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Improving the Fidelity of Modeling IFC and ROE Use by Security Forces in a Crowd Control Context

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IMPROVING THE FIDELITY OF MODELING IFC AND ROE USE BY SECURITY FORCES IN A CROWD CONTROL CONTEXT

EXECUTIVE SUMMARY

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Project Summary

We assessed the guidance for the use of intermediate force capabilities (IFCs) in current rules of engagement (ROEs) as well as the experience of military members with IFCs in crowd control situations through an extensive literature review and interviews. Our goal was to identify information necessary to further the agent-based model WRENCH (Workbench for refining Rules of Engagement against Crowd Hostiles) by adding when and how diverse IFCs are used. Our project also looked at the training in the military for IFC use and the current integration of these weapons in deployment.

We found that rules for IFC use are not typically included in the standing ROEs for a combat zone and military members general felt that they didn't have guidance for when and how to use IFCs. Overall, few military members reported receiving training, with the exception of National Guard members, and those who did often didn't have IFCs readily available on future deployments once trained. We also found a general perception that some military members did not see a clear benefit of IFCs, and others reported that available IFCs often seemed absent or dysfunctional in those instances where they would have been helpful. Our recommendations are to promote training at the commander level and above, along with discussion of how IFCs can best be incorporated into ROEs and escalation of force (EOF) guidance. Such a change would ensure that force members in roles that could benefit from IFC use would receive training on those particular IFCs that would be most beneficial in their roles. Further, it would incorporate input from those most often using the IFCs in the development process.

Keywords: *IFC, intermediate force capability, JIFCO, Joint Intermediate Force Capabilities Office, ROE, rules of engagement, WRENCH, Workbench for refining Rules of Engagement against Crowd Hostiles, agent-based modeling, non-lethal weapons, crowd management, gray zone*

Background

Under JIFCO (Joint Intermediate Force Capabilities Office) funding and following a previous Naval Research Program project, the Crowd Dynamics Modeling Group at the Naval Postgraduate School (NPS) has designed and developed WRENCH. WRENCH is a complex agent-based simulation environment that models security force interactions with civilian crowds. This program incorporates needs, social modeling, and identity dynamics within crowds in an operational civil security scenario that enables commanders to explore the effects of using different IFCs under different ROEs. The main goal of this project was to gather information, develop insights, and guide recommendations for future enhancements to the WRENCH simulation model in the design of the ROEs, EOF rules, and IFC modeling to inform improvements to the fidelity of security force and crowd behavior modeling. Such assessments are integral to meeting the challenges of mitigating civilian harm specified in several recent DOD and Congressional memos. Additionally, the use of IFCs will be important to gray zone interactions which heavily involve civilians.

The objective of this study was to gather and synthesize relevant information about the use and effects of IFCs in the field, and then use this information to develop recommendations for future improvements to

the WRENCH simulation model. Six specific research questions are addressed: which IFCs are currently used, what influences their use, what ROEs are followed, what additional IFCs are being considered, and what potential enhancements to WRENCH should we incorporate as a result of those answers?

We took a multi-method approach to this research. After consulting with the sponsor, we conducted a literature review to see what had been studied about IFC use in the military. We included in this a review of formal doctrine regarding IFCs as well as published research and popular literature on the topic. We included a wide variety of sources, including DOD directives; branch-specific field manuals, training manuals, and orders; academic publications; and books published by civilian authors. Next, we identified the gaps in the research relevant to our research questions. To address the gaps in current knowledge, we developed a list of questions for subject matter experts and field experts and submitted them to the NPS Institutional Review Board. Following their determination that our proposed interviews with SMEs did not constitute generalizable research and therefore did not require IRB approval, we conducted the interviews. We initially searched for Marine Corps members to interview but quickly expanded the scope of our call for participants to include all military branches. To aid in identifying additional interviewees, we also conducted informal polls of students in several NPS classes to gauge their experience with IFCs.

