IH Field Guide for Blast Overpressure (BOP): Process Identification the Addition of BOP as a Hazard within DOEHRS-IH

Juy 2025

Background Information

Centralized Navy IH BOP Program

Technical Guidance for Process Identification and Inclusion in DOEHRS-IH

STEP 1. Identify BOP producing processes.

STEP 2. Determine whether controls are in place that may reduce BOP exposure.

STEP 3. Add BOP producing processes to DOEHRS-IH.

STEP 4. Add standard wording to Observation and Notes (within DOEHRS-IH) and Executive Summary/Program Summary within IH Survey

For questions regarding this IH Field Guide for BOP, contact mailto:usn.hampton-roads.navmcpubhlthcenpors.list.nmcphc-ATSBOPsupport@health.mil.

More information on BOP can be found on NMCFHPC's website. https://www.med.navy.mil/Navy-and-Marine-Corps-Force-Health-Protection-Command/Environmental-Health/Industrial-Hygiene/Acquisition-Technical-Support/Blast-Overpressure-BOP/

Ref: (a) Department of Defense (DoD) Requirements for Managing Brain Health Risks from Blast Overpressure of 8 Aug 24

(b) DoD Warfighter Brain Health Initiative Strategy and Action Plan, June 8, 2022

(c) Department of Defense Implementation Guidance for Managing Brain Health Risks from Blast Overpressure of 12 Dec 24

Background Information

BOP is defined as the sharp, instantaneous rise in ambient atmospheric pressure resulting from an explosive detonation or the weapon system firing. Exposure to BOP can result in a blast injury and adversely affect the brain and hollow organs of the body (lungs, intestines, ears). Per reference (a), DoD personnel in operational environments demonstrate possible adverse effects from acute and repetitive exposures to BOP on brain health and cognitive performance (e.g., headache, ringing in ears, slow reaction time, poor concentration). Although brain health effects from BOP exposures are not yet fully characterized, adverse health and cognitive performance impacts have been reported for exposures to BOP above four pounds per square inch (4 psi). Reference (a) establishes DoD requirements and direction for the management of brain health risks to DoD personnel from exposures to BOP and directly supports the DoD commitment to reduce the risks associated with BOP as detailed in reference (b).

Key terms and definitions the IH program office (IHPO) should know relating to the graphical representation in Figure 1 include:

Peak Pressure (psi)

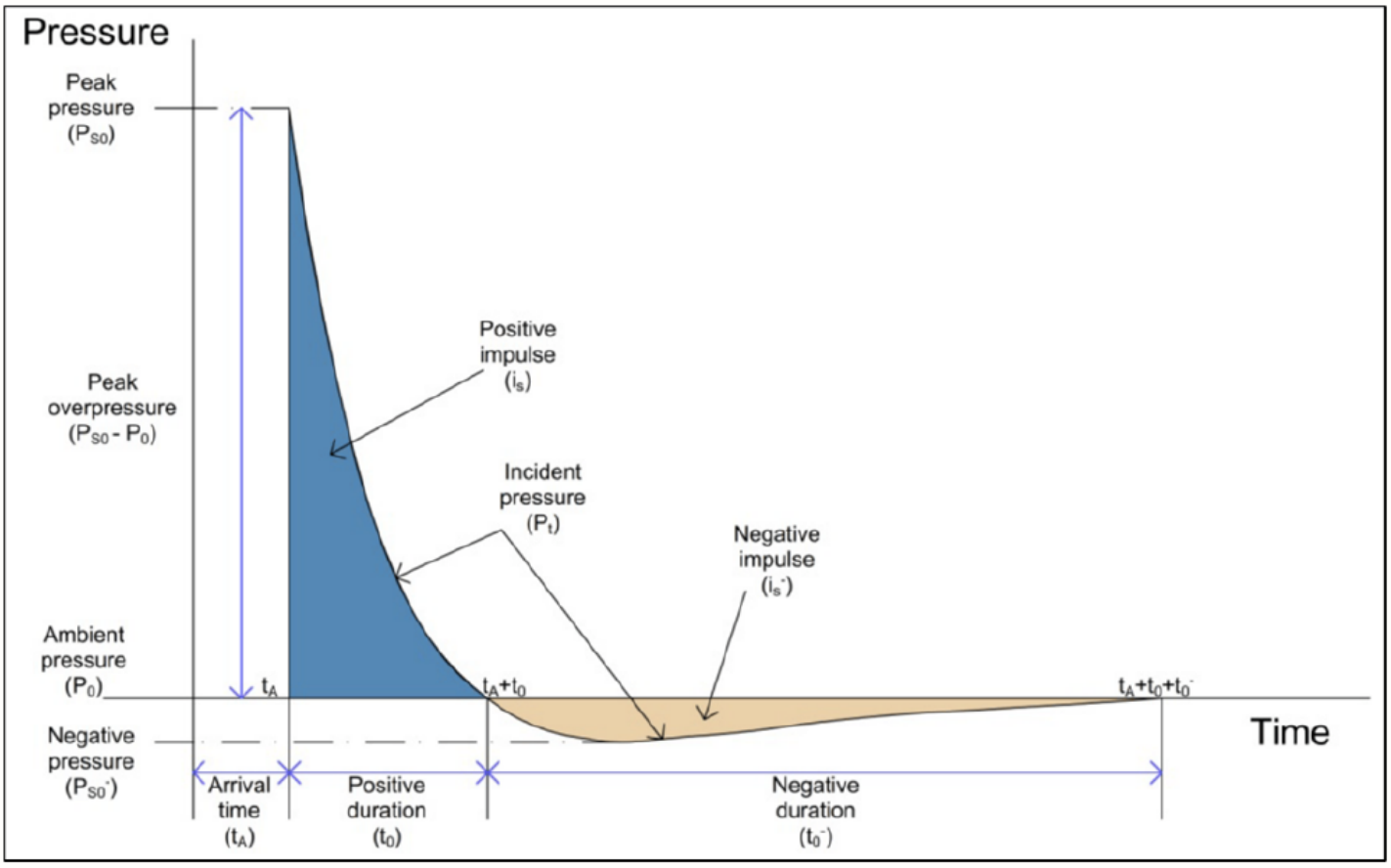
- The sharp rise on the graph indicates the **peak pressure** (**P**) of the blast typically measured in pounds per square inch (psi).

Positive Impulse (psi-ms)

- The net force of the positive phase duration is the positive **impulse,** typically measured in psi/msec, also referred to as the “area under the curve”.

Positive Phase Duration (ms)

- The time (t) in milli seconds (msec) from P to ambient pressure is known as the **positive phase duration**.



Filice, A.; Mynarz, M.; Zinno, R. Experimental and Empirical Study for Prediction of Blast Loads. *Appl. Sci.* 2022, *12*, 2691. https://doi.org/10.3390/app12052691

Figure 1. Graphical Representation of a Blast Wave

Centralized Navy BOP Program

Navy IH will coordinate project management centrally from NMCFHPC to oversee the early adoption of the BOP program, implement exposure assessment methods and evaluate work for quality assurance (e.g., sampling, analysis, reporting, recordkeeping).

The process identified in this tech guide will enable the Department of Navy (DON) Industrial Hygiene (IH) Program Offices (PO) to satisfy the following elements of the Department of Defense (DoD) Requirements for Managing Brain Health Risks from Blast Overpressure:

- ✓ "Identify and track personnel who are potentially exposed to BOP in the Defense Occupational and Environmental Health Readiness System-Industrial Hygiene, prioritizing those personnel who possess

an occupational specialty that, by nature of operational activities, regularly places them at increased risk of BOP exposures."

Technical Guidance for Process Identification and Inclusion in DOEHRS-IH

Using the information in this guide, the IHPO will identify commands, processes, and personnel that utilize Tier 1 weapons and other BOP producing weapons of concern. Weapon systems, BOP hazard, control measures, and process personnel information will be documented in DOEHRS-IH.

