



17897



Infantry Platoon Battle Course (IPBC)

RANGE DESIGN GUIDE



RANGE AND TRAINING LAND PROGRAM – MANDATORY CENTER OF EXPERTISE

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General

This document contains information specific to an Automated Infantry Platoon Battle Course (IPBC), FCC 17897. It describes the design and construction information that is specific to this range. The general sections of the RDG provide information on range features that are generic to multiple range types. Use both for complete range requirements. The non-automated version of the IPBC, FCC 17896, is similar, but without the target automation.

Purpose

The IPBC is used to train and test infantry units up to the platoon level, either mounted or dismounted, on the skills necessary to coordinate and conduct tactical movement and to detect, identify, engage, and defeat stationary and moving infantry and armor targets in a tactical array. The platoon can conduct individual maneuvers as well as collective maneuvers (battle drills).

The dismounted platoon has an area to practice the critical training maneuvers:

- Ambush
- Movement to contact
- Attack
- Raid
- Retrograde
- Defend
- Reconnaissance/security

The standard IPBC does not accommodate aerial gunnery.

If required by the installation, the range can be configured to provide positions for vehicle overwatch.

The IPBC supports multiple battle tasks at both the squad and platoon levels.

The facility supports live fire training exercises when meeting installation safety requirements. The IPBC also supports non-live fire conditions including dry fire, MILES (laser), and blanks prior to live fire.

Primary Features

The primary features of the ranges are divided into two categories: the Range and the Range Operations and Control Area (ROCA).

Range

The following drawings depict the standard layout for the range, they are included at the end of this document.

- [IPBC Layout Drawings](#)
- [Assault Defend House](#)

Layout

Use the standard IPBC layout referenced above as the starting point for the objective and target locations. The intent of the standard layout is to provide two lanes of squad battle courses

consisting of three objectives each, A through C. There is one platoon lane, objectives A through F; platoons can use either or both squad lanes. The intent is to provide as flexible of a training venue as possible. Within safety limits, units can choose which objectives are used. The use of trackless and portable targetry increases flexibility.

The IPBC occupies an area approximately 1500 meters wide by 4000 meters deep, plus an area for the ROCA facilities. The IPBC has separate objective enemy battle positions to simulate typical threat scenarios. Use the standard layout and distances shown as a starting point then tailor the layout to depict the installations training requirements, the type of weapons and ammunition used, and specific site terrain features. Base the strategies for the final range layout on the following criteria:

- Training directives, priorities, and guidance established by the installation’s Chain of Command.
- Unit battle tasks
- Unit mission-essential task list
- Unit training priorities
- Training resources and availability
- Terrain availability

Consider terrain as a critical element when selecting a suitable location for a battle course. The site’s terrain features should support the user’s training requirements as well as the critical training maneuvers. Site the various objectives in a tactically correct layout for the terrain on the chosen site.

Blending emplacements into the natural terrain presents a more realistic battlefield and causes the training soldiers to look for the threat rather than target berms. Consider the use of below grade target emplacements rather than the standard typical above grade target berms; assure proper drainage. Refer to the RDG section for each individual downrange feature for additional considerations.

NUMBER	FEATURE	RDG SECTION
1	Moving Armor Target	MAT
6	Stationary Armor Target	SAT
14	Moving Infantry Target – 15M	MIT
41	Stationary Infantry Target	SIT
1	Trench	Trench
9	Machine Gun/Observation Bunker	MGB
1	Assault Defend House (includes 2 SITs)	Assault Defend House
2	Tactical Helicopter Landing Zones	LZ/PZ

Firing Line

The IPBC does not have a specific firing line. Rather, it has a baseline or start-fire line where live fire training can begin. Mark the start-fire line as required by the installation.

Down Range

Objective A

There are two of these objectives, each simulates an enemy observation post. Site Objective A 200 to 300 meters downrange on a ridgeline or other strategic area that can be engaged from a frontal suppressing posture and a lateral (flanking) defeating posture. Each Objective A has four SITs, eight total.

Objective B

There are two of these interim Objective's sited about 1,100 meters from the baseline. Each has 3 SIT's, a MIT, and a Bunker. Locate with line of site to Objective C's. This requires the platoon to place suppressive fires on Objective C while maneuvering to engage and secure Objective B.

Objective C

There are also two of these objectives which simulate enemy counterattack/overwatch forces. Locate about 200 meters from the appropriate Objective B. This objective should have line of sight from/to Objective B. This allows the training unit to coordinate suppressive fire from Objective B while a maneuver force moves to engage and secure. Each Objective C includes three SITs, two MITs, a Bunkers, and one SAT.

Objective D

This objective is an enemy obstacle. Site the objective in a location where the terrain forces the platoon to negotiate the obstacle. There should be sufficient distance from Objective C to require the platoon to maneuver tactically to an area where they can observe the obstacle then maneuver to conduct their breaching/clearance exercise. Place Channeling Obstacles, (minefield and/or an impassable contaminated area or terrain feature) to channel troops toward the trench. Objective D includes of a trench with a MGB and SIT at each end.

Objective E

This objective is the platoon's final objective sited about 3,500 meters from the baseline. Objective E should be spread wide as shown to make the unit attack/defend a wide front. The objective has the Assault/Defend House, ten SITs (two of which are in the Assault/Defend House), four MITs, one SAT, one MAT, three MGB.

