

CBRN Contamination



VBS4 24.1.1



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The BISim Wiki is the primary resource on VBS4 scripting:

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PhysX

VBS4 uses the PhysX physics engine. For more information on PhysX visit the Nvidia site.

<https://gameworksdocs.nvidia.com/simulation.html>



Contents

CBRN Contamination	1
1. CBRN Contamination	6
1.1 CBRN Preparation	6
1.2 CBRN Execution	7
2. Hazardous Area	10
2.1 Creating a Hazardous Area	10
2.2 Hazardous Area Effects	14
2.3 Hazardous Area Symbology	15
2.4 Administrator Decontamination	15
3. CBRN Equipment	16
3.1 Area Marker Equipment	17
3.2 Area Marking Kit	17
3.3 CBRN Markers	18
3.4 CBRN Suits Crate	18
3.5 Decontamination Equipment	18
3.6 Detection Devices	19
3.7 M8 Chemical Detection Paper	20
3.8 M9 Chemical Detection Paper	20
3.9 SCBA Mask	20
3.10 CBRN1 and CBRN3 Forms	20
4. CBRN Suits and Gas Masks	21
4.1 Chemical Effects and Symptoms	22
4.2 Obtaining MOPP Suits	23
4.3 CBRN Suits Crate	24
4.4 Using Gas Masks	26
4.5 SCBA Mask	26
4.6 Additional Points	28
5. Swedish CBRN Protection	30
6. CBRN Detection Devices	32

6.1 AN / PDR-77 Probes	32
6.2 Chemical Agent Monitor	34
6.3 Joint Chemical Agent Detector	35
6.4 Lightweight Chemical Agent Detector	37
6.5 Man-Portable Chemical Agent Detector	39
7. M8 Chemical Detection Paper	41
8. M9 Chemical Detection Paper	43
9. Area Marking Kit	45
9.1 Retrieving the Area Marking Kit	45
9.2 Using the Area Marking Kit	46
10. CBRN Markers	48
11. CBRN Decontamination	49
11.1 Decontamination Equipment	49
11.2 Portable Decontamination Equipment	52
11.2.1 Antidotes	54
12. Forms	56
12.1 Accessing Form Options	56
12.2 Creating a Form	57
12.3 Filling-In and Sending a Form	59
12.4 Existing Form Types	60
12.5 Completed Forms	64
13. User Actions	66
13.1 3D World Actions	66
13.1.1 3D World Action Controls	67
13.2 Quick Menu Actions	67
13.2.1 Quick Menu Controls	68

1. CBRN Contamination

The purpose of the CBRN Contamination use case is provide procedural training to Trainees to detect, avoid, and mitigate chemical, biological, radiological, and nuclear contamination (CBRN) that may be encountered in the field.

A typical CBRN scenario consists of the following:

- Hazardous areas that produce CBRN contamination:
 - Mustard Gas
 - Chlorine Gas
 - Sarin Gas
- Units equipped with CBRN equipment:
 - CBRN Suits
 - CBRN Detection Equipment
 - CBRN and Area Markers
 - CBRN Decontamination Equipment

The general workflow of a CBRN simulation in VBS4 contains two parts:

- [CBRN Preparation \(below\)](#)
- [CBRN Execution \(on the next page\)](#)

1.1 CBRN Preparation

As an administrator, use VBS Editor in Prepare mode to prepare a CBRN scenario.

Follow these steps:

1. Use VBS Editor to create a new Scenario, or edit an existing one.

For more information, see Scenario Preparation in the VBS4 Editor Manual.

2. Add any of the following hazards to the CBRN scenario:

Hazard	Description
Hazardous Area	Place contaminated areas in your scenario. For more information, see Hazardous Area (on page 10) .
OPFOR Munitions	VBS4 includes shells that contain chlorine, mustard, sarin gas, and liquid chemical agents that forms clouds around the impact area that disperse over time. These shells may be used by OPFOR units and form part of a CBRN scenario. Add the applicable vehicles to the scenario and modify their loadouts as required. For more information, see Adding Vehicles and Creating Vehicle Variants in the VBS4 Editor Manual.

3. VBS4 has units with specific equipment for CBRN, including the following:

Unit	Description
US USMC	Specific USMC units are equipped with MOPP suits: <ul style="list-style-type: none">• US USMC Desert / Woodland > Rifleman - M16A4 (NBC MOPP N)
SE Army	All Swedish units have CBRN suit functionality as standard. This is not simulated as equipment that they carry.

i NOTE

Other units may pick up and use CBRN equipment in the Scenario, or have the equipment added to their inventory.

For more information, see [Edit Equipment Loadout](#) in the VBS4 Editor Manual.

Add personnel to the scenario.

For more information on placing units, see [Adding Units](#) in the VBS4 Editor Manual.

4. Add additional objects and equipment.

VBS4 includes specific equipment for CBRN scenarios:

- Area Marking Kit
- CBRN Markers
- CBRN Suits Crate
- Decontamination Equipment
- Detection Devices
- M8 and M9 Chemical Detection Paper
- SCBA Mask

Place these objects directly in the scenario using the (F8) Objects option or equip units with them by adding them to their inventory.

For more information, see [CBRN Equipment \(on page 16\)](#), [Adding Objects](#) and [Edit Equipment Loadout](#) in the VBS4 Editor Manual.

5. Preview and save the mission.

For more information, see [Scenario Preparation](#) in the VBS4 Editor Manual.

1.2 CBRN Execution

Once the CBRN scenario is prepared by the administrator, it can be executed.

Start the Scenario and open VBS Editor.

For more information, see [Scenario Execution](#) in the VBS4 Instructor Manual.

Use the Editor UI to modify the scenario as it runs.

A typical CBRN scenario has the following functionality:

1. Instructors monitor and manage contamination effects using VBS Editor in Execute mode:

- The Scenario Objects List displays an overview of contaminated units and objects:



- Contaminated units and objects display CBRN symbology in the 3D Camera View:



- Hazardous Areas may be added, edited, and individual entities may be decontaminated.
For more information, see [Hazardous Area \(on the next page\)](#).
- 2. Trainees can use CBRN Suits to protect themselves from contamination:
 - [CBRN Suits and Gas Masks \(on page 21\)](#)
 - [Swedish CBRN Protection \(on page 30\)](#)

 **NOTE**

Different levels of suit offer varying levels of protection to different types of contamination.

- 3. Trainees can use various equipment to detect CBRN contamination:
 - [CBRN Detection Devices \(on page 32\)](#)
 - [M8 Chemical Detection Paper \(on page 41\)](#)
 - [M9 Chemical Detection Paper \(on page 43\)](#)
- 4. Trainees can use markers and tape to mark contaminated areas:
 - [Area Marking Kit \(on page 45\)](#)
 - [CBRN Markers \(on page 48\)](#)
- 5. Trainees can use CBRN1 and CBRN3 Forms to report CBRN contamination:
 - [CBRN1 and CBRN3 Forms \(on page 20\)](#)
- 6. Trainees can use equipment to decontaminate themselves and other units or objects, or to treat units suffering the effects of contamination:
 - [CBRN Decontamination \(on page 49\)](#)

2. Hazardous Area

VBS4 includes the **Hazardous Area** Editor Object (EO), which enables Mission Designers to quickly create an area on the terrain which is contaminated by a CBRN (Chemical, Biological, Radioactive, Nuclear) substance. This topic discusses the following:

- [Creating a Hazardous Area \(below\)](#)
- [Hazardous Area Effects \(on page 14\)](#)
- [Hazardous Area Symbology \(on page 15\)](#)
- [Administrator Decontamination \(on page 15\)](#)

The following Hazardous Area substances are available to place in a scenario:

- **Mustard Gas**
- **Chlorine Gas**
- **Sarin Gas**
- **Liquid Nerve Agent (LNA)**
- **Radioactive**

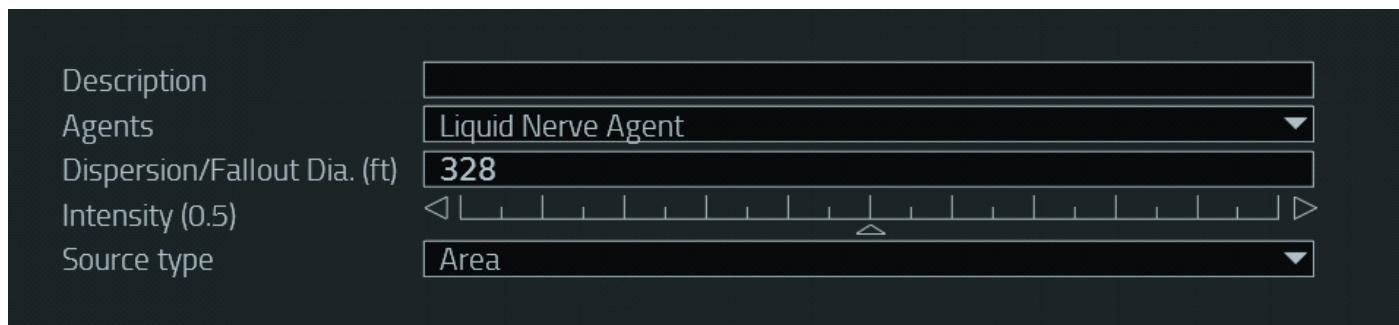
2.1 Creating a Hazardous Area

Use the Hazardous Area EO to create and place a CBRN contaminated area in a scenario.

NOTE

The Hazardous Area EO can only be repositioned in Prepare Mode (OME).

Image-1: Hazardous Area Object Properties dialog



Follow these steps:

1. In the **Editor Objects List**, select **Hazardous Area**, and double-click the map where you want the epicenter of the Hazardous Area to be.

2. In the [Hazardous Area Object Properties dialog \(on the previous page\)](#), configure the following settings.

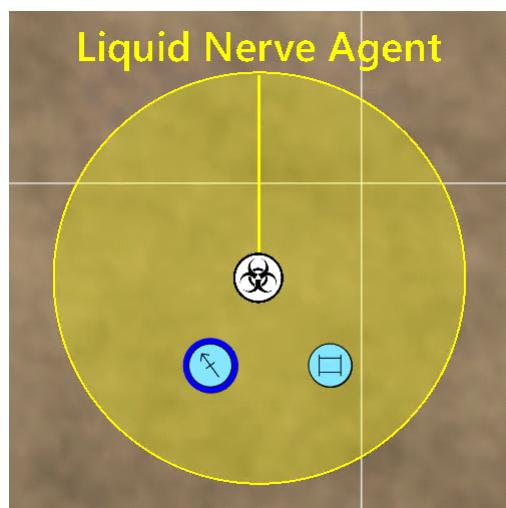
Setting	Description
Description	Optional. Enter a description for the Hazardous Area.
Agents	Use the drop-down to select the specific substance you want to use.
	NOTE
	This setting can only be modified in Prepare Mode (OME).
Dispersion / Fallout (ft)	Enter a dispersion / fallout area, in feet (ft).
	WARNING
	In VBS4, Liquid Nerve Agents (LNAs) and Radiation contaminants are confined to the area inside the Hazardous Area cylinder, unless a contaminated entity moves beyond its boundaries and contaminates other entities by touching / handling them, for example.
	While gases initially occupy the defined area, elements such as wind usually disperse them beyond the boundaries of the Hazardous Area. Therefore, entities that are outside the area defined by the Hazardous Area EO, may still come into contact with a gas cloud, and be affected / contaminated.
Intensity	Use the slider to set the intensity of the substance.
	WARNING
	For LNAs, there is a threshold level intensity of 0.15 . Below this level, LNAs cause detectable contamination but do not cause harmful effects to units. Above this level, LNAs cause harm to unprotected units.

Setting	Description
Source Type	<p>Use the drop-down to select from the following options:</p> <ul style="list-style-type: none">• Area• Point Source <div style="border: 1px solid #0070C0; padding: 10px; margin-top: 10px;"><p>EXAMPLE</p><p>Simulates the difference between a radioactive fallout area (radioactive particles in the air), and a radioactive point source (like a piece of uranium, for example), where players can detect the source of the Radiation the closer they get to it (see also AN / PDR-77 Probes (on page 32)).</p></div> <p>Both options are visualized in the same way in VBS.</p> <div style="border: 1px solid #0070C0; padding: 10px; margin-top: 10px;"><p>NOTE</p><p>This setting can only be modified in Prepare Mode (OME).</p></div>

3. Click **OK**.

The Hazardous Area appears on the 2D Map as a **yellow** range visualization circle, with either of the following CBRN symbols at the center.

Image-2: Gas / LNA and Radiation symbols



In 3D Camera View, the Hazardous Area appears as a **yellow** range visualization cylinder, with CBRN symbology above it.

Image-3: Hazardous Area cylinder in 3D



i NOTE

The following considerations apply:

- Some gases produce visible gas clouds for Trainees, but other gases and CBRN substances are invisible.
- Use the Range Visibility Settings in the VBS4 Administrator Manual to enable / disable the individual elements of the range visualizations.
- The height of the range visualization cylinder (2 meters by default) cannot be adjusted.
- Range visualizations can only be seen by scenario Administrators / Instructors, not Trainees.
- Hazardous Area range visualizations (cylinders) are also visible in AAR (see After Action Review (AAR)) in the VBS4 AAR Manual.