The science relating to BOP exposure is still evolving. In the absence of an occupational exposure limit which does not exist, 4 psi is used as a risk mitigation threshold per references (a) and (c). Reference (c) states "this threshold may be revised in the future when further research defining brain health impacts from BOP exposure is available." Therefore, the IHPO **will not** be completing exposure assessments in DOEHRS-IH for the hazard of BOP. Other hazards associated with the processes will continue to be assessed.

STEP 1. Identify BOP producing processes.

The IHPO must first recognize processes that may lead to BOP exposure and determine the likelihood of exposure based on personnel roles within the process. NMCFHPC developed a survey that will be used to assist in identifying BOP producing processes based on weapons use. The **DON IH WEAPONS USE SURVEY FOR BOP EXPOSURE ESTIMATES** can be found on NMCFHPC's BOP website. More details on the proper use of the Weapons Use Survey are below.

(a) Tier 1 Weapons

Weapons systems known to produce BOP exposures exceeding 4 psi include breaching charges, shoulder fired weapons, 0.50 caliber rifles/guns, and indirect fires. DoD has identified these weapons as Tier-1 Weapons that are of greatest concern, which are included in the **DON IH WEAPONS USE SURVEY FOR BOP EXPOSURE ESTIMATES.** Tier-1 weapons are shown below in Figure 2. Exposure data has been collected during the use of the Tier-1 weapons as part of the NDAA 734 efforts; a summary can be found within the DoD Blast Overpressure Reference and Information Guide (D-BOP RIG) available at **https://denix.osd.mil/auth/soh/programs/bop/.**

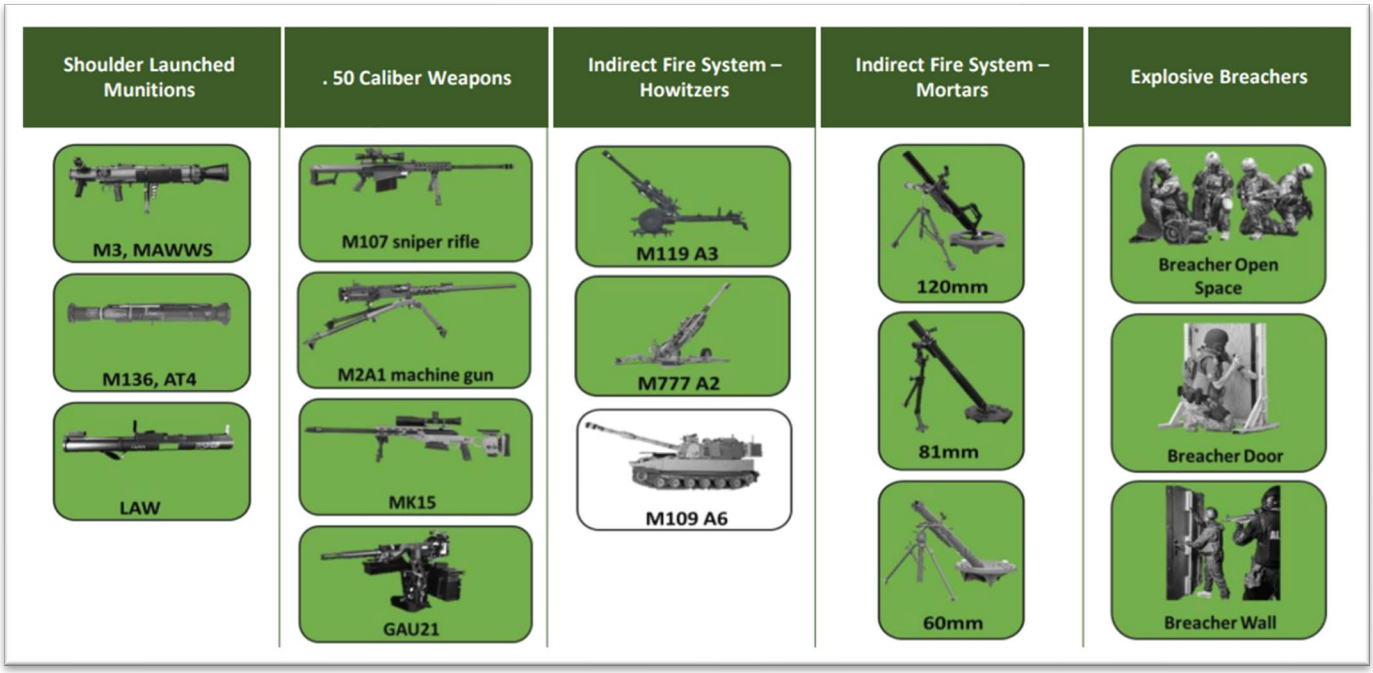


Figure 2. Tier-1 Weapons as identified in the DoD Blast Overpressure Reference and Information Guide (D-BOP RIG)

(b) Additional Department of Navy Weapons of Concern

NMCFHPC, in collaboration with the acquisition and operational community, have identified additional weapons that may produce BOP that were not on the Tier-1 list. The additional weapons have been added to the **DON IH WEAPONS USE SURVEY FOR BOP EXPOSURE ESTIMATES,** found on NMCFHPC's BOP website**.** A screenshot of the tool is below.

DON IH WEAPONS USE SURVEY FOR BOP EXPOSURE ESTIMATES

Command: **Command POC:** **IH:** **Date:**

Instructions: The IH should distribute this survey to the safety representative or weapons representative at the command, who will review the survey below and annotate all weapons used at the command with a "yes" in the first column. **If yes to a particular weapon,** the point of contact should also detail the **MOS/Specialty Code/Rating** of personnel who use the weapon as well as answer the the information in **items (a) through (h)** within the **Weapons Usage Notes and Controls** column:

(a) total number of personnel involved in operation of the weapon at the command (operators and support personnel)
(b) rounds used per person
(c) the frequency and duration of use of the weapon
(d) and details on the location of use (such as indoor, outdoor, shipboard, underground, etc).
(e) Do you have any requirements to limit the number of personnel within the vicinity of firing operations?

DOD Requirement: DOD Policy requires DOD Components to minimize the number of personnel in the vicinity of BOP generating events (i.e., personnel who are not directly involved in the training or executing tasks associated with the training event) to minimize unnecessary exposure.

(f) Do you enforce safety warnings and restrictions in weapons systems technical and operators' manuals, and have a safety brief prior to beginning operations?

DOD requirement: Enforce safety warnings and restrictions in weapons systems technical and operators' manuals.

(g) How far do personnel stand from the weapon, and do personnel stay as far away as possible while still meeting mission requirements?

DOD Requirement: Components must incorporate BOP risk management and mitigation actions to minimize the risk of brain injury that includes stand-off distances for Tier-1 Weapons and standoff distances for non-training audiences. *NOTE: Standoff distances for "Tier 1" weapons are documented below and can also be found in the DoD Blast Overpressure Reference and Information Guide (D-BOP RIG), available at https://denix.osd.mil/auth/soh/programs/bop/

(h) Do you have any internal requirements for a maximum number of rounds that can be fired for any weapons utilized at the command?

DOD requirement: Until studies are complete that define an allowable number of rounds per training period, integrate BOP exposure mitigation measures during live-fire training events to ensure operational readiness to protect brain health and the health of the Force. DoD Components will integrate simulations into training strategies to reduce BOP exposure, when appropriate, and will not expend excess rounds once training standards are achieved.

