MAJ David Allen & MAJ Marcus Boswell 09 June 2024

Operation LEE - Executive Summary

Significance

The recommendation below directly improves the Naval Postgraduate School's (NPS) Emergency Management (EM) systems and builds institutional resilience through cost-tailorable methods.

Situation

The NPS's EM systems fail to address significant security threats like the Rage Virus. In 2003, Great Britain's outbreak nearly destroyed the country in only ~28 days, with less than 1 out of every 3800 persons surviving. In the 21 years since the outbreak, Rage Virus research has been insufficient to protect U.S. interests. The NPS is a critical institution for defense relevant technological advances and is vulnerable to similar biological events.

Mission

Identify critical weaknesses in the NPS EM systems and opportunities for improvement by conducting a rigorous simulation of a biological outbreak at the NPS.

Execution

Operation LEE simulated the NPS as a closed environment consisting of all 1,616 resident students and the eight major building sections. Movement distances, travel times, combat and infection processes were modeled from available data. Students and infected maintained the ability to decide movement paths, build and assault defenses, and retrograde. Six variations of critical factors such as infection rate, and infrastructure quality were analyzed during 25 simulations.

Assumptions:
1) The students did not have warning of the outbreak.
2) No firearm access during the outbreak.
3) All students meet physical fitness requirements.

Constraints & Limitations:
1) Generalized Class IV and Engineer Estimates.
2) Limited visibility not fully modeled.
3) Tactical Combat Casualty Care not implemented.

System Orientation:
1. Travel Techniques
2. Adjudicate Outside Contact
3. Defense, Breach & Internal Contact
4. Retrograde & Route Selection
5. NPS Building Network (Not Pictured)

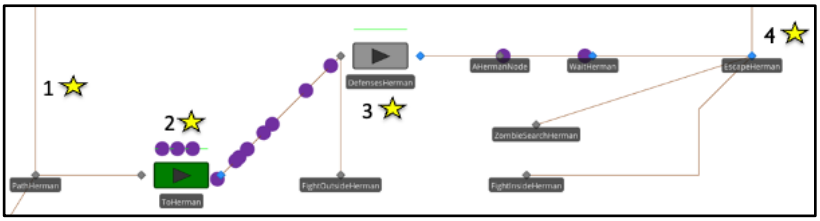

Figure 1. Herrmann Hall Subsystem, NPS Outbreak Model.

Conclusion & Recommendations

Key Results:
1) Human "Win" Rate – **24% (Survived 96 hours)**
   Conditions: Low Infection Rate & Upgraded Infrastructure
2) Average Human Survival Time – **6.18 hours**
3) Average Last Human Casualty – **15.77 hours**
4) Location of Most Casualties – **Del Monte Café**
5) Survival time not correlated with group size.

Critical Weaknesses:
1) No EM plan for Rage Virus or similar events.
2) Student density enables infection transmission.
3) Current infrastructure makes rescue operations infeasible due to rapid infection transmission.
4) Student strengths enhance the infected after virus transmission.

Recommendations:
1) Develop an addition to NPS's *Hazard Specific Annex 12: Biological Terrorism* that details shelter-in-place and rescue procedures for Rage Virus like events.
2) Conduct rehearsals of the procedures in NPS's *Hazard Specific Annexes* with all students on a yearly basis.
3) Update NPS's Essential-Items list to include California legal, dual-purpose items such as lug wrenches.
4) Minimize the number of students on campus by leveraging Microsoft 365 for virtual and recorded lectures.
5) Restrict physical class sizes to no more than 20 students.
6) Allocate 3x Days of Supply (DOS) of Class I per student and apportion it across all buildings.
7) Authorize a cost estimation study to upgrade NPS's infrastructure. Initial improvements should include GSA Class 5 Vault Doors and Terror Screen SR4 rolling security shutters.