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Optimized Transit Tool & Easy Reference (OTTER) Improved Data Analysis

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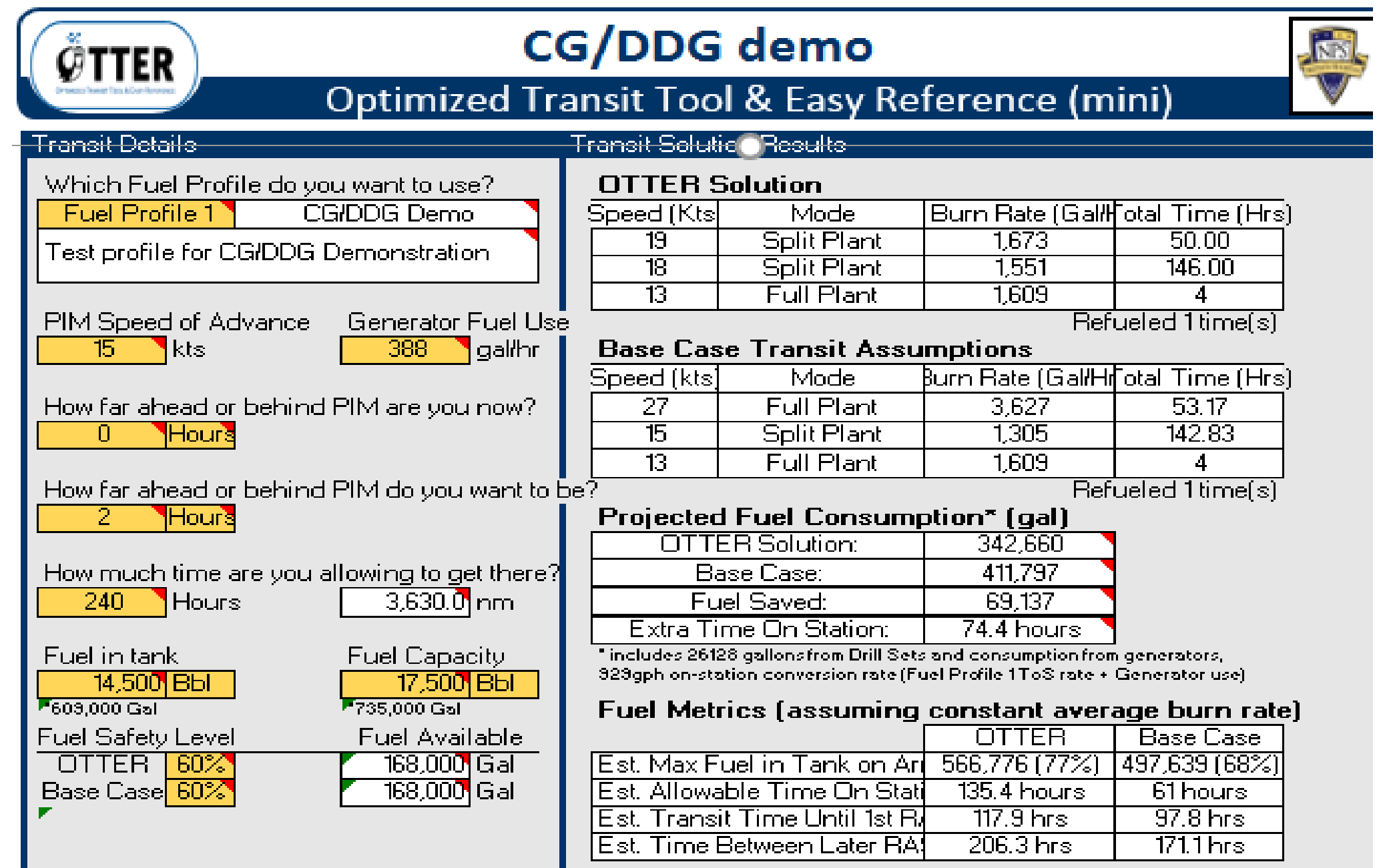
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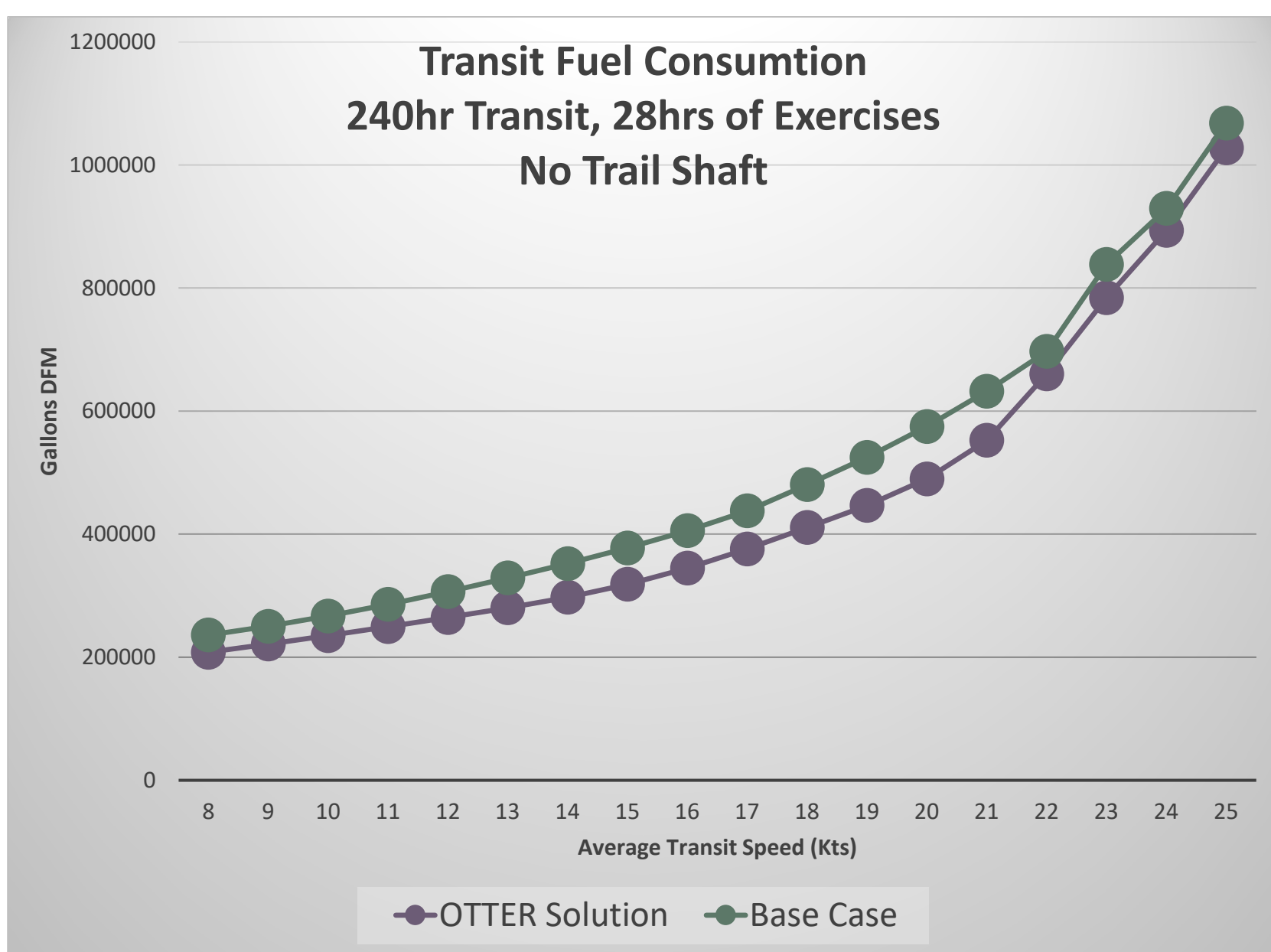
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Background

