IBG Position Statement
On
Industry Standards & Best Practices
(Aug 2026)

1. Introduction

Recognizing that tactical operations are inherently dangerous circumstances that carry an increased risk of injury to personnel including tactical breachers; the IBG *Technical & Safety Advisory Committee* (TSAC) conducts ongoing observation of industry standards and best practices across the tactical breaching community throughout the world's military, law enforcement and security forces. It is the responsibility of the Incident Commander, based on the advice of the Tactical Commander, to weigh those risks to special operations personnel, against the totality of the circumstances through which they are presented.

Tactical operations also by their very nature present a range of exigent variables that must be evaluated and acted upon often under emotional, difficult, time-critical circumstances, which fall far outside the expectations of conventional military and police general duties and responsibilities. These position statements below are adopted by the *IBG Technical and Safety Advisory Committee* (TSAC) as a summary of evolving industry standards and best practices intended to better promote the identification and management of scene hazards. This is *not* intended to restrict or limit the operational decision making of Commanders. It is the intent of the TSAC to review and further develop this important Paper periodically as safety and technical issues continually evolve.

2. Scope

This *Position Paper* applies equally to all military, law-enforcement and security forces personnel conducting precision tactical energetic breaching as a *Method of Entry.* It is intended to guide both operational *breachers*, *team leaders* and *command leadership* in the development of organization and unit specific SOPs that advance and enable the use of tactical energetic breaching in appropriate circumstances.

3. Terms, definitions and abbreviations

The words 'must', 'should', 'could' and 'may' are used to indicate the intended degree of compliance with the relevant aspects of the Position Statements here within.

Breacher – a person trained, certified and authorized to possess, transport, store and use explosive material (i.e. *energetic material*) as a method of tactical energetic breaching. This person will ordinarily be competent in a full range of *Methods of Entry* techniques, including but not limited to manual tools, mechanical, ballistic, thermal and hydraulic breaching tools and equipment.

Breaching Supervisor/Safety Officer – A trained and experienced *Breacher* with the required level of leadership, training and administrative competencies to manage the daily activities of a tactical energetic breaching capability on behalf of a *Responsible Person* (e.g. *Division Commander*, SWAT Commander)

Responsible Person – the leadership or managerial person designated responsible for overall management of the tactical energetic breaching capability. This may be a Division Commander, SWAT Commander or Breaching Supervisor/Safety Officer, or any other person, at the discretion of the *Authorized Person*.

Authorizing Person – the Sheriff, Chief of Police, Fire Chief, or Executive Head of the organization legally authorized or responsible for conducting public safety or stability operations within the designated jurisdiction; or their official delegate (e.g. a Deputy Chief, Division Commander, SWAT Commander or similar Command level position).

Therefore, the *Authorized Person* will retain overall *Strategic* accountability for the program and will designate a *Responsible Person* to maintain *Operational* oversight of the tactical energetic breaching capability, associated resources and training. This *Responsible Person* may or may not be a certified *Breaching Supervisor/Safety Officer* capable of managing the day-to-day implementation of the tactical energetic breaching capability.

4. Background

The International Breachers Group (IBG) was founded in 1998 to "…bring breachers from around the world together in order to make our job description safer and more productive." To this end, the IBG established a *Technical and Safety Advisory Committee (TSAC)* comprising operational personnel from top tier military and law enforcement special operations units, training institutions and both scientific and medical research professionals; "…to further advance, encourage, represent, and defend the interests of *Method of Entry* personnel within the public safety and tactical breaching community throughout the world's military, law-enforcement, and security forces."[1]

Upon receiving Census data from 758 teams around the world in 2025, the *IBG-TSAC* has adopted the *Position Statements* below to summarize industry standards and best practices and to serve as a comprehensive industry guideline to support the continued safe development of the profession.

5. Current Situation

The effects of Blast Over-Pressure (BOP) on the body have been well studied at the higher end of the spectrum (High -level Blast/HLB Injury), though the effects of repetitive Low-Level Blast (LLB) on the human body, are comparatively less well known and are an area of increasing attention and research. The *Technical & Safety Advisory Committee (TSAC)* of the IBG monitors current research efforts through a range of military, government and private sector forums and notes the following areas of current research[2]:

a. Government and military funded research have identified an increased hazard of BOP exposure that leads to Low Level Blast Injury (LLB Injury) in occupational groups to include military crewmen of heavy weapons, artillery, mortars, shoulder fired rockets, anti-material sniper rifles, ordnance technicians and *Tactical Breachers*.

