



AeroVironment  
RQ-14 Dragon Eye



AeroVironment  
RQ-11 A/B Raven



U.S. Navy  
Northrop Grumman  
MQ-8B Firescout



Army National Guard  
OH-58



German Bundespolizei  
Eurocopter EC135



Mexican Navy  
MBB BO-105 Super Five



U.S. Park Police  
Bell 412EP



Italian Guardia de Finanza  
Agusta-Bell AB412



New South Wales Police Force  
Eurocopter AS350 Squirrel



Phoenix Police / Fire Department  
Agusta A109



Japan Coast Guard  
Sikorsky S-76



U.S. Coast Guard  
Eurocopter MH-65C Dolphin



Hellenic Port Police  
Eurocopter AS365 N3 Dauphin



Royal New Zealand Navy  
Kaman SH-2 (NZ) Seasprite



Canada DND  
Sikorsky CH-124A



Royal Danish Air Force  
Sikorsky S-61



Mexican Navy  
Mil Mi-17



U.S. Army  
Sikorsky HH-60L



Japan Coast Guard  
Eurocopter EC225



Royal Danish Air Force  
Agusta Westland AW101 Merlin



Venezuelan Air Force  
North American Rockwell  
OV-10E Bronco



Mexican Air Force  
Fairchild C-26A Metro III



FLIR Systems, Inc.  
Pilatus PC-12



Royal Netherlands Coast Guard  
Dornier DO-228



Japan Coast Guard  
Saab 340



Royal Danish Air Force  
Bombardier CL-604 Challenger



U.S. Coast Guard  
HC-144A Ocean Sentry



Irish Air Corps  
CASA CN-235-100MP Persuader



Japan Coast Guard  
Gulfstream G-V



Brazilian Air Force  
EMBRAER P-99B



U.S. Air Force  
Lockheed Martin HC-130

# Our Customers are Our Credentials

Since 1978, FLIR Systems has delivered over 5,000 airborne EO/IR sensor systems to customers in more than 75 nations around the world, on over 100 different types of fixed and rotary wing aircraft and UAVs



# 30 Years of Aviation

## Worldwide Installed Base

Since 1978, FLIR Systems has delivered over 5,000 airborne EO/IR sensor systems to customers in more than 80 nations around the world, on over 100 different types of fixed and rotary wing aircraft and UAVs