WARNING

Entities inside a defined Hazardous Area are contaminated. This includes buildings and, currently, all units in vehicles. However, vehicle occupants wearing MOPP suits receive similar levels of protection to those outside vehicles, see [CBRN Suits and Gas Masks \(on page 21\)](#).

Trainees who suspect that they have entered a contaminated area are expected to establish what substance is present using the following equipment:

- [CBRN Detection Devices \(on page 32\)](#)
- [M8 Chemical Detection Paper \(on page 41\)](#)
- [M9 Chemical Detection Paper \(on page 43\)](#)

2.2 Hazardous Area Effects

Units who are wearing a MOPP Suit, gas mask, or SCBA mask may not be internally affected by a CBRN substance if they have adequate protection, but they may be outwardly contaminated (their clothing), and should use appropriate decontamination equipment once they have moved away from the Hazardous Area, see [CBRN Decontamination \(on page 49\)](#).

For more information about MOPPS Suits, gas masks, SCBA masks, and other protective equipment, see [CBRN Suits and Gas Masks \(on page 21\)](#).

The prognosis for unprotected units that move away from a Hazardous Area depends on the substance that they were exposed to.

Substance	Description
Gases	Recovery is possible with time. If units recover, the hazard symbology is removed from above their avatar, and from their entry in the Scenario Objects Panel.
Liquid Nerve Agent	Recovery is not possible unless treatment is given (see Antidotes (on page 54)), which only suppresses symptoms.
Radiation	Recovery is not possible and no treatment is available.

See also [Chemical Effects and Symptoms \(on page 22\)](#) for a list of health effects that units may experience.

Other entities, such as vehicles and objects are also contaminated when inside the area defined by the Hazardous Area EO, and remain contaminated even when they move away from the affected area. Trainees can use various equipment to decontaminate vehicles and objects, see [Decontamination Equipment \(on page 49\)](#).

NOTE

If necessary, Administrators / Instructors can instantly decontaminate entities in the VBS Editor in Execute Mode, providing that they move the entity outside of the Hazardous Area first, see [Administrator Decontamination \(on the next page\)](#).

For a complete list of decontamination and other equipment that you can make available to Trainees in a scenario, see [CBRN Equipment \(on page 16\)](#).

2.3 Hazardous Area Symbology

All entities that are contaminated by a CBRN substance display CBRN symbology above their avatar in 3D Camera View. This includes units wearing MOPP suits as, while they may not have internal contamination and become ill, they may have outer contamination of their MOPP suit or other protective clothing.

In addition, similar symbology appears next to the entry of all contaminated entities in the Scenario Objects Panel. These symbols remain in place, even if the entity leaves the defined Hazardous Area, unless you perform [Administrator Decontamination \(below\)](#), or if players use appropriate decontamination equipment. For more information, see [Decontamination Equipment \(on page 18\)](#) and [Portable Decontamination Equipment \(on page 52\)](#).

Image-4: Contaminated vehicle with CBRN symbology



2.4 Administrator Decontamination

Entities that are contaminated by a CBRN substance can be instantly decontaminated by Administrators / Instructors during a scenario.

Follow these steps:

1. Ensure that the entity is outside the Hazardous Area cylinder.
2. Do one of the following:
 - Right-click the **Entity** on the map.
 - Right click the **Entity** entry in the Scenario Objects Panel.
3. In the context menu, select **Clear CBRN Contamination**.

All contamination and related symbology is removed from the entity.

Usually, Trainees are expected to decontaminate themselves and other entities as part of a mission. For more information, see [CBRN Decontamination \(on page 49\)](#)

3. CBRN Equipment

VBS4 includes a selection of CBRN related equipment Editor Objects that you can place in a scenario.

Some of the objects can be placed directly in the Equipment Inventory of a Trainee. Use **Customize Starting Loadout** (see Edit Equipment Loadout in the VBS4 Trainee Manual) in the OME to add portable objects to a Trainee inventory. Alternatively, you can place them on the ground in the vicinity of the Trainee for them to retrieve.

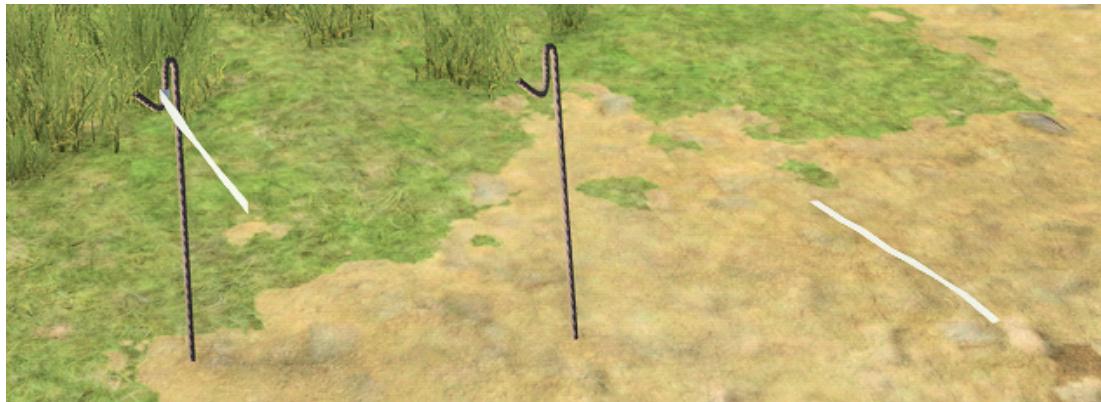
This topic discusses the following Editor Objects:

- [Area Marker Equipment \(on the next page\)](#)
- [Area Marking Kit \(on the next page\)](#)
- [CBRN Markers \(on page 18\)](#)
- [CBRN Suits Crate \(on page 18\)](#)
- [Decontamination Equipment \(on page 18\)](#)
- [Detection Devices \(on page 19\)](#)
- [M8 Chemical Detection Paper \(on page 20\)](#)
- [M9 Chemical Detection Paper \(on page 20\)](#)
- [SCBA Mask \(on page 20\)](#)
- [CBRN1 and CBRN3 Forms \(on page 20\)](#)

3.1 Area Marker Equipment

Area Marker Equipment is available to place and assemble directly in a scenario using the 3D Camera View (see Interacting with Editor Objects in the VBS4 Editor Manual).

Object	Description
Area Tape Marker 1 / 5 / 10 m	Area Tape Spike, with a length of tape already attached. Add an additional spike to complete.
Area Tape Spike	Single spike, which is automatically placed upright in the ground, when you place it on the map.
Engineer Tape 1 / 5 / 10 m	Length of ground-placed Engineering / Area Tape intended as a visualization device for Administrators.
Area Tape	



3.2 Area Marking Kit

The Area Marking Kit enables Trainees to mark areas or vehicles contaminated by CBRN substances. Place the kit in the Equipment Inventory of a Trainee, or on the map for retrieval and assembly.

(F8) Objects > Object - CBRN - Area Marking Kit



For information about using the Area Marking Kit as a Trainee, see [Area Marking Kit \(on page 45\)](#).

3.3 CBRN Markers

CBRN Markers are used to warn scenario participants that an area is contaminated by a CBRN substance.

(F8) Objects > Object - CBRN > CBRN Atom / Bio / Gas Mine Marker

Place them directly in the scenario.

If necessary, Trainees can carry CBRN Markers and place them on the ground using their Equipment Inventory UI.

How these objects appear and are used in-game is discussed in [CBRN Markers \(on page 48\)](#).

3.4 CBRN Suits Crate

Individual CBRN clothing items are available in a crate in VBS4. Trainees can remove items from the crate, put them into their inventory, and put them on.

(F8) Objects > Object CBRN > CBRN Suits (parts)

contains 10 of each of the following items:

- Boots
- Hood
- Jacket
- Trousers
- Gloves
- Mask

Place the crate directly in the scenario.

How these objects appear and are used in-game is discussed in [CBRN Suits Crate \(on page 24\)](#).

WARNING

The equipment within the CBRN Suits Crate can only be used by USMC units that do not wear any special equipment / uniform by default (for example, EOD bombsuit technicians or pilots).

3.5 Decontamination Equipment

Various decontamination and antidote objects are available, which you can place directly in the scenario.

(F8) Objects > Object - CBRN

includes the following objects:

- **33 Gallon Trash Can - Decontaminant (grey)**
- **33 Gallon Trash Can - Water (blue)**
- **CBRN Tarp - Black / Blue / Green**
- **Shufflepit (Dirt / Sand)**
- **ATNAA (Antidote Treatment Nerve Agent Auto-injector)**

- **CANA** (Convulsive Antidote, Nerve Agent)
- **M100** (Decontamination Kit)
- **M26** (Vehicle decontamination apparatus)
- **RDSL** (Reactive Skin Decontamination Lotion)

How these objects appear and are used in-game is discussed in [CBRN Decontamination \(on page 49\)](#).

3.6 Detection Devices

VBS4 includes the following CBRN detection devices:

AN / PDR-77 Probes

A series of hand-held probes used to detect Radiation.

[**\(F8\) Objects > Object - CBRN > AN/PDR-77 Alpha / Beta / Micro / Pancake / X-Ray**](#)

Using the probes is discussed in [AN / PDR-77 Probes \(on page 32\)](#).

Chemical Agent Monitor (CAM)

A portable, hand-held device capable of detecting Blister or Liquid Nerve Agent contamination on people, objects, and elements of the surrounding environment. It also detects Sarin Gas.

How Trainees use the CAM is discussed in [Chemical Agent Monitor \(on page 34\)](#).

Joint Chemical Agent Detector (JCAD)

A hand-held detector used to alert Trainees to the presence of hazardous substances, including noxious gases and Liquid Nerve Agents.

[**\(F8\) Objects > Object - CBRN > JCAD M4A1**](#)

Using the JCAD is discussed in [Joint Chemical Agent Detector \(on page 35\)](#).

Lightweight Chemical Agent Detector (LCAD)

A hand-held detector designed to detect Chemical Warfare Agents (CWAs). It forms part of a two-tier detection capability with the MCAD.

Using the LCAD is discussed in [Lightweight Chemical Agent Detector \(on page 37\)](#).

Man-Portable Chemical Agent Detector (MCAD)

This portable device is capable of detecting and identifying the full range of Chemical Warfare Agents (CWAs). MCAD is a point detector, which quantifies the CWA it is configured to respond to.

Using the MCAD is discussed in [Man-Portable Chemical Agent Detector \(on page 39\)](#).

3.7 M8 Chemical Detection Paper

The M8 Chemical Detection Paper (M8 CDP) is a booklet containing paper which changes color when it detects the presence of Liquid Nerve Agents.

(F8) Objects > Object - CBRN > M8 Chemical Detection Paper

Usage is discussed in [M8 Chemical Detection Paper \(on page 41\)](#).

3.8 M9 Chemical Detection Paper

The M9 Chemical Detection Paper (M9 CDP) is a box / strip of gray-colored adhesive tape which changes color when it detects the presence of Liquid Nerve Agents, including Sarin Gas.

(F8) Objects > Object - CBRN > M9 Chemical Detection Paper / M9 Chemical Detection Paper Strip

Usage is discussed in [M9 Chemical Detection Paper \(on page 43\)](#).

3.9 SCBA Mask

The SCBA (Self-contained Breathing Apparatus) Mask is part of a kit which contains the mask, a high-pressure tank, and a pressure regulator. The kit is contained in a bag which Trainees can carry.

(F8) Objects > Object - CBRN > Air-Pak 75 SCBA

Usage is discussed in [SCBA Mask \(on page 26\)](#).

3.10 CBRN1 and CBRN3 Forms

Two CBRN Form types can be sent and received by Administrators / Trainees in VBS4:

Form	Sent By	Description
CBRN1	Trainees	Observer initial report form.
CBRN3	Administrator / Instructor	Immediate warning of expected contamination or Hazardous Area.

For more information, see [CBRN1 / CBRN3 \(on page 63\)](#).

4. CBRN Suits and Gas Masks

VBS4 is able to simulate Chemical, Biological, Radiological, and Nuclear (CBRN) situations. You can put on protective CBRN clothing in response to a threat from any of these substances, or if you enter an environment where they are present.

This topic discusses the following aspects of CBRN protection:

- [Chemical Effects and Symptoms \(on the next page\)](#)
- [Obtaining MOPP Suits \(on page 23\)](#)
- [CBRN Suits Crate \(on page 24\)](#)
- [Using Gas Masks \(on page 26\)](#)
- [SCBA Mask \(on page 26\)](#)
- [Additional Points \(on page 28\)](#)

You may already be equipped with one of the available CBRN MOPP Suits, which offer six levels of protection (MOPP 0 to MOPP 4, and MOPP Alpha), depending on the substance you are exposed to. However, you are still at risk of "outer" contamination and may experience "inner" contamination effects if the MOPP Suit or other protective CBRN clothing you are wearing is not adequate.

TIP

Gas Masks and SCBA Masks provide the equivalent of MOPP 3 level protection.

NOTE

Swedish units use their own specific CBRN protection, see [Swedish CBRN Protection \(on page 30\)](#).

Image-5: Different levels of MOPP Suit protection



The MOPPs levels shown here, from left to right are: MOPPS 0, 1, 2, 3, 4, and Alpha.