[1] TSAC Terms of Reference rev May2025

[2] Including empirical reports, global census and research gleaned from international forums on blast injury countermeasures, and the US National Center for Biotech Information (https://www.ncbi.nlm.nih.gov/pubmed).

b. An increase in effort to monitor cumulative blast exposure in target groups, including *Tactical Breachers,* is required to further develop effective *Occupational Exposure Limits* (OELs) for exposure to BOP and other hazards related to the above occupational groups.

c. Exposure to high level noise has been proven to cause injuries irrespective of hearing protection. When sound waves exceed a threshold of approximately 165-175dB, "micro-vibrations" enter the body through conduction of bone and other bodily tissue and impact organs throughout the body, including the brain in a similar way to low level blast exposure. This sound attenuation does not dissipate in the environment as quickly as blast pressure, therefore safety distances in training could be reviewed to better accommodate for this.

d. Researchers have found that there is a clear, yet undefined period after a single exposure to BOP where the brain becomes highly susceptible to additional injury should it receive an additional follow-on BOP exposure. This relates specifically to *Breachers* firing successive shots in sequence (i.e. stacking shots).

e. There continues to be an increase in companies manufacturing wearable blast gauges to enable *monitoring* of operational personnel during the execution of their tasks. While *monitoring* is a critical part of the 'feedback loop' needed to further increase scientific understanding of LLB exposure, there are also a range of other cost-effective *testing measures* that are being researched to *test* for signs and symptoms relating to *LLB Injury*, over time.

f. BOP effects individuals differently based on a range of factors that are still not fully understood but are known to include age, physical health, hydration and genetics. These are among many factors that make comprehensive evidence based *Occupational Exposure Limits* (OELs) challenging to define.

6. Recommendations

a) While energetic material has been used to gain entry during tactical operations for decades and has been significantly refined since the rise of national Counter-Terrorism Units in the 1970's, recent technological advancement has led to new areas of potential study. Organizations must continue to conduct appropriate risk assessment to mitigate hazards presented by the occupation of tactical breaching. Blast Overpressure along with other hazards are not specific to tactical energetic entry and are of equal if not greater concern in relation to ballistic breaching and use of various power tools and thermal cutting equipment for breaching.

b) *Responsible Personnel* should consider a range of testing paradigms in their attempts to track the effects of occupational exposure to BOP events and may include periodic assessment of neurocognition, ocular, gait, auditory or other symptomatic effects.

c) The *IBG-TSAC* recommends that 25kpa (3.7psi) for a peak exposure limit along with a concurrent cumulative blast exposure of 219 kpa/msec (31.7 psi/msec) within a 24-hour period, should be adopted as an interim *Occupational Exposure Limit* (OEL). – This standard has been adopted by NATO (TR-HFM-338), as it was found to be the cumulative point where 50% of tested personnel experienced cognitive decline using the *DANA Neurocognitive Assessment Tool* (NCAT).

d) Until further research can be completed, the TSAC identifies this above standard as an appropriate interim measure however, the IBG-TSAC further recommends that a peak exposure limit of approximately ~14kpa (2psi) could be used for predicting Minimum/Safe Standoff Distance (MSD/SSD) wherever practical, to further enhance safety margins (e.g. Training, "Breach & Hold" activities etc.).

e) Military, law enforcement and security forces continue to incidentally report routine peak overpressure readings exceeding 5psi on blast gauges when conducting ballistic breaching activities, and this area of research should be further explored.

f) All personnel participating in operations that may include tactical energetic breaching should receive training that makes them aware of the safety requirements and known hazards surrounding BOP Injury. This should at the very least include all *Breachers*, and *Entry Personnel* and should include as a minimum, the known effects of BOP exposure to the brain and body, the common short and long-term hazards associated with tactical energetic breaching (both tactical and health implications) and common risk mitigation strategies including *Personal Protective Equipment (PPE)*.

g) In most common circumstances, the cumulative exposure to BOP will occur in training more so than in operations, therefore *Responsible Personnel* should make all reasonable efforts to mitigate this exposure, while maintaining operational effectiveness. This may include but is not limited to the following measures:

i. Zero exposure to cumulative overpressure should be a routine training goal.

ii. Minimize internal breaching activities as much as is practical to achieve the associated training objectives. Consider the use of inert or reduced load charges where feasible, to reduce the amount of 'operational load' charges that are fired in confined spaces during training events, and

iii. Where practical, internal shots should be fired from outside of the charge location room, with the door closed, and

iv. Use appropriate tamping material during charge construction where feasible to reduce BOP exposure and minimize predictable fragmentation, and

v. Use the lowest net explosive weight necessary to guarantee mission success and uninterrupted access through the target material, and

vi. Maximize the use of open areas and large spaces to dissipate blast overpressure more efficiently, and

vii. Use the full length of the available lead-line, where practical and avoid being in the room with the charge wherever tactically feasible, to further reduce exposure to BOP, fragmentation or hazardous gases and chemicals, and

viii. *Breachers* and *Safety Officers* should make best use of available cover within the immediate environment to further reduce exposure to BOP or fragmentation including structural corners, doors or doorframes and blast or fragmentation protective blankets and shields. However, avoid using these blast reflective services as a measure to further reduce minimum/safe stacking distances, and

