

Influence of NLW on Command & Control aspects

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Introduction

The Dutch armed forces asked TNO to support in the evaluation of NLW concepts. TNO-FEL has constructed a Frame of Reference that can be used to pass judgement on the operational value of various NLW concepts. It is observed that NLW can have a large influence on Command & Control (C2) proces. TNO-FEL is asked to contribute to the development of a method to identify critical C2-procectasks of NLW concepts.

Objectives

The goals of this study are:

- to support in incorporating the C2-aspects in the Frame of Reference for judging the suitability of NLW for the Netherlands armed forces,
- to construct a C2-model and evaluation method suited for the identification of critical C2-aspects of NLW concepts,
- to identify critical C2-aspects for a number of NLW concepts in a number of specific scenarios.

Approach

The OODA loop (Observe, Orient, Decide and Act) is used as the basic C2-model. For a more precise analysis the model is refined by specific tasks. Each task is to be assessed on controllability. This assessment is implemented by asking questions on complexity, duration and relevance in comparison to the situation with only lethal weapons. The whole deployment process is assessed as controllable only if all tasks are controllable. The reasons for possible uncontrollability are the critical C2-aspects. For this study, three scenarios (the hostages/sniper scenario, the maritime embargo scenario and the motorised patrol blocked by civil crowd scenario) and three NLW concepts (flash bang grenade, teargas grenade, and high power microwave grenade) have been chosen for analyses. The analysis is based on interviews with military experts. Each interview took about 2 hours for each combination of NLW and scenario.

Results

- Method

This study shows that the method results in an identification of critical aspects in the C2-process. Since expert opinions are used to score the C2-tasks, the model itself does not require detailed knowledge of NLW. Thus the method can be used for all NLW concepts and scenarios.

- NLW assessment

The table below summarises the results for a number of NLW and scenarios.

	scenario 1: sniper / hostages	scenario 2: maritime embargo	scenario 3: patrol blocked by crowd
flash-bang grenade	controllable		controllable
tear-gas grenade	uncontrollable		controllable under conditions.
HPM grenade		controllable under conditions.	

The table shows that the controllability of the C2-process is strongly dependent on the combination of the NLW and the scenario (more specific: the role of the NLW in the scenario). In some scenarios the use of a specific NLW leads to an uncontrollable process. In other scenarios, the NLW should only be used if certain preconditions are met. For example, an HPM grenade should only be used if a complete understanding of the sea- and air situation is present, to prevent damage to neutrals or friends.