



*The Philadelphia Chapter of the American Helicopter Society
Dinner Meeting*

Tuesday, November 11th, 2014

Program: **The LIFT! Project – Modular, Electric Vertical Lift System**

Speaker: **Michael Duffy – Boeing Vertical Lift Aerodynamics Department**

Sponsor: **Boeing Phantom Works**

Special V-22 Desk Model Raffle for New Members who Attend

Place: **D’Ignazio’s Towne House
117 Veterans Square, Media, PA 19063**

Time: **Cocktails - 5:30 pm, Dinner - 6:30 pm, Presentation - 7:15 pm**

Menu: **Filet Mignon, Chicken Breast stuffed w/ ham & cheese,
Baked Flounder, or Vegetarian Ravioli**

Registration: Deadline Noon Monday, November 10th Please!

Members \$25

Member + Spouse \$45

Guests of AHS Members \$30

Non-Members \$35

Student Members \$15

Please note there will be a \$5 surcharge for the Filet Mignon

Reservations: **email: dinnermeetings@ahsphillypa.org**

Phone: 610-522-4973

If you need to cancel your reservation please do so by 10 AM.

<http://www.vtol.org>

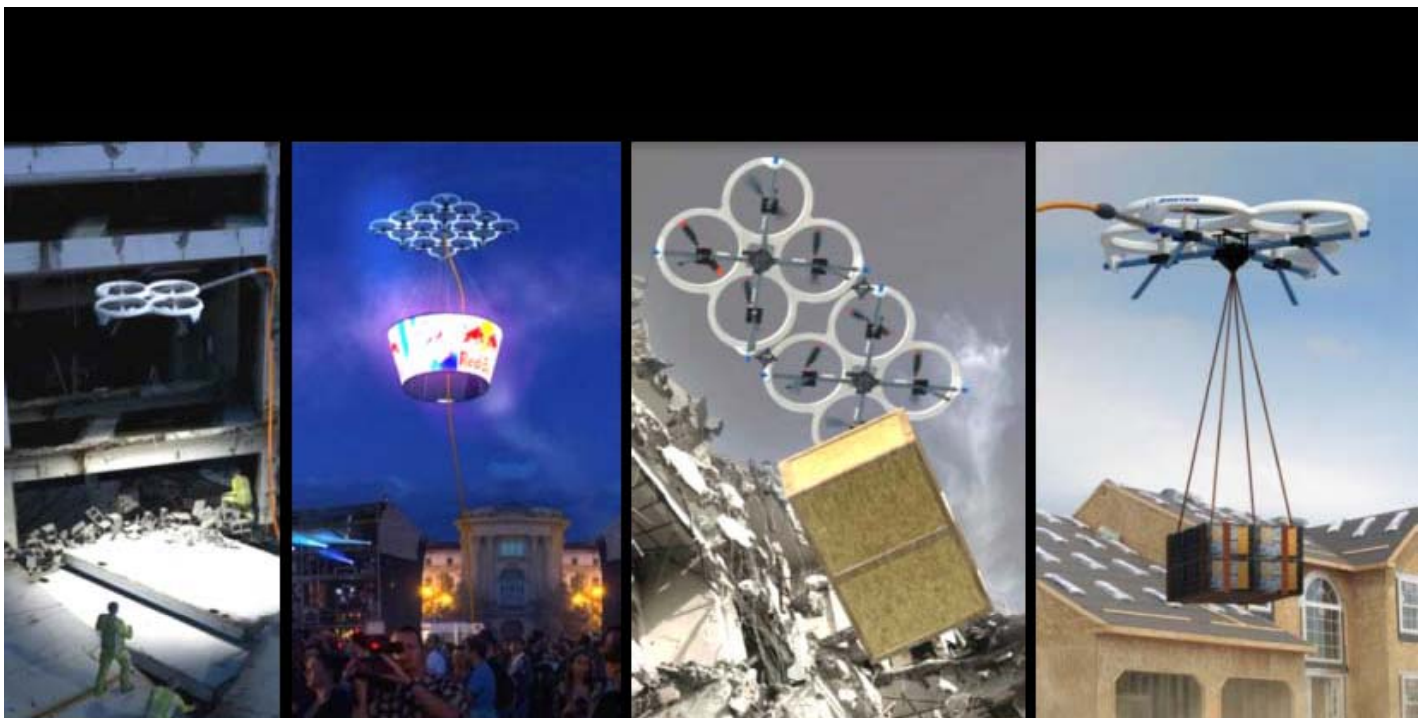
<http://www.ahsphillypa.org>

About our Program:

The LIFT! Project – Modular, Electric Vertical Lift System

Presented by Michael Duffy

The LIFT! project was a flight demonstration program for a modular, electric powered, vertical lift quadrotor (four rotors) platform, which could combine through physical connections to lift heavier payloads.



The concept of LIFT! was envisioned to be used for various vertical lift missions, which helicopters and cranes do today, such as: lifting HVAC units, lifting supplies to the top of a building, delivering payloads short distances for disaster relief, and the like. The modular concept provides portable and scalable lift, which allows for ‘right sizing’ the aircraft for a given payload and mission.

About our Speaker:

Michael J. Duffy

Bio:

Michael Duffy has worked at Boeing Company 11 years for the Vertical Lift Aerodynamics department located at Ridley Park, PA. Currently, Mr. Duffy directs a flight test project, which is testing a set of small modular electric vertical lift vehicles called LIFT!. The LIFT! project was conceived by Mr. Duffy and has successfully demonstrated a 200 lb payload lift. This technology is currently being considered for several military and commercial applications.

Prior to the LIFT! project, Mr. Duffy led several aerodynamic design and test programs including: Active flow control for download alleviation on the V-22 Tiltrotor, a small scale rapid prototype flying demo aircraft for the DARPA X-plane project, the aerodynamic design for the DARPA Mission Adaptive Rotor program, and the aerodynamic design and test of the V-22 Nacelle Mounted Sails. Mr. Duffy has a strong interest in electric propulsion as it relates to reduced operating cost for Vertical Lift aircraft.

EDUCATION

Georgia Tech	Aerospace Engineering	M.S. 2010
Penn-State	Aerospace Engineering	B.S. 2003

EMPLOYMENT

The Boeing Company	Aerodynamics Engineer, 2003-2014
Sikorsky Aircraft	Engineering Co-Op, 5/2002–8/2002
Sikorsky Aircraft	Engineering Co-Op, 5/2001–8/2001

Honors and Awards:

Boeing Defense Top Talent Award, 2013
Boeing Pride Awards (10+), 2003-2013

Selected Publications/Patents:

Duffy, Michael J, Liu, John, McVeigh, Michael M, "Aerodynamic Design of Nacelle-Mounted Sails for Flight Test Demonstration on the V-22 Osprey Tiltrotor." Published Papers of the AIAA Aerospace Sciences Meeting, 2012, DOI: 10.2514/6.2012-1041

Five patents pending on various inventions for: Cooperative Unmanned Air Vehicles and Modular Electric Vertical Lift