For questions or to request changes to this weapons survey, contact: usn.hampton-roads.navmcpubhlthcenpors.list.nmcphc-atsbopsupport@health.mil

Yes if used	MOS/ Specialty Code/Rating	Servi	Systems	Round	DODIC	Platform/ Posture	Exposur	Weapon Usage Notes and Controls* (a)-(h) above
		USMC	30mm	30mm		Advanced Reconnaissance Vehicle (ARV-30)	Operator, Observer, Dismount	
		USMC	30mm	30mm		Amphibiuos Combat Vehicle (ACV-30)	Operator, Observer, Dismount	
		USMC	60 mm ground mortar 0 charge	60 mm mortar (on the ground) All Ammo @ Charges 0,1,2,3 and 4		Standing	Team	Tier 1; DOD minimum safe standoff distance = 3ft
		USMC	60 mm ground mortar 2 charge	60 mm mortar (on the ground) All Ammo @ Charges 0,1,2,3 and 4		Standing	Team	Tier 1; DOD minimum safe standoff distance = 3ft
		USMC	60 mm ground mortar 3 charge	60 mm mortar (on the ground) All Ammo @ Charges 0,1,2,3 and 4		Standing	Team	Tier 1; DOD minimum safe standoff distance = 3ft
		USMC	60 mm ground mortar 4 charge	60 mm mortar (on the ground) All Ammo @ Charges 0,1,2,3 and 4		Standing	Team	Tier 1; DOD minimum safe standoff distance = 3ft

(c) Utilizing the DON IH WEAPONS USE SURVEY FOR BOP EXPOSURE ESTIMATES

Instructions for use: The IH should distribute the **DON IH WEAPONS USE SURVEY FOR BOP EXPOSURE ESTIMATES** to the safety representative or weapons representative at the command, who will review the survey below and annotate all weapons used at the command with a "yes" in the first column.

If yes to a particular weapon, the point of contact should detail the MOS/Specialty Code/Rating of personnel who utilize the weapon and detail additional information that must include:

- total number of personnel involved in operation of the weapon at the command (operators and support personnel)
- rounds used per person
- the frequency and duration of use of the weapon
- and details on the location of use (such as indoor, outdoor, shipboard, underground, etc.).

The point of contact should also answer **questions regarding administrative controls** used to manage brain health risks of BOP exposures. More information on this can be found below in "STEP 2. Determine whether controls are in place that may reduce BOP exposure."

DON IH WEAPONS USE SURVEY FOR BOP EXPOSURE ESTIMATES

Command: **Command POC:** **IH:** **Date:**

Instructions: The IH should distribute this survey to the safety representative or weapons representative at the command, who will review the survey below and annotate all weapons used at the command with a "yes" in the first column. **If yes to a particular weapon,** the point of contact should also detail additional information in a separate notes page to be given to the IH or by adding to the **"Weapon Use Notes and Controls"** column, with information that must include:

(a) total number of personnel involved in operation of the weapon at the command (operators and support personnel)
(b) rounds used per person
(c) the frequency and duration of use of the weapon
(d) and details on the location of use (such as indoor, outdoor, shipboard, underground, etc).
(e) Do you have any requirements to limit the number of personnel within the vicinity of firing operations?

DOD Requirement: DOD Policy requires DOD Components to minimize the number of personnel in the vicinity of BOP generating events (i.e., personnel who are not directly involved in the training or executing tasks associated with the training event) to minimize unnecessary exposure.

(f) Do you enforce safety warnings and restrictions in weapons systems technical and operators' manuals, and have a safety brief prior to beginning operations?

DOD requirement: Enforce safety warnings and restrictions in weapons systems technical and operators' manuals.

(g) How far do personnel stand from the weapon, and do personnel stay as far away as possible while still meeting mission requirements?

DOD Requirement: Components must incorporate BOP risk management and mitigation actions to minimize the risk of brain injury that includes stand-off distances for Tier-1 Weapons and standoff distances for non-training au ces.

(h you have internal requirements for a maximum number of rounds that can be fired for any weapons utilized at the command?

DO equirement il studies are complete that define an allowable number of rounds per training period, integrate BOP exposure mitigation measures during live-fire training ts to ensure operational readiness to protect alth and alth of the Force. DoD Components will integrate simulations into training strategies to reduce BOP exposure, when appropriate, and will not expend ex nds once training standards are achieved.

For questions or to request changes to this weapons survey, contact: usn.hampton-roads.navmcpubhlthcenpors.list.nmcphc-atsbopsupport@health.mil

Yes if used	MOS/ Specialty Code/Rating	Servic	Systems	Round	DODIC	Platform/ Posture	Exposur	Weapon Usage Notes and Controls (a)-(h) above
		USMC	30mm	30mm		Advanced Reconnaissance Vehicle (ARV-30)	Operator, Observer, Dismount	
		USMC	30mm	30mm		Amphibiuos Combat Vehicle (ACV-30)	Operator, Observer, Dismount	
		USMC	M249	5.56mm		Prone	Operator	

(d) Navy Unique Exposures

DON has a unique environment compared to the other services. This includes underway and other environments with reflective surfaces, mission and training requirements that require firing a certain type and number of rounds, non-stationary training, "living where you work" in shipboard environments, and work environments that vary to include shoreside, undersea, underground, in air, and shipboard that may create exposures that differ from traditional exposures anticipated from operating weapons in an open field, open air environment. The following reflective surfaces and where they are in relation to weapons operations may affect BOP exposures: enclosures, walls, berms, sand/sandbags, vehicles, trees, rocks, and foxholes. This may be further expanded on ships to include bulkheads, decks, overhead, passageways, bulwarks, and ladders.

Because of the unique DON environments, the role of the IHPO in observing and evaluating, whether qualitatively or quantitatively, is essential to understanding and documenting potential exposure within DON. A few things to keep in mind during the IH survey:

- Weapon operators, instructors, range safety personnel, watchstanders, etc., may all be exposed to BOP during weapons use.
- Exposed populations can be identified by weapons used or by occupational specialty.
- Weapons systems known to produce BOP exposures exceeding 4 psi include breaching charges, shoulder fired weapons, 0.50 caliber rifles/guns, and indirect fires.
- In general, Naval Special Warfare operators, Special Boat Team personnel, Explosive Ordnance Disposal (EOD) personnel, Gunners Mates, weapons operators and assistant gunners, Range Safety Officers, and instructors utilizing the weapons identified below are at highest risk of exposure to various levels of BOP within the Department of Navy (DON).

(e) Process Naming

Once weapons use has been identified, a process to capture the weapons used must be created. The IHPO will have to determine the best process name to capture the use of the weapons systems, which may lead to multiple processes. Examples of process names are below (not an inclusive list).

- **Process: Weapons Training, Shoulder Fired Weapons.** This could include multiple weapons or one weapon, such as the Carl Gustaf, AT4, and M72 LAW.
- **Process: Operating Crew Served Weapons.** Crew Served Weapons require more than a single operator for its proper use. Crew served weapons may be used shipboard or shoreside. Examples of crew served weapons include M2HB, M2A1, and M240B. Shipboard Crew Served Weapons guides can be found here: https://militaryhealth.sharepoint-mil.us/:f:/r/teams/DONBOP/Shared%20Documents/General/Surface%20Ship%20Crew%20Served%20Weapons%20guides?csf=1&web=1&e=QMvXq7
- **Process: Weapons System Test and Evaluation.** This may include several weapons, such as the GAU-21, MK15, M2A1, etc.
- **Process: Topside watchstanding during weapons operations.** Weapons could include larger shipboard weapons such as MK45, CIWS, etc.
- **Process: Explosive Breaching.** This could include various charges, indoor or outdoor.
- **Process: Training with Mortar Systems**. This may include several types of mortars, or one single type.
- **Process: Operations utilizing Advanced Reconnaissance Vehicle (ARV-30).** This could include operator, observer, dismount if necessary.

STEP 2. Determine whether controls are in place that may reduce BOP exposure.

Utilize **DON IH WEAPONS USE SURVEY FOR BOP EXPOSURE ESTIMATES** to begin to understand whether controls are in place, which identifies questions relating to controlling BOP exposures. The "Department of Defense (DoD) Requirements for Managing Brain Health Risks from Blast Overpressure" policy requires DOD Components to manage brain health risks of BOP exposures. The questions below guide the IH to understand

whether the command is managing risk per DOD requirements. These questions are also within the survey itself that can be found on [NMCFHPC's BOP website] and shown in the screenshot below.

