



Non-Compliant Boarding Operations: Potential for non-lethal weapons employment

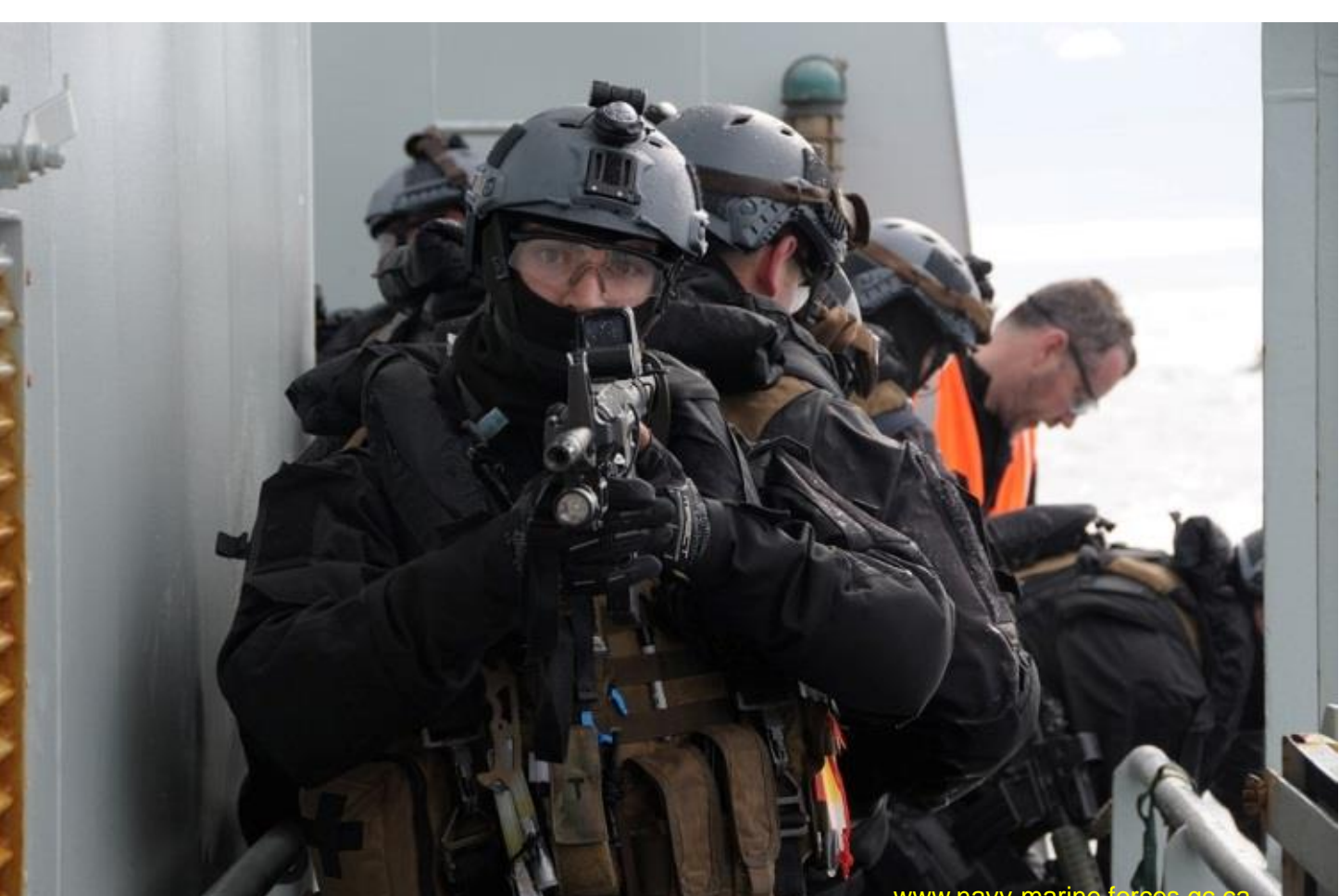


BACKGROUND

Maritime interdiction operations (MIO) are increasing in prominence as the majority of day-to-day naval operations deals with counter-piracy and/or counter-terrorism, rather than with major navy-against-navy combat operations. MIO vignettes can include operations in support of law enforcement (drug interdiction, enforcing environment regulations, etc.), counter-piracy and counter-terrorism operations, or embargo enforcement. A common capability across this wide range of vignettes is the need to board, search and, possibly, seize target vessels.

