

## **Seize the Moment – An Optimized Caliber and the IC Competition**

### **By Jim Schatz**

In March 2011, some in the small arms community became aware of a US Army-conducted study to assess terminal effects of various rifle calibers and projectile designs as they apply to use in shoulder-fired small arms. The ground-breaking study, which will be presented on Thursday during the conference, indicated that the “optimum” caliber in regards to overall terminal performance, exterior and wound ballistics, effective range, reduced recoil impulse, penetration, and a range of other test metrics is not the NATO 5.56mm (.224 caliber) but in fact an “intermediate” caliber between .224 and .30 caliber, namely .256 to .277 caliber. This echoes earlier efforts in the US to field the M1 Garand in 1932 in caliber .276 Pederson and the 1958 initiative to build AR-15 rifles for testing in caliber .258. More recent attempts to improve the terminal performance of the M4 Carbine include efforts by US Special Forces in the development of the 6.8x43mm SPC round and most currently the AAC .300 Blackout cartridge. The outstanding British .280 cartridge developed for the EM2 bull-pup rifle in the late 1950’s, like all earlier attempts, failed to be adopted, not due to its superior performance but due to political and logistical reasons.

This paper will look at recent developments to include combat AAR’s and programmatic activities throughout NATO to address poor 5.56mm performance in combat, in particular in Afghanistan. It will explain why the pending US Individual Carbine competition will not result in the down select of a “sustainably improved” new capability in terms of downrange carbine performance, and thus why to avoid failure it should be delayed. It will touch on the immense leap-ahead capability potential in the US LSAT program but why it must be refocused on developing its ammunition and weapons in a caliber greater than 5.56mm. And finally, the paper will explore the future plans for the production of new ammunition types and why as we plan for new machinery to load lightweight ammunition we should at that same time change calibers to an all around more effective choice as defined in the game-changing US Army Caliber Study. It will also explore the urgent need to convene a joint interagency/international Caliber Working Group to take the results of the US Army Caliber Study and combine those with parallel efforts ongoing elsewhere within NATO to address far too many documented 5.56mm failures.

Finally, this paper will provide a roadmap, a proposal on how the joint community can combine resources in an era of shrinking R&D and defense budgets and guarantee that the next US and/or NATO common carbine, rifle and LMG can be improved not only in mechanical function but in down range terminal performance on target, and at ranges in excess of even the very best improved 5.56x45mm round.

The door for this opportunity is closing and will so with the issuance of the pending IC RFP to industry. This alternate course of action must be considered now before we look for and field yet again another carbine in 5.56x45mm for the next 2-4 decades. This proposal offers the substantial improvements in capability that all of our war fighters deserve but will not be acquired from current planned initiatives in 5.56mm.