4.1 Chemical Effects and Symptoms

If you are not wearing any protective MOPP / CBRN clothing or equipment, you experience the following escalating effects based on the proximity, density, and length of time that you are exposed to a CBRN substance:

NOTE

If you are already wearing a Gas mask or MOPP 3 suit prior to exposure, you do not experience the symptoms of Chlorine or Mustard Gas. If you put a mask on shortly after exposure to these substances, the symptoms subside over the course of a few minutes.

- **Mustard Gas** - Tunnel vision, increased fatigue, unstable aim, coughing / choking, health degradation but not death.
- **Chlorine Gas** - Tunnel vision, increased fatigue, unstable aim, coughing / choking, unconsciousness, health degradation and eventual death.
- **Sarin Gas** - Tunnel vision, increased fatigue, unstable aim, convulsions, unconsciousness, health degradation and eventual death.
- **Radiation** - Tunnel vision, increased fatigue, unstable aim, health degradation and eventual death.
- **Liquid Nerve Agent** - Tunnel vision, convulsions, unconsciousness, health degradation and eventual death.

WARNING

Chlorine and Mustard gases produce visible clouds. The other substances are invisible.

EXAMPLE

If a default 105 mm Chlorine warhead detonates near a player who is not wearing a gas mask, they receive maximum strength exposure, and the exposure level for the player increases rapidly at 1 unit per second. The player experiences coughing after 1 second, and blurred vision after 3 seconds. On noticing these effects, the player puts on their gas mask as quickly as possible. As it takes a few seconds to put the mask on, a Chlorine exposure level of 12 can easily be reached. If they put their mask on quickly enough, they can prevent the choking effect, unconsciousness, and death.

As soon as the mask is on, the player begins to recover, as their exposure level decreases over time. Default exposure levels for Chlorine decrease at 3 units per minute. Based on a maximum exposure level of 12, vision improves after about 3 minutes, and coughing stops about 40 seconds later. Higher levels of exposure result in more effects, and a longer recovery time.

If players are downwind of a CBRN delivery (say 200 m), they receive a correspondingly lower level of exposure per second, the effects take longer to appear, and they can put on their masks before more severe effects become apparent. Consequently, their recovery is also faster, due to their lower exposure.

The strength of chemical exposure depends on proximity and density. Multiple shells can also produce overlapping clouds of gas, resulting in increased cumulative strength and increased exposure rates.

NOTE

Chemical warheads, their effects, and corresponding recovery rates are configurable. For more information, see Configure CBRN Weapons in the VBS Developer Reference in the `\docs\` folder of your VBS Developer Suite installation.

4.2 Obtaining MOPP Suits

Applicable Units can access MOPP Suits using the Quick Menu (see [Quick Menu Actions \(on page 67\)](#)), if they are not already equipped with them.

Follow these steps:

1. Press **Quick Menu (Left Windows)**.
2. Select **MOPP SUIT OPTIONS**.
3. Select the appropriate MOPP level.

Your avatar automatically simulates putting the MOPP Suit on.

To remove the MOPP Suit, repeat steps 1 to 2, and then select **NONE**.

Your avatar automatically simulates taking the MOPP Suit off.

Image-6: Accessing the different MOPP Suit levels



NOTE

MOPP Suit level changing times vary (for example, it takes longer to change into MOPP 4 compared to MOPP 1). To change from MOPP 0 to MOPP Alpha takes the cumulative time of all the MOPP Suit levels.

4.3 CBRN Suits Crate

Individual CBRN clothing items are available in the CBRN Suits Crate in VBS4.

WARNING

The equipment within the CBRN Suits Crate can only be used by USMC units that do not wear any special equipment / uniform by default (for example, EOD bombsuit technicians or pilots).



You can remove items from the crate, put them into your inventory, and put them on. The CBRN Suits Crate contains 10 of each of the following items:

- **Boots**
- **Hood**
- **Jacket**
- **Trousers**
- **Gloves**
- **Mask**

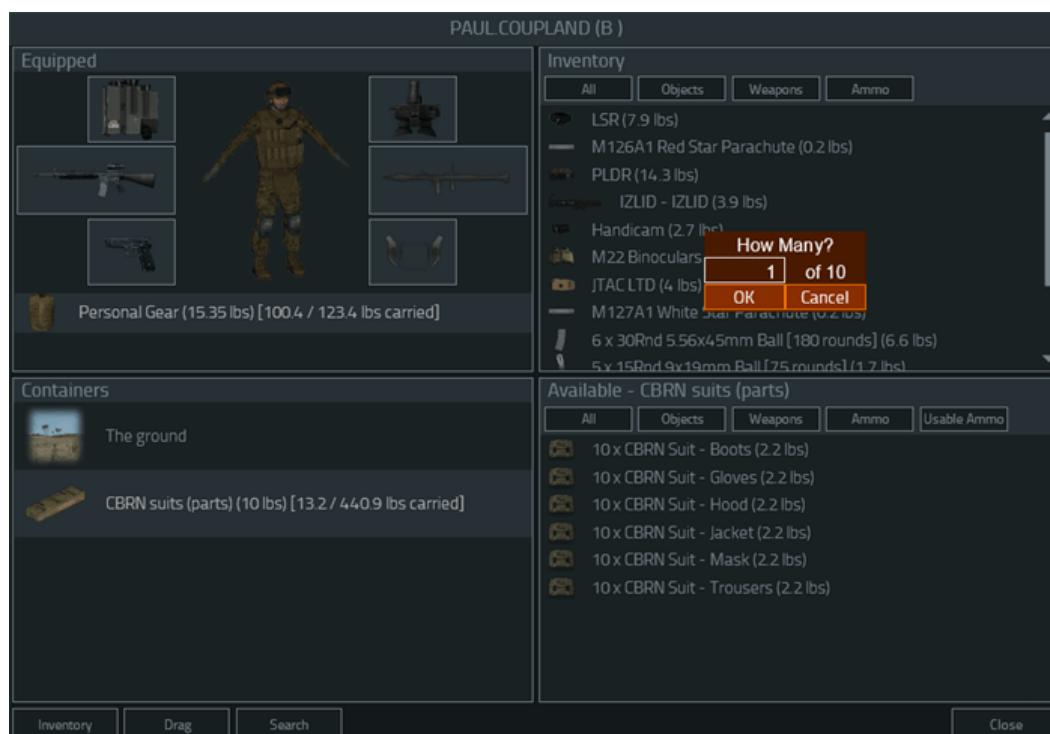
To access and put them on, follow these steps:

1. Approach the crate.
2. Press **Inventory (I)** to open your Equipment Inventory.
3. In the **Containers** window (bottom-left), click **CBRN Suits (parts)**.
A list of CBRN clothing items in the crate is shown in the **Available** window (bottom-right).
4. Click and drag an item of CBRN clothing to the **Inventory** window (top-right).
5. In the **How many?** dialog, enter the amount of the item you want, and click **OK**.
The items are placed in your inventory.
6. Repeat steps 4 and 5 to add more items.
7. In the **Inventory** window, click the **item** you want to wear and drag it to the **Equipped** window (top-left), and place it under **Personal Gear**.
8. Click **Close** to close the Equipment Inventory UI.

Your avatar automatically simulates putting the CBRN clothing item on.

To remove an item of CBRN clothing, reverse the procedure and place the item in your **Inventory**. To place it back in the crate, click the **item** and drag it to the crate in the **Containers** window.

Image-7: Obtaining CBRN clothing items



4.4 Using Gas Masks

Units equipped with Gas masks in their inventory can put them on using the Quick Menu (see [Quick Menu Actions \(on page 67\)](#)), depending on where they are.

Follow these steps:

- If you are inside a vehicle, press **Quick Menu (Left Windows)**, and select **PUT ON MASK**.
- If you are outside a vehicle, press **Quick Menu (Left Windows)**, select **MOPP SUIT OPTIONS > PUT ON MASK**.

Your avatar automatically simulates putting the Gas mask on.

To remove the mask, repeat the actions described, but this time select **REMOVE MASK / MOPP SUIT OPTIONS > REMOVE MASK** in the Quick Menu.

4.5 SCBA Mask

The SCBA (Self-Contained Breathing Apparatus) Mask is part of a kit which contains the mask, a high-pressure tank, and a pressure regulator. The kit is contained in a bag which can be carried in your inventory. The SCBA Mask provides 45 minutes of oxygen.

Image-8: Air-Pak 75 SCBA bag



If the bag is not in your inventory but is in your vicinity, approach it, and do one of the following:

- Look at the bag, until the **Pick Up** 3D World Action appears (see [3D World Actions \(on page 66\)](#)). Then, select it.

Picked up Air-Pak 75 SCBA appears at the top-right of your screen, and the bag is placed in your inventory.

- Press **Inventory (I)** to open your Equipment Inventory, and follow the procedure in Manage Equipment to place it in your inventory.

To put the SCBA Mask on, follow these steps:

1. Press **Inventory (I)** to open your Equipment Inventory.
2. In the Carried Items window, click the **Air-Pak 75 SCBA** and drag it to the **Equipped** window, placing it under **Personal Gear**.
3. Click **Close** to close the Equipment Inventory UI.

Your avatar automatically simulates putting the SCBA Mask on.

Image-9: Unit equipped with the SCBA Mask



How much oxygen you have remaining when wearing the SCBA Mask is shown by an Air Indicator bar at the top-left of your screen, similar to that shown when underwater diving, see Drowning in the VBS4 Trainee Manual.

WARNING

If you run out of oxygen, you suffocate and die.

To avoid suffocation, you must remove the SCBA Mask before the oxygen completely runs out. To do this, press **Inventory (I)** to open your Equipment Inventory and repeat step **2** of the aforementioned procedure in reverse to remove it.

4.6 Additional Points

- If you are the leader of a group and follow the procedure described in [Obtaining MOPP Suits \(on page 23\)](#), AI in your group put their MOPP Suits on when you do.
- The **M22 Gas Detector** can be deployed. It sounds an alarm when any airborne agent comes within range. These detectors are deployable within and around bases.
- As a member of a helicopter crew, you are safe from CBRN substances in the air (except for Chlorine and Sarin gases), but not on the ground.
- All protection levels are not available to all units.
- [M9 Chemical Detection Paper \(on page 43\)](#) and [M8 Chemical Detection Paper \(on page 41\)](#) can detect liquid chemical agents.
- A range of detection devices are available to establish the presence of various hazardous substances, see [CBRN Detection Devices \(on page 32\)](#).
- Various equipment is available for you to decontaminate yourself or other entities, see [CBRN Decontamination \(on page 49\)](#).



NOTE

All non-US CBRN units (**Rifleman - M16A4 (NBC MOPP 0)**) are available with level **0** protection only. This can be changed by entering the following command in the **Initialization Statement** field in the Object Properties dialog in Prepare mode:

```
[this, newLevel, true] call fn_vbs_setUnitNBCLevel
```

Replace `newLevel`, with a string ("level1", "level2", "level3", "level4") or a number (1, 2, 3, 4).

The unit changes into the defined MOPP Suit level on mission start. In addition, this command can be used in Execute mode to make units change MOPP Suit during a mission.

To verify the valid CBRN level parameters for a unit, execute the following statement in the Developer Console:

```
["true" configClasses (configFile >> "CfgVehicles" >> typeof player >>  
"NBCProtection"), {configName _x}] call fn_vbs_setEach
```

To match the numbered scale to the available CBRN levels for a unit, execute the following script in the debug console: `ret = [player, X, false] call fn_vbs_setUnitNBCLevel`, where `X` is the numbered level to query.

5. Swedish CBRN Protection

All Swedish units have CBRN capability. Change dress states using Quick Menu (see [Quick Menu Actions \(on page 67\)](#)).

Follow these steps:

1. Press **Quick Menu (Left Windows)**.
2. Select **DRESS STATE OPTIONS**.
3. Select the appropriate **Dress State**:
 - Go to Dress State 1 - 5
 - Go to Dress State ALPHA
 - Put on Gloves
 - Put on Mask

Dress State	Gas Mask	Suit	Boots	Gloves
1	-	-	-	-
2	-	ON	-	-
3	-	ON	ON	-
4	-	ON	ON	ON
5	ON	ON	ON	ON
Alpha	ON	-	-	ON

Dress State 5 protects against all chemical warfare weapons simulated in VBS4.

VBS4 does not simulate carrying the different parts of the CBRN equipment in the Equipment Inventory. It is assumed that the CBRN units always have everything available.

NOTE

When a group leader changes to a specific Dress State, all subordinate units change to the same Dress State.

Changing Dress States takes a significant amount of time, while the unit performs a "dressing-up" animation. Performing any other action during the animation cancels the Dress State change.

Note for Mission Editors: By default, all Swedish units start missions at the lowest Dress State. To set units to a specific Dress State at the start of a mission, edit the unit in Prepare mode, and set the following Initialization Statement, which initiates the dressing-up animation:

```
[this, "moppX", true] call fn_vbs_setUnitNBCLevel
```

Where X is the Dress State, 1-5 or A.

