



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. The document includes references to sections of the RDG for information that is general to multiple range types. The document describes the design and construction information that is specific to the range and is not contained in, or differs from, the general section. Use both the specific information in this section and the general sections referenced together for a complete, useable range. 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 conduct tactical movement techniques, 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 support activities.

The facility can support live fire training exercises only when the range meets all safety aspects. The ISBC also supports non-live fire conditions that include dry fire, MILES (laser), and blanks prior to live fire.

Primary Features

This section provides the standard layout and a listing of the primary features that are standard on an IPBC; separated into Range and the Range Operations and Control Area (ROCA). The tables include the number and/or size of each item included in a standard facility with hyperlinks to the RDG section with the general design and construction requirements.

Standard Layout

The following drawings depict the standard layout for the range.

- [IPBC Layout Drawings](#)
- [IPBC Electrical Layout Drawings](#)

Range

NUMBER	FEATURE	RDG SECTION
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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	Assault Defend House
2	Tactical Helicopter Landing Zones	LZ/PZ

ROCA

NAME	SIZE	UoM	RDG SECTION
Control Tower – Small Arms	1	EA	Range Control Towers
Operations/Storage Building, Standard	800	SF	Ops/Stg Buildings
Classroom Facility	800	SF	Classroom and AAR Facilities Part 1 Classroom and AAR Facilities Part 2
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

Design

Use the standard IPBC layout referenced above as the basis for the range.

The IPBC occupies an area approximately 1500 meters wide by 4000 meters deep, plus an area for the ROCA facilities. The IPBC has six objective enemy defensive 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.
- Platoon battle tasks
- Platoon mission-essential task list
- Platoon 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.

General Range Design Requirements

This section contains references to the general range design sections of the RDG. Use these in addition to the sections for a specific item or structure and the design requirements in this document specific to the IPBC.

General

- [Fire Protection](#)
- [LEED](#)
- [EPACT](#)
- [Furniture](#)
- [ADA](#)
- [Utility Services](#)

Civil Range Design

- [Siting Considerations](#)
- [Roads/Trails/Parking](#)
- [Target Protection Design Curves](#)
- [Line of sight](#)
- [Topographic Surveying](#)
- [Surface Danger Zones](#)

Electrical Range Design

- [Data Termination Rack](#)
- [Downrange Power and Data Distribution – General](#)
- [Downrange Power and Data Distribution – Over 300M](#)
- [Target Feeder Voltage Drop Spreadsheet/Instructions](#)

ROCA

Refer to the [ROCA-General](#) section of the RDG for general design information. The ROCA for the IPBC is based on the standard Small Arms ROCA.

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 allows 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. Ranges have Observer/Controllers maneuver with the platoon to control the training scenarios and as a safety measure.

Firing Line

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

Down Range

Objective A

This objective 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. Objective A consists of two SITs.

Objective B

This objective is an interim platoon objective sited about 1,100 meters from the baseline. Lay the objective in two groups; one with four SITs, one MIT, and one MGB, the other with two SITs, one MIT, and one SAT. Locate with line of sight to Objective C. This requires the platoon to place suppressive fires on Objective C while maneuvering to engage and secure Objective B.

Objective C

This objective simulates an enemy counterattack/overwatch force. Locate about 200 meters from Objective B. This objective should have line of sight from/to Objective B. This allows the training platoon to place suppressive fires from Objective B while a maneuver force moves to engage and secure. Objective C includes five SITs, two MITs, 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 a minefield and/or an impassable contaminated area 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 has three groups of targets. The first group contains seven SITs (two located in the assault/defend house), two MITs, one SAT, one MGB, and one MSD. The second group contains one MGB and one SIT. The third group contains six SITs, three MITs, one MAT, one MGB, and one MSD.

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 allowing a maneuver force to engage and secure Objective F. Locate Objective F about 3,850 meters from the baseline. Objective F has three groups of targets. The first group contains three SITs, three MITs, one SAT, one MGB, and one MSD. The second group contains six SITs, one SAT, and one MGB. The third group contains five SITs, two MIT's, one SAT, one MGB, and one MSD.

Danger Area

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).

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 sight specific. Generally, keep as much natural vegetation and terrain as possible. Some installation and sites require selective tree thinning and clearing in order for targets to be visible. Site objectives and targets so that only limited sight grading is required. Coordinate with the installation trainers to determine target visibility requirements. Consider LoS for vehicle over watch positions, visibility to counter attack 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 have visibility to the baseline or start-fire line. Provide a view shed analysis to show the installation what will be visible from the control room.

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

CCI/TII Checklist

Refer to the [CCI/TII Checklist](#) to ensure that the range meets the standard interface requirements.

Targetry

The IPBC uses fully automated targets with event-specific, computer-driven target scenarios and scoring. The targetry 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 is then available to the unit for after action review (AAR).

The IPBC uses Observer/Controllers maneuvering with the platoon to control the training scenarios and as a safety measure. These observers may 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 targetry system provider for specific requirements.

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

Target locations are site adapted. All must be located in areas that support desired tactics and the training requirements. Avoid environmentally undesirable locations where possible.

Trenches, bunkers, and target emplacements must simulate typical threat scenarios.

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

A Remote Piloted Vehicle Launch Point may be required on some ranges. Coordinate the location and design with the installation.