These Visit Board Search and Seizure (VBSS) operations constitute maritime boarding actions and tactics, which involve sending a boarding party from a frigate or destroyer (mother ship) to the target vessel via Rigid Hull Inflatable Boat (RHIB) or maritime helicopter. The mother ship serves as the support base for the boarding team. Aerial capabilities such as maritime helicopters or unmanned aerial vehicles can be used to monitor the target, if necessary. The VBSS operations can range from compliant (the boarded vessel obeys all instructions) through various degrees of non-compliant boardings, such as the crew offering passive resistance, refusing to obey directions, all the way up to the crew engaging the boarding team with lethal force. The Royal Canadian Navy (RCN) stood up an Enhanced Naval Boarding Party (ENBP) as an organic RCN capability intended to conduct non-compliant boardings, short of insertion under hostile fire. In the spring of 2015, the ENBP conducted initial operational trials.

In some scenarios it may be highly desirable to try to minimize the potential casualties among the boarded vessel's crew and/or passengers, as well as to reduce potential damage to the vessel itself. Non-lethal capabilities, because of the reversibility of their effects, could possibly fill in the gap in the force continuum between the application of lethal force and verbal engagement. Therefore, the feasibility and potential operational cost-benefit assessment were one of the subjects of the ENBP trials.



ENBP Trials

The ENBP can be employed in a variety of roles, including the conduct of VBSS operations, serving as a Quick Reaction Force for the mother ship's own boarding team who are conducting compliant boardings, or supporting non-combatant evacuation operations in littoral regions. It is not expected that the ENBP would conduct routine compliant boardings. Therefore, the employment of the ENBP by the ship's commander assumes a potentially hostile environment.

Potential for non-lethal capabilities

It needs to be noted here that the ENBP does not employ non-lethal capabilities, and the observations outlined here are based on the assessment of the current concept of operations without non-lethal weapons – not on actual non-lethal weapons trials.

Because of operational requirements, such as the need to approach a target using a RHIB or helicopter in variety of weather conditions, the need to climb ladders or move through confined spaces, the weight load that the boarding party members can carry is fairly limited. Because the load already carried is already at a maximum, any inclusion of non-lethal systems would necessitate exclusion of some of the currently-carried capabilities. In addition, weight is not the only limitation. For instance, it may not be feasible for an operator to carry two rifles, one lethal and one non-lethal. Any increase in the load would have negative effects on the teams' mobility and would run contrary to their concept of operations. Lastly, there was a significant concern that introducing a new weapon systems would significantly increase training requirements.

Since the ENBP is expected to be employed in a potentially hostile environment, they are likely to encounter armed opposition. Such an encounter could have fatal consequences if the boarding team did not have sufficient fire power to respond. This has to be considered when potential trade-offs are weighed.

The greatest potential for non-lethal capabilities to augment the ENBP would be to have the mother ship employing acoustic, optical, and electromagnetic systems to disrupt or suppress the target vessel's crew to facilitate insertion or extraction of the boarding team. For example, lasers and acoustic systems could be employed to disorient the crew to allow for the approaching team to gain a foothold onboard the target vessel. Some electromagnetic systems, such as an active denial system, could be used to selectively disrupt potential threats onboard.

The situation is different when compliant boardings are considered. In such cases the likelihood of an armed encounter is fairly low, and the presence of non-lethal capability would provide the team with an enhanced ability to deal with potentially hostile encounters not involving lethal threats.

VBSS Wargame

In support of the assessment of non-lethal capabilities in the context of the VBSS operations, Canada sponsored a wargame development by the Naval Postgraduate School in Monterey, CA. The students devised a table top, turn-based board game of VBSS operations; they also employed the game to assess a notional hybrid (non-lethal/lethal) weapons mix, as well as a lethal-only option. The scenario represented an initially compliant boarding escalating rapidly.

Scenario:

- The boarding team approaches the target vessel. As they near the insertion point, they observe a crew member within the boarding area. Once this person is warned, he complies with the direction to move to the bow.
- Once the team boards the vessel, they split, with two personnel moving toward the bridge. When they approach one of the stairwells, they are confronted by a crew member who threatens them, initially verbally, and then with a knife. The Blue team must deal with this threat.
- The search team first encounters an individual sleeping in the living quarters that behaves abusively, and may have hostile intent. After that, they enter the cargo area and are confronted by one or two individuals (depending on the outcome of the previous step) that engage them with small arms fire. Blue must determine the best response.
- The crew assembled in the bow becomes agitated, and as they hear shots being fired, they confront the two Blue personnel overseeing them. Blue must attempt to deal with the unruly crowd that decides not to comply with their orders, and may become threatening or even violent.