6. CBRN Detection Devices

VBS4 includes the following CBRN detection devices, used to establish the presence of CBRN substances:

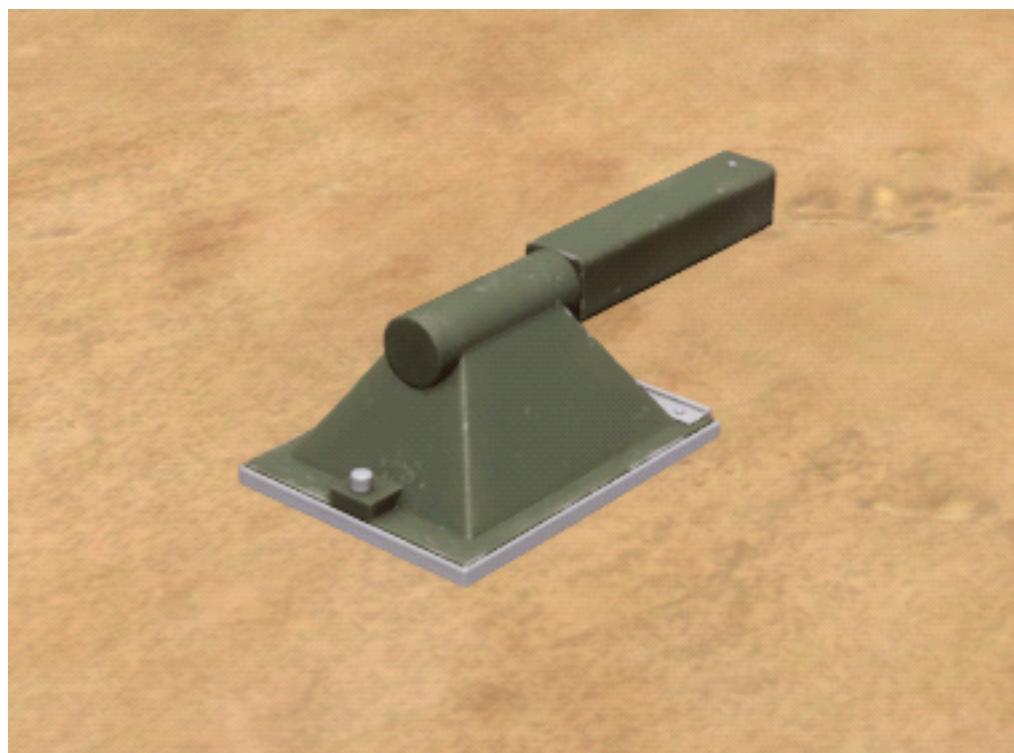
- [AN / PDR-77 Probes \(below\)](#)
- [Chemical Agent Monitor \(on page 34\)](#)
- [Joint Chemical Agent Detector \(on page 35\)](#)
- [Lightweight Chemical Agent Detector \(on page 37\)](#)
- [Man-Portable Chemical Agent Detector \(on page 39\)](#)

If you detect a CBRN substance, you can send a report to your Administrator / Instructor, see [CBRN1 / CBRN3 \(on page 63\)](#).

6.1 AN / PDR-77 Probes

The AN / PDR-77 probes are hand-held Radiation detection devices that are available in VBS in various shapes and sizes (Alpha / Beta / Micro / Pancake / X-Ray).

Image-10: AN / PDR-77 Alpha Probe



An AN / PDR-77 probe may already have been placed in your Equipment Inventory by your Administrator, in which case you can skip to step 2 of the following procedure. Otherwise, you can retrieve it from the ground in your vicinity.

Follow these steps:

1. Approach and look at the probe, until the **Pick Up** 3D World Action appears (see [3D World Actions \(on page 66\)](#)).

2. Click the **MMB** to pick up the probe.

The probe is added to you Equipment Inventory.

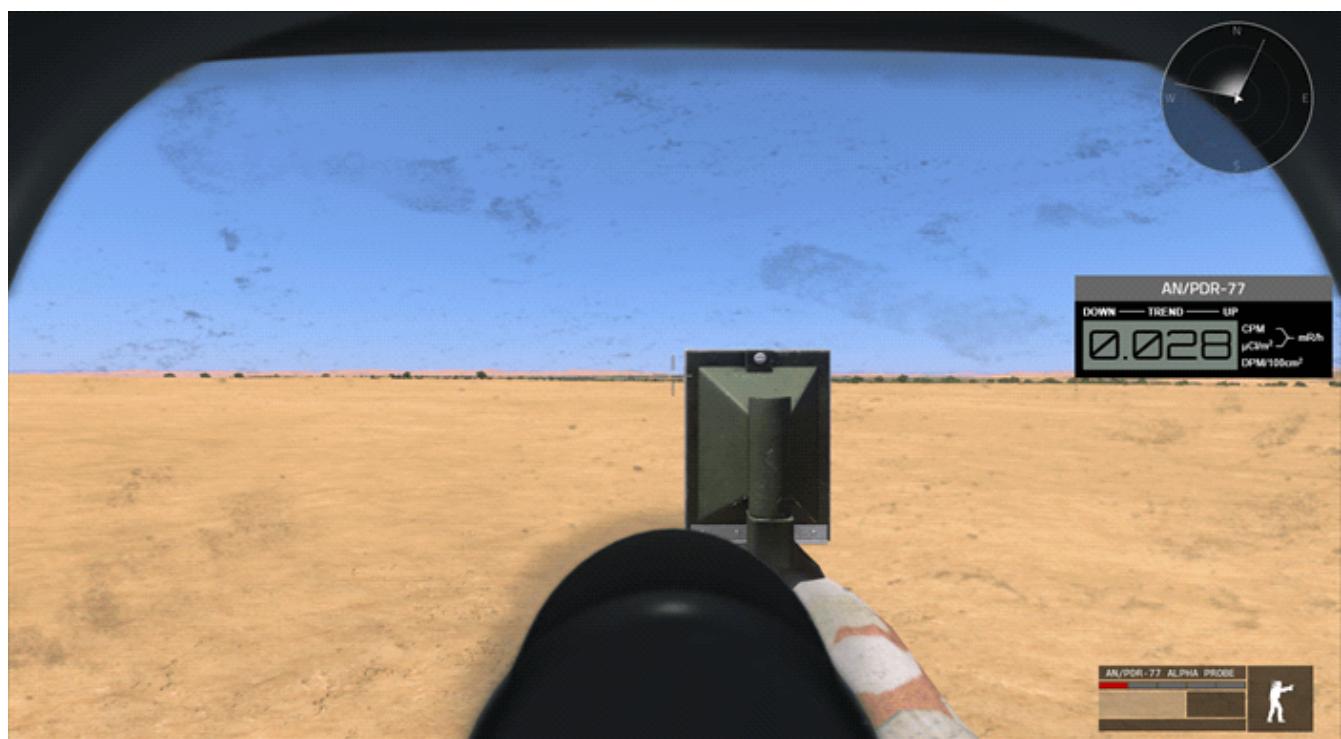
3. Press **Inventory (I)** to open your the Equipment Inventory, and follow the procedure in Manage Equipment in the VBS4 Trainee Manual to place it in your inventory.

The probe is placed in the **Pistol** slot of your inventory. Click **Close** or press **Esc**, to exit the UI.

4. Press **Quick Menu (Left Windows)** (see [Quick Menu Actions \(on page 67\)](#)).

5. Select **WEAPON**, and then **AN / PDR-77 Name PROBE IN HAND**.

The probe is placed in your hands, and the following HUD appears at the right of your screen:



If Radiation is present, an alarm is heard, and the HUD gives a reading of the Radiation level in the immediate vicinity.

6.2 Chemical Agent Monitor

The Chemical Agent Monitor (CAM) is a portable hand-held device capable of detecting Blister or Liquid Nerve Agent contamination on people, objects, and elements of the surrounding environment. In VBS4, it identifies and alerts you to the presence of the following CBRN substances:

- **Liquid Nerve Agent**
- **Sarin Gas**

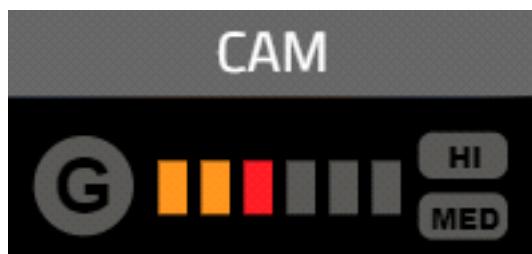


The CAM may have been placed in your Equipment Inventory by your Administrator, in which case you can skip to step 2 of the following procedure. Otherwise, you can retrieve it from the ground in your vicinity.

Follow these steps:

1. Approach and look at the **CAM**, until the **Pick Up** 3D World Action appears (see [3D World Actions \(on page 66\)](#)).
2. Follow the instructions in Equipment Inventory, and place the CAM in your **Pistol Slot**.
3. Press **Quick Menu (Left Windows)** (see [Quick Menu Actions \(on page 67\)](#)).
4. Select **WEAPON**, and then **CAM IN HAND**.

The CAM is placed in your hands, and the following HUD appears at the right of your screen:



If a CBRN substance is present, an alarm is heard, and the HUD indicates what substance is present. The horizontal bars indicate the concentration level of the substance.

The CAM HUD has the following indicators:

Indicator	Description
G	Flashes red to indicate the presence of a Liquid Nerve Agent or Sarin Gas.
HI / MED	Together with the horizontal indicator bars, indicate the substance level. Orange = Medium, Red = High.

Press **Toggle Weapons (Spacebar)** to move through the following modes, which are shown in the top bar of the multi-weapon HUD located at the bottom-right of your screen:

Mode	Description
Point CWA1 Mode	Scans for Liquid Nerve Agent or Sarin Gas once every second in the direction the CAM is pointed.
Point CWA5 Mode	Scans for Liquid Nerve Agent or Sarin Gas once every 5 seconds in the direction the CAM is pointed.

6.3 Joint Chemical Agent Detector

The Joint Chemical Agent Detector (JCAD) M4A1 is a pocket-sized hand-held device that identifies and alerts you to the presence of the following CBRN substances:

- **Liquid Nerve Agent**
- **Chlorine Gas**
- **Mustard Gas**
- **Sarin Gas**



The JCAD may have been placed in your Equipment Inventory by your Administrator, in which case you can skip to step 2 of the following procedure. Otherwise, you can retrieve it from the ground in your vicinity.

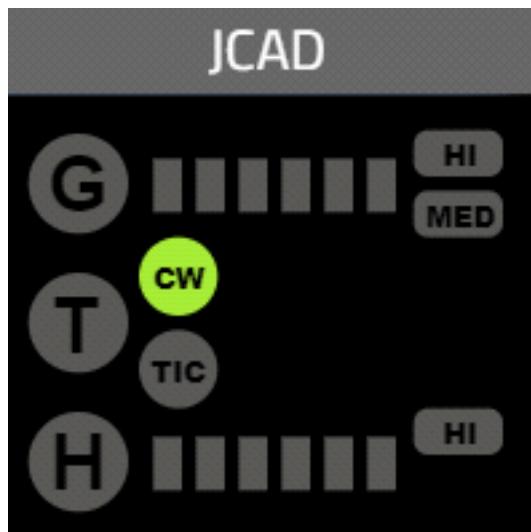
Follow these steps:

1. Approach and look at the **JCAD**, until the **Pick Up** 3D World Action appears (see [3D World Actions \(on page 66\)](#)).

Picked up JCAD M4A1 appears at the top-right of your screen, and the JCAD is placed in your inventory.

2. Follow the instructions in Equipment Inventory, and place the JCAD in your **Pistol Slot**.
3. Press **Quick Menu (Left Windows)** (see [Quick Menu Actions \(on page 67\)](#)).
4. Select **WEAPON**, and then **JCAD M4A1 IN HAND**.

The JCAD is placed in your hands, and the following HUD appears at the right of your screen:



If a CBRN substance is present, an alarm is heard, and the HUD indicates what substance is present. The horizontal bars indicate the concentration level of the substance.

The JCAD HUD has the following indicators:

Indicator	Description
G	Flashes red to indicate the presence of Sarin Gas or a Liquid Nerve Agent.
T	Flashes red (after switching to Area TIC Mode) to indicate the presence of Chlorine Gas.
H	Flashes red to indicate the presence of Mustard Gas or a Blister Agent.
CW	Flashes green to indicate "Chemical Warfare".
TIC	Flashes green to indicate "Toxic Industrial Chemical".
HI / MED	Together with the horizontal indicator bars, indicate the substance level. Orange = Medium, Red = High.

Press **Toggle Weapons (Spacebar)** to move through the following modes, which are shown in the top bar of the multi-weapon HUD located at the bottom-right of your screen:

Mode	Description
Area CWA1 Mode	Scans for Liquid Nerve Agent, Mustard Gas, Sarin Gas once every second in a 5-meter area.
Area CWA5 Mode	Scans for Liquid Nerve Agent, Mustard Gas, Sarin Gas once every 5 seconds in a 5-meter area.
Area TIC Mode	Scans for Chlorine Gas once every 5 seconds in a 5-meter area.
Point CWA1 Mode	Scans for Liquid Nerve Agent, Mustard Gas, Sarin Gas once every second in the direction the JCAD is pointed.
Point CWA5 Mode	Scans for Liquid Nerve Agent, Mustard Gas, Sarin Gas once every 5 seconds in the direction the JCAD is pointed.
Point TIC Mode	Scans for Chlorine Gas once every 5 seconds in a 5-meter area in the direction the JCAD is pointed.

6.4 Lightweight Chemical Agent Detector

The Lightweight Chemical Agent Detector (LCAD) is a hand-held device designed to detect Chemical Warfare Agents (CWA). It forms part of a two-tier detection capability with the [Man-Portable Chemical Agent Detector \(on page 39\)](#). In VBS4, it identifies and alerts you to the presence of the following CBRN substances:

- **Liquid Nerve Agent**
- **Mustard Gas**
- **Sarin Gas**



The LCAD may have been placed in your Equipment Inventory by your Administrator, in which case you can skip to step 2 of the following procedure. Otherwise, you can retrieve it from the ground in your vicinity.