OTTER is an Excel-based tool to help surface ships plan their transits to maximize fuel efficiency based on optimal speed and engine configuration combinations. This study sought to provide an improved estimate of OTTER's potential fuel savings across a wide array of operational conditions. This study also gathered feedback from potential operators on how to improve the tool.



OTTER transit specification and solution results interfaces



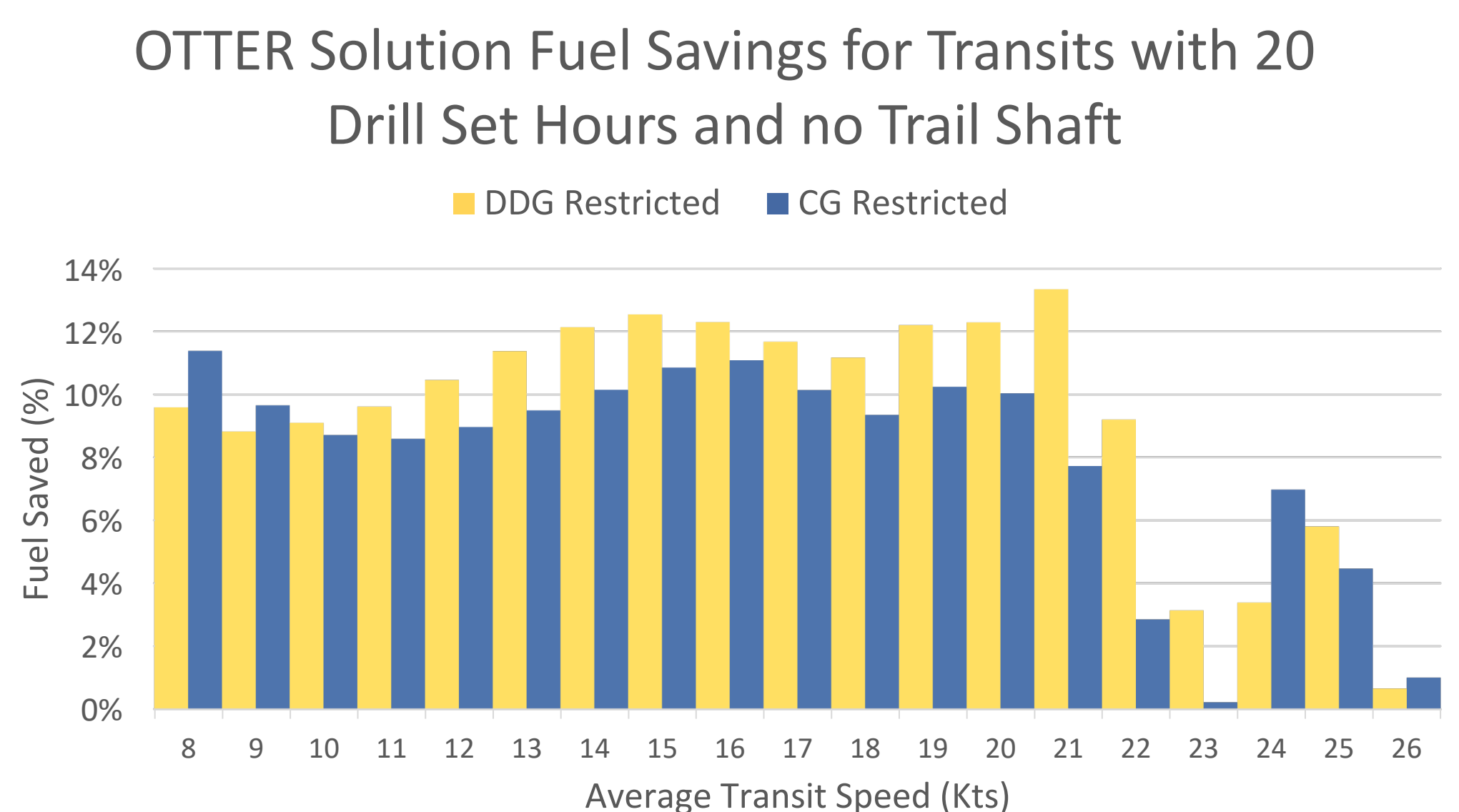
Example of OTTER's fuel savings in a restricted operations environment

Transit Modeling Approach

This study used the OTTER tool to model ten day transits of various distances with up to four hours per day dedicated to running drills and exercises. Transits were modeled for Cruisers and Destroyers under both conditions where ships were free to choose any engine configuration and under more restricted conditions where ships had to operate in at least split plant configuration.

Results

Even in transit cases where operational conditions limit a ship's freedom to choose optimal transit speeds and engine configurations, OTTER is still able to generate solutions that result in significant fuel savings. Fuel savings typically ranged from 3% to 10%, but could be as high as 20% in specific circumstances.



Example of OTTER's fuel savings in a restricted operations environment

OTTER Improvements and Training Materials

- Thanks to feedback from Surface Warfare Officer volunteers, we were able to identify several key improvements to be made in future OTTER updates.
- Enhanced protection to prevent accidental changes to core functions
- Reproduce training materials in slideshow format to be more consistent with other programs



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