syncroness
innovative product development

INNOVATION = DIGGING DEEPER TO FIND THE RIGHT SOLUTIONS

INNOVATION AT A GLANCE

Client:
General Dynamics

Industry:
Defense

Syncroness services:
» Mechanical engineering
» Mechanical analysis

Objectives:
» Design and prototype a camera mast for a Expeditionary Fighting Vehicle (EFV) for the U.S. Marine Corps
» Identify the root cause of a toxic fumes problem
» Analyze and modify the gear train to achieve required durability

RESULTS

With the modifications and solutions developed by Syncroness, the vehicle was able to pass final testing.

The Expeditionary Fighting Vehicle (EFV) would enable the U.S. Marine Corps to travel across land and sea from one high-tech and agile vehicle. Syncroness was brought in to identify solutions to overcome the vehicle's maintenance and reliability issues.

INNOVATIVE DESIGN

Syncroness designed a camera mast to mount onto the EFV. The mount had three modes of operation (stowed, sea, and ground) and could hold 30 pounds of equipment five feet in the air during all vehicle operations. It had to be strong enough to survive and function after repeated artillery strikes to the vehicle. Our team managed the entire design, performed mechanical analysis, and built the prototype system.

GETTING RIGHT TO THE SOURCE

The EFV was experiencing a problem with toxic fumes during medium- to high-fire rate testing. If the problem was not addressed, the vehicle program would have been cancelled. Our engineers performed airflow analysis to uncover the root cause of the toxic fumes problem. They then designed prototype test components to evaluate during live fire and produced the design solution that overcame the problem.

ANALYZING DURABILITY

Our engineers analyzed the General Dynamics Amphibious Operations Final Drive System (FDS). The FDS, which connects the transmission to the treads, had not been previously verified for the required life rating. We determined the durability of the FDS gear set based on the supplied mission profile and provided the necessary documentation to support the operating characteristics of the FDS related to gear durability.

LET'S KEEP INNOVATING.

10875 Dover Street, Unit 200 | Westminster, CO 80021 | 303.429.5005 | 877.429.5005 | Fax: 303.429.5025 | www.syncroness.com