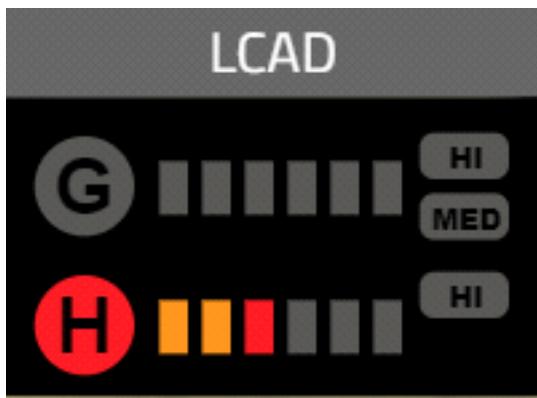
Follow these steps:

1. Approach and look at the **LCAD**, until the **Pick Up** 3D World Action appears (see [3D World Actions \(on page 66\)](#)).

Picked up LCAD appears at the top-right of your screen, and the LCAD is placed in your inventory.

2. Follow the instructions in Equipment Inventory, and place the LCAD in your **Pistol Slot**.
3. Press **Quick Menu (Left Windows)** (see [Quick Menu Actions \(on page 67\)](#)).
4. Select **WEAPON**, and then **LCAD IN HAND**.

The LCAD is placed in your hands, and the following HUD appears at the right of your screen:



If a CBRN substance is present, an alarm is heard, and the HUD indicates what substance is present. The horizontal bars indicate the concentration level of the substance.

The LCAD HUD has the following indicators:

Indicator	Description
G	Flashes red to indicate the presence of Sarin Gas or a Liquid Nerve Agent.
H	Flashes red to indicate the presence of Mustard Gas or a Blister Agent.
HI / MED	Together with the horizontal indicator bars, indicate the substance level. Orange = Medium, Red = High.

Press **Toggle Weapons (Spacebar)** to move through the following modes, which are shown in the top bar of the multi-weapon HUD located at the bottom-right of your screen:

Mode	Description
Area CWA1 Mode	Scans for Liquid Nerve Agent, Mustard Gas, Sarin Gas once every second in a 5-meter area.
Area CWA5 Mode	Scans for Liquid Nerve Agent, Mustard Gas, Sarin Gas once every 5 seconds in a 5-meter area.

6.5 Man-Portable Chemical Agent Detector

The Man-Portable Chemical Agent Detector (MCAD) is a portable device which is capable of detecting and identifying the full range of Chemical Warfare Agents (CWAs). MCAD is a point detector, which quantifies the CWA it is configured to respond to. In VBS4, it identifies and alerts you to the presence of the following CBRN substances:

- **Liquid Nerve Agent**
- **Chlorine Gas**
- **Mustard Gas**
- **Sarin Gas**

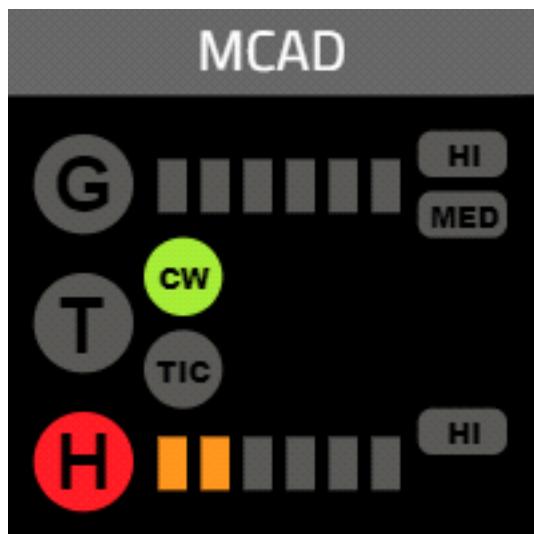


The MCAD may have been placed in your Equipment Inventory by your Administrator, in which case you can skip to step 2 of the following procedure. Otherwise, you can retrieve it from the ground in your vicinity.

Follow these steps:

1. Approach and look at the **MCAD**, until the **Pick Up** 3D World Action appears (see [3D World Actions \(on page 66\)](#)).
- Picked up MCAD** appears at the top-right of your screen, and the MCAD is placed in your inventory.
2. Follow the instructions in Equipment Inventory, and place the MCAD in your **Pistol Slot**.
 3. Press **Quick Menu (Left Windows)** (see [Quick Menu Actions \(on page 67\)](#)).
 4. Select **WEAPON**, and then **MCAD IN HAND**.

The MCAD is placed in your hands, and the following HUD appears at the right of your screen:



If a CBRN substance is present, an alarm is heard, and the HUD indicates what substance is present. The horizontal bars indicate the concentration level of the substance.

The MCAD HUD has the following indicators:

Indicator	Description
G	Flashes red to indicate the presence of Sarin Gas or a Liquid Nerve Agent.
T	Flashes red (after switching to Area TIC Mode) to indicate the presence of Chlorine Gas.
H	Flashes red to indicate the presence of Mustard Gas or a Blister Agent.
CW	Flashes green to indicate "Chemical Warfare".
TIC	Flashes green to indicate "Toxic Industrial Chemical".
HI / MED	Together with the horizontal indicator bars, indicate the substance level. Orange = Medium, Red = High.

Press **Toggle Weapons (Spacebar)** to move through the following modes, which are shown in the top bar of the multi-weapon HUD located at the bottom-right of your screen:

Mode	Description
Point CWA1 Mode	Scans for Liquid Nerve Agent, Mustard Gas, Sarin Gas once every second in the direction the MCAD is pointed.
Point CWA5 Mode	Scans for Liquid Nerve Agent, Mustard Gas, Sarin Gas once every 5 seconds in the direction the MCAD is pointed.
Point TIC Mode	Scans for Chlorine Gas once every 5 seconds in a 5-meter area in the direction the MCAD is pointed.

7. M8 Chemical Detection Paper

M8 Chemical Detection Paper (CDP) is used to detect the presence of chemicals, including Liquid Nerve Agents (LNA), Sarin Gas, and Mustard Gas. In VBS4, M8 CDP consists of a booklet of paper sheets. When a paper sheet comes into contact with one of the aforementioned CBRN substances, it reacts with the chemicals in the paper to produce agent-specific color changes.

Image-11: M8 CDP booklet



There is a color chart inside the front cover of the booklet, which helps you to determine the type of CBRN substance that is present:

Color	Description
Yellow	G-Type Nerve Agent.
Red	H-Type Blister Agent.
Dark Green	V-Type Nerve Agent.

The M8 CDP booklet may already have been placed in your Equipment Inventory by your Administrator. Otherwise, do one of the following to retrieve it:

- If the M8 CDP booklet is on the ground nearby, approach and look at it, until the **Pick Up** 3D World Action appears (see [3D World Actions \(on page 66\)](#)). Then, select it.

Picked up M8 Chemical Detection Paper appears at the top-right of your screen, and the M8 CDP booklet is placed in the **Pistol** slot of your inventory.

- Press **Inventory (I)** to open your Equipment Inventory, and follow the procedure in Manage Equipment to place the M8 CDP booklet in your inventory.

The booklet is automatically placed in your **Pistol** slot.

To use the M8 CDP, follow these steps:

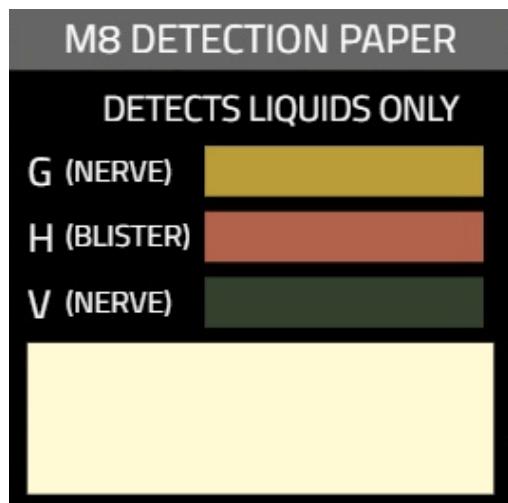
1. Press **Quick Menu (Left Windows)** (see [Quick Menu Actions \(on page 67\)](#)), and select **WEAPON > M8 CHEMICAL DETECTION PAPER IN HAND**.

The M8 CDP booklet is placed in your hands, and the M8 CDP HUD appears at the middle-right of your screen.



2. Walk towards the contaminated source.
3. Press **Fire (LMB)**.

The lower box in the HUD changes color to indicate the CBRN substance that is present.



NOTE

If more than one CBRN substance is present, the HUD displays the substance with the highest concentration.

8. M9 Chemical Detection Paper

M9 Chemical Detection Paper is a gray-colored adhesive tape that turns red in the presence of nonspecific liquid chemical agents, including Sarin gas.

NOTE

CBRN units cannot place the paper on themselves since it is already a component of CBRN suits. However, CBRN units can still place the paper on objects.

M9 Chemical Detection Paper placed on animated parts of vehicles (such as turrets and doors) does not move with the animation.

To place or remove the M9 Chemical Detection Paper from yourself:

Follow these steps:

- Press **Quick Menu (Left Windows)** (see [Quick Menu Actions \(on page 67\)](#)), and Select **PUT ON M9 TAPE**.

The M9 Chemical Detection Paper is attached to your uniform.

- Press **Quick Menu (Left Windows)**, and Select **REMOVE M9 TAPE**.

The M9 Chemical Detection Paper is detached from your uniform.

To place the M9 Chemical Detection Paper on another object or character:

Follow these steps:

1. Approach the object or character.

NOTE

To use the paper you must be within 1m of an appropriate surface.

2. Press **Quick Menu (Left Windows)**, and Select **PLACE M9 TAPE**.

The M9 Chemical Detection Paper dialog appears.

3. Click and drag the **LMB** to choose a strip size.

The remaining length of the paper appears at the top of the dialog.

4. Release the **LMB** to adjust the strip location along its placement axis by scrolling the mouse wheel.

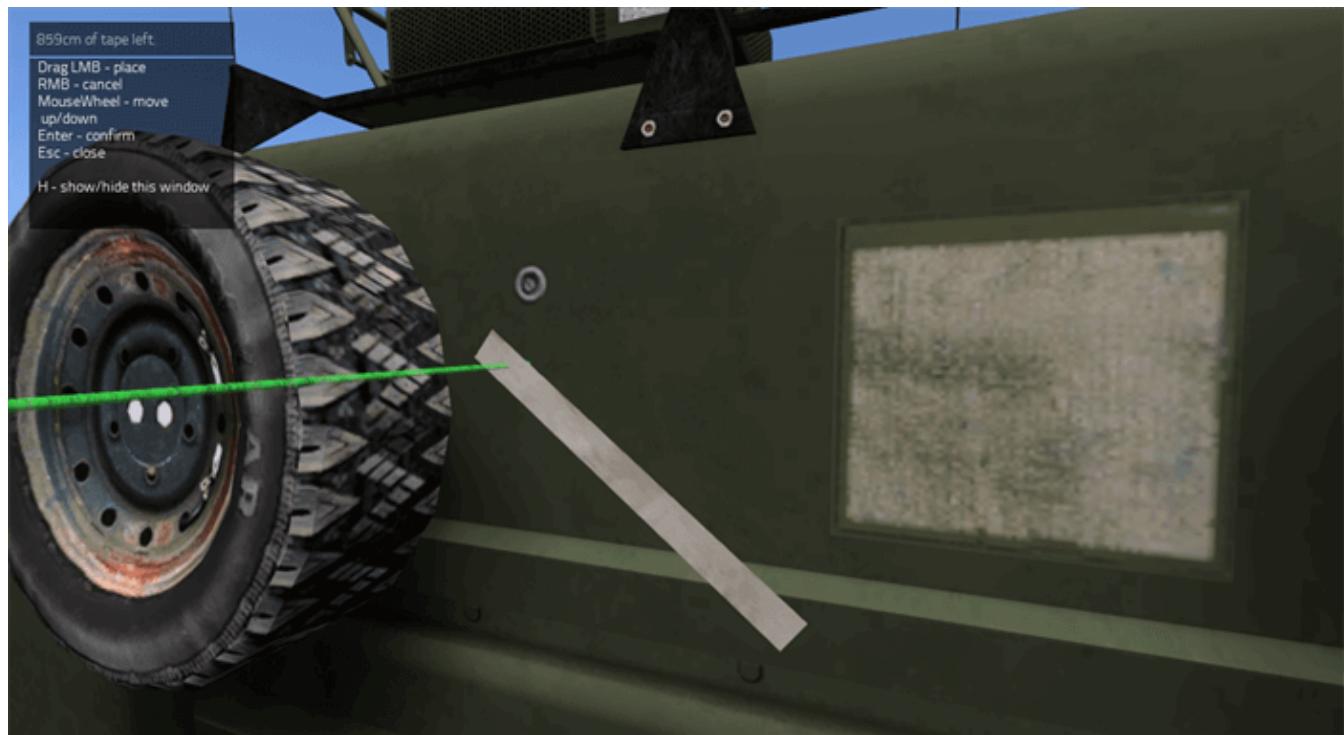
5. Press **Enter** to confirm strip placement (or click the **RMB** to cancel the placement).