DON IH WEAPONS USE SURVEY FOR BOP EXPOSURE ESTIMATES

Command: **Command POC:** **IH:** **Date:**

Instructions: The IH should distribute this survey to the safety representative or weapons representative at the command, who will review the survey below and annotate all weapons used at the command with a "yes" in the first column. **If yes to a particular weapon,** the point of contact should also detail additional information in a separate notes page to be given to the IH or by adding to the **"Weapon Use Notes and Controls"** column, with information that must include:

(a) total number of personnel involved in operation of the weapon at the command (operators and support personnel)
(b) rounds used per person
(c) the frequency and duration of use of the weapon
(d) and details on the location of use (such as indoor, outdoor, shipboard, underground, etc).
(e) Do you have any requirements to limit the number of personnel within the vicinity of firing operations?
DOD Requirement: DOD Policy requires DOD Components to minimize the number of personnel in the vicinity of BOP generating events (i.e., personnel who are not directly involved in the training or executing tasks associated with the training event) to minimize unnecessary exposure.
(f) Do you enforce safety warnings and restrictions in weapons systems technical and operators' manuals, and have a safety brief prior to beginning operations?
DOD requirement: Enforce safety warnings and restrictions in weapons systems technical and operators' manuals.
(g) How far do personnel stand from the weapon, and do personnel stay as far away as possible while still meeting mission requirements?
DOD Requirement: Components must incorporate BOP risk management and mitigation actions to minimize the risk of brain injury that includes stand-off distances for Tier-1 Weapons and standoff distances for non-training audiences.
(h) Do you have any internal requirements for a maximum number of rounds that can be fired for any weapons utilized at the command?
DOD requirement: Until studies are complete that define an allowable number of rounds per training period, integrate BOP exposure mitigation measures during live-fire training events to ensure operational readiness to protect brain health and the health of the Force. DoD Components will integrate simulations into training strategies to reduce BOP exposure, when appropriate, and will not expend excess rounds once training standards are achieved.

For questions or to request changes to this weapons survey, contact: usn.hampton-roads.navmcpubhlthcenpors.list.nmcphc-atsbopsupport@health.mil

Yes if used	MOS/ Specialty Code/Rating	Service	Systems	Round	DODIC	Platform/ Posture	Exposure	Weapon Usage Notes and Controls (a)-(h) above
		USMC	30mm	30mm		Advanced Reconnaissance Vehicle (ARV-30)	Operator, Observer, Dismount	
		USMC	30mm	30mm		Amphibiuos Combat Vehicle (ACV-30)	Operator, Observer, Dismount	
		USMC	M249	5.56mm		Prone	Operator	

- **Question 1:** Do you have any requirements to limit the number of personnel within the vicinity of firing operations?
  - **DOD Requirement**: DOD Policy requires DOD Components to minimize the number of personnel in the vicinity of BOP generating events (i.e., personnel who are not directly involved in the training or executing tasks associated with the training event) to minimize unnecessary exposure.
  - **Answer**: If yes, administrative controls are in place.
  - **Control description for DOEHRS**: Minimize personnel near BOP generating events.
  - **Control description comments**: DOD Policy requires DOD Components to minimize the number of personnel in the vicinity of BOP generating events (i.e., personnel who are not directly involved in the training or executing tasks associated with the training event) to minimize unnecessary exposure.

- **Question 2:** Do you enforce safety warnings and restrictions in weapons systems technical and operators' manuals, and have a safety brief prior to beginning operations?
  - **DOD requirement:** Enforce safety warnings and restrictions in weapons systems technical and operators' manuals.
  - **Answer**: If yes, administrative controls are in place.
  - **Control description for DOEHRS**: Enforce safety requirements.
  - **Control description comments**: DOD Policy requires DOD Components to enforce safety warnings and restrictions in weapons systems technical and operators' manuals per DOD requirements.

- **Question 3:** How far do personnel stand from the weapon, and do personnel stay as far away as possible while still meeting mission requirements?
  - **DOD Requirement**: Components must incorporate BOP risk management and mitigation actions to minimize the risk of brain injury that includes stand-off distances for Tier-1 Weapons and standoff distances for non-training audiences.
  - **NOTE**: Standoff distances for "tier-1" one weapons are documented in the DoD Blast Overpressure Reference and Information Guide (D-BOP RIG), available at **https://denix.osd.mil/auth/soh/programs/bop/**
  - **Answer**: If yes, administrative controls are in place.
  - **Control description for DOEHRS**: Stand-off distances utilized per DOD requirements.
  - **Control description comments**: Components must incorporate BOP risk management and mitigation actions to minimize the risk of brain injury that includes stand-off distances for weapons users and standoff distances for non-training audiences per DOD policy.

- **Question 4:** Do you have any internal requirements for a maximum number of rounds that can be fired for any weapons utilized at the command?
  - **DOD requirement:** Until studies are complete that define an allowable number of rounds per training period, integrate BOP exposure mitigation measures during live-fire training events to ensure operational readiness to protect brain health and the health of the Force. DoD Components will integrate simulations into training strategies to reduce BOP exposure, when appropriate, and will not expend excess rounds once training standards are achieved.
  - **Answer**: If yes, administrative controls are in place.
  - **Control description for DOEHRS**: Minimize rounds fired.
  - **Control description comments**: DOD Policy requires DOD Components to limit the number of rounds to no more than the amount necessary to achieve mission readiness.

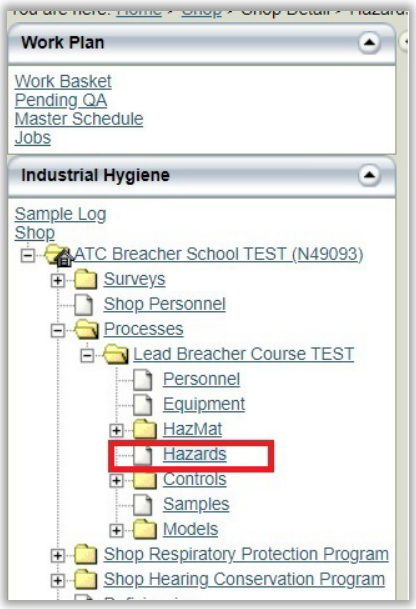
The above information can be used to select controls when entering the process in DOEHRS as detailed below.

STEP 3. Add BOP Producing Processes to DOEHRS-IH

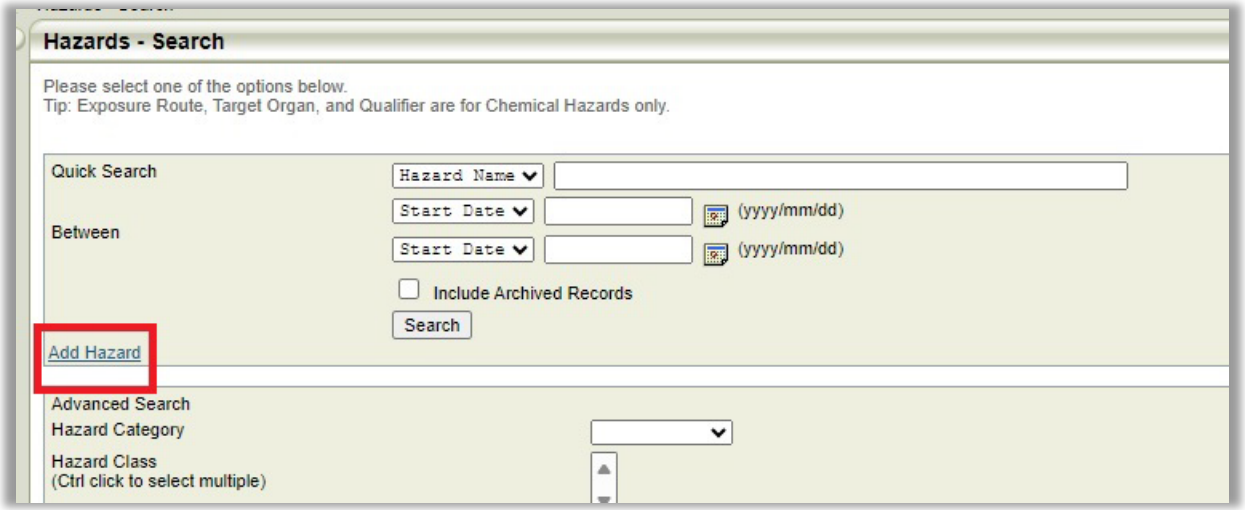
Prior to entering Blast Overpressure information, verify appropriate personnel are assigned to the shop and process(es) that will have BOP hazards added. Add personnel as needed.