Findings and Conclusions

We found that rules for IFC use are not typically included in the standing ROEs for a combat zone. Rules pertaining to the use of IFCs, when given, are determined by the commanders and incorporated in the EOF guidance provided for different areas with the zone. However, in general, EOF rules often pertain only to the use of lethal force.

We found a disconnect between training and use of IFCs. Many who had training never used or deployed with the weapons, and others who used them had no training. National Guard members reported receiving general training in the use of IFC measures for riot control but didn't always feel their training prepared them well for real situations. Military training on IFCs was reported using a train-the-trainer model, but training on the use and benefits of IFCs was not widespread among military members. Some specifically mentioned that front-line members did not understand the benefit of IFCs for their mission, so they disregarded IFCs when they were available.

There was a generational pattern between older and younger military service members, with the younger more readily embracing the use of IFCs. Most interviewees would like more training and access to IFCs as well as clear ROEs for using some of the newly developed tools. In addition to crowd control, we found diverse scenarios in which IFCs would be useful and even necessary to deal with civilians. In the literature, there is a wide variety of operational and mission specific differences among the sources and the military branches. A majority of the rules of engagement agree with the principle of "proportionality of means," where the choice of IFC within the Continuum of Force should match the perceived level of the threat.

The perception of IFCs was favorable among a majority of the military users we interviewed. Military users expressed a desire for effective and user-friendly IFCs. Some identified past situations where IFCs would have been helpful. However, they stated that current IFCs are often too heavy or bulky, difficult to find, and sometimes not in working order. Military users expressed frustration and limits with many of the IFCs, and some were unable to use them due to lack of training. Users expressed interest in new IFCs under development.

Our results confirm our hypothesis, that training and integration of IFCs is not well developed in many facets of the military. Due to this and the lack of experiences with IFCs, obtaining the specific answers to inform WRENCH was difficult. When we expanded our call for interviews to civilian police, we were able to find people with extensive experience using IFCs in crowd control. Since civilian police were beyond the original scope of research, we conducted few such interviews. We include the civilian outcomes in an appendix. Military interviewees stated that they garnered useful information and experiences pertaining to crowd control from civilian police in the past, and we heard from civilian police that they have significantly revised their procedures based on recent experiences.

Recommendations for Further Research

Intermediate force capability weapons (IFCs) are an integral part of the force continuum and crucial in dealing with civilians, whether in crowd contexts, humanitarian operations, border conflicts, or the gray zone. Currently, training and deployment of IFCs is lacking in the military. Training is often not required, and those untrained are unable to use such weapons when and if they become needed. Further, many of these weapons are not available during deployment. Military service members expressed a frustration with some of the current IFCs in their difficulty of use, bulkiness, or lack of integration with uniforms or weaponry. We recommend training on IFCs at the commander level and above, along with discussion of how IFCs can best be incorporated into guidance for rules of engagement (ROEs) and escalation of force (EOF). This change would ensure that force members in roles that could benefit from IFC use get training on IFCs that would be most beneficial to use.

Further development of smaller and lighter IFCs is called for, in addition to broader training beyond specific units that may not be available. Military users are interested in having non-lethal options, particularly as they have been in numerous situations involving civilians. We recommend that more input from prospective users of future IFCs is sought and considered during the development process.

The information about the ROEs, EOFs, and effects of IFC use gathered through the literature and interviews, while sparse, provide valuable information for improving the fidelity of WRENCH (Workbench for refining Rules of Engagement against Crowd Hostiles). In future research, the ways in which IFCs were used and the effects observed on the behavior of the people will be used to improve the design of ROEs, EOFs, and weapons effects on individuals in WRENCH, and also to validate the emergent crowd behavior seen when using WRENCH. Interviews with police on their experience using IFCs would

also be beneficial for further development of the WRENCH model, and we recommend that the sponsor consider that for future research.

Acronyms

EOF	escalation of force
IFC	intermediate force capability
JIFCO	Joint Intermediate Force Capabilities Office
NPS	Naval Postgraduate School
ROE	rules of engagement
WRENCH	Workbench for refining Rules of Engagement against Crowd Hostiles