The M9 Chemical Detection Paper is now placed on the object and turns red in the presence of a chemical agent.

To remove the paper, approach and look at the object, until the **Remove M9 Tape Strips 3D World Action** appears (see [3D World Actions \(on page 66\)](#)). Then, select it.

The M9 Chemical Detection Paper is removed from the object.

Image-12: M9 Chemical Detection Paper strip on the side of a vehicle



9. Area Marking Kit

VBS4 includes the Area Marking Kit, which enables you to cordon off areas, such as around vehicles or areas contaminated by hazardous substances, using tape and spikes.

In this topic various aspects of Area Marking Kit handling and assembly are discussed, including:

- [Retrieving the Area Marking Kit \(below\)](#)
- [Using the Area Marking Kit \(on the next page\)](#)

The Area Marking Kit may have been placed in your Equipment Inventory by your Administrator, otherwise you can retrieve it from the ground.

Image-13: Area Marking Kit



9.1 Retrieving the Area Marking Kit

If the Area Marking Kit is not in your inventory, use the following procedure to retrieve it.

Follow these steps:

1. Walk up to the **Area Marking Kit**.
2. Press **Inventory (I)** to open your Equipment Inventory.
3. In the **Available Window**, click the **Area Marking Kit** and drag it into the **Inventory Window**.
4. Click **Close**.

The Area Marking Kit is ready for use.

9.2 Using the Area Marking Kit

When the Area Marker Tape Kit is available in your inventory, you can place spikes and tape.

Follow these steps:

1. Press **Inventory (I)** to open your Equipment Inventory.
2. Right-click the **Area Marking Kit**, and select **Assemble Area Tape**.

The Equipment Inventory UI closes, and a **green** Spike visualization appears in front of you.

At the top-right of your screen is an information panel:

Use "Space" or "XBox Y" or "Prim. Mouse Btn." or "XBox Right Trigger" to confirm placement and "Escape" to cancel.

Status : Good Location
Distance to previous post : 0.31m
Total tape remaining : 54.05m



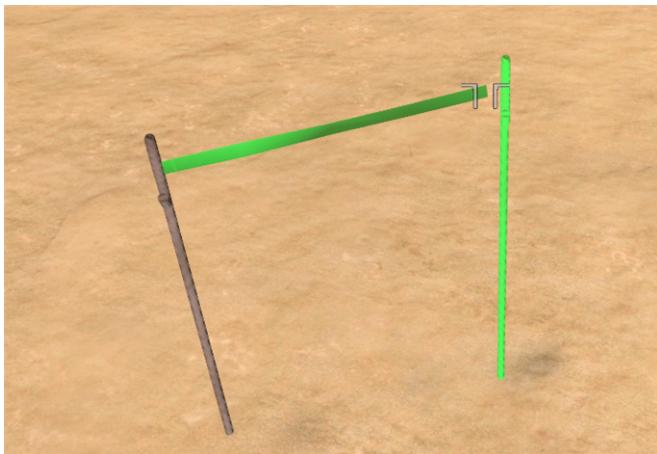
TIP

This panel informs you about the amount of remaining tape, and if it becomes obstructed in some way (as indicated by the **Status**).

3. Drag your **mouse** to move the spike around.

4. Walk to the location where you want to place the first spike, and press the **Spacebar**.

The spike is placed in the ground with a **green** visualization of a length of tape, with the next Spike attached to it.



i **NOTE**

If any of the spikes turn **red** during this process, it means that the location is not suitable for the Spike, or that the tape is somehow obstructed (possibly by your body).

5. Repeat Step 4 until you have marked out the required area.
6. When you have placed the last spike, press **Esc** to complete the process.

The marked-out area is assembled.

i **NOTE**

During the placement process, if you run out of Area Tape, the last available meter of tape and the last Spike turn **red**. In addition, **Status** in the information panel displays: **Not enough remaining tape**.

If this happens, do one of the following:

- Move the last Spike back until it turns green, and press the **Spacebar** to place it.
- Assuming you have more Area Tape in your inventory, press **Esc**, and select the **Attach Area Tape** 3D World Action (see [3D World Actions \(on page 66\)](#)) to continue placing tape.

To disassemble the marked-out area, walk up to a **Spike**, and select the **Remove Spike** 3D World Action. The Spike and the length of Area Tape attached to it (that extends to the previous Spike) are removed.

⚠️ WARNING

Area Marker Tape and Spikes are not placed back in your inventory.

10. CBRN Markers

VBS4 includes a series of CBRN Markers that are usually placed in the scenario by your Administrator / Instructor, to warn you that an area is contaminated by a CBRN substance.

If necessary, you can carry them by placing them in your inventory and later place them on the ground using the Equipment Inventory UI (see in the VBS4 Trainee Manual).

Do one of the following:

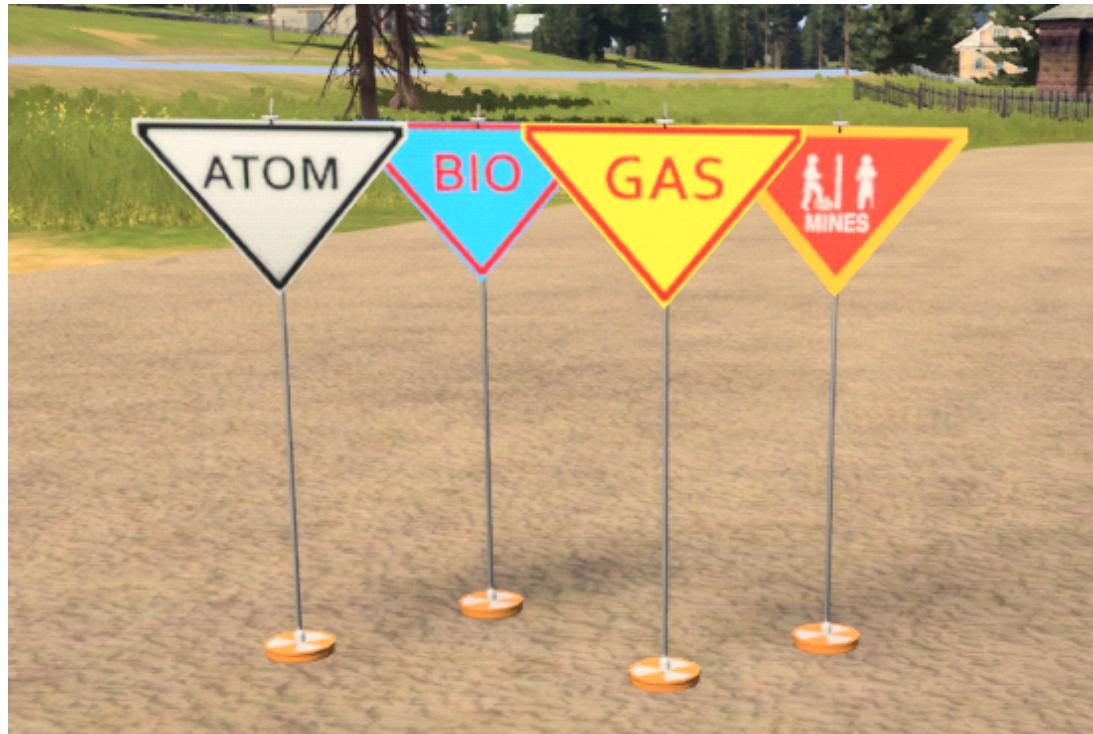
- Approach and look at the Marker, until the **Pick Up** 3D World Action appears (see [3D World Actions \(on page 66\)](#)). Then, select it.

Picked up CBRN Name Marker appears at the top-right of your screen, and the Marker is placed in your inventory.

- Press **Inventory (I)** to open your Equipment Inventory, and follow the procedure in Manage Equipment in the VBS4 Trainee Manual to place it in your inventory. Reverse the procedure to place the Marker on the ground.

In VBS4, the following CBRN Markers are available:

Image-14: Atom, Bio, Gas, and Mine markers



11. CBRN Decontamination

In VBS4, decontamination of entities / an area can be executed instantly by your Instructor. However, it is likely that you are expected to use some of the decontamination objects provided for you in the scenario to perform the decontamination of entities. The objects include a range of decontamination equipment, and antidotes that you can self-administer or administer to others.

This topic discusses the following aspects of decontamination:

- [Decontamination Equipment \(below\)](#)
- [Portable Decontamination Equipment \(on page 52\)](#)
- [Antidotes \(on page 54\)](#)

WARNING

Radiation and Liquid Nerve Agents are transferable between entities, and should not come into contact with other entities prior to decontamination.

In addition, contaminated entities must be moved out of an affected area before attempting decontamination.

11.1 Decontamination Equipment

If you are in an area that is contaminated by a CBRN substance, the following objects may be provided.

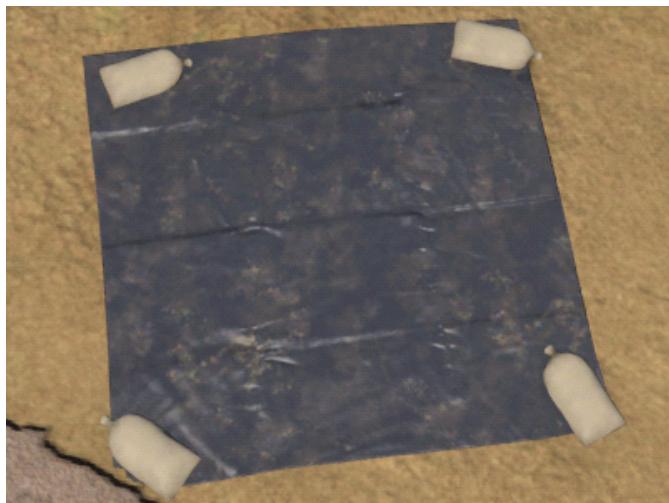
Shuffle Pits

Dirt or Sand pits used by units wearing MOPP Suits, to stand in while being decontaminated.



Tarp

Tarpaulin used by units wearing MOPP Suits, to stand on whilst being decontaminated.



Trash Can

Blue or gray 33 gallon Trash Can containing either a decontaminant (**gray**) or water (**blue**). The gray Trash Can is used for self-decontamination.

NOTE

The blue Trash Can is a prop and does not have any user actions.



Follow these steps:

1. Walk up to the **gray** Trash Can.
2. Look at the Trash Can, until the **Decontaminate Self** 3D World Action appears (see [3D World Actions \(on page 66\)](#)). Then, select it.

The contaminant is removed from your MOPP Suit / other clothing.

M26

The M26 Joint Service Transportable Small Scale Decontaminating Apparatus (JSTSS DA) is used to decontaminate vehicles and weapons using water. It is effective for the decontamination of Nerve Agents G (such as Sarin Gas) and V, and Blister Agent H (such as Mustard Gas).



To use the M26, follow these steps:

1. Walk up to the M26.
2. Look at the M26, until the **Use M-26** 3D World Action appears. Then, select it.
3. Walk towards and look at the vehicle / weapon you want to decontaminate, until the **Use M-26 Lance** 3D World Action appears. Then, select it.
The Lance is automatically placed in your hands and begins to emit a fine mist spray.
4. Move around the vehicle / weapon to spray all surfaces.
5. When you have finished decontamination, click **Stop M-26 Lance** to stop the spray, and **End M-26 Use** to stow the Lance.

The vehicle / weapon is decontaminated.

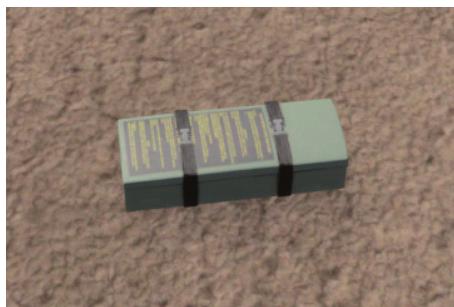
11.2 Portable Decontamination Equipment

The following equipment is used to decontaminate objects, the exposed skin of units, or provide an antidotes for internally contaminated units.

If these items are not already in your inventory, you can retrieve them from the ground. Press **Inventory (I)** to open the Equipment Inventory, and follow the procedure in Manage Equipment to place them in your inventory.

M100 Decontamination Kit

The M100 Sorbent Decontamination System (SDS) is used to remove / partially neutralize liquid contaminants from objects. It effectively decontaminates objects of Liquid Nerve Agents.



To use the M100, follow these steps:

1. Ensure that the object is out of the contaminated area.
2. Approach the object, and press **Inventory (I)** to open your Equipment Inventory.
3. Right-click the **M100** in the **Carried Items** (top-right) window of the Equipment Inventory UI, and select **Use on other** from the context menu.

The Equipment Inventory UI closes, and you see the following M100 icon above the object and, an iron sight with CBRN symbology:

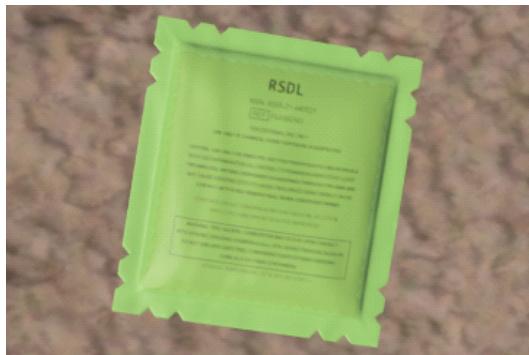


4. Aim the iron sight at the **object**, and press **Fire (LMB)**.

The object is decontaminated.

