The Effects of Increased Fuel Efficiency on Operational Capabilities

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With Guest Lecturer Ronald Filadelfo

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Ronald Filadelfo

The U.S. Navy is reviewing a number of energy efficiency initiatives as part of its efforts to reduce fossil fuel consumption. The benefits of such initiatives are twofold: they save money in peacetime and increase capabilities in wartime. This study focuses on the latter. Specifically, the Navy Energy Coordination Office (OPNAV N45E) asked CNA to develop a framework for quantifying how increased fuel efficiency could affect combat effectiveness. OPNAV N45E also asked CNA to use the framework to quantify the effects of fuel efficiency on core naval missions. This briefing, therefore, highlights the primary logistical and operational benefits of fuel efficiency and quantifies those benefits for a notional carrier strike group (CSG).

Topics for this seminar will include:

- Benefits of energy efficiency initiatives
- Logistical and operational benefits of fuel efficiency
- Identifying continuous and discontinuous effects

Abridged Biography:

Dr. Ronald Filadelfo joined CNA in 1984 and currently serves as Leader of the Environment and Energy Research Group at CNA. The group's current research focus includes the effects of military sonars on marine mammals, the relationship between climate change and national security, and installation and operational energy issues for the military.

His early career at CNA focused on submarine and antisubmarine warfare issues. As an analyst in CNA's ASW Department, he supported several fleet exercises, and had two fleet assignments: Commander, Destroyer Squadron Thirty-One, and Tactical Training Group, Pacific. Since 1992 his efforts have concentrated on Navy environmental issues. More recently, his primary research area has been concerned with exploring the links between military sonar use and whale strandings.

In 2007 Dr. Filadelfo led the analysis and writing team that supported the CNA Military Advisory Board study of the effects of climate change on national security. He holds a PhD degree in physical oceanography from the State University of New York.

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