



17895

Infantry Squad Battle Course (ISBC)



## RANGE DESIGN GUIDE



RANGE AND TRAINING LAND PROGRAM – MANDATORY CENTER OF EXPERTISE

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE

HUNTSVILLE, ALABAMA

256-895-1534

[EMAIL RTLP](#)

## General

This document contains information specific to an Infantry Squad Battle Course (ISBC), FCC#17895. 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.

## Purpose

The ISBC is used to train and test infantry units up to the squad 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 squad can conduct individual maneuvers as well as collective maneuvers (battle drills).

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

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

The standard ISBC 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.

Refer to the Layout Section below for additional information

## Primary Features

This section provides the standard layout and a listing of the primary features that are standard on an ISBC; 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.

- [ISB-C-01/-02](#)
- [ISB-E-01/-02](#)

### Range

NUMBER	FEATURE	RDG SECTION
1	Moving Armor Target	<a href="#">MAT</a>

6	Stationary Armor Target	<a href="#">SAT</a>
6	Moving Infantry Target – 15M	<a href="#">MIT</a>
20	Stationary Infantry Target	<a href="#">SIT</a>
2	Trench	<a href="#">Trench</a>
5	Machine Gun/Observation Bunker	<a href="#">MGB</a>

## ROCA

NAME	SIZE	UoM
Control Tower – Small Arms	1	EA
Operations/Storage Building, Standard	800	SF
Classroom Facility	800	SF
Latrine: Vault (Latrine: Water)	330 (550)	SF
Bleacher Enclosure	1	EA
Covered Mess	800	SF
Ammunition Breakdown Building	185	SF

## Design

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

The ISBC occupies an area approximately 1000 meters wide by 1000 meters deep, plus an area for the ROCA facilities. The drawings show the objectives as six enemy defensive battle positions configured to simulate typical threat scenarios. Use the standard layout and distances shown as a starting point then tailor the layout to the specific site terrain features and to support the installations training requirements for the type of weapons and ammunition used. 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.
- Squad battle tasks
- Squad mission-essential task list
- Squad 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. Coordinate range layout closely with the installation training staff.

Consider the use of below grade target emplacements rather than the standard typical above grade target berms; assure proper drainage. 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. Refer to the RDG section of each particular downrange feature for additional considerations.

## General Range Design Requirements

In addition to the General Design Requirements, refer to the following discipline specific sections. Use these in addition to the sections for a specific item or structure and the design requirements in this document specific to the ISBC.

### Civil Range Design

- [Siting Considerations](#)
- [Roads/Trails/Parking](#)
- [Target Emplacement Protection](#)
- [Line of Sight](#)
- [Topographic Surveying](#)

### 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 ISBC 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.

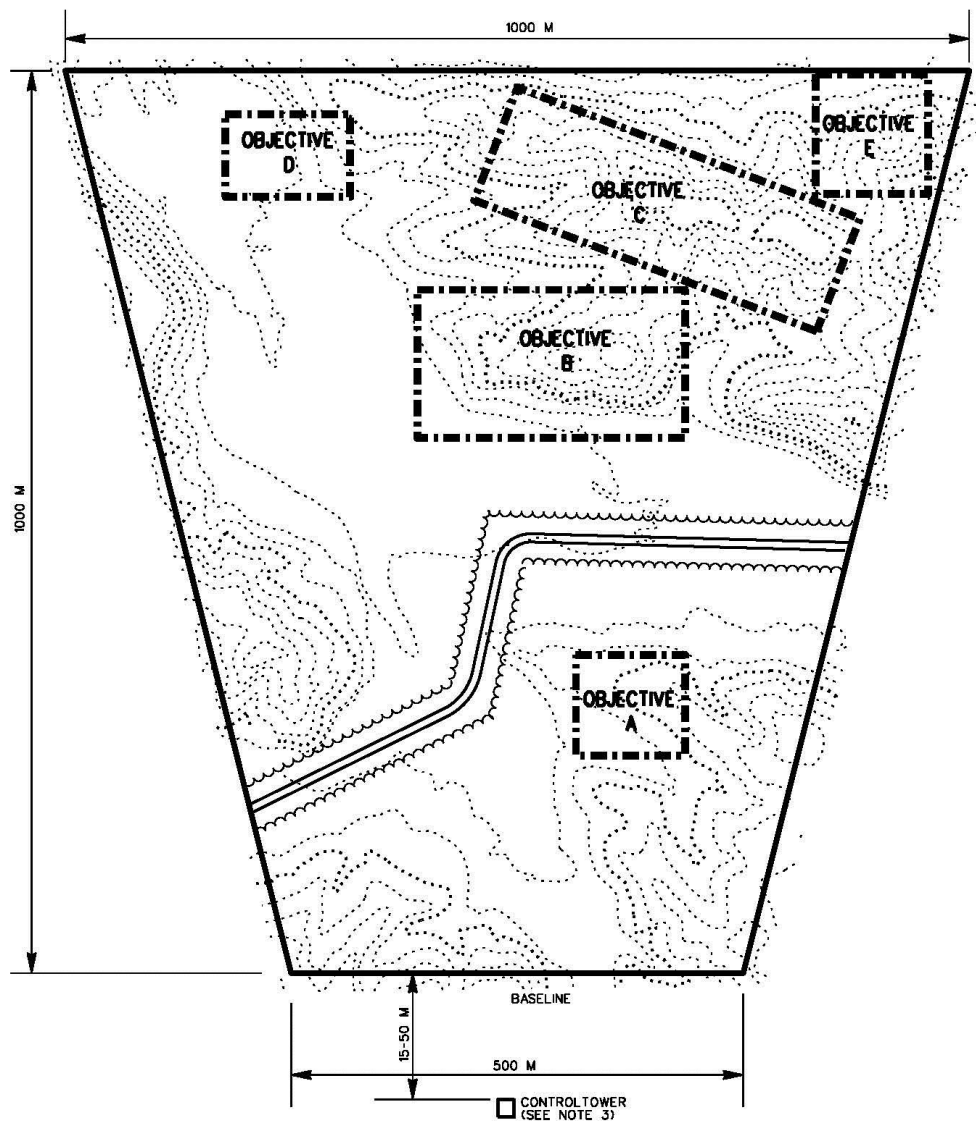
## Firing Line

The ISBC 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 includes 4 SITs.



*STANDARD LAYOUT*

### Objective B

Objective B is the final objective, consisting of two groupings with three SITs and a single MIT in each grouping. Infantry targets should be located approximately 15 meters apart in each grouping. Each target grouping will also include one enemy trench, one SAT, and one machinegun bunker. Locate the target groupings approximately 500 to 600 meters from the baseline. Locate with line of site to Objective C. This requires the squad 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 with line of sight from/to Objective B. This makes the training unit 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.

### Objectives D and E

Objectives D and E are counterattack forces consisting of five SITs, two MITs, one SAT, and one machinegun bunker. Locate the objectives with line of sight back to areas within objectives B and C.

### 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 ISBCs, 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

### 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 ISBC 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 to limited the amount of sight grading. 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 ISBC 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).

Generally, an Observer Controller (OC) following the unit triggers the scenarios as the unit progresses through the range objectives. The OC uses either a radio to signal an operator in the tower or a hand held controller to activate the targets directly. The use of hand held controllers might require the addition of antenna towers to ensure connectivity of the wireless signal to the control tower; coordinate with target provider.

## 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](http://www.us.army.mil)) and the General Dennis J. Reimer Training and Doctrine Digital Library ([www.train.army.mil](http://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.

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



*SIT ARRAY*



*TYPICAL TRENCH*