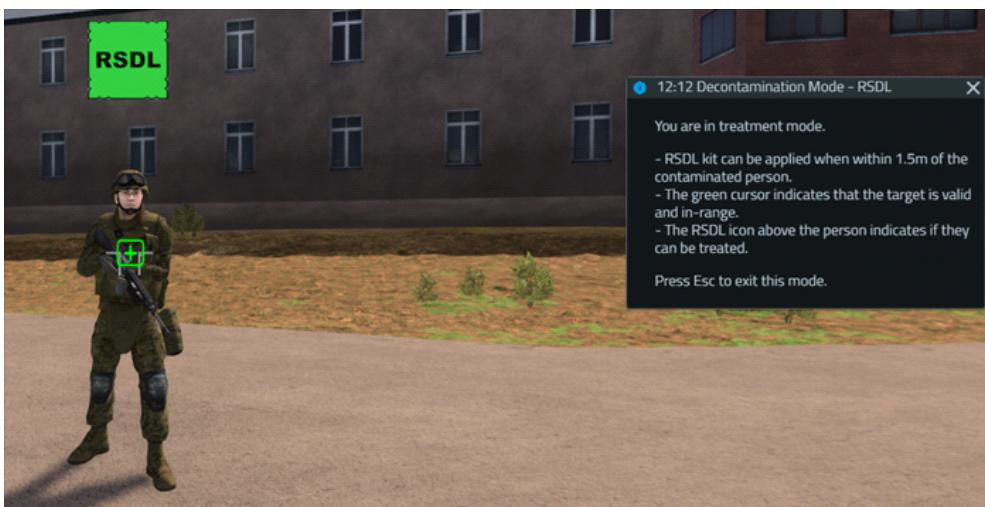
Reactive Skin Decontamination Lotion (RSDL)

RSDL is used to remove / neutralize liquid contaminants from the skin. It effectively decontaminates units of Liquid Nerve Agents, such as Mustard Gas and Sarin.



To use the RSDL, follow these steps:

1. Ensure that you and other contaminated units are out of the CBRN contaminated area.
2. Press **Inventory (I)** to open the Equipment Inventory.
3. Right-click the **RSDL** in the **Carried Items** window, and select one of the following:
 - **Use on self** - You are automatically decontaminated. Click **Close** to close the Equipment Inventory.
 - **Use on other** - The Equipment Inventory UI closes, and you see the following RSDL icon above the unit and an iron sight with a **green cross**:



Aim the iron sight at the **unit** and press **Fire (LMB)**.

The unit is decontaminated and recovers.

WARNING

RDSL must be administered within two minutes of initial contamination for it to work.

11.2.1 Antidotes

Two syringes are available in VBS4 which are used to counteract the effects (convulsions) of, and provide an antidote for, Sarin Gas contamination. The syringes are as follows:

CANA (Convulsive Antidote, Nerve Agent)

Can be self-administered or used on others. It is used to treat the convulsions caused by Sarin Gas, enabling you to help yourself or others to administer ATNAA.



ATNAA (Antidote Treatment Nerve Agent Auto-injector)

Can be self-administered or used on others. It is an effective antidote for Sarin Gas contamination.



To use the CANA / ATNAA syringes, follow these steps:

1. Ensure that you and other contaminated units are out of the CBRN contaminated area.
2. Press **Inventory (I)** to open the Equipment Inventory.

3. Right-click **CANA** in the Carried Items (top-right) window, and select one of the following from the context menu:

- **Use on Self**

After a few seconds, the convulsions stop.

Click **Close** to close the Equipment Inventory.

- **Use on Other**

The Equipment Inventory closes, and you see the following syringe icon above the unit and an iron sight with a **green** cross:



Aim the iron sight at the **unit** and press **Fire (LMB)**.

After a few seconds, the unit stops convulsing.

4. Press **Inventory (I)** to open the Equipment Inventory again, and repeat the procedure in Step 3, but this time right-click the **ATNAA**, and use the following controls:

- **Use on Self**

You are automatically decontaminated and recover.

Click **Close** to close the Equipment Inventory UI.

- **Use on Other**

The Equipment Inventory UI closes, and you see the syringe icon above the unit and an iron sight with a **green** cross.

Aim the iron sight at the **unit** and press **Fire (LMB)**.

The unit is automatically decontaminated and recovers.

12. Forms

VBS4 enables scenario designers to create customizable forms that can be used as required. In addition, there is a range of existing forms provided for use by Administrators / Instructors and Trainees. All scenario participants can view a list of completed forms, once they are sent / transmitted.

This topic discusses the following:

- [Accessing Form Options \(below\)](#)
- [Creating a Form \(on the next page\)](#)
- [Filling-In and Sending a Form \(on page 59\)](#)
- [Existing Form Types \(on page 60\)](#)
- [Completed Forms \(on page 64\)](#)

12.1 Accessing Form Options

Form options are accessed from the following locations:

- Under the Tools Menu Options in the VBS Editor in Prepare, Execute, and C2 Modes (see Tools Menu Options in the VBS4 Instructor Manual).
- In the Quick Menu (see Quick Menu Actions) in Execute and C2 Modes.

Option	Mode	Location	Description
Send Form	Execute / C2	Tools Menu / Quick Menu	Opens the Send Form dialog, where you can select the type of form you want to send, and the recipients. For more information, see Filling-In and Sending a Form (on page 59) .
Create Form	Prepare / Execute	Tools Menu	Opens the Form dialog, where you can create customized form templates. For more information, see Creating a Form (on the next page) .
List Forms	Execute / C2	Tools Menu	Opens the List Forms dialog, which lists all Completed Forms (on page 64) .

12.2 Creating a Form

Select **Create Form** from the Tools Menu to create a new form template.

Follow these steps:

1. Go to **Tools > Create Form**.

The Form dialog opens.



2. Use the first drop-down to select the type of row on the form that you want to create:

Type	Description	Label	Value
Text	Text only, no fields to fill-in.	Row item name.	Item value, which cannot be edited.
Use the drop-down to select the number of rows for the item value. If there is more than one value, they are placed side-by-side in the same row.			
Edit	Text with a field to fill-in.	Row item name.	Item value, which can be edited.
Use the drop-down to select the number of rows for the item value. The value is placed in a box, which can be edited by the user. If there is more than one value, they are placed side-by-side the box.			
Combo	Text with a drop-down menu.	Row item name.	Item value, which cannot be edited. Multiple values can be added by separating them with a comma (,). Value 1, Value 2, Value 3
Use the drop-down to select the number of rows for the item value. If 1 row is selected, the items in the Value field are placed in a drop-down menu. If more than 1 row is selected, the values are placed in a list.			

3. Do one of the following:

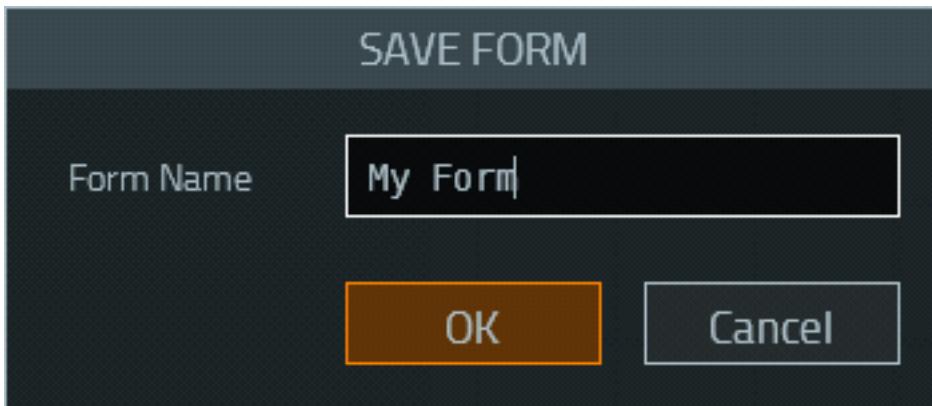
- Click **Preview** to see how the form looks (click **X** to return to the Form dialog to continue creating your form).
- Click **Add**, to add more rows.
- Click **Clear** to clear the row and start again.

4. If necessary, click the **arrow icons** to move the rows up or down on the form, or click the **trash icon** to reset the row.



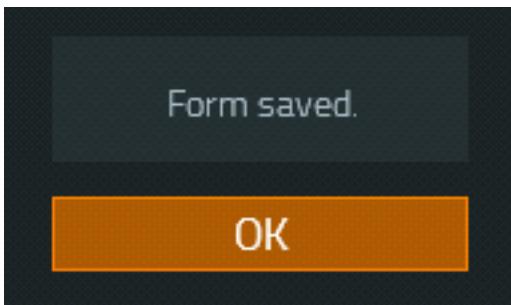
5. Click **Save** to save the form.

The Save Form dialog opens.



Input a name for the form, and click **OK**.

The Form Saved dialog opens.



Click **OK**. The form is created, and saved in the profile data (it is mission independent).

6. Once the form is loaded / saved, click **Transfer** to send the created form across the network.

12.3 Filling-In and Sending a Form

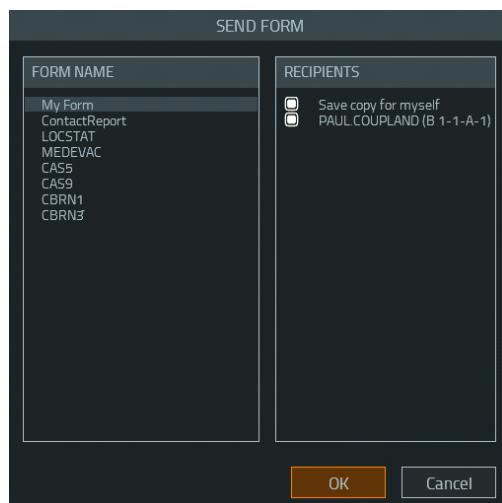
Once other computers receive the form templates, they are available in the **Form Name** list of the **Send Form** dialog, along with the [Existing Form Types \(on the next page\)](#).

Follow these steps:

1. Do one of the following to send a form:

- Go to **Tools > Send Form**.
- Open the Quick Menu (see Quick Menu Actions) and click **COMMS**, then click **FORMS**.

The **Send Form** dialog opens.



2. Select a form to send in the **Form Name** list so that it is highlighted.
3. If you are in a multiplayer scenario, select the **Recipients** you want to send the form to.

NOTE

By default, all Administrators / Instructors are selected, as is **Save copy for myself**. If you change the selection, the list of recipients is used for all forms for the remainder of the scenario, or until the selection is updated.

4. Click **OK**.

The selected form opens.

5. Fill-in the form, and click **Send / Transmit / OK** to send it.

The form is sent.

NOTE

Dedicated servers always receive the forms.

12.4 Existing Form Types

This section lists the existing form types, that are provided by default, and describes their uses. The procedure to access and send them is described in [Filling-In and Sending a Form \(on the previous page\)](#).

ContactReport

Use this form to report the detection of an enemy.

The screenshot shows a dark-themed window titled "CONTACTREPORT". It contains several input fields:

- A large text input field containing "0".
- A date input field containing "31TFF2814726245".
- A dropdown menu set to "Unknown".
- A time input field containing "12:00:11".
- A small text input field below the date.
- A section labeled "ENEMY SHOTS" with a text input field containing "0".
- A section labeled "FRIENDLY SHOTS" with a text input field containing "0".

LOCSTAT

Use this form to send your "Location State". Your coordinates are included by default.

The screenshot shows a dark-themed window titled "LOCSTAT". It contains three input fields:

- A text input field containing "B".
- A coordinate input field containing "33UXR1715378935".
- A duplicate coordinate input field containing "33UXR1715378935".

MEDEVAC

Use this form to request medical assistance.

The screenshot shows a dark-themed window titled "MEDEVAC". It contains several input fields:

- A large text input field containing "33UXR1715378935".
- A section labeled "ENEMY HITS" with a text input field containing "0".
- A section labeled "ENEMY WOUNDS" with a text input field containing "0".
- A section labeled "FRIEND HITS" with a text input field containing "0".
- A section labeled "FRIEND WOUNDS" with a text input field containing "0".

The MEDEVAC form accessed here is a simplified version of the MEDEVAC form accessed from the new User Actions. For more information, see MEDEVAC / CASEVAC in the VBS4 Editor Manual and Request MEDEVAC / CASEVAC.

CAS 5-Line / CAS 9-Line

Use these forms to request Close Air Support (CAS) (see VBS Close Air Support in the Introduction to VBS4 Guide).

