Restoration of obliterated engraved marks on high strength Al-Zn-Mg-Cu alloy (AA7010) surfaces by etching technique was studied. The alloy surfaces were mechanically engraved with some identification marks using "Gravograph". The marks were then erased by removing the metal to different levels up to and below the depth of engraving. Five metallographic reagents were tested on the obliterated surfaces by etching. The following two methods (i) immersion in 10% aq. phosphoric acid and (ii) alternate swabbing of 60% HCl and 40% NaOH were found to be quite effective to reveal the obliterated marks. These two procedures were also able to show effectively the marks obliterated by over-engraving and centre punching. Of the two techniques immersion in phosphoric acid provided more contrast. Interestingly, alternate swabbing of 60% HCl and 40% NaOH presented itself to be the common reagent for restoration on pure aluminium as well as its alloy surfaces. This is evident from our own current experiments and those of earlier researchers [G. Peeler, S. Gutowski, H. Wrobel, G. Dower, The restoration of impressed characters on aluminium alloy motor cycle frames, J. Forensic Ident. 58 (1) (2008) 27-32; M. Izhar M. Baharum, R. Kuppuswamy, A.A. Rahman, Restoration of engraved marks on aluminium surfaces by etching technique, Forensic Sci. Int. 177 (2008) 221-227]. The findings have assumed importance as engines and chassis of cars and frames of firearms are currently made of high strength aluminium alloys and recovery on these surfaces by current methods is not satisfactory.

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DOI: 10.1016/j.forsciint.2009.11.018
PMID: 20022189