Operational Scenario
The Fire Scout VTUAV system is capable of operating from any air-capable Navy ship and will be primarily based aboard the Navy’s newest surface combatant, the Littoral Combat Ship (LCS). Fire Scout is a critical contributor to the ship’s three primary missions: Anti-Submarine Warfare, Surface Warfare, and Mine Warfare. Operational concepts allow for the Fire Scout to transition through multiple roles while it provides support throughout the Joint Battle Space.

Through rapid reconfiguration facilitated by modular payload architecture and defined interface specifications, Fire Scout is able to adapt to the mission at hand and provide real-time ISR/T to the operational commander. Fire Scout is the perfect asset to detect and engage swarming boats, ensure landing areas are clear for amphibious craft, provide over-the-horizon communications relay, and conduct Intelligence, Surveillance and Reconnaissance (ISR) in support of the Joint Battle Space.

As battlefield preparation continues and enemy forces are engaged, the Fire Scout can provide Over-the-Horizon (OTH) targeting for anti-ship and anti-aircraft systems, as well as target designation of land-based forces. Fire Scout can also conduct Forward Area Air Defense (FAAD) and provide Intelligence, Surveillance and Reconnaissance (ISR) in support of the Joint Battle Space.

Fire Scout missions will be expanded through spiral development of requirements and capabilities. These would include maritime surveillance radar, signals and communications intelligence gathering, magnetic anomaly detectors, and satellite communications. The Fire Scout VTUAV will provide additional capabilities as it increases the number of payloads employed and will allow the operational commander to dramatically augment his situational awareness and responsiveness.

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AEROSPACE SYSTEMS
STRIKE AND SURVEILLANCE SYSTEMS DIVISION
MQ-8B Fire Scout
Air Vehicle: Star SAFIRE III U.S. Navy Specials
United States Navy
Star SAFIRE III
EO/IR/LRF
Mine Detector
UHF-VHF
Comm Relay
Maritime Radar

Fire Scout Specifications
- Fuselage Length (with Dual Payload Nose): 23.95 ft (7.3 m)
- Fuselage Width: 8.80 ft (2.7 m)
- Wing Span: 20.03 ft (6.0 m)
- Height (Top of Tail Antenna): 27.50 ft (8.4 m)
- Gross Weight: 2,550 lbs (1,158 kg)
- Engine: Rolls Royce 250-C20W Turboshaft
- Speed: 115+ Knots
- Ceiling: 20,000 ft (6.1 km)
- Endurance:
  - Total Flight Time with Baseline Payload: 8+ Hours
  - Total Flight Time with EO/IR + Radar: 7+ Hours
  - Total Flight Time with Maximum Payload: 5+ Hours

Contact Info:
Joe Fleming (858) 618-6737 • Email: joseph.fleming@ngc.com

NAVAIR 09-413 Dated 8 February 2010
Revised Cover: NAVAIR 10-604 Dated 28 April 2010
VM00-AS-4873_02_13
NORTHROP GRUMMAN CORPORATION
STRIKE AND SURVEILLANCE SYSTEMS DIVISION

Unmanned. Unmatched.
Northrop Grumman’s Transformational Fire Scout Vertical Unmanned Aerial Vehicle System provides unprecedented situation awareness and precision targeting support for U.S. Armed Forces operations to increase the effectiveness and flexibility of a Joint C4ISR architecture, Fire Scout provides Over The Horizon (OTH) targeting and perform battle damage assessment. Accurate targeting data to strike platforms, Army, and Homeland Security Forces and targeting data can be conducted with seamless control from ships or from land-based ground control facilities encompass the Joint Tactical Radio System (JTRS), Traffic Collision Avoidance System (TCAS), SATCOM, Sonobuoy Countermeasures, mine detection, etc. The Fire Scout System is designed for U.S. service projections of fire control, logistics, monitoring, information security, and reconnaissance, and targeting (ISR/T) capabilities providing organic Intelligence, Surveillance, Reconnaissance, and Targeting (ISR/T) capabilities

Meeting the Armed Forces’ System Needs
- Provides organic Intelligence, Surveillance, Reconnaissance, and Targeting (ISR/T) capabilities
- Provides OTH targeting
- Provides Precision/Tactical Effects on Enemy Assessment
- Reduces sensor/synthetic aperture requirements with embedded moving target indication
- Enables SoS/Cloud Computing (OITC) Cooperation
- Fully interoperable between land and over-land-based Tactical Control Centers

Legacy of High Reliability
Based on a proven aircraft developed from over 25,000 flight hours, The Fire Scout System is designed to leverage proven technology and continues to expand upon the GRUMMAN Mk 16 Block 11A turboshaft engine incorporates reliable, high performance, and produces 160 million flight hours. Leveraging from this FAA certified aircraft with commonality of over 50 percent of the propulsion system into this vehicle while enabling the airflow with a 200 percent increase in thrust. The Fire Scout System is designed for the demanding environments of the commercial market with its autonomous operations and capabilities.

MQ-8B Fire Scout VTUAV
Navy’s manned-unmanned operations

Northrop Grumman’s Transformational Fire Scout Vertical Unmanned Aerial Vehicle System provides unprecedented situation awareness and precision targeting support for U.S. Armed Forces operations to increase the effectiveness and flexibility of a Joint C4ISR architecture, Fire Scout provides Over The Horizon (OTH) targeting and perform battle damage assessment. Accurate targeting data to strike platforms, Army, and Homeland Security Forces and targeting data can be conducted with seamless control from ships or from land-based ground control facilities encompass the Joint Tactical Radio System (JTRS), Traffic Collision Avoidance System (TCAS), SATCOM, Sonobuoy Countermeasures, mine detection, etc. The Fire Scout System is designed for U.S. service projections of fire control, logistics, monitoring, information security, and reconnaissance, and targeting (ISR/T) capabilities.

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Precision Strike Support and real-time Battle Damage Assessment.

The Fire Scout System allows for the full use of multiple onboard sensors and payloads for Over the Horizon Targeting, providing continuous operations, providing coverage with a total vehicle endurance greater than 8 hours.

The Northrop Grumman VTUAV system is based on a Schweizer 333 commercial airframe and is capable of autonomous, minimal impact on host ship operations. The MQ-8B Fire Scout provides an unprecedented situation awareness and proven performance for the U.S. Navy, Fire Scout system can find, detect, identify, and target tactical threats.

Payload Features

- Modular Mission Payloads (MMP)
- Ready to Deliver
- Baseline MMP capability
- 600 pound payload lift capacity
- Plug and play product
- Software and STANAG 4586 Compliance
- Interoperability through Tactical Control System (TCS)

Payloads such as radar and electro-optical/infrared sensors allow downlink for the operator to view, control the delivery, expendables employment, threat avoidance system and terrain avoidance system (TAS), SATCOM, Sonobuoy Joints Tactical Radio System (JTRS), Traffic Collision Avoidance System (TCAS), and Light Night Vision System.

The Fire Scout System provides a comprehensive unmanned aerial vehicle solution to enable a mission commander (MC), an operator (AVO), a mission payload operator (MPO) and a tactical mission commander (TMC) to perform real-time and perform override control of both the air vehicle and payload. It can also upload new software developed for Navy ships, tactical ground control facilities encompass the vehicle and payload. It can also upload new software and increase the effectiveness and flexibility of broad area surveillance.

Meeting the Armed Forces’ System Needs

- Providing unique unmanned aerial vehicles (UAVs) and an advanced tactical unmanned aerial system (TUAS) solution
- Detecting and engaging 300000 BDU-33s
- Land on any aviation-capable warship and at any time of day within 110 nm (200 km) from the launch site.

The Fire Scout System provides “real-time” Battle Damage Assessment, providing Over The Horizon (OTH) targeting and target-specific full area surveillance.

System Requirements

- Autonomous operations from air-capable ships
- On-station endurance up to 8 hours
- Will autonomously engage and do battle with characterized threats
- Minimal impact on host ship operations
- No pilot in the loop required for launch

December 18, 2006

The MQ-8B Fire Scout provided an unprecedented ability to detect, identify, and target areas based on a highly reliable civilian Commercial Off The Shelf (COTS) helicopter. The advanced optics and data links and communications relay software developed for Navy ships, tactical ground control facilities encompass the vehicle, providing system 700 km and even the vehicle itself.

Northrop Grumman’s Transformational Fire Scout VTUAV is designed to deliver world-class unmanned aerial vehicle (UAV) capabilities to the U.S. Navy. The Fire Scout VTUAV system is based on a Schweizer 333 commercial airframe and is capable of autonomous, minimal impact on host ship operations. Fire Scout can find, detect, identify, and target tactical threats.

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The MQ-8B Fire Scout VTUAV is a lightweight, low-cost, and low-power-consuming Unmanned Aerial Vehicle System designed to provide unattended airborne intelligence and surveillance capabilities to the U.S. Navy, Marine Corps, and Coast Guard. The Fire Scout system includes a fully interoperable, modular mission payload, allowing for autonomous operations and real-time battle damage assessment.

The Fire Scout System provides Enhanced Threat Detection, Intelligence Gathering, and Targeting (ISR/T) capabilities, as well as countermeasures and electronic warfare support. This system is designed to meet the needs of the U.S. Armed Forces for providing reliable, cost-effective, and adaptable ISR solutions.

**System Requirements**
- Autonomous operations from air-capable ships
- terrain-confusion systems on thin coverage
- capable of high-altitude (50,000 ft) operations
- Designed and certified for 365 days/365 days
- equipped with a multi-sensor payload

**Payload Features**
- Modular Mission Payloads
- plug and play capability
- dual software and STANAG 4586 Compliance
- Certified aircraft with commonality of over 50 percent of the mechanical parts, the servicing and logistical processes are well known, proven and documented. This "low risk" approach is focused on delivering, expendables employment, threat countermeasures, etc...
- Interoperability through Tactical Control System (TCS)
- Implements network centric warfare concepts with TCAS, SATCOM, Sonobuoy, Radar Altimeter Antenna, and Fiber Optic Ethernet. The CS provides full networking capability
- Provides a roll on/roll off shelter or mounted on a High Mobility Multi-purpose Wheeled Vehicle (HMMWV) for land-based delivery, expendables employment, threat countermeasures, etc...

**Meeting the Armed Forces’ System Needs**
- Providing airborne intelligence, surveillance, reconnaissance, and targeting (ISR/T) capabilities
- Performs the mission’s sensor, jamming, and targeting functions
- Network-centric warfare concepts with TCAS, SATCOM, Sonobuoy, Radar Altimeter Antenna, and Fiber Optic Ethernet

**Legacy of High Reliability**
- Based on the proven design of the UCARS family of UAS, delivering over 20 million flight hours
- Leveraging from this FAA certified aircraft with commonality of over 50 percent of the mechanical parts, the servicing and logistical processes are well known, proven and documented. This "low risk" approach...
Operational Scenario

The Fire Scout VTUAV system is capable of operating from any air-capable Navy ship and will be primarily based aboard the Navy’s newest surface combatant, the Littoral Combat Ship (LCS). Fire Scout is a critical contributor to the ship’s three primary missions: Anti-Submarine Warfare, Surface Warfare, and Mine Warfare. Operational concepts allow for the Fire Scout to transition through multiple roles while it provides support throughout the Joint Battle Space.

Through rapid reconfiguration facilitated by modular payload architecture and defined interface specifications, Fire Scout is able to adapt to the mission at hand and provide real-time ISR/T to the operational commander. Fire Scout is the perfect asset to detect and engage swarming boats, ensure landing areas are clear for amphibious craft, provide overhead communications relay, and conduct intelligence, surveillance, and reconnaissance (ISR). As battlefield preparation continues and enemy forces are engaged, the Fire Scout can provide Over-the-Horizon (OTH) targeting for both Navy and Marine Corps Line-of-Sight (LOS) and Land-based targets, enabling coordination from land and sea and providing a strategic advantage.

Fire Scout missions will be expanded through spiral development of requirements and capabilities. These include maritime surveillance radar, signals and communications intelligence gathering, magnetic anomaly detectors, and satellite communications. The Fire Scout VTUAV will provide additional capabilities as it increases the number of payloads employed and will allow the operational commander to dramatically augment his situational awareness and responsiveness.

AEROSPACE SYSTEMS
STRIKE AND SURVEILLANCE SYSTEMS DIVISION
MQ-8B Fire Scout

Air Vehicle

Fuselage Length (with Dual Payload Nose) 23.95 ft (7.3 m)
Fuselage Width 8.80 ft (2.7 m)
Length (with Rotor Blades Extended) 20.43 ft (6.2 m)
Height (Top of Tail Antenna) 9.71 ft (2.9 m)
Cross-Section 2.150 ft² (142.0 sq ft)
Engine
Rolls Royce 250 C20W Turboshaft Engine
Speed 115+ Knots
Ceiling 20,000 ft (6.1 km)
Endurance
Total Flight Time with Baseline Payload 8+ Hours
Total Flight Time with EO/IR + Radar 7+ Hours
Total Flight Time with Maximum Payload 5+ Hours
Payloads
Star SAFIRE III EO/IR/LRF
U.S. Navy Sonar UUV (300/500)
Mine Detector
UHF/VHF Comm Relay
Markete Radar

Operational Concept

MQ-8B Fire Scout
U.S. Navy, Surface
United States Navy

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NORTHROP GRUMMAN CORPORATION
STRIKE AND SURVEILLANCE SYSTEMS DIVISION

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As battlefield preparation continues and enemy forces are engaged, the Fire Scout can provide Over-the-Horizon (OTH) targeting for both Navy surface and land-based forces, increasing distance from land and shore and creating a safer battle environment.

Fire Scout missions will be expanded through spiral development of requirements and capabilities. These expansions would include maritime surveillance radar, signals and communications intelligence gathering, magnetic anomaly detectors, and satellite communications. The Fire Scout VTUAV will provide additional capabilities as it increases the number of payloads employed and will allow the operational commander to dramatically augment his situational awareness and responsiveness.

AEROSPACE SYSTEMS
STRIKE AND SURVEILLANCE SYSTEMS DIVISION

NORTHROP GRUMMAN CORPORATION
STRIKE AND SURVEILLANCE SYSTEMS DIVISION

MQ-8B Fire Scout
Air Vehicle Specifications

Air Vehicle

- Fuselage length (with Dual Payload Nose): 23.35 ft (7.1 m)
- Fuselage Width: 8.80 ft (2.7 m)
- Length (with Rotor Nacelle Forward): 20.03 ft (6.1 m)
- Height (Total Tail Assembly): 21.50 ft (6.5 m)
- Gross Weight: 2,500 lbs (1,136 kg)

- Rolls Royce 250 C20W Turboshaft Engine

- Speed: 115+ Knots
- Ceiling: 20,000 ft (6.1 km)

Payloads

- Size: SAVIRE III EO/IR/LRF
- U.S. Navy Sonar 360/60/12
- Miss Detector
- UHF/VHF Comm Relay
- Maritime Radar

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