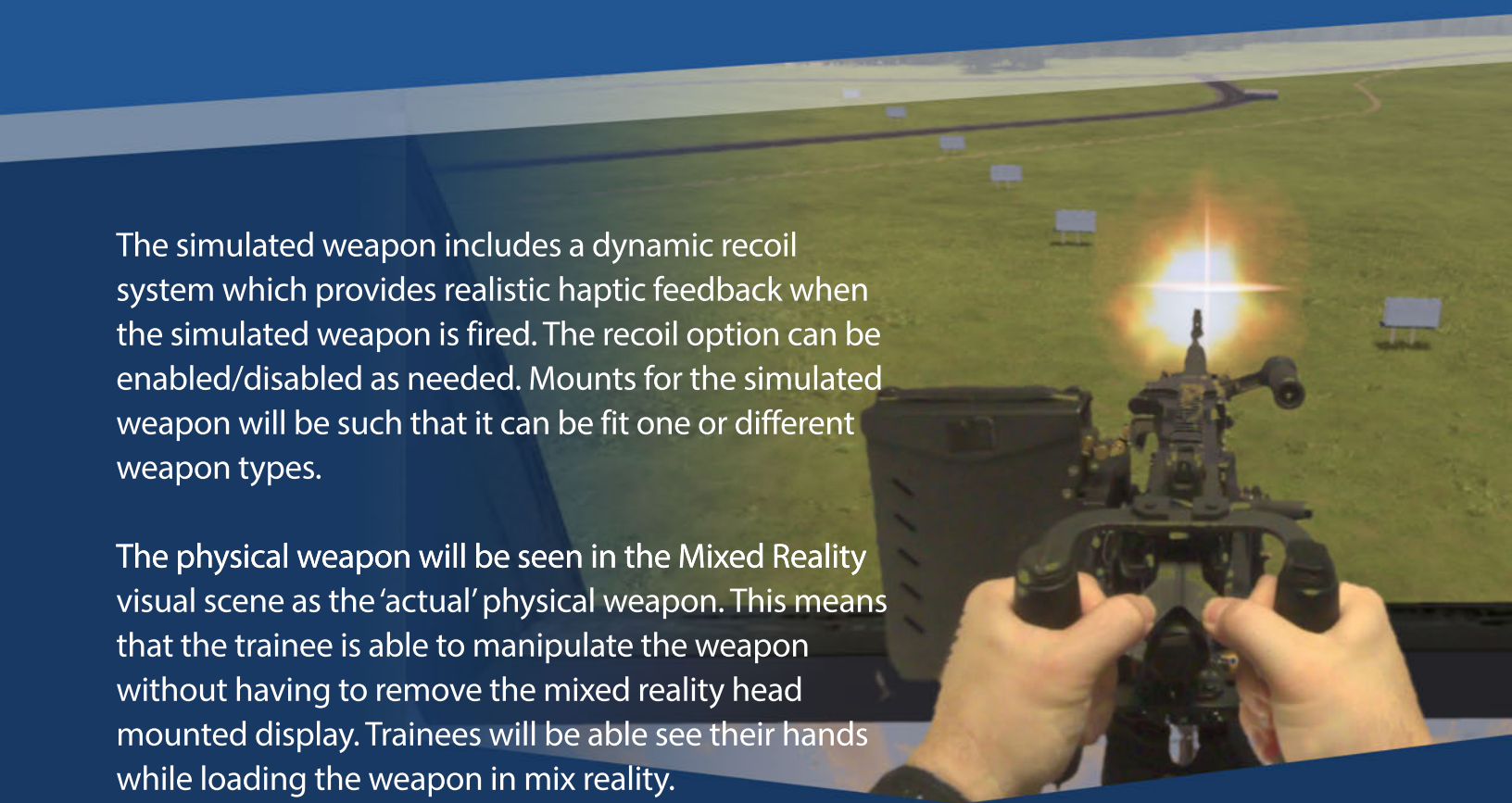# Multipurpose Gunnery Mission Trainer

The Mixed-Reality Gunnery Mission Trainer (MxGMT) is a high-fidelity, fully immersive virtual training device for mission-specific gunnery operations. It delivers a cutting-edge mission training environment with a realistic blend of virtual reality with audio, visual and haptic (touch) elements that replicate helicopter gunnery support operations to develop personal and team skills.

The real-world feel of the trainer facilitates the practice of helicopter communications and gunnery operations in a safe, operationally relevant environment that will maximize crewmember confidence and performance.

The weapon system will permit weapon operations including (as applicable to the weapon):

- Arming
- Sight pictures
- Safing
- Loading
- Trigger control
- Grips
- Charging
- Reloading
- Aiming
- Dry fire
- Burst firing

The simulated weapon includes a dynamic recoil system which provides realistic haptic feedback when the simulated weapon is fired. The recoil option can be enabled/disabled as needed. Mounts for the simulated weapon will be such that it can be fit one or different weapon types.

The physical weapon will be seen in the Mixed Reality visual scene as the 'actual' physical weapon. This means that the trainee is able to manipulate the weapon without having to remove the mixed reality head mounted display. Trainees will be able see their hands while loading the weapon in mix reality.

Bluedrop's replica weapon training system provides extensive training capability. With the system, gunners can train many elements of helicopter gunnery including:

- Weapon preparation including securing, or releasing weapon locks, and pre-use checks.

- Normal Operations including feeding, loading, arming, safing, sighting, trigger control, bursts, and duty cycles.

- Emergency Operations including a range of realistic malfunctions and immediate and remedial actions.

- Recoil training with realistic full-force recoil at full rate of fire.

The simulation software will simulate the bullet trajectory of the weapons using Bluedrop's ballistic computation software.