a. Adding Blast Overpressure as a Process Hazard

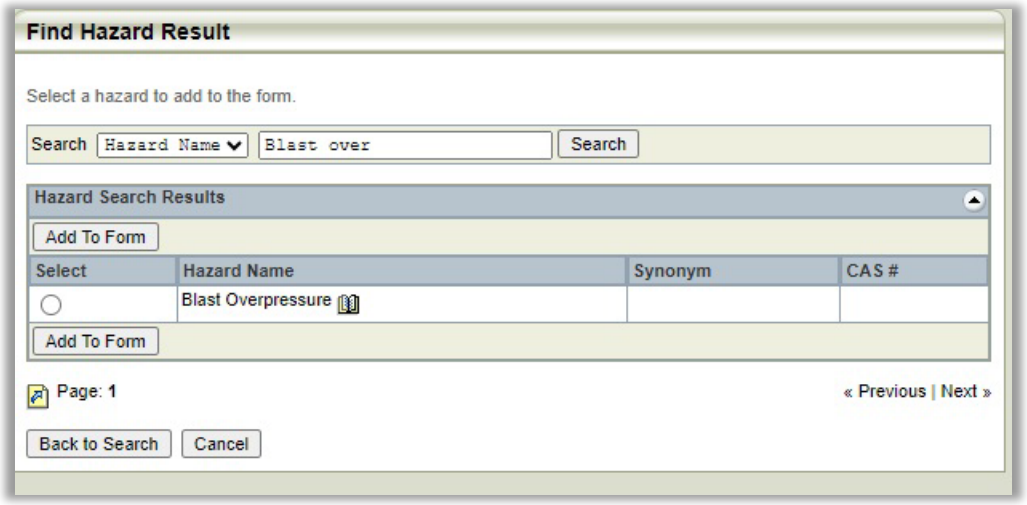
Step 1. Click on Process Name and expand the options to see and select **Hazards**.



Step 2. Select **Add Hazard**.

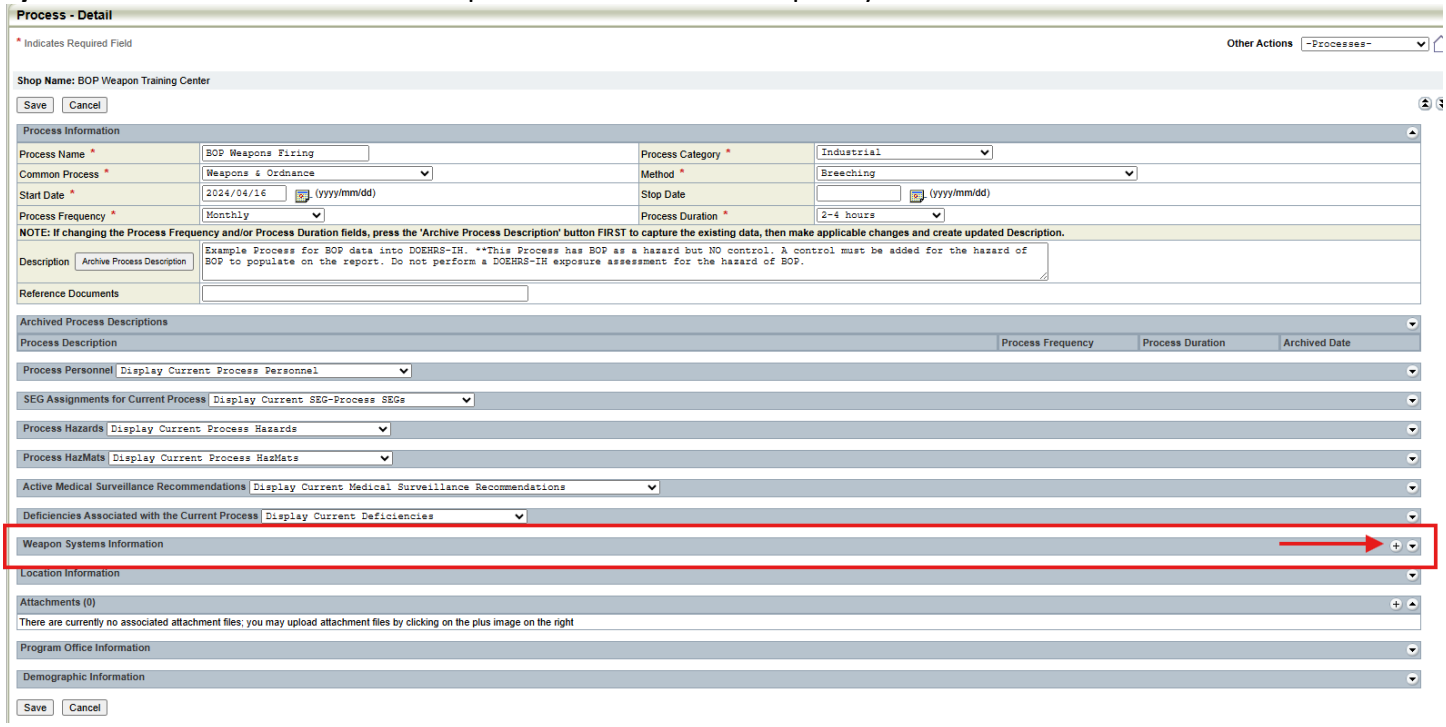


Step 3. Search for **Blast Overpressure** and then **Add to Form**. On the **Hazard Detail** page, select **Save**.

