



## Shoot Houses

Our successful past performance history has established Range Systems global presence as an industry leader in providing live fire shoot house facilities. We present turnkey solutions for realistic and dynamic training environments that replicate the challenges and situations law enforcement officers and soldiers face. Our shoot house designs offer scenarios for urban operations training that include tactical movement, target engagement, breaching, and target discrimination in an environment that replicates real-time and real-distance.



Range Systems has had an integral role in defining the training standard for live fire shoot houses for the US military. Partnering with users from the US Army 7<sup>th</sup> ATC Grafenwoehr, we developed a specification based on their requirements for a deployable shoot house facility that could be fielded worldwide, withstand extreme live firing and harsh environmental conditions, and be installed without special tools. This specification became a quantifiable baseline for the design and delivery of SMASH™, a functional, affordable, and reconfigurable shoot house system. We have also worked closely with the US Army Special Operations Command (USASOC) in developing new cutting-edge design innovations to meet their evolving training requirements and are now recognized as the training standard for USASOC.

The common denominator in all live fire shoot houses is the steel based structure. The feature that sets Range Systems apart from all others is the extraordinary ballistic capabilities, durability, and ease of maintenance our designs offer. Range Systems was chosen by the US Army Corps of Engineers and US Army Forces Command to provide live fire shoot houses because of the superior performance and unique characteristics of our ballistic rubber encapsulating system. Our patented ballistic rubber virtually eliminates ricochet and bullet splatter and significantly reduces airborne lead particulates. This material has passed testing conducted by the US Army Picatinny Arsenal Armament Test Facility for ricochet and penetration against the military 5.56mm M855 Steel Core Penetrator round.



Our shoot house walls are constructed of our proprietary Dura-Panel™ rubber composite panels secured directly to AR500 steel panels which fortifies ballistic containment and removes the hazards of ricochet, splatter, and shoot-through. This method of wall construction ensures the rubber panels stay safely in place under extreme live firing and harsh environmental conditions. Other types of shoot house designs use welded metal barbs to secure the rubber to the wall which creates an air gap between the rubber and steel. Not only can these metal barbs be damaged or destroyed by direct hits penetrating through the rubber, they

are exposed to powerful bullet fragmentation and splatter inside the air gap which can severely damage and erode the ballistic integrity of the wall.

While the use of tracers is not recommended, independent testing has verified that Range Systems proprietary fire resistant formula EXP™ ballistic rubber contains properties that reduce the risk of fire from isolated exposure to a low volume of tracers. The test results also suggest that EXP™ composite rubber



has some fire extinguishing properties. An accidental tracer round fired in your EXP™ range or shoot house will likely be extinguished rather than start a fire. No other company can make this claim and support it with independent test results. Whether you are planning to retrofit an existing range or build a new facility, specify Range Systems EXP™ to provide safer range conditions for personnel and the environment.

Based upon a legacy of innovative design achievements, Range Systems developed SMASH™, a modular and expandable shoot house that meets the demand for deployable, non-permanent live fire training structures. Utilizing standard parts and modular components, SMASH™ offers a ballistically secure shooting facility that is rapidly deployed, requires virtually no maintenance, and is adaptable to your training requirements.



SMASH™ components are interchangeable and reconfigurable to allow the training staff to easily create a different layout without the need for heavy material handling equipment such as cranes or forklifts.

SMASH™ offers a flexible live fire structure that can be used as an individual training facility or as part of an entire live-fire village created with multiple SMASH™ units. Our proprietary bolt-together design allows SMASH™ to be erected quickly and permits training to commence much sooner than other standard shoot house designs. SMASH™ can be reconfigured to provide multiple floor plans for realistic and changing urban operations training scenarios and is easily dismantled for transport to alternate sites. Range Systems breach doors and sliding ballistic doors and windows can also be incorporated into SMASH™.

SMASH™ construction includes a dual external wall seam plate system to provide continuous ballistic protection and ensure a 360° training environment. Like all Range Systems shoot houses, SMASH™ endures extreme live firing, requires minimal maintenance, and is cost-effective which translates into more training time and less expense. In fact, due to its affordability, SMASH™ is frequently procured with military OPA funds and qualifies as a non-permanent structure for government funding purposes.

Recognizing the potential hazards live fire activities present, structural integrity and safety qualities are foremost in Range Systems shoot house designs. Our patented ballistic wall system creates interior walls



that closely match standard commercial and residential dimensions and permits quick installation of standard pre-hung doors or breach doors in all doorways. Our breach door systems are capable of supporting mechanical, explosive, and shotgun breaches and to meet SDZ requirements, Range Systems has sliding ballistic covers to secure all exterior openings. We can customize floor plan layouts for single level to multi-level that include corner-fed rooms, center-fed rooms, "L" hallways, "Z" hallways, fully contained ballistic stairwells, exterior ballistic protection for external attack scenarios, observation catwalks, breach ports, and sliding ballistic doors and windows to create or eliminate alternate room entrance/exit points.