Observations

Two options, *Hybrid* and *Lethal* were considered. For the *Hybrid* option, the players were subjected to limitations on weapons selection; e.g., they could only have one rifle per soldier. This created an interesting dynamic during the game, when, in one instance, the search team's lethal capabilities were limited to handguns (which had a lower kill probability than an assault rifle) when facing armed opponents – leading to a protracted gun battle. The blunt trauma rounds and TASER were found to be largely ineffective against targets wearing life jackets. On the other hand, the non-lethal systems, especially blunt trauma rounds provided an efficient means of dealing with the hostile crowd (in Turn 4), or an individual yielding a blunt weapon (in Turn 2). Overall, non-lethal systems showed potential benefits, but reinforced the fact that the trade-offs need to be considered carefully.

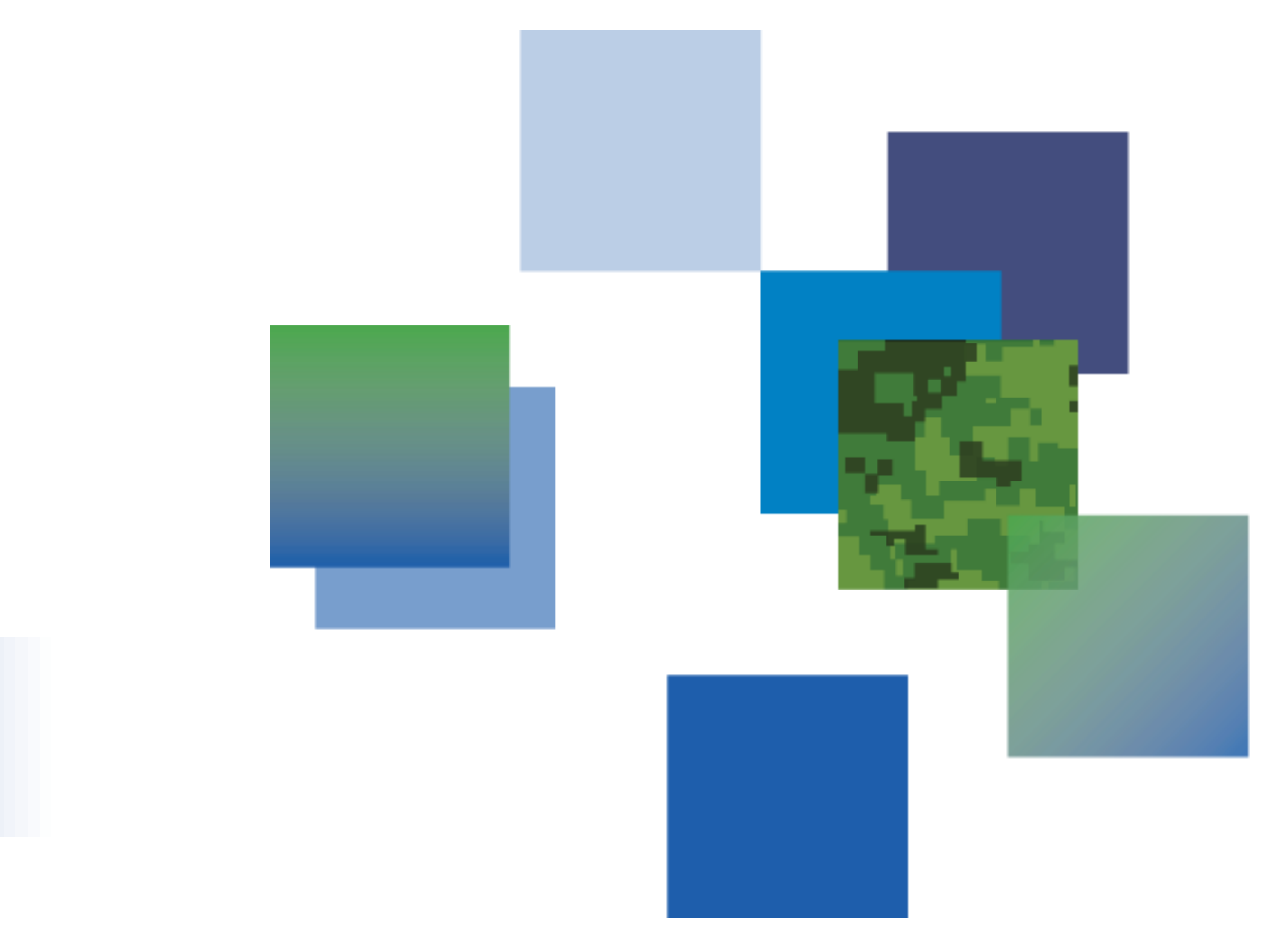
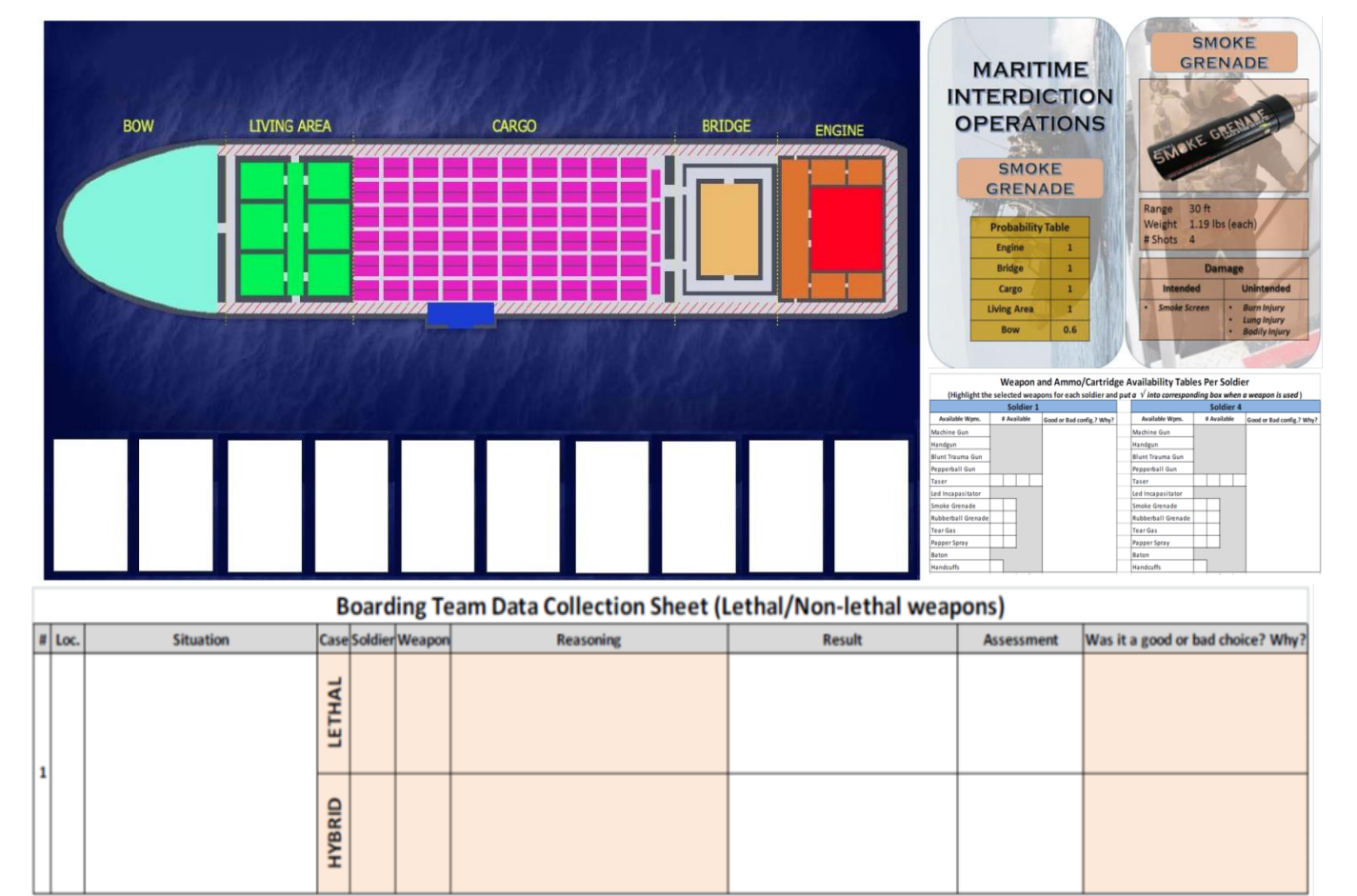
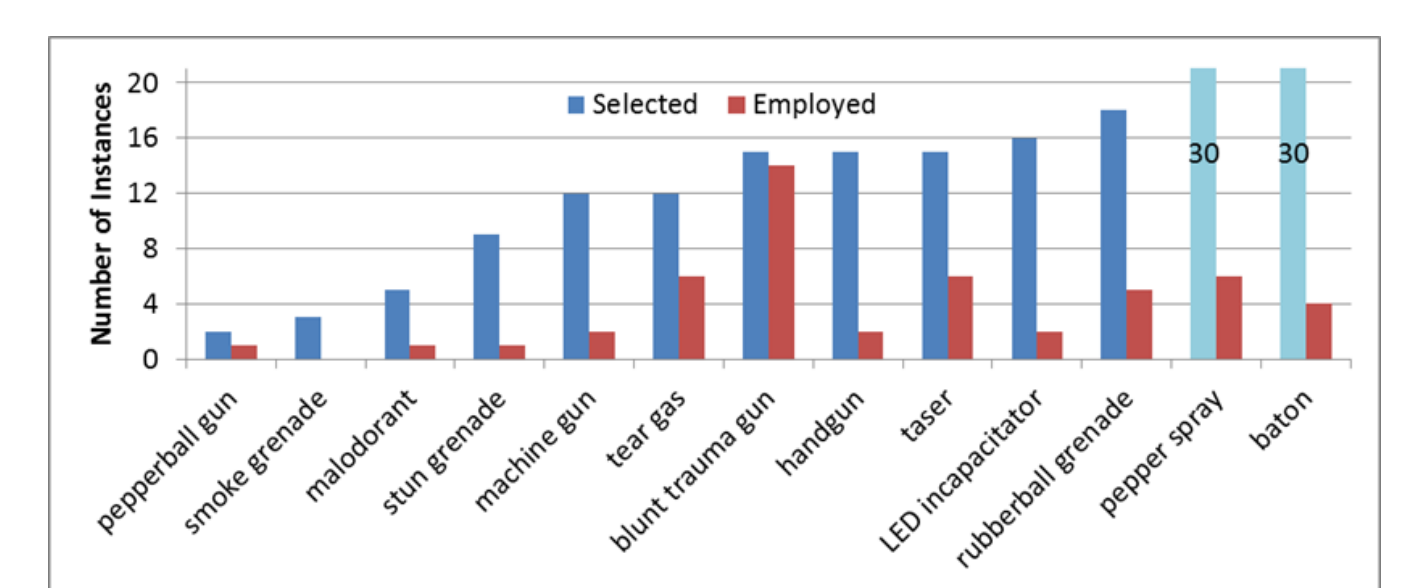


