



**CRANE**

## Aerodynamic Simulation System and Method for Objects Dispensed from an Aircraft

**Track Code:** CRANE-99836

**Categories:**

- Electrical Engineering
- NSWC Crane

**Keywords:**

- Aeronautics
- Aircraft
- Computer Technology
- Crane
- Electrical Engineering
- Software

Infrared countermeasures are often dispensed from aircrafts to counter heat seeking surface-to-air or air-to-air missiles. Such infrared countermeasures are typically decoy flares having a burning temperature equal to or hotter than the aircraft's engine exhaust. The goal is to make heat seeking missiles seek out the heat signature of the burning flare rather than the heat signature of the aircraft's engines.

Naval Surface Warfare Center, Crane Division (NSWC Crane), has developed and patented a method for calculating predicted trajectories of a plurality of objects such as expendable countermeasures dispensed from a moving aircraft. This technology includes trajectory simulation software stored in the memory execution by the processor. In the first sequence, the software generates a graphical user interface to select an aircraft for the simulations. The second processing sequence determines a location and an orientation of at least one object dispenser relative to the selected aircraft. The third processing sequence generates a graphical user interface to define flight conditions for the aircraft. The fourth and fifth processing steps define and calculate the object dispense sequence and trajectory for at least one object dispenser.

**Advantages:**

- Increases safety
- Enhances effectiveness

**Potential Applications:**

-Military

**People:**

- Bennett, John O (Project leader)
- Sweeten, James T.
- Waggoner, Brent A

**Intellectual Property:**

**Application Date:** December 16, 2009

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**Contact OTC:**

Purdue Office of Technology Commercialization  
The Convergence Center  
101 Foundry Drive, Suite 2500  
West Lafayette, IN 47906

Phone: (765) 588-3475

Fax: (765) 463-3486

Email: [otcip@prf.org](mailto:otcip@prf.org)