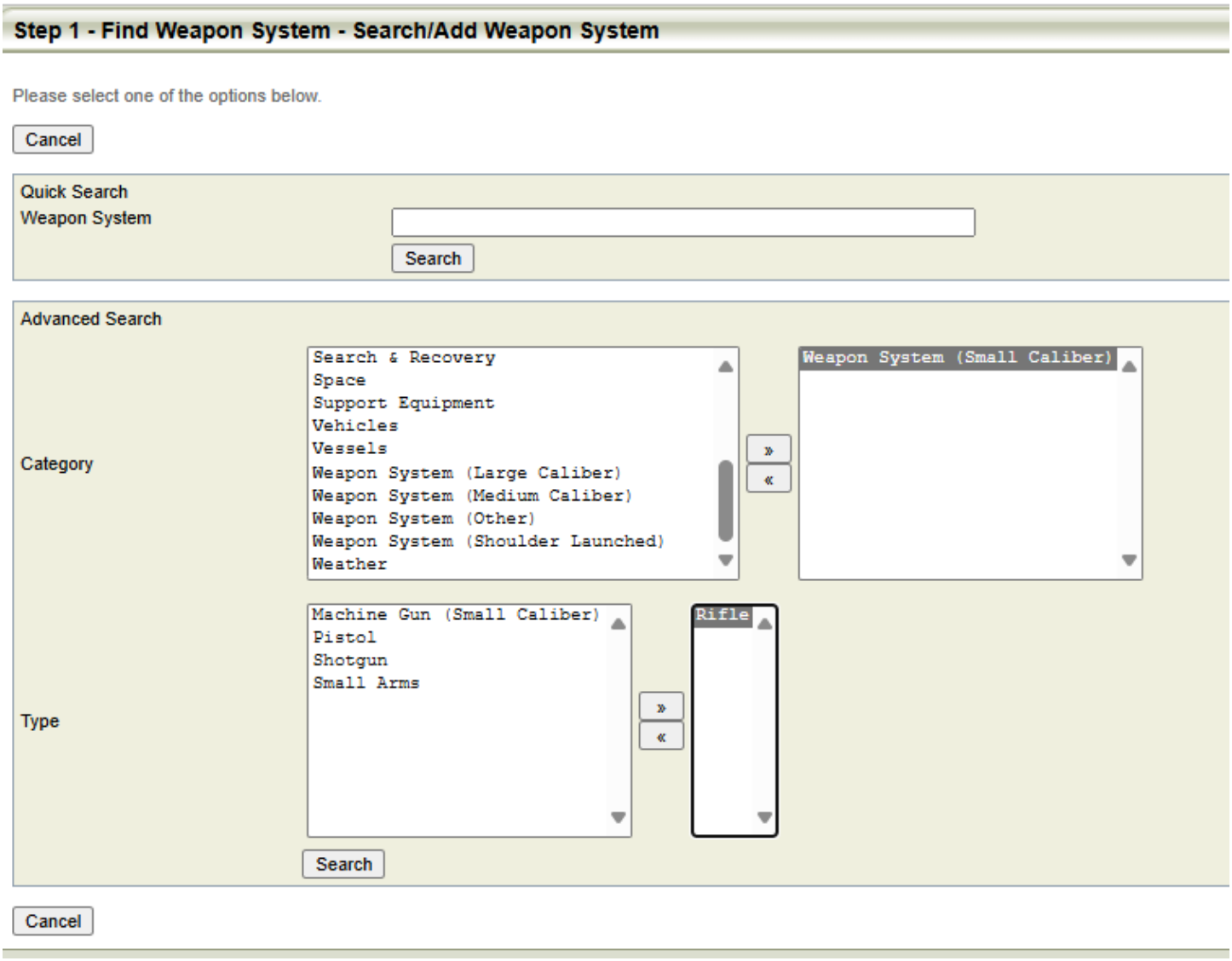


b. Add Weapons System Information to a Process

Step 1. Select the appropriate process. On the **Process Information**, click the drop-down arrow for **Weapons System Information** tab. Select the plus button to add a weapon system.



Step 2. If you know the name of the Weapon System you are searching for, you can use the **Quick Search Weapons System** option. If you need to search for your Weapon System, use the Advanced Search options to locate the correct weapons system. First select the correct **Category** and continue to make selections until the weapon system you are looking for populates in the **Type** field and the select **Search**. You can add one or more weapons per process. A full breakdown of DON BOP Weapon System options can be found can be found on [NMCFHPC's BOP website].



Step 3. After selecting your Weapon System, the **Step 2 – Find Weapon System – Select Weapon System** page will appear. This page lists Weapon Systems by alphabetical order and you may need to hit **View All Results** to find your specific Weapon System then select **Continue**.

Note: **Do not** use the **Add "Other" Weapon System**. If you cannot find the weapons system in the search function, contact NMCFHPC DOEHRS-IH Support Team.

Step 2 - Find Weapon System - Select Weapon System

Results 1-20 of 20 records found.

Shops

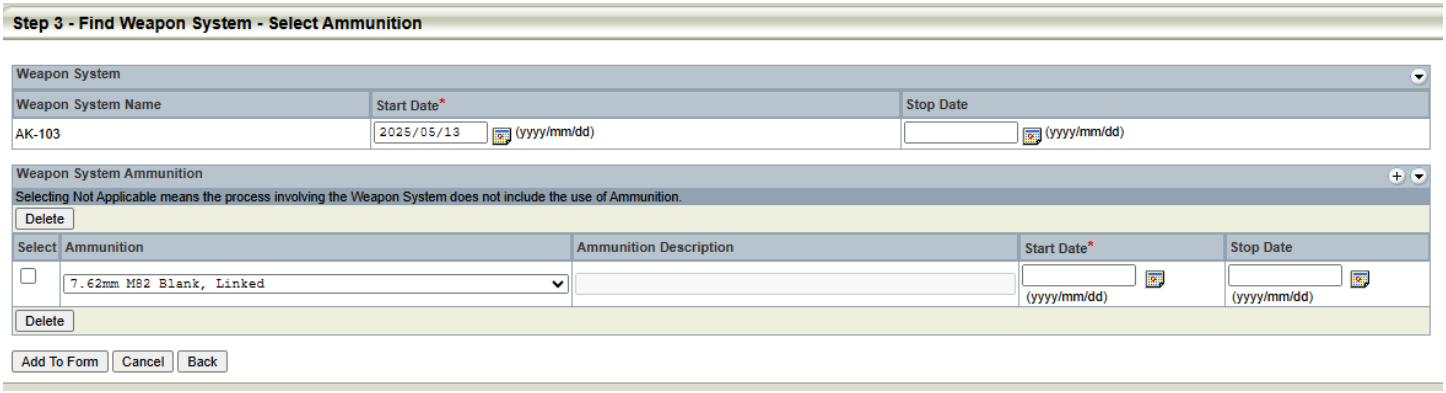
Select	Weapon Category	Weapon Type	Weapon System
○	Weapon System (Small Caliber)	Rifle	AK-103
○	Weapon System (Small Caliber)	Rifle	AK-104
○	Weapon System (Small Caliber)	Rifle	M1 Carbine Rifle
○	Weapon System (Small Caliber)	Rifle	M1 Garand Rifle
○	Weapon System (Small Caliber)	Rifle	M107 Sniper Rifle
○	Weapon System (Small Caliber)	Rifle	M110 Rifle
○	Weapon System (Small Caliber)	Rifle	M14 Rifle
○	Weapon System (Small Caliber)	Rifle	M16A2 Rifle
○	Weapon System (Small Caliber)	Rifle	M1903 Springfield Rifle
○	Weapon System (Small Caliber)	Rifle	M1917 Enfield Rifle
○	Weapon System (Small Caliber)	Rifle	M2010 Enhanced Sniper Rifle
○	Weapon System (Small Caliber)	Rifle	M21 Sniper Weapon Systems (SWS)
○	Weapon System (Small Caliber)	Rifle	M24
○	Weapon System (Small Caliber)	Rifle	M24 Sniper Weapon Systems (SWS)
○	Weapon System (Small Caliber)	Rifle	M4 Carbine Rifle
○	Weapon System (Small Caliber)	Rifle	M82 Barrett
○	Weapon System (Small Caliber)	Rifle	MK 18 Carbine Rifle
○	Weapon System (Small Caliber)	Rifle	MK 22 Sniper Rifle
○	Weapon System (Small Caliber)	Rifle	NGSW Automatic Rifle
○	Weapon System (Small Caliber)	Rifle	NGSW Rifle

