

research to determine the utility and practicality of these many ideas in their implementation and effect.

This paper will address the specific area of developing trends in SALW to determine their possible impact and to suggest practical methods of ameliorating potential issues of concern, albeit primarily within an arms control context. Trends in SALW military developments (including ammunition) will be examined to ascertain whether they should be of concern due to uncontrolled and unnecessary diffusion and/or the impact of increased effectiveness in creating casualties and potential inhumane effects.⁸ Accordingly, observations and, where appropriate, recommendations applicable to both state and non-state actors in all types of conflict will be made regarding whether new procedures should be considered to control their distribution or limit their effect. The possible impact of new developments in "non-lethal" weapons (to be primarily used in low intensity military operations and law enforcement operations) and the more esoteric but nonetheless very real concern of potential developments in the area of directed energy weapons (DEWs) (such as "light amplification by stimulated emission of radiation", or lasers) in an anti-personnel role will also be examined. This paper is not intended to be a detailed technical analysis of these new systems, but rather a general overview designed to provide policy makers with basic technical information on new developments and assist them in formulating strategies in this area. The principal focus of the analysis will be on weapons and ancillary equipment that could enhance or replace the common current military and security force inventories of personal weapons such as the American (US) AR-15/M16, the Russian and former Soviet (FSU) Kalashnikov AK-47/AK-74, the Belgian Fabrique National (FN) Fusil Automatique Léger (FAL) and the German Heckler & Koch (H&K) G (Gewehr) -3 and all their variants.

A SHORT HISTORY OF SALW DEVELOPMENT

There are many excellent references⁹ which give a detailed technical as well as layman's analysis of firearms developments over the years. This simplified overview does not pretend to offer a comprehensive survey of this subject area, but rather provides a very cursory layman's introduction. By and large, improvements in firearms have been incremental and evolutionary in scope, highlighted on occasion by significant developments that might be considered revolutionary. How and when the gun was invented is lost in antiquity. Historically its use was

⁸ The term inhumane is based on the Convention on prohibitions or restrictions on the use of Certain Conventional Weapons which may be deemed to be excessively injurious or to have indiscriminate effects. (1980).

⁹ Those used in this synopsis include: Ivan V. Hogg, *Guns and How They Work* (Marshall Cavendish Books Limited, 1979); Ivan V. Hogg, *The Story of the Gun* (St Martin's Press, 1996); Derel Allsop and L. Popelinsky (et al), *Brassey's Essential Guide to Military Small Arms: Design Principles and Operating Methods* (Brassey's Inc. 1997); and James Marchington (ed), *Handguns, Sub-machine Guns, Semi-Automatic Pistols & Revolvers (Brassey's Modern Army Factfile Series)* (Brassey's Inc. 1997).