PARABELLUM DEFENCE SOLUTIONS

Defensive Firearms Engagement Training Platforms

A White Paper
INTRODUCTION

Defensive Firearms Engagement Training

By necessity, operatives engaged in armed/high-risk private security, close protection or private military contracting will require a comprehensive, high-level and up-to-date training in multitudinous aspects of professional firearms handling:

- Safe and secure carry of a loaded defensive live firearm - both concealed and visible;
- Safe, rapid draw and training-on-target (TOT) of a weapon; methods of threat-challenge for de-escalating conflict without firing;
- Accurate shot placement against both static and moving human-equivalent targets when threat necessitates weapon discharge;
- Safe weapon discharge with consideration for civilian & infrastructure risks;
- Effective, rapid return-fire engagement (RFE) while under fire;
- Competence in use, handling and maintenance of AR-platform rifle, pistol & tactical shotgun weapon types; interchange between platforms while under fire;
- Defensive fire during direct protection of unarmed client/asset;
- Cover/support fire in protection of fellow operatives protecting a client/asset;
- Defensive fire from, and during operation of, a vehicle;
- Operation of distraction/stun-type military pyrotechnic devices;
- Safe use of firearms as emergency breaching tools.
Employers and team leaders in these fields consequently must make carefully-considered decisions and budgetary evaluations which assess, in parallel, the investment cost, efficacy and safety concerns of training methods, while examining, in detail, such factors as:

- Safety of company operatives during both training and real-world threat situations;
- Professional reputation, especially resulting from outcomes of threat-engagement incidents;
- Insurance, injury/fatality compensation, civil/criminal negligence matters;
- Legal/regulatory limitations according to national/local government & law enforcement policy;

This document evaluates currently available training platforms & methods according to all essential criteria, in order to provide professionals who operate in fields which require training in defensive firearms handling with a reliable, considered assessment of the available options.

For the purposes of objective assessment, and in reflection of the market predominance of the international close protection & private military contracting industries by UK-based companies, this document has been compiled to incorporate the more restrictive legal limitations imposed on firearms training within the United Kingdom. It therefore assesses available options from a somewhat more rigorous - and cautious - perspective than might otherwise be found if assessed from a US/EU perspective.
Executive Summary

Assessing Training Platforms for Defensive Firearms Engagement

Broadly, available firearms engagement training options in the private sector - i.e. outside of employment within national armed forces (AF) / official law enforcement (LE) divisions - are limited to;

1. Professional training in unarmed, related engagement methods (i.e. hand-to-hand combat, defensive driving) modified to incorporate rubber training weapon ('Blue Gun') facsimiles;
2. Theoretical firearm training without practical experience;
3. Practical and/or theoretical firearms training using inert but otherwise functional ('Blue Gun') weapon facsimiles;
4. Live firearm training at established, licensed range facilities;
5. 'Airsoft' skirmishing at established sites;
6. Target air weapon shooting - commercial range or in-house;
7. Defensive Training Marker weapons ('rubberball');
8. Laser-based dry-fire training platforms.

Within this White Paper, the authors have undertaken an assessment of all eight main options for defensive firearms training available to the various forms of private-contractor operative.

Basing their assessment of every aspect ranging from realism and accuracy to safety and cost consideration, Defensive Training Markers (s.7, p. 12) clearly emerge as the leading platform for professional firearms-user training against every assessment criterion, and are the overwhelmingly recommended choice for professional operatives and organisations in the close protection, private armed security and private military contractor fields.
1. 'Blue Gun' integration in other training

'Blue Gun’ (or, less commonly, ‘Red Gun’) facsimiles - aka ‘rubber ducks’ in military colloquialism - are colour-pigmented urethane-rubber (or similar) 'dummy' weapons used when the scope of training does not incorporate safe-handling skills or competency in firing.