Page: A M N | View All Results

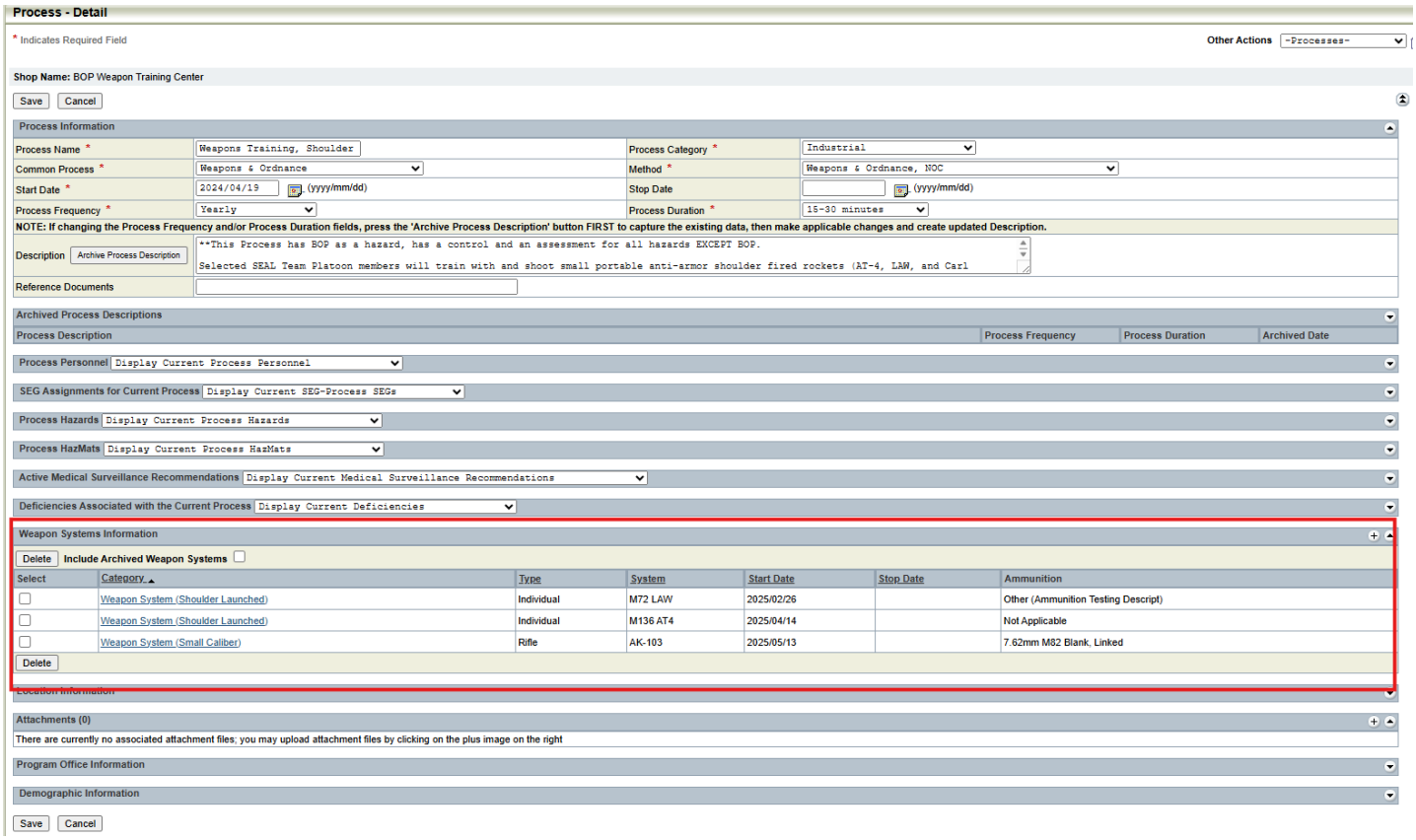
Add "Other" Weapon System ☐

Continue Cancel Back

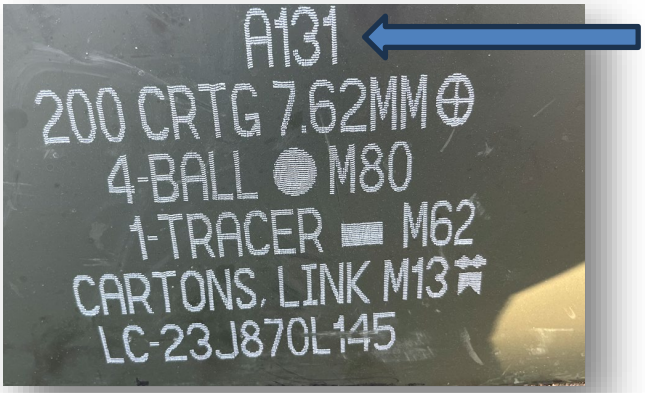
Step 4. **The Step 3 – Find Weapon System – Select Ammunition** page will appear. Select the **Start Date** for the Weapon System Name and add any ammunition information.



Step 5. The weapon system and ammunition information will now appear on the **Process – Detail** page. **Weapons System Information** does not currently populate in the Standardized Survey.

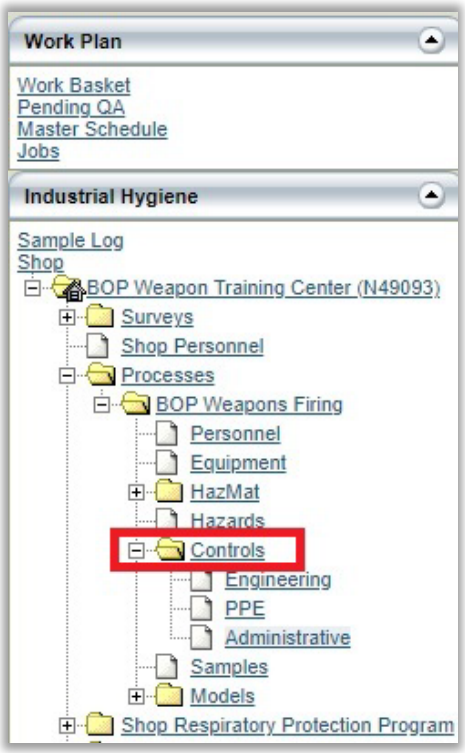


Note: In the **Process Description**, specify the associated Department of Defense Identification Code (DODIC/ammunition code) and Posture position along with additional process information. The DODIC and other ammunition specific information can be found on the ammo can or by asking personnel on the range. The figure below shows a DODIC on an ammo can.

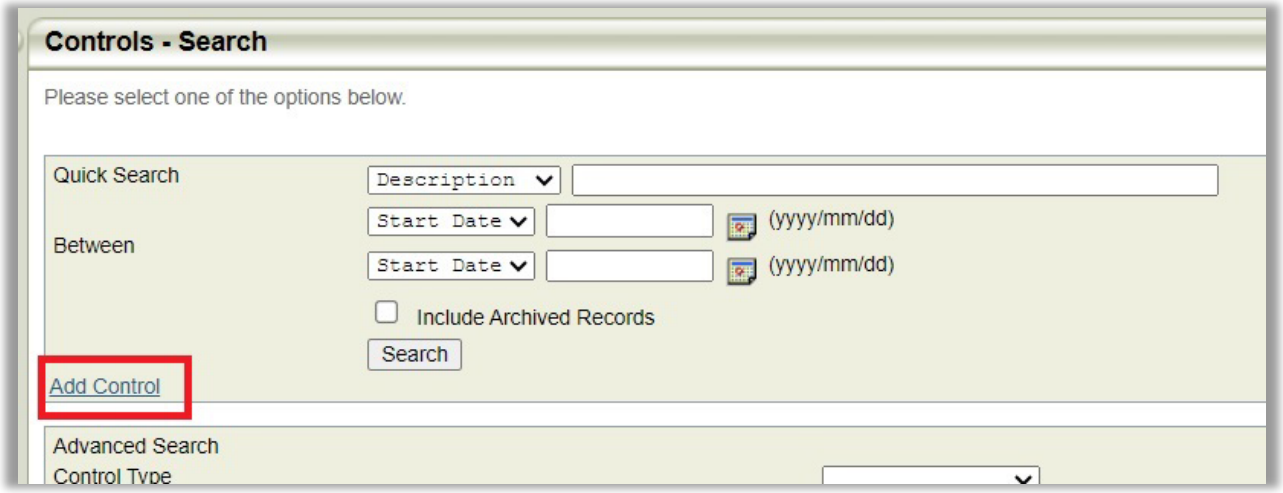


c. Adding Controls for Blast Overpressure Hazards

Step 1. Click on selected Process Name and expand the options to see and select **Controls**.

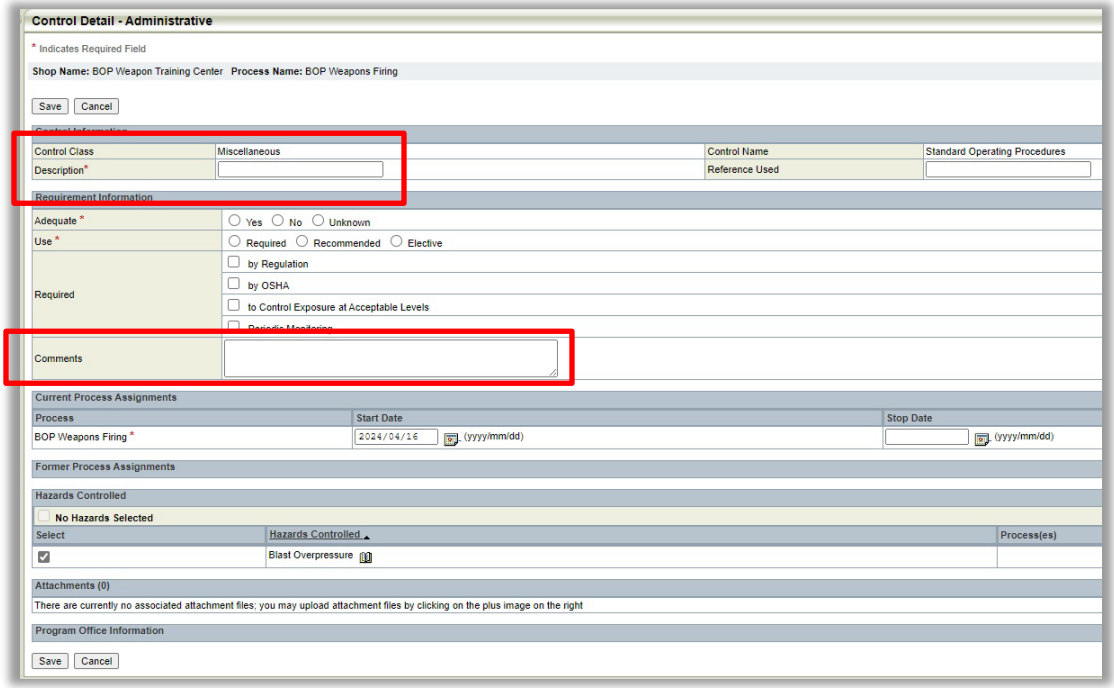


Step 2. Select **Add Control**.