Figure 1. Wargame setup*



* Smoke grenade information is not meant to be representative of a specific system, manufacturer, or performance characteristics. It is representative only.

Figure 2. Number of instances a given weapon was selected and employed. Pepper spray and baton were provided by default for each game iteration.



CONCLUSIONS

- Due to limitations on the boarding party members' weight load imposed by operational requirements, the inclusion of non-lethal capabilities by the boarding party would force significant trade-offs in lethal capabilities.
- In scenarios that assume a potentially hostile situation onboard a target vessel, the cost of carrying non-lethal capabilities by boarding parties might not be matched by the expected benefits.
- In particular, potentially surrendering lethal capabilities in order to incorporate non-lethal systems might have fatal consequences if there is a situation requiring application of lethal force. Because of the expected type of ENBP operations, this would be a significant risk.
- The greatest potential for non-lethal capabilities for non-compliant boarding would be to employ them in a support role by the mother ship or supporting aerial platforms.
- The non-lethal capabilities would be a feasible option for the ship's intrinsic boarding party conducting routine, compliant boardings, with low likelihood of the need to employ lethal force.
- Employment of non-lethal systems in a maritime environment will require significant validation. The wargame results suggested that they might not be sufficiently effective due to the high likelihood of passive counter measures intrinsic in a maritime environment (e.g., life jackets).
- The trade-offs for boarding teams (even for compliant boardings) would need to be considered carefully and are recommended for further study.