### **Argentina**

**Australia** – Army, RAAF, Customs, State and Federal Agencies, MSA

**Azerbaijan** – MoI

**Austria** – Air Force, BMI (Ministry of Interior)

**Bahrain** – MoI

**Barbados** – Coast Guard

**Belgium** – Air Force and Police

**Bolivia** – Air Force

**Botswana** – Game Patrol

**Brazil** – Air Force, Army, Navy, Regional Police

**Brunei** – Air Force

**Bulgaria** – Air Force, Navy, MoI

**Canada** – RCMP, DND (MHP), DFO (Fisheries and Oceans)

**Chile** – Navy, Air Force, Carabineros

**Colombia** – Air Force, National Police, Navy, Army

**Czech Republic** – Army, Police

**Cyprus** – MoD, MoJ

**Denmark** – Army, RDN, RDAF

**Dominican Republic**

**Ecuador**

**Egypt** – Navy

**Equatorial Guinea**

**Estonia** – Border Guard

**Finland** – Frontier Defense Forces, Army

**France** – Customs, Army, Air Force, Special Forces

**Germany** – Army, Navy, BPOL, Police Air Support

**Greece** – Air Force, Navy, Port Police, Coast Guard, Fire Brigade, Special Forces

**Guatemala**

**Hong Kong** – GFS

**Hungary** – MoI

**Indonesia** – Police, MoI

**India** – Air Force

**Iraq** – Air Force

**Ireland** – Coast Guard, Air Corps, Garda

**Israel** – IAF, IDF, National Police

**Italy** – Army, Navy, Air Force, GdiF, CdiP, Carabinieri

**Japan** – JCG, JNPA, Prefectural PD

**Jordan** – Army, Air Force, Navy, MOI

**Korea** – KCG, ROKN, ROKAF, FFDR

**Kuwait** – Navy

**Latvia** – Border Guard, Air Force

**Lithuania** – Border Guard

**Malaysia** – RMAF, Navy

**Mauritania** – Air Force

**Mexico** – Navy, Air Force, National Police

**Morocco** – Air Force

**Netherlands** – Navy, Army, National Police, Coast Guard, Dutch Antilles Coast Guard

**New Zealand** – Navy

**Nigeria** – Coast Guard

**Norway** – Navy, RNoAF, Coast Guard

**Oman** – Navy, Air Force, Coast Guard, P.D., Royal Flight

**Pakistan** – Navy, Army, Air Force, MSA

**Panama**

**Peru** – Air Force, Police

**Philippines** – Air Force

**Poland** – Air Force, Border Guard, Ground Defense, Special Forces, Navy

**Portugal** – Air Force, Navy

**Qatar** – Air Force, Navy

**Republic of China** – Air Force

**Romania** – MOI

**Russia** – Police

**Saudi Arabia** – Air Force, Navy, Border Guard, Land Forces

**Scotland** – Fisheries

**Slovakia** – MOI

**Slovenia** – MOI

**South Africa** – Navy

**Spain** – Air Force, Guardia Civil, Customs, SASEMAR (Coastal Protection Agency), National Police, MSA

**Sri Lanka** – Air Force

**Sweden** – Coast Guard, Air Force, Nordic Battle Group, Army, Police

**Thailand** – Royal Thai Navy, Army

**Trinidad & Tobago** – Coast Guard

**Tunisia** – Air Force

**Turkmenistan**

**U.A.E.** – Air Force, Army, Border Guard, S.O.C., Dubai PD, Abu Dhabi PD

**U.K.** – Royal Air Force, Navy, Army, Special Forces, Coast Guard, Police Air Support

**Ukraine**

**United States** – All services, all agencies

**Uruguay**

**Venezuela** – Air Force







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**Australia** – Army, RAAF, Customs, State and Federal Agencies, MSA

**Azerbaijan** – Mol

**Austria** – Air Force, BMI (Ministry of Interior)

**Bahrain** – Mol

**Barbados** – Coast Guard

**Belgium** – Air Force and Police

**Bolivia** – Air Force

**Botswana** – Game Patrol

**Brazil** – Air Force, Army, Navy, Regional Police

**Brunei** – Air Force

**Bulgaria** – Air Force, Navy, Mol

**Canada** – RCMP, DND (MHP), DFO (Fisheries and Oceans)

**Chile** – Navy, Air Force, Carabineros

**Colombia** – Air Force, National Police, Navy, Army

**Cyprus** – MoD, MoJ

**Czech Republic** – Army, Police

**Denmark** – Army, RDN, RDAF

**Dominican Republic**

**Ecuador**

**Egypt** – Navy

**Equatorial Guinea**

**Estonia** – Border Guard

**Finland** – Frontier Defense Forces, Army

**France** – Customs, Army, Air Force, Special Forces

**Germany** – Army, Navy, BPOL, Police Air Support

**Greece** – Air Force, Navy, Port Police, Coast Guard, Fire Brigade, Special Forces

### Guatemala

**Hong Kong** – GFS

**Hungary** – Mol

**India** – Air Force

**Indonesia** – Police, Mol

**Iraq** – Air Force

**Ireland** – Coast Guard, Air Corps, Garda

**Israel** – IAF, IDF, National Police

**Italy** – Army, Navy, Air Force, GdiF, CdiP, Carabinieri

**Japan** – JCG, JNPA, Prefectural PD

**Jordan** – Army, Air Force, Navy, MOI

**Korea** – KCG, ROKN, ROKAF, FFDR

**Kuwait** – Navy

**Latvia** – Border Guard, Air Force

**Lithuania** – Border Guard

**Malaysia** – RMAF, Navy

**Mauritania** – Air Force

**Mexico** – Navy, Air Force, National Police

**Morocco** – Air Force

**Netherlands** – Navy, Army, National Police, Coast Guard, Dutch Antilles Coast Guard

**New Zealand** – Navy

**Nigeria** – Coast Guard

**Norway** – Navy, RNoAF, Coast Guard

**Oman** – Navy, Air Force, Coast Guard, P.D., Royal Flight

**Pakistan** – Navy, Army, Air Force, MSA

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**Qatar** – Air Force, Navy

**Republic of China** – Air Force

**Romania** – MOI

**Russia** – Police

**Saudi Arabia** – Air Force, Navy, Border Guard, Land Forces

**Scotland** – Fisheries

**Slovakia** – MOI

**Slovenia** – MOI

**South Africa** – Navy

**Spain** – Air Force, Guardia Civil, Customs, SASEMAR (Coastal Protection Agency), National Police, MSA

**Sri Lanka** – Air Force

**Sweden** – Coast Guard, Air Force, Nordic Battle Group, Army, Police

**Thailand** – Royal Thai Navy, Army

**Trinidad & Tobago** – Coast Guard

**Tunisia** – Air Force

**Turkmenistan**

**U.A.E.** – Air Force, Army, Border Guard, S.O.C., Dubai PD, Abu Dhabi PD

**U.K.** – Royal Air Force, Navy, Army, Special Forces

**Ukraine**

**United States** – All services, all agencies

**Uruguay**

**Venezuela** – Air Force





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Photo Credit: Lance Cpl. Christopher O'Quin  
United States Marine Corps



## Afghanistan-bound HMLA-367 to bring new Huey to the fight

September 07, 2009

Marine Light Attack Helicopter Squadron 367 "Scarface" wrapped up their final week of Enhanced Mojave Viper Aug. 26 as they prepare to take the Bell UH-1Y "Yankee," an updated version of the Huey helicopters, to the fight.

Scarface will be the first squadron to utilize the Yankee while conducting combat operations in support of the ground combat element and other coalition forces in Operation Enduring Freedom-Afghanistan. "Twentynine Palms mirrors the terrain where we are going to fight, which is great," said Lt. Col. Michael J. Borgschulte, commanding officer, HMLA-367.

"I am extremely confident in my Marines. Our squadron has a lot of combat experience," said Borgschulte. "This squadron's combat readiness is higher than any squadron I have been in." With this elevated combat readiness and the combined assault of the new Yankee and the AH-1W Cobra, Scarface is ready to be unleashed in Afghanistan. **"Unlike our other helicopters the Yankee doesn't have blind spots,"** said Eklund, 26, from Pleasanton, Calif. **"My weapon can shoot anywhere from off the nose to behind us."** The Yankee also sports the Brite Star Block II forward looking infrared system, which is the latest generation in targeting," Borgschulte said. The system will allow the pilots to view and mark targets with infrared sightings further out and aid in instant target recognition by pilots and crew chiefs. **"The Brite Star Block II is a force multiplier that will increase situational awareness among crew members and more accurately correlate targets,"** said Rose.

<http://www.shephard.co.uk/news/3810/afghanistan-bound-hmla-367-to-bring-new-huey-to-the-fight/>



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## ***News Release***

### **LOCKHEED MARTIN AIRBORNE LAB DEMONSTRATES ADVANCED INTELLIGENCE COLLECTION CAPABILITIES AT U.S. ARMY EXERCISE**

*Flying Laboratory Collected, Correlated, Distributed Real-time Intelligence*

DENVER, September 9, 2009 – The power of one multi-intelligence aircraft collecting, correlating then distributing diverse types of intelligence to those who needed it was demonstrated by Lockheed Martin [NYSE: LMT] during the U.S. Army's C4ISR On-The-Move exercise. Lockheed Martin's Airborne Multi-intelligence Laboratory (AML) demonstrated how its onboard sensors, interacting with the Army's intelligence and battle command enterprