



**Calhoun: The NPS Institutional Archive**  
**DSpace Repository**

---

Faculty and Researchers

Faculty and Researchers' Publications

---

2010

## Ship Damage Visualizer

McDowell, Perry

---

<https://hdl.handle.net/10945/51395>

---

This publication is a work of the U.S. Government as defined in Title 17, United States Code, Section 101. Copyright protection is not available for this work in the United States.

*Downloaded from NPS Archive: Calhoun*



Calhoun is the Naval Postgraduate School's public access digital repository for research materials and institutional publications created by the NPS community. Calhoun is named for Professor of Mathematics Guy K. Calhoun, NPS's first appointed -- and published -- scholarly author.

**Dudley Knox Library / Naval Postgraduate School**  
**411 Dyer Road / 1 University Circle**  
**Monterey, California USA 93943**

<http://www.nps.edu/library>

# Ship Damage Visualizer

[www.movesinstitute.org/research-project/ship-damage-visualizer-research/](http://www.movesinstitute.org/research-project/ship-damage-visualizer-research/)

## Project Abstract

This project was designed as a faster and more streamlined method of visualizing how an attack on a ship and the subsequent damage caused would affect a ship and all of its components.

## Sponsor

NSWC-Carderock

## Principal Investigator(s)

Perry McDowell

## Point of Contact

Perry McDowell

mcdowell@nps.edu

The highly user-configurable application uses the [Delta3D](#) Open Source Game Engine and the Qt UI toolkit to provide views into how the damage occurs and how the systems on-board are affected.

Each section, deck, part, and system can be toggled on or off. The complexity of the ship model requires an intuitive user interface to allow the user quick access to the queried part of the ship.

Damage animation sequences can be played back in non-realtime, with the time scrubbing feature. This allows precise understanding of how projectiles traverse through the ship.

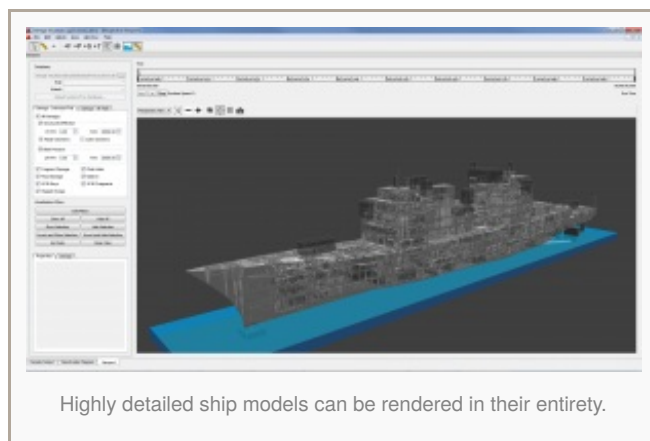
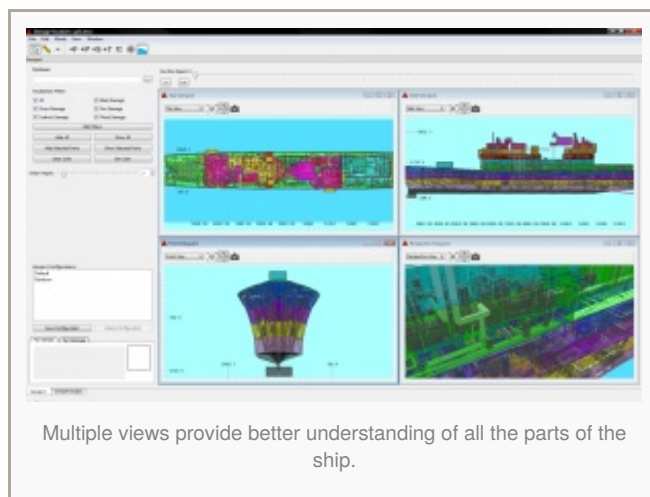
## Features

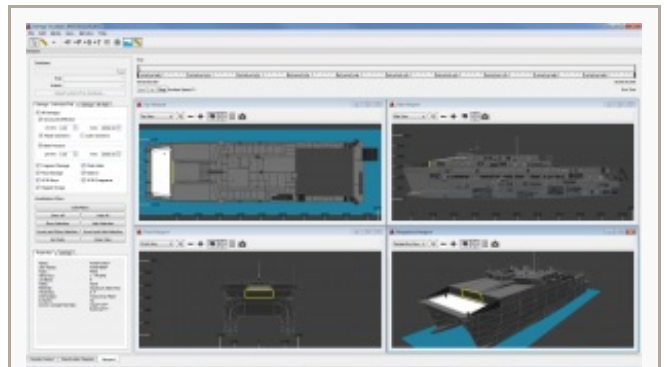
- Custom software crafted to support sponsor's requirements
- Flexible design allows for running classified/unclassified data sets
- Highly user-configurable to support individual's preferences
- Custom rendering techniques to support massive rendering sets

*Period of Performance:* May 2010 to Aug 2012

*Tags:* [Research](#), [Simulation](#)

*Focus Area:* Visual Simulation and Game-based Technology





Selecting on individual parts of the ship displays more information in the Properties Panel.