CAS 5-line form

Line 1	A/C Callsign _____, this is _____, 5-line
	Type <input type="button" value="1 ▾"/> <input type="button" value="BOC ▾"/> Ordinance _____
Line 2	My position _____, Marked by _____
Line 3	Target location _____
	Range _____, Bearing _____
Line 4	Target description _____, Marked by _____
Line 5	FAH _____ LTL _____ SEAD <input type="button" value="Int ▾"/>
	ACA _____ Danger Close <input type="checkbox"/> GFC Init _____
Remarks/ Restrictions	<input type="text"/>
<input type="button" value="Send"/> <input type="button" value="Close"/>	

CAS 9-line form

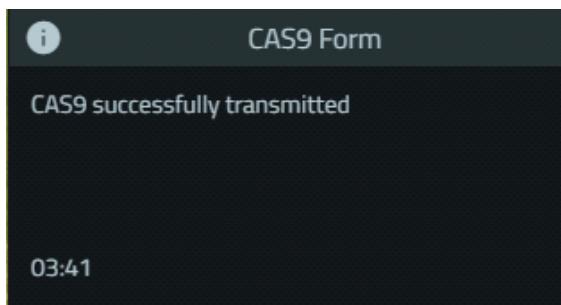
Line 1	IP/BP _____
Line 2	Heading _____ / Offset _____
Line 3	Distance _____
Line 4	Target elevation _____
Line 5	Target description _____
Line 6	Target location _____
Line 7	Type mark _____ Code _____
Line 8	Location of friendlies _____
Line 9	Egress _____
Remarks/ Restrictions	<input type="text"/> FAH _____ LTL/PTL _____ TOT _____ / TTT _____
<input type="button" value="Send"/> <input type="button" value="Close"/>	

For more information, see VBS Close Air Support Execution and VBS Close Air Support Example Execution in the VBS Close Air Support Manual.

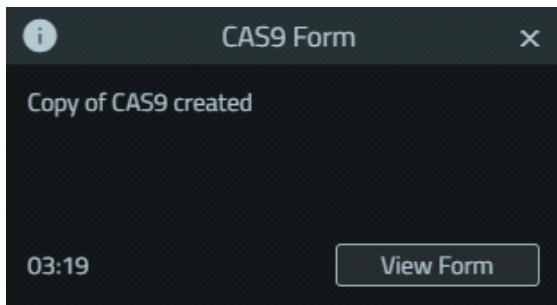
When you click **Send**, the following dialogs appear at the bottom-right of your screen, and in your **Notifications** panel.

NOTE

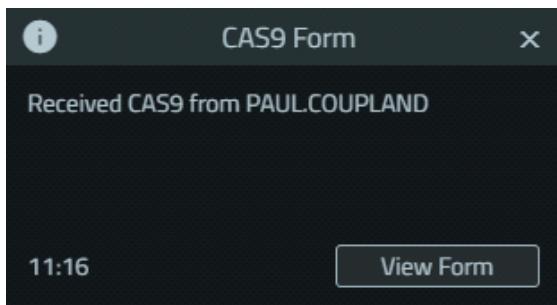
The dialogs appear in first-person view, in the VBS Editor, and in the VBS Plan / CAS UI. Dialogs that appear in first-person view cannot be interacted with.



If you selected **Save copy for yourself**, the following dialog appears. Click **View Form** to open and view the form.



If you receive a **CAS 5-Line** or **CAS 9-Line** form, the following dialog appears. Click **View Form** to open and view the form.

**TIP**

Received CAS 5-Line or CAS 9-Line forms have the informational text **Select desired text for copy and paste**. at the bottom. This means that you can copy information from the form and paste it elsewhere. For example, you may need to copy and paste target coordinates when creating a new target in the VBS Plan / CAS UI.

CBRN1 / CBRN3

Use the CBRN1 Form to send an initial report of CBRN observations. Use the CBRN3 form to send an immediate warning of CBRN contamination, or a Hazardous Area (see Hazardous Area in the VBS4 Editor Manual).

Line	Nuclear	Chemical	Biological	Radiological
A	C	C	C	C
B	M	M	M	M
D	M	M	M	M
F	O	O	O	O
G	M	M	M	M
H	M	N/A	N/A	N/A



TIP

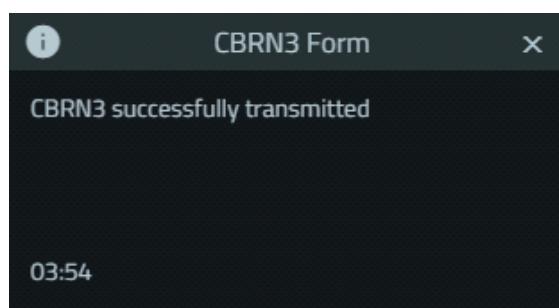
Cells marked with an **M** are mandatory. Cells marked with an **O** are optional.

When you click **Send**, the following dialogs appear at the bottom-right of your screen, and in your **Notifications** panel.

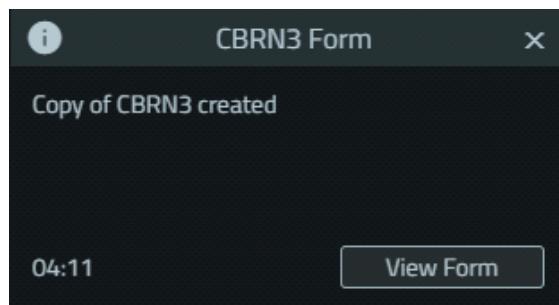


NOTE

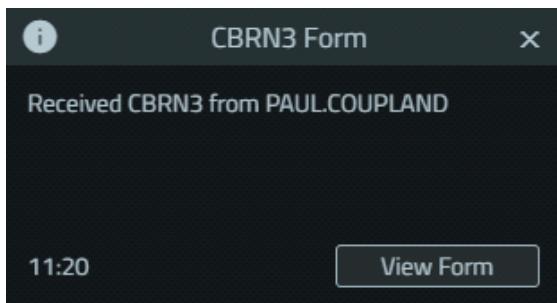
The dialogs appear in first-person view, in the VBS Editor, and in the VBS Plan / CAS UI. Dialogs that appear in first-person view cannot be interacted with.



If you selected **Save copy for yourself**, the following dialog appears. Click **View Form** to open and view the form.



If you receive a **CBRN1** or **CBRN3** form, the following dialog appears. Click **View Form** to open and view the form.



12.5 Completed Forms

Completed forms are forms that have been transmitted / sent.

Follow these steps:

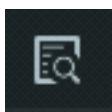
1. Go to **Tools > List Forms** to access the current list of completed forms.

The **List Forms** dialog opens.

MISSION:	All	START TIME:	All		
Form Title	Mission	Submitted By	Side	Scenario Start	Sim Time
CBRN1 LOCSTAT	Poland	PAUL.COUPALND PAUL.COUPALND	BLUFOR BLUFOR	13-2-2023 16h 39m 14-2-2023 16h 28m	00:03:52 00:00:16

2. Do one of the following:

- Double-click an **entry** in the list to open and view the form.
- Click an **entry** in the list, so that it is highlighted, and click the search icon.



The form opens for you to view.

3. Click **X** to close the form.



TIP

Sent CAS 5-Line / 9-Line forms and CBRN1 / CBRN3 forms can also be opened and viewed by the receiver by clicking **View Form** in their notification dialogs. For more information, see [CAS 5-Line / CAS 9-Line \(on page 61\)](#) and [CBRN1 / CBRN3 \(on the previous page\)](#).

The following applies to all completed forms:

- The server receives and stores all completed forms.
- Trainees can see all the forms they have transmitted (filtering by **Mission / Start Time** is possible).
- The Administrator / Instructor can see all the forms sent by all users.
- If an After Action Review (AAR) was recorded, bookmarks appear in the Timeline and the Bookmarks List to indicate that a form was sent. Double-clicking an entry in the Bookmarks List brings up the form, and moves the current time in the Timeline to when the form was sent. For more information, see After Action Review (AAR) and Bookmarks List in the VBS4 AAR Manual.

13. User Actions

User actions are available to interact with the VBS4 simulation environment and objects in it.

User actions are divided into:

- [3D World Actions \(below\)](#)
- [Quick Menu Actions \(on the next page\)](#)

13.1 3D World Actions

3D World Actions appear on objects in the 3D View of the VBS4 simulation.

Their appearance usually depends on proximity to the object and the view direction. This means that the majority of the 3D World Actions appear when standing next to an object and looking at it.



3D World Actions are often available for:

- Equipment and weapons.
- Other objects on the ground.
- Control stations, static weapons, vehicles, and their equipment.
- Specific equipment in your vehicle position.
- Terrain obstacles, such as ladders and gates.
- Other characters.

Follow these steps:

1. Approach the object you want to interact with.
The 3D World Actions appear.
2. Use the [3D World Action Controls \(on the next page\)](#).

A line points to the object to indicate that 3D World Actions are available.

13.1.1 3D World Action Controls

The following table lists the 3D World Action Controls, defaults, and option names from the Controls Settings (see Controls Settings in the VBS4 Administrator Manual):

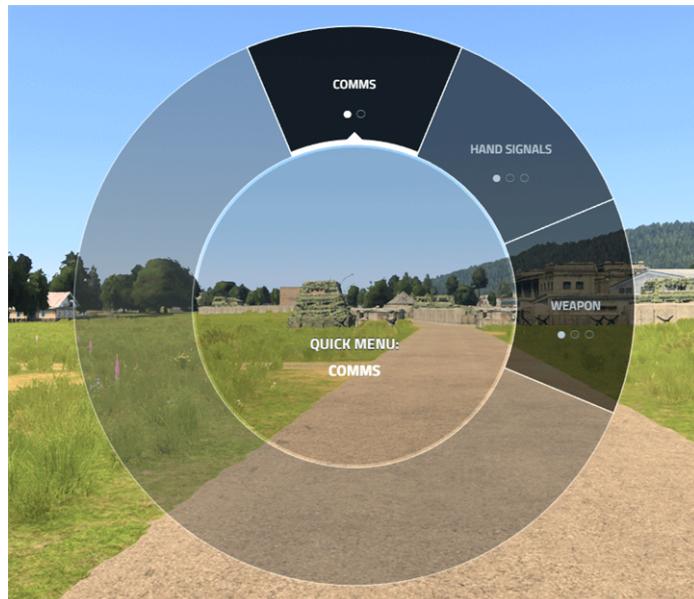
NOTE

For Microsoft Xbox 3D World Action controls, see Microsoft Xbox Controls in the VBS4 Trainee Manual.

Control Name	Default Control
Perform Action	Enter or Mouse Scroll Button
Previous Action	[or Mouse Scroll Wheel Up
Next Action] or Mouse Scroll Wheel Down

13.2 Quick Menu Actions

The Quick Menu provides access to additional functions, typically more complex personal movements than those found among 3D World Actions.



The following actions use the Quick Menu (for more information the topics in the VBS4 Trainee Manual):

- Hand Signals
- Weapon Handling
- Forms
- CBRN Suits and Gas Masks
- Swedish CBRN Protection
- Using VBS Radio
- Some vehicle equipment systems.

The Quick Menu consists of multiple levels of numbered menu options, some with multiple pages.

Follow these steps:

1. Press **Quick Menu (Left Windows)** to open the Quick Menu.
2. Use the [Quick Menu Controls \(below\)](#).
3. Click a Quick Menu option, press the appropriate number, or for highlighted options, press **Enter** to access the next menu level.
4. Repeat steps 2 and 3 to access the next menu level or to perform the specified option.

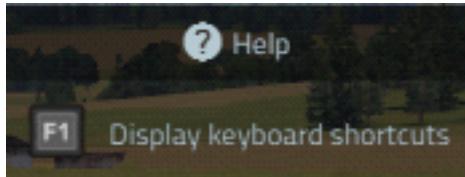
13.2.1 Quick Menu Controls

The following table lists the Quick Menu Controls, defaults, and option names from the Controls Settings (see Controls Settings in the VBS4 Administrator Manual):

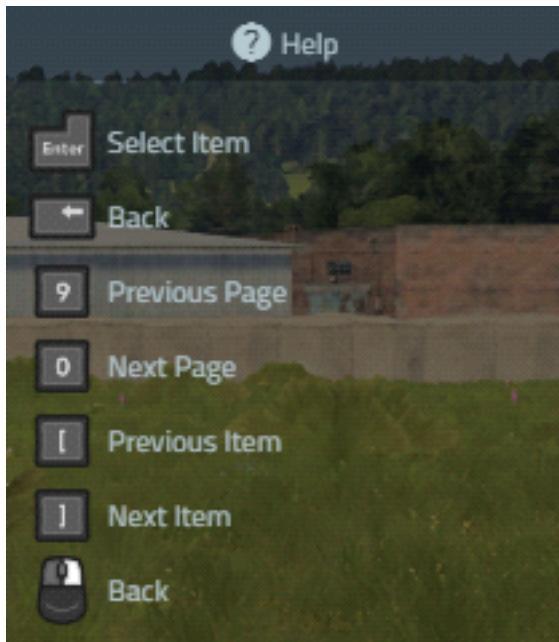
NOTE

For Microsoft Xbox Quick Menu controls, see Microsoft Xbox Controls in the VBS4 Trainee Manual.

The Quick Menu Help shows when you open the Quick Menu.



Press **F1** to display the Quick Menu controls.



Quick Menu Control	Default Control	Control Option Name
Open / Close Quick Menu	Left Windows Do one of the following: <ul style="list-style-type: none">• Tap the key to open it, and tap again to close it.• Hold the key to open the Quick Menu, and release the key to close it.	Quick Menu
Select Option	Do one of the following: <ul style="list-style-type: none">• Mouse over an option or press the appropriate number.• Select previous option: [or Mouse Scroll Wheel Up.• Select next option:] or Mouse Scroll Wheel Down.	Previous Action Next Action
Perform Action	LMB / Enter / MMB for a selected / highlighted option.	Perform Action
Navigate to Previous Menu	Backspace, RMB , or click BACK .	Back
Menu Page Navigation	0 and 9 , or click the Box icons below the menu.	