Objective F

This objective simulates another enemy counterattack force. Locate within line of sight of Objective E. The training platoon must set up a defensive position on Objective E and place suppressive fires onto Objective F. Locate Objective F about 400 to 500 meters beyond Objective E. Objective F has eleven SITs, four MITs, three SATs, and three bunkers.

Other Areas

A danger area is any area void of a protective cover that could aid in the concealment of the unit during movement exercises. The danger area is not a mandatory feature for all IPBCs but is an option to force the maneuvering element into situations that control direction of fire and help contain Surface Danger Zones (SDZ). Locate the two Landing/Pickup zones, (LZ/PZ) to facilitate tactical insertion/extraction. Provide a cleared area large enough for the unit to deploy

Remote Piloted Vehicles; assume approximately 1 acre as a starting size. Coordinate with the installation for requirements and locations.

Line of sight

Refer to the [Line of Sight](#) (LoS) section of the RDG for LoS requirements, procedures, and submittal requirements.

LoS requirements for the IPBC are very site specific. Generally, keep as much natural vegetation and terrain as possible. Some installations and sites require selective tree thinning and clearing for target visibility. Site objectives and targets so that only limited site grading is required. Coordinate with the installation trainers to determine target visibility requirements. Consider LoS for vehicle over watch positions, visibility to counterattack objectives, RF coverage, firing limit markers, etc. Include both terrain and tree/vegetation in LoS analysis.

The Control Tower is not required to have unobstructed visibility to all downrange areas. It should preferably have visibility to the baseline or start-fire line.

Cameras are not standard on an IPBC. However, if cameras are used, provide a camera analysis to show what is visible.

Targetry

The IPBC uses fully automated targets with event-specific, computer-driven target scenarios and scoring. The Range Control System (RCS) computer in the Control Tower controls the targets through the target data network. The target data network can be either hard-wired or Radio Frequency (RF), refer to the Electrical Range Design Section of the RDG for further information. The computer captures the scoring data which can then be used by the unit for performance evaluation in the after-action review process.

The IPBC uses Observer/Controllers (OC) maneuvering with the platoon to control the training scenarios and as a safety measure. These observers use either a handheld controller or radio back to the control tower to initiate target scenarios. In some cases, repeater antennas are required to provide coverage for RF targetry control; coordinate with the MCX and targetry system provider for more specific requirements.

This range includes provisions for Vehicle and Infantry Trackless Moving Targets (TMT-V and TMT-I). The standard targetry package includes 1 TMT-V and 4 TMT-I targets. These targets are battery operated. Charging is done at the ROCA outside the Operations/Storage Building. Consider requirements for additional cut/fill and road network depending on soil types, terrain, and scenarios. Coordinate with installation trainers for the areas where TMTs will operate and areas from where they must be visible. Also consider providing hide locations; areas where TMTs are not engaged and can be hidden.

ROCA

Refer to the ROCA section of the RDG for general design information. The ROCA for the IPBC is based on the standard Small Arms ROCA. Refer to the table below for the list of standard buildings.

Locate the ROCA so that it does not obstruct assembly and maneuver areas for the soldiers training on this facility. Typical location is to the side and behind the baseline. This offers the opportunity for units to maneuver tactically to the baseline, (if allowed by the installation). The Control Tower is not required to have unobstructed visibility to all downrange areas. It should

have visibility to the baseline or start-fire line. Because of the limited visibility requirement, many installations place the “tower” at ground level. An alternative is to replace the tower with the previous standard Range Operations Center (ROC). The ROC is an 800sf building divided in half with the RCS on one side and an observation area on the other; contact the MCX for details. That change requires an exception to standard.

The Operations and Storage Building (Ops/Stg) has the additional requirement for storing and charging TMTs. Because of the additional fire protection/suppression requirements for the battery types used, charging and storage are done outside of the building. Refer to the Ops/Stg section in the RDG for specific requirements. Consider road access to/from downrange when siting this facility in the ROCA.

NAME	SIZE	Uo M	RDG SECTION
Control Tower – Small Arms (Or ROC)	1	EA	Range Control Towers
Operations/Storage Building, Standard Additional 400sf covered area if TMTs are to be supported on the facility	800 (1200)	SF	Ops/Stg Buildings
Classroom Facility	800	SF	Classroom and AAR Facilities
Latrine: Vault (Latrine: Water)	330 (550)	SF	Latrines
Bleacher Enclosure	1	EA	Bleacher Enclosure
Covered Mess	800	SF	Covered Mess
Ammunition Breakdown Building	185	SF	Ammunition Breakdown Building

Requirement Documents

Refer to Training Circular TC 25-8, Training Ranges, for additional information and references to the FMs, ARTEPs, TCs, etc. that describe and require the training on this type of range. The latest TC 25-8 is available at Army Knowledge Online (www.us.army.mil) and the General Dennis J. Reimer Training and Doctrine Digital Library (www.train.army.mil).

Additional Information

Helicopter landing zones (LZ/PZ) are tactical elements of the range; not designed to airfield requirements. Locate them to support tactical aerial insertion and extraction.