Step 3. On the **Control Information** page, select **Control Type: Administrative**, **Control Class: Miscellaneous**, **Control Name: Standard Operating Procedure** and then select **Continue**.

Step 4. On the **Control Details** page, enter the **Description** and **Comments**.



Standardized Control description wording options and comments for DOEHRS (**use exact phrases below**):

Option (1) Control description: Minimize personnel near BOP generating events.

- Control description **comments**: DOD Policy requires DOD Components to minimize the number of personnel in the vicinity of BOP generating events (i.e., personnel who are not directly involved in the training or executing tasks associated with the training event) to minimize unnecessary exposure.

Option (2) Control description: Enforce safety requirements.

- Control description **comments**: DOD Policy requires DOD Components to enforce safety warnings and restrictions in weapons systems technical and operators' manuals per DOD requirements.

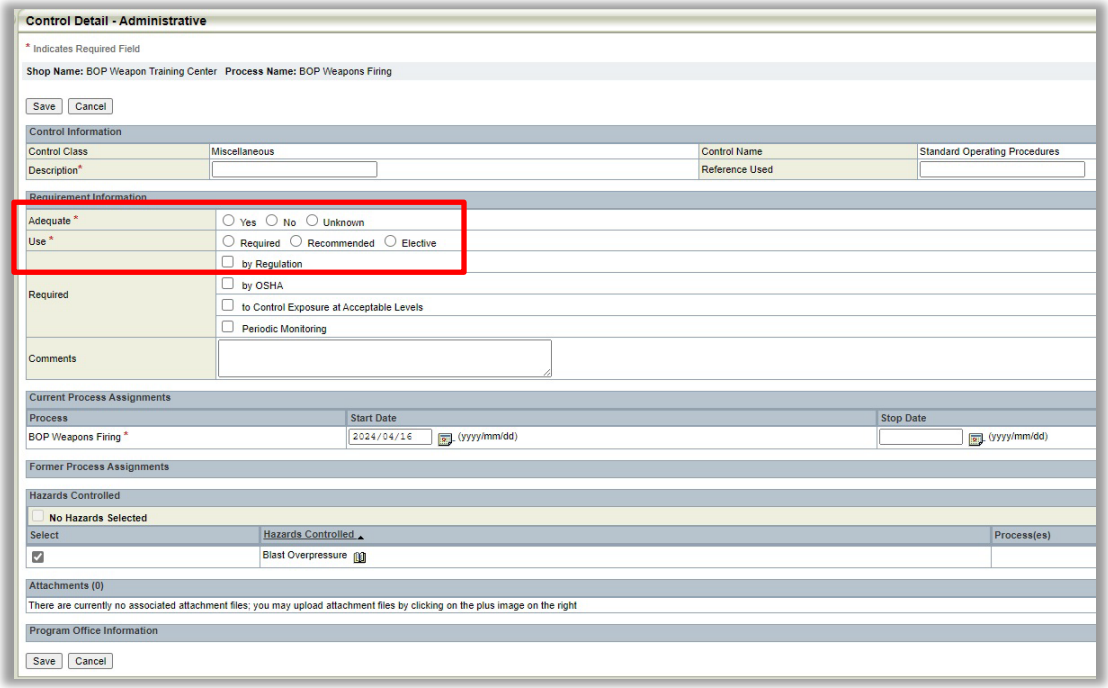
Option (3) Control description: Stand-off distances utilized per DOD requirements.

- Control description **comments**: Components must incorporate BOP risk management and mitigation actions to minimize the risk of brain injury that includes stand-off distances for weapons users and standoff distances for non-training audiences per DOD policy.

Option (4) Control description: Minimize rounds fired.

- Control description **comments**: DOD Policy requires DOD Components to limit the number of rounds to no more than the amount necessary to achieve mission readiness.

Step 5. Select "**Unknown**" response for **Adequate** and "**Required**" for **Use**. Scroll down to the **Hazards Controlled** section and select **Blast Overpressure**. Select **Save**.



*****Because BUMED IH is not currently performing exposure assessments for BOP hazards, at least one Control must be added with the Hazard of BOP for BOP to be listed in the standardized survey. An example standardized survey can be found on [NMCFHPC's BOP website](#)*****

The resulting survey would result in a process that looks like this within the DOEHRS-IH Survey:

Process: BOP Weapons Test			
Frequency: Weekly Duration: 1-2 hours			
Description: **This Process has BOP as a hazard and a control, but NO assessment.			

Administrative

Control Description	**Hazards Controlled**	**Control Use**	**Adequate**
STAND-OFF DISTANCES UTILIZED PER DOD REQURIEMENTS	Blast Overpressure	Required	Unknown
Comments: Components must incorporate BOP risk management and mitigation actions to minimize the risk of brain injury that includes stand-off distances for weapons users and standoff distances for non-training audiences per DOD policy.			

STEP 4. Add standard wording to Observation and Notes (within DOEHRS-IH) and Executive Summary/Program Summary within IH Survey

If the IHPO identifies a BOP producing process and adds it to DOEHRS-IH, standard wording must be placed in **Observations and Notes** section (within DOEHRS-IH) and the **Executive Summary/Program Summary** of the IH survey. Standard wording is as follows:

"Blast Overpressure

References:

(a) Department of Defense Warfighter Brain Health Initiative – Strategy and Action Plan, June 8, 2022
(b) Department of Defense (DoD) Requirements for Managing Brain Health Risks from Blast Overpressure
(c) DoD Safety and Occupational Health, Blast Overpressure (BOP) Program, available at **https://denix.osd.mil/auth/soh/programs/bop/**
(d) Warfighter Brain Health Hub, available at https://www.health.mil/Military-Health-Topics/Warfighter-Brain-Health

Blast Overpressure (BOP) is defined as the sharp, instantaneous rise in ambient atmospheric pressure resulting from an explosive detonation (e.g., breaching operations) or the weapon system firing. The DoD is committed to reducing risks associated with blast overpressure (BOP) as part of the overall "Comprehensive Strategy and Action Plan for Warfighter Brain Health", reference (a). Reference (b) establishes DoD requirements and direction for the management of health risks to DoD personnel from exposures to BOP. Reference (b) states that DoD personnel in operational environments demonstrate possible adverse effects from acute and repetitive exposures to BOP on brain health and cognitive performance (e.g., headache, ringing in ears, slow reaction time, poor concentration). Although brain health effects from BOP exposures are not yet fully characterized, adverse health and cognitive performance impacts have been reported for exposures to BOP above 4 pounds per square inch (psi). References (c) and (d) provide additional resources relating to BOP.

To aid in risk mitigation, industrial hygiene has identified processes that involve BOP exposures at your command below."

END STANDARD WORDING

Additional information and files discussed in this IH Field Guide can be found on NMCFHPC's BOP Website:

https://www.med.navy.mil/Navy-and-Marine-Corps-Force-Health-Protection-Command/Environmental-Health/Industrial-Hygiene/Acquisition-Technical-Support/Blast-Overpressure-BOP/