'Blue Gun’ and related inert facsimile weapon training is an established method in military service training, fulfils many learning objectives of such training and offers many advantages over other training platforms:

- Basic training & handling can be undertaken without the safety & cost implications, and trust/competency concerns vis a vis new recruits, that exist when using live firearms;
- Specific exercises/drills where firearm involvement is limited to ‘carry-only’ can be undertaken without consideration for the care of the firearm;
- Trainees/operatives can focus further on intended training objectives without the distractions posed by safe weapons-handling practices, care of the firearm as a company asset, and for safeguarding later reliability of the weapon in-the-field;
- Typical UK RRP for ‘Blue Guns’ ranges from £70 for typical pistol models, £250+ for AR-style long-barrelled/tactical shotgun models;
- Blue Gun manufacturers offer a large range of common commercial firearm facsimiles;
- Non-realistic colouring reduces risk of misidentification for real firearm and consequences (eg during training, discovery by third party/law enforcement);

Significant limitations:
- No functional parts - suitable only for basic hold/draw/carry training;
- Lack of scope for integrating shooting skills in associated training exercises;
- No scope for training/assessment of shooting accuracy, adjustment for adverse conditions, magazine capacity, reloading practice or compensation for recoil;
- No training value for dealing with weapon malfunction, misfire, or cartridge jam;
- Unrealistic weight, feel and other physical properties (holster friction on draw, bounce/drop behaviours;
- Comparatively high cost for no functionality;
• Niche distribution market in UK - range of models often limited, unreliable supply;
• Lack of realism provides psychological barrier to ‘as-real’ training behaviours.
2. Theoretical firearm training without practical experience

Theoretical training should feature in all operative training and is, in itself, invaluable in many respects;

- No equipment requirements - no regulatory/legal or safety consideration;
- Can take place in any quiet environment;
- Can be used to significantly enhance intellectual/knowledge-based and ethical/legal considerations of weapon discharge, shot placement, ballistic performance, calibre & cartridge differences, effective range etc;
- Established principles/practices, military engagement/tactical strategies and technical specifications can be illustrated diagrammatically and verbally explained in a classroom setting; level of comprehension can be individually assessed across all trainees;
- Advanced/specialist theory-reliant training (long-range/sniper training) necessitates substantial theoretical grounding;
- Training can be outsourced to qualified/experienced instructors.

While theoretical training does not intrinsically disadvantage the operative, it is subject to many limitations;

- No development of purely practical skill/accuracy, automatic/reflex response, or experience in intricate functionality of the firearm;
- Lack of scope for integrating shooting skills in other exercises;
- Limited scope for training/assessment of shooting accuracy, adjustment for adverse conditions, magazine capacity, reloading practice or compensation for recoil;
- Limited value in training for dealing with weapon malfunction, misfire, or cartridge jam;
- Incorporates no experience in weight, feel and other physical properties (holster friction on draw, bounce/drop behaviours);
- Limited and uncertain sources of reliable, discreet, competent training professionals;
- Typically high cost of instruction;
- Potential for compromise of operational security where external contractors are employed.
3. Firearm training incorporating inert functional facsimile (‘Smart Gun’)

Broadly, this training platform straddles 2. & 3. in almost all respects, offering the same advantages and disadvantages of both. Incorporation of non-firing functional facsimiles - those with functional slide/bolt cocking, trigger pull, magazine insertion/release - does however improve the scope of training, and would be recommended over training with non-functional facsimile, or no facsimile at all.

4. Live Firearm Training at range facilities

Given that many operatives will come to the private sector with some armed service pedigree, it is almost a certainty that range shooting will have comprised all, if not the majority, of an operative’s initial training in combat firearm use.

Under ideal circumstances, any operative whose profession requires the carry and use of a defensive firearm should undertake regular range training for the honing of marksmanship skill and to preserve established ‘reflex’ elements of advanced shooting; for the scope of this document it scarcely seems appropriate to endeavour to list the advantages of such a necessity.

