages of the scientific benefits this process holds for law enforcement.