ix. Minimize personnel inside the anticipated BOP radius when collecting data shots, rotating *Safety Officers* and *Breachers* to allow periods of recovery for individuals between shots. Reduce exposing personnel to multiple BOP events in rapid succession as much as is practical to achieve the designated training objectives, and

x. *Training Officers* or *Breaching Safety Officers* should conduct some form of BOP exposure assessment of commonly used training areas to identify preferred and hazardous firing points and safe observations areas, and

xi. Recognizing that bare concrete walls are amongst the worst materials for increasing internal over-pressure and noise, *Responsible Personnel* should consider appropriate material for construction of shoot-house walls and ceilings that are being used for routine tactical energetic breaching training to reduce both internal BOP and loud noise exposure. This may include commercial or rudimentary solutions like curtains and blinds.

7. Personal Protective Equipment (PPE)

a. *Breachers* conducting tactical energetic breaching activities must wear all *Personal Protective Equipment* (PPE) that is required by relevant laws, rules & regulations, and has been issued by the organization. This should include but is not limited to the following:

i. Long sleeved clothing that will not melt if exposed to flash fire, including a protective hood where appropriate. Protective clothing could be either fire protection rated, or appropriate natural fibers.

ii. Appropriate protective eye wear and quality-rated "over-the-ear" hearing protection, supplemented with "in-ear" plugs as necessary, to comply with relevant safety standards.

iii. Respiratory protection rated appropriately for the hazards associated with the operational equipment and target material.

iv. Protective boots and gloves.

b. Additional *Personal Protective Equipment* relevant to tactical operations could also be stipulated as mandatory, including but not limited to:

i. Ballistic protective clothing, including body armor.

ii. Wearable blast pressure monitoring gauges.

iii. Recognizing that helmets have been observed to increase peak and cumulative over pressure, their use may be appropriate to protect from fragmentation or to increase familiarity with operational equipment.

c. The PPE outlined in this section could also constitute mandatory equipment for all *Entry Personnel* that may be exposed to the tactical energetic breaching environment.

8. Training

a) *Breachers* must successfully complete a tactical energetic entry certification course approved by the *Responsible Person* and be appropriately authorized prior to conducting tactical energetic breaching activities.

b) *Breachers* should maintain their currency by completing an additional training day per month/cycle specific to the specialization of Breaching, including target identification and reconnaissance, charge selection, construction and placement, misfire procedures and emergency crisis intervention.

c) *Breachers* should also complete re-certification at least every 3-years, or more frequently as required by relevant laws, rules and regulations[3].

9. Operational Considerations

Recognizing that tactical special operations present a range of circumstances that cannot always be reasonably predicted, the below *Operational Considerations* are intended to function as guidelines for *Incident*, and *Tactical Commanders* and are not intended to be proscriptive nor binding. It is the position of the *Technical and Safety Advisory Committee* of the *International Breachers Group* (IBG-TSAC) that:

a) When considering the operational employment of tactical energetic breaching, *Commanders* should consider, among the totality of circumstances they are presented with:

i. Suspected or known history of violence by the subjects.

ii. Suspected or known weapons or destructive devices inside the target structure.

iii. Subject's level of awareness that an operation is taking place.

iv. Environmental conditions that channel or restrict the access and egress of *breachers* to and from the designated breach point.

v. The construction of the target/stronghold and indications of potential fortification, barricading or booby traps.

vi. Whether or not a 'knock and announce' strategy will be likely employed (presenting additional hazards to tactical energetic breaching).

[3] as appropriate in the relevant federal, state or local jurisdiction

b) While tactical energetic breaching should not be limited to hostage rescue scenarios, *Commanders* should consider tactical energetic breaching as a primary *Method of Entry* in circumstances of hostage rescue because it provides:

i. instantaneous uninterrupted access for hostage rescue teams,

ii. coordinating entry at multiple simultaneous breach points,

iii. ability to clear larger portions of the structure immediately from outside,

iv. additional safety to *breachers,* as they can affect entry from a relatively safe location some distance from the breach point remotely.

v. disruption to the *subject's* decision-making process due to overwhelming sound, light and spectacular destruction of physical barriers to entry.

c) In evaluating the operational employment of tactical energetic breaching, the following could be considered:

i. Use of autonomous vehicles to place the charge.

ii. Use of pole charges to reduce exposure at the breach point.

iii. Use of all practically available technologies to ensure that the immediate area behind/inside the breach point is free of personnel.

iv. Targeting multiple breach points simultaneously.

v. Carrying contingency charges should be considered whether tactical energetic breaching is a part of the *Breaching Plan* or not (e.g. internal door charges, additional exterior lock, linear, wall, floor or roof charges etc.)

vi. Carrying a spare firing system to manage misfires [4]

vii. Carrying fire suppression equipment within the breaching element

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[4] TSAC recognizes the safety concerns that must be addressed when carrying multiple firing systems on a single individual.