

## Vertical Take-Off and Landing Unmanned Aerial Vehicle (VTUAV) (Fire Scout)

### Executive Summary

- The Navy delayed IOT&E from June 2009 to 2QFY10 because of software development delays and problems associated with shipboard launch and recovery.
- Additional developmental testing is required to demonstrate air vehicle reliability, shipboard operations, data link, and payload operations.
- As an Operational Test Readiness Review entrance criterion, the system should demonstrate the ability to routinely perform a set of operationally representative missions.

### System

- The Vertical Take-Off and Landing Unmanned Aerial Vehicle (VTUAV) is a helicopter-based tactical Unmanned Aerial System comprised of up to three Fire Scout air vehicles with payloads, a shipboard integrated Ground Control Station with associated tactical data links, and the Unmanned Aerial Vehicle Common Automatic Recovery System.
- The VTUAV is intended to have the following capabilities:
  - Combat radius: 110 nautical miles
  - Endurance at combat radius: 3 hours on station
  - Target Identification: Fast Inshore Attack Craft at 6 km range
  - Initial payload consists of the AN/AAQ-22D Bright Star II electro-optical and infrared imaging system with laser designator



### Mission

Aviation detachments equipped with VTUAVs will perform reconnaissance, surveillance, target acquisition, and communications relay missions in support of littoral anti-submarine warfare, anti-surface warfare, and mine warfare operations.

### Prime Contractor

- Northrop Grumman-Ryan Aeronautical, San Diego, California

### Activity

- IOT&E was scheduled to start in June 2009. The planned start date has been delayed until 2QFY10 because of software development delays and shipboard compatibility problems.
- The program planned extensive shipboard testing during FY09. However, software development, mechanical problems, and weather combined to greatly reduce the amount of testing actually completed.
- Land-based developmental testing in 2009 focused on air vehicle envelope expansion, payload performance, and data link development.
- Operational test team air vehicle operators received training as part of the Integrated Test Team participation in developmental testing. Operationally representative flights have been limited to date because of developmental test flight restrictions.
- Operational test team mission payload operators have yet to successfully employ the payload during operational vignettes.
- IOT&E software developed to date does not support critical VTUAV requirements (dual air vehicle control) and key enabling capabilities (hot refueling), and IOT&E has been delayed to 2QFY10.
- Vibration Monitoring System and technical publications immaturity have delayed operational testers from testing production representative air vehicles.
- The tactical data link used for transmitting payload imagery and as the primary air vehicle command and control link is not reliable. It has yet to be determined if the data link problems are systemic in nature or unique to the developmental test air vehicles and payloads.

### Assessment

- Current procedures do not measurably increase probability of successful launch and recovery.

### Recommendations

- Status of Previous Recommendations. There are no outstanding previous recommendations.

# NAVY PROGRAMS

- FY09 Recommendations.
  1. The program should conduct additional developmental testing to increase system effectiveness and operator proficiency during shipboard launch and recovery before IOT&E.
  2. Software development should focus on correcting deficiencies in order to enhance operational employment.
  3. The system should demonstrate the ability to routinely perform a set of operationally representative missions as an Operational Test Readiness Review entrance criterion.
  4. Production representative air vehicles should accumulate sufficient flight hours before IOT&E to demonstrate data link, payload, and air vehicle reliability.