

Blast Overpressure (BOP) Tool Mobile Application for Monitoring Blast Exposure during Weapon Training in Open and Closed Spaces

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What is BOP Tool?

What is BOP Tool? – BOP Tool offers capability to monitor and investigate the incidence of BOP exposure of service members and shows the overpressure zones around weapon systems (WS). Sixteen Tier-1 WS are currently available in the BOP Tool.

Need for BOP Tool Mobile Application

- Advancements in mobile device computing power and storage make it feasible to use the BOP Tool on a mobile platform, enhancing field usability
- Feedback from demonstrations of the desktop version to other DoD organizations underscores the strong demand for a mobile application
- The mobile app comprises modules for blast overpressure zones during weapon and breacher explosive training in both open and enclosed environments

BOP Mobile App (2D; Open Field)

Input Screen (Mobile App)

50 Cal

Weapon class	50cal
Weapon system	Select a weapon system
	GAU21 M107 M2A1 MK15
Firing stations	1 2 3
Training session duration (min)	30
Number of firings	10
Run	

SMAW

Weapon class	SMAW
Weapon system	Select a weapon system
	M136-AT4 M3-MAAWS M72-LAW
Firing stations	1 2 3
Training session duration (min)	30
Number of firings	10
Run	

Breacher

Weapon class	Breacher
Weapon system	Select a weapon system
	Door-Water Fence Interior-Door Wall-Fracture Wall-GBuster
Firing stations	1 2 3
Training session duration (min)	30
Number of firings	10
Run	

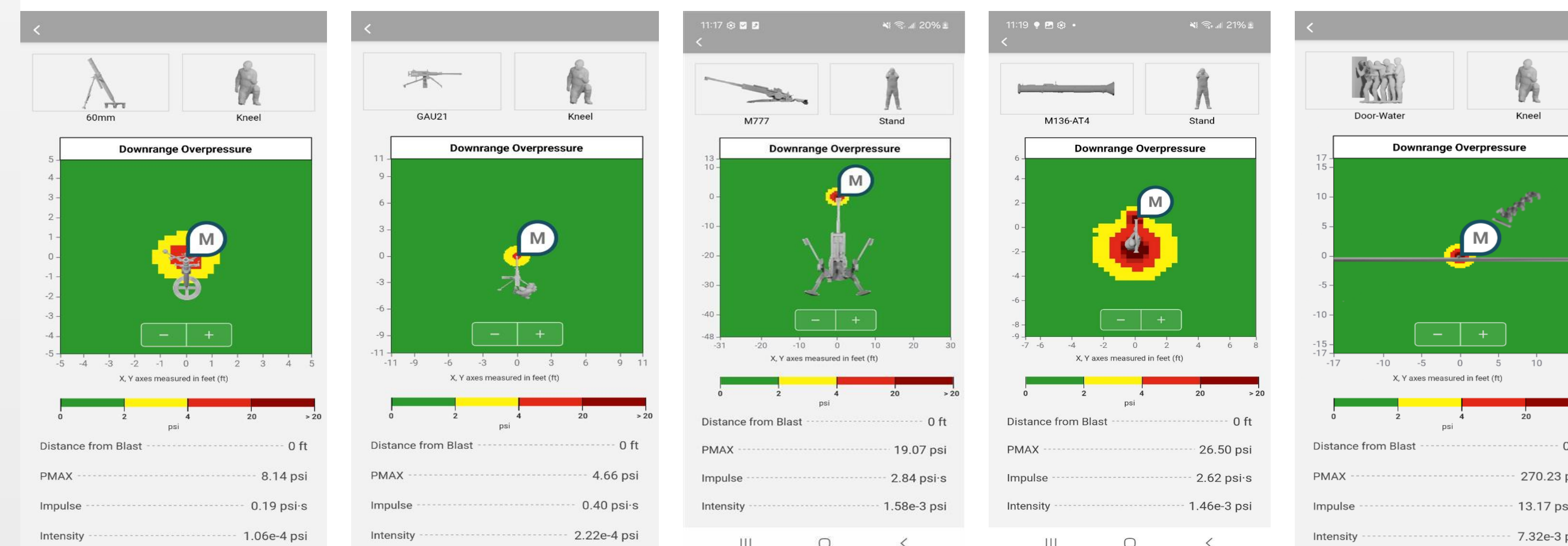
BOP Mobile App (2D; Open Field)

Input Screen (2D Mobile App)

Howitzer	Mortar
Weapon class	Howitzer
Weapon system	Select a weapon system
	M109 M119 M277
Firing stations	1 2 3
Training session duration (min)	30
Number of firings	10
Run	

The mobile application uses the validated weapon BOP models (developed for the desktop BOP Tool) for predicting the overpressure zones.

Output Screen (2D Mobile App)



BOP Mobile App (3D; Enclosed Spaces)

Input Screen (3D Mobile App)

Breacher Explosive Scenario

Weapon class	Breacher
Weapon system	ECT
Net Explosive Weight (NEW)	300gr
Closed Space Environment	SH CQBA
Observation Room	Room 2
Door to Breach	Door 3
Wall material (absorption coefficient)	Medium (Plywood or similar)
Monitor plane height (posture)	Kneel
Run	

Weapon class	Breacher
Weapon system	ECT
Net Explosive Weight (NEW)	300gr
Closed Space Environment	SH CQBA
Observation Room	Room 2
Door to Breach	Door 3
Wall material (absorption coefficient)	Medium (Plywood or similar)
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Run	

SMAW Firing

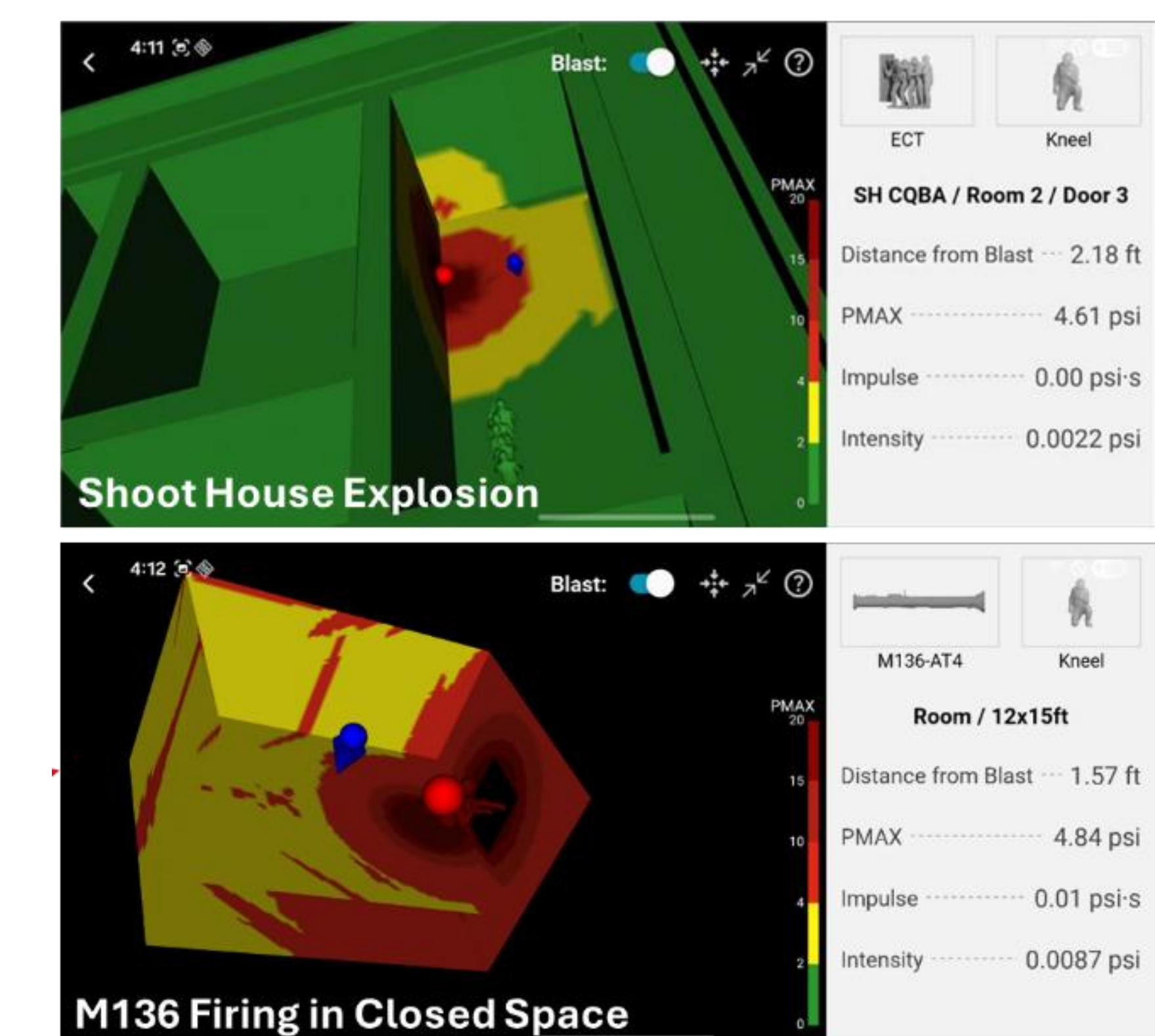
Weapon class	SMAW
Weapon system	M136-AT4
DoD Identification Code	C995
Closed Space Environment	Room
Environment Dimensions	12x15ft
Wall material (absorption coefficient)	Hard (Concrete or similar)
Monitor plane height (posture)	Kneel
Training session duration (min)	30
Run	

BOP Mobile App (3D; Enclosed Spaces)

The mobile application for enclosed spaces is currently under development

The mobile application currently includes explosive training in shoot house and SMAW firing in enclosed space scenarios.

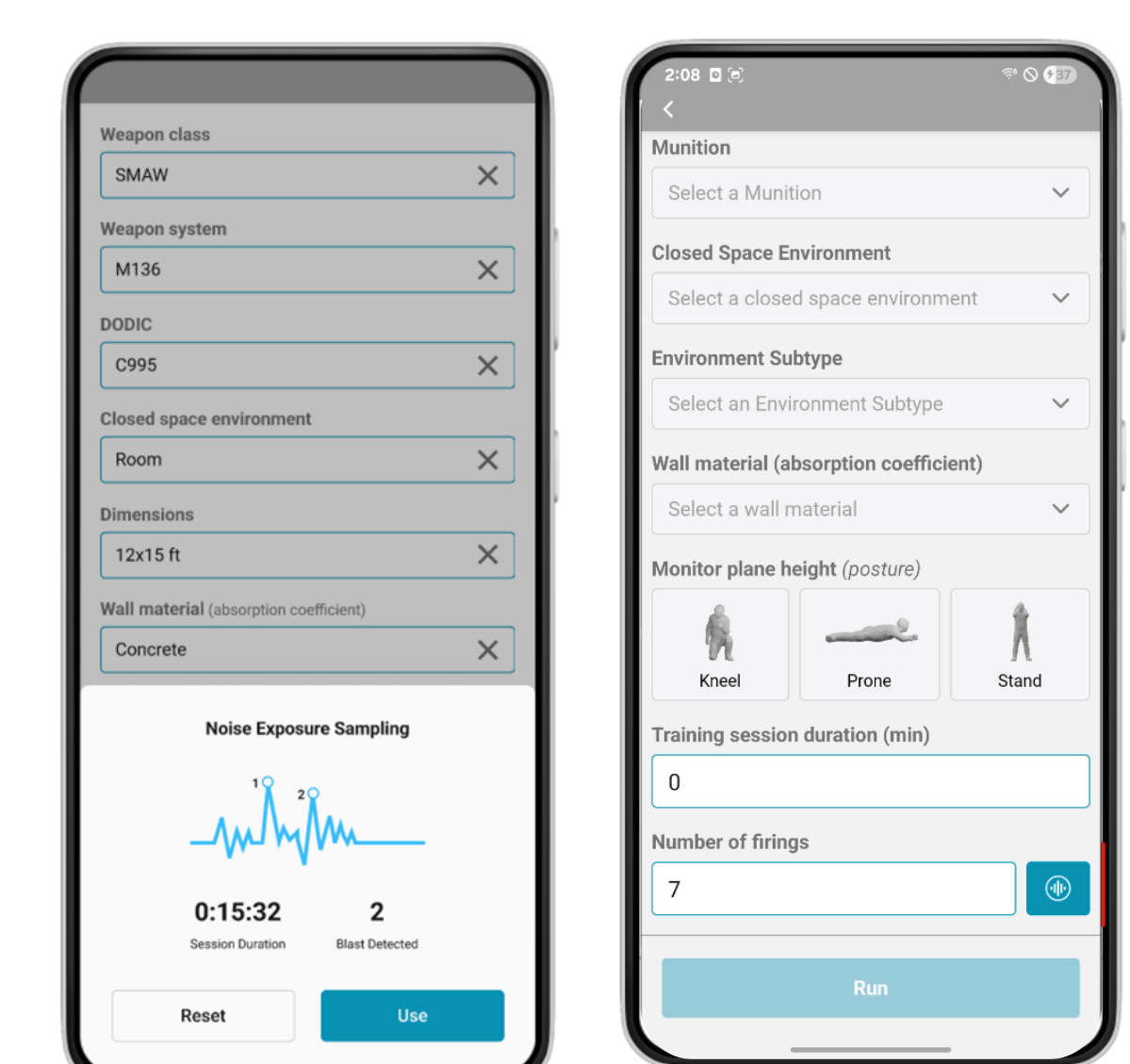
Mobile App Outputs in Landscape View



User Friendly Gestures



Identification of # of Blasts



The open-space BOP mobile application is funded by the DoW BIRCO under the MTEC Project Call MTEC-23-06-USAMRDC-MT-103, and the closed-space BOP mobile application is developed under DHA SBIR Phase I contract # HT942525P0055.

