

Analysis of Organizational Performance at the US Army National Training Center

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The US Army National Training Center (NTC) could benefit from the use of real-time data analytics to improve the operational effectiveness of its military training operations through an enhanced After-Action Review (AAR). NTC captures Global Positioning System (GPS) data from various sensors during 14-day training rotations that include battle simulations and a live-fire exercise. In this study, we seek to model operational effectiveness for offensive and defensive operations at NTC by identifying and evaluating key measures of performance. Analyzing this data will permit automated models to allow rotating units to more effectively understand their operational effectiveness, identify key areas of improvement, and implement those changes. The data analysis is being performed in R, with the future possibility of creating a real-time interactive dashboard. In order to analyze operational effectiveness, we first create quantitative metrics based on US Army doctrine relevant to NTC operational problem sets. The performance measurements serve as predictors in a regression model to predict operational effectiveness. Fluctuations in friendly Mass and Concentration were found to closely mirror the operational timeline that the unit experienced. Work is currently underway to include the effectiveness metric, which will serve to measure the unit's overall performance. By conducting real-time data analysis, NTC can improve its ability to provide excellent feedback to rotating units, which will produce much more effective training. The dashboard will provide quantitative results for rotational units to analyze their adherence to doctrinal fundamentals and provide greater context in their performance reviews.

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