Range training does however present certain disadvantages and limitations;

- Few, if any, private facilities exist in the United Kingdom where operatives can openly practice shooting disciplines of an appropriate format to their profession;
  - Handgun shooting - with the exception of long-barrelled, extended-counterweighted match pistols - is effectively entirely prohibited in the UK;
  - Rifle shooting is restricted in magazine capacity above small-bore rimfire calibre & no automatic-fire weapons are permitted for use in the UK;
- The restriction of firearms ownership to individuals, by expressed (and specifically sporting) weapon type, and legal restrictions on calibres, moderators, magazine capacities, firing rate, barrel length and even ammunition purchase quantities, alongside intrusive
scrutiny as to purpose of club membership and Firearms Certificate application by law enforcement, makes professional training of a discreet operation of multiple operatives effectively impossible;

- Having to shoot with the general public (albeit license holders) at public facilities runs risk of compromise of operational security;

- High-quality indoor ranges of appropriate length (targets at 10, 25, 50, 75 & 100 yards) are uncommon, often with particularly ‘cliquey’ membership which at times is impenetrable to new members without personal links to existing club members;

- Attitudes at ranges to more ‘military’ styles of weapon, practice drill, and even to styles of paper targets used, can be less than accommodating - most not only disapprove of use of human-form targets but will also consider reporting to authorities any individuals undertaking such drills, or even enquiring about use of military/LE style weapons or targets, as individuals posing a potential terrorism risk;

- Few shooting venues will offer facilities to utilise more than one weapon type and certain shooting disciplines - i.e. the sport of tactical shotgun - occupy very niche markets; organising training across multiple disciplines is prohibitively time consuming for most operatives or their employers;

- Opportunities do exist for overseas training in jurisdictions with less legislative restriction but at considerable cost; current law enforcement priorities may also invite unnecessary scrutiny of such activities should they be mistaken as preparatory to acts contrary to national security.
5. Airsoft (6mm BB) skirmishing

Despite ostensibly being, in many respects, the closest commercially-available option for legitimate military-simulation opportunity, this is substantially lacking in opportunity for realistic conversion to appropriate applicable training objectives;

- Accuracy, range and firearm-like performance of Airsoft replica firearms does not compare - weight, construction, recoil feel, operation/loading mechanisms, effective range, precision and rates of fire are not realistic;
- Whilst cosmetic accuracy of weaponry - often produced under licence from original firearms manufacturers - can be very good, quality equipment costs (£150+ for pistols; £350+ for rifle/shotgun/AR-style weaponry) can run to near those of more powerful weapons which lend themselves better to realistic training for handling, operation and accuracy/marksmanship;
- Unrealistic perception of ‘hits’ - very light impact, barely perceptible through combat attire;
- Lack of realistic weight and operation fails to promote instinctive firearm safety and good practice in dealing with misfire/cartridge jam;
- Structure of typical ‘skirmishing’ exercises preclude use of multiple weapon types; no value for alternative ‘firearm as implement’ practice eg door breaching;
- Requirement for team involvement with general public (often civilian individuals with overt/fanatical interest in military/special operations) normally precludes specific training objectives and poses potential risk to operational security.
6. Target Air Weapon shooting

Marksmanship practice using target air weaponry (air rifle/pistol) as a substitute for live firearm training can provide a worthwhile alternative to certain elements of firearm skill development;

- Comparable/equivalent accuracy;
- Realistic feel, appearance and weight;
- Identical safety protocol required;
- Available in multiple weapon platforms - pistol, AR, bolt-action;
- Potential for long-range shooting practice and use of high-quality optics;
- High equipment investment but comparatively low training cost;
- Legally permissible to train on private land or at commercial range facilities.

In the absence of large-calibre pistol & centre fire semi-automatic shooting facilities, there appear to be sound arguments for use of high quality air weaponry as a valid means of maintaining and developing marksmanship skill and good practice in firearms handling.

The disadvantages of this training platform however are not insignificant;

- Air weapons remain legally classified in the UK as a firearm under Section 1(3)(b) and with a relatively high power-output and small-surface-area metal projectile with a high mass-to-size ratio - remain particularly dangerous and unsuitable for involvement in any personnel-based exercise, as sufficiently effective PPE cannot be assured;
- Absence of realistic loading procedure;
- Magazine capacity & operation normally not representative of firearm;
- Inconsistent power level - CO2/PCP reservoir fitted/integral to weapon diminishes in power (affecting accuracy) over successive magazines until noticeable drop in power dictates refill necessary.
7. Defence Training Markers

Defence Training Markers represent a newly emerging sector of non-lethal barrelled weaponry which promises extensive scope for legally-compliant, safe firearms training with a very high degree of realism.

Based on the operating principles of paintball markers and CO2 airguns - a high-pressure carbon dioxide source providing propulsion for the non-fragmenting rubber/polymer ball ammunition loaded - DTM weapons have developed as training weapons for professional defensive firearms users. They have, in testament to their efficacy, also been extensively developed in higher muzzle energies as designated Non-Lethal Home Defence weapons for retail where legislation permits.

The advantages of DTM weapons are many and varied:

- High-end models are manufactured by, and/or under licence from, mainstream firearms makers in essentially identical form/appearance and weight to the ‘real’ firearm;
- Operation, cocking & firing of the weapon - aside from initial insertion of CO2 bulbs into the appropriate section of the magazine - is normally identical to that of the real weapon, in every respect from loading of ammunition to the last-shot-holdopen of the slide or bolt;
- Manufactured to replicate slide/bolt blowback with specific attention to providing an unsurpassed level of realistic simulated recoil;
- Will accept, and perform in line with, professional-grade optics, laser sighting & tactical flashlights;
- Available weapon types encompass standard military pistol, revolver, assault rifle & tactical shotgun;
- Magazines are comparable in dimensions and weight, and their capacities comparable to the real firearm equivalent: 8-shot pistol, 14-shot AR magazine, 16-shot pump-action shotgun options, available in calibres corresponding to those of combat firearms (.43 & .50), with tactical shotguns chambered in .68, giving an area of impact more comparable with a tightly-choked tactical 12-gauge short-barrelled shotgun.
• These weapons are manufactured to firearms quality and appropriately employ the use of corresponding firearms-grade woods, synthetics & steel as required;

• Ammunition precision-manufactured in non-lethal materials in variety of densities:
  • Hardnesses range from quite pliable for reduced energy transfer to target, to high density for maximum impact, including specialist rounds employing metal dust/rubber composites for specific glassbreaking applications;
  • Projectiles also available in low-mass, low-friction for high accuracy;
  • Finned/self-rifled projectile options for high stability in-flight;
  • Powder & paint rounds available for visual marking of targets;

• Projectile velocities and accuracy levels are high, producing equivalent grouping to the real firearm equivalent at standard combat distances

• Power levels are sufficient to perforate heavy cardboard & thin wooden targets, including perforation of plasterboard drywall

• High level of realism promotes as-real-firearm good handling practice.

• Available in fully-realistic finish and in alternative body/slide colouring to distinguish from live firearms.

• Target options range from low-cost paper targets, live training with other operatives/instructors (subject to adequate PPE),

Training with DTM weapons offers an experience as close as possible to the use of live firearms without the safety implications, and will hone all necessary skills, including adjustment for real-world adverse conditions eg windage.

DTM weaponry is already proving itself to be the superior choice for elite professional training - a variety of EU Special Forces and Armed Response Units attached to national law enforcement are already using DTM weapons of the type our company supplies for their own engagement training, on the grounds of realism, enhanced safety, and considerably reduced cost versus firing range practice.
8. Laser-based dry-firing training platforms

Laser-based dry-fire simulation platforms offer a good alternative to various types of live-fire training and, subject to specification, can offer very high levels of accuracy, with many systems comparable in accuracy to real pistol shooting.

However, this platform is also significantly disadvantaged insofar as;

- Unrealistic weapon weight
- No simulation of recoil, reloading, misfire/jam clearing
- Very high cost - average cost of a single laser training pistol approx £300 and targeting systems £1000+.
Conclusion

Of all available training platforms available in the UK (and in other jurisdictions where firearms ownership and use is similarly legislated), our studied assessment concludes that the emerging market in Defence Training Markers offers a platform for training in the use of firearms for engagement that substantially outstrips, in benefits, all other options.

Already proving their worth in training with Special Forces & Armed Response Units across various EU states, the level of realism, weapon accuracy, and overall breadth of training potential afforded by DTM weaponry - combined with the modest investment cost and high intrinsic level of safety provided for - highlights that, for elite training, one option stands tall among all others; Defensive Training Markers promise to form the cornerstone of tactical engagement training for professionals in the armed security, close protection & private military contracting industries for decades to come, and will vastly improve the safety and competency of operatives in both training and during live-fire engagement.