Range Systems live fire shoot houses have been chosen for their superior performance by these military agencies and law enforcement departments worldwide:

**US Army**

Ft. Richardson, AK

Ft. Wainwright, AK

Ft. Carson, CO  
Pinion Canyon

Ft. Benning, GA

Ft. Stewart, GA  
Two facilities

Ft. Campbell, KY

Ft. Knox, KY

Ft. Bragg, NC  
Range 65  
Range 62  
Range 37N  
Range 19 (2 LFSH)

Ft. Bliss, TX  
Two installations

Ft. Hood, TX

Ft. A.P. Hill, VA

Ft. Lewis, WA  
Four installations

Ft. Lewis, WA  
Yakima Training Center

JRMC Hohenfels, Germany  
Four facility complex  
including a two-story bldg

SOF Baghdad, Iraq  
3<sup>rd</sup>. Special Forces Group  
36 Commando

**US Marines Corps**  
Camp Hanson, Okinawa

**US Navy SWG**  
Norfolk, VA  
Two-story breacher facility

**US National Guard**  
Camp Dodge, IA  
Camp Atterbury, IN  
Wendell Ford TC, KY  
Camp Ripley, MN

Camp Grayling, MI  
Camp Shelby, MS  
Fort Indiantown Gap, PA  
Camp Bullis, TX  
Fort Pickett, VA  
Camp Dawson, WV

**Law Enforcement Agencies**

Butte County Sheriff's, CA  
Glendale Police Dept, CA  
Los Angeles Police Dept, CA  
Milford Police Dept, CA  
Wilmington Police Dept, DE  
Illinois State Police, IL  
Kent County Sheriff's Dept, MI  
Hutchinson Police Dept/FBI, MN  
Broken Arrow Police Dept, OK  
Greenville Police Dept, SC  
Milwaukee FBI, WI

**International Military**

Japan Defense Forces  
Jordan GID  
Jordan 71<sup>st</sup> CTB  
Mexican Army  
UK Ministry of Defense

Range Systems proprietary ballistic rubber has been tested for its capabilities and performance by the US Army Picatinney Arsenal<sup>1</sup>, US Test Lab (Wichita, KS)<sup>2</sup> and the Research and Development unit for Materials and Equipment for the US Army, Combat Applications Group, Fort Bragg, NC<sup>3</sup>. Summaries of these results are listed below:

1. US Army Study (Picatinny Arsenal) shows acceptable penetration and stopping power with specific use of 7.62mm (M80 Ball) and 5.56mm (M855 Ball). Field-test shows minimal ricochet at limited incidence of angle with specific use of 7.62mm (M80 Ball), 5.56mm (M855 Ball and M193 Ball) from M14 rifle, M16A2, M16A1, and the M4A1 carbine.
2. US Test Lab Study (Wichita, KS) shows bullet stopping power to 2,300 fps muzzle velocity on a 300 grain bullet striking with 3,700 foot-pounds of energy.
3. Product has been tested and approved through the Research and Development unit for Materials and Equipment for the US Army, Combat Applications Group, Fort Bragg, NC.



## Best-case training for worst-case scenarios

Range Systems, the only full-service provider of custom engineered ballistic rubber shoot houses, outperforms the competition in these critical areas:

- **Lower Cost of Ownership.** Lower lifetime cost considering purchase price, maintenance and maximum customer use.
- **Easy Maintenance.** Range Systems shoot houses are unmatched in durability and designed to withstand thousands of high-powered hits before maintenance is required. Individual wall panels are easily replaced when necessary without the need for special tools or prolonged downtime. This allows you to spend more time training, not maintaining.
- **Safety.** Proprietary rubber ballistic wall construction encapsulates bullets to contain ricochet, splatter and airborne lead.
- **Green.** Range Systems ballistic rubber is formulated from recycled rubber particles and our exclusive patented composition and withstands extreme ambient conditions without degradation.
- **Support.** We provide expert advice, design assistance, installation services, and operation and maintenance training.

### Available options:

- Multi-story Designs and Configurations
- Observation Catwalks
- Ballistic Ceilings/Roofs
- Ballistic Stairwells/Stairways
- Ballistic Breaching Doors/Windows/Mouse Holes
- Ballistic Sliding Doors/Windows/Wells
- Ballistic Pivot Walls
- Exterior Ballistic Protection
- Lighting
- Target Systems
- NIOSH Compliant HVAC System
- Closed-Circuit Camera for Action Review
- Available with or without Concrete Pad



### Range Systems

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