Current state of military hybrid vehicle development

Denise M. Kramer*
US Army TARDEC,
RDTA-RS, MS-159, 6501 East 11 Mile Road,
Warren, Michigan 48397-0001, USA
E-mail: dmkramer@mtu.edu

*Corresponding author
Gordon G. Parker
Mechanical Engineering – Engineering Mechanics,
Michigan Technological University,
815 R.L. Smith Building,
1400 Townsend Drive, Houghton, Michigan 49931-1295, USA
E-mail: ggparker@mtu.edu

Abstract: Hybrid vehicles are common in the marketplace for passenger cars and commercial applications such as delivery trucks and transit busses. One of the biggest justifications for hybrids is their fuel efficiency. With fuel costs as high as $100 per litre in the battle field it is remarkable that there are no deployed hybrid military vehicles. This is not due to a lack of investment in research and development, since much work has been done. The goal of this survey paper is to summarise past research in both the commercial and government sectors towards achieving a military hybrid vehicle and provide recommendations for a path forward. Special attention is given to drive cycles and the unique requirements that impact military hybrid vehicle design.