

BLAST SIMULATORS: MABS LEGACY AND THE CONTINUING CHALLENGE

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EXTENDED ABSTRACT

MABS was founded as an unclassified working forum for a small group of allied Defence laboratories for 'bench level' information exchange and discussion on the development and application of experimental methods for simulating nuclear blast conditions. This task was driven by the requirement for continued testing of structures, materials, and systems, as well as assessment of human injury from nuclear blast despite the ban on atmospheric nuclear testing formally implemented in 1963. MABS is remarkable even to this day having no formal inter-governmental mandate or budget in its own right yet providing a group of specialist allied Defence laboratories the auspices for critical information exchange and collectively making some of the most important advances in the understanding of blast physics, damage, and protection for its member nations. MABS is an unpretentious forum whose effectiveness surpasses many others hobbled by politics, academia, bureaucracy, commercialization, and sometimes cliquish or even personal agendas.

MABS has of course evolved over its nearly six decades: firstly, going beyond experimental methods to include the burgeoning field of computational simulation, then expanding its membership to NATO, then 'NATO friendly', nations. The blast threat has also evolved for this now-global community such that the scope for MABS has necessarily expanded to consider the full spectrum of explosive threats beyond nuclear particularly the menace of terrorist bombing and improvised non-conventional devices of all kinds.

Due to its pro-active Steering Committee and motivated member nations, MABS has made some important contributions to the greater blast research community: the MABS Monograph compilation of blast instrumentation techniques sponsored by the US, the SpiezBase searchable index of MABS papers sponsored by Switzerland, and the digital archiving of historical proceedings prior to the CD age as contributed by the host nations 1967-2006.

Although MABS was the first of its kind, there are now several regular conferences covering studies of Defence-relevant blast phenomena and effects which typically highlight computational modelling as well as ad-hoc experiments. However, the development of *blast simulator test facilities* themselves and, by extension, some degree of standardizing blast exposure conditions for systematic testing, remains distinctive to MABS. Julius Meszaros was the champion of credible blast-simulator experimentation, and this remains both an important legacy yet, ironically after six decades, an ongoing challenge for MABS. The loss of 'corporate memories' and dispersal of blast-related research to new agencies and a new generation, superposed on expanded requirements for blast testing due to new threats and target types, has led to a helter-skelter of blast simulation methods. Some of these methods will lead blast-effects research in wrong directions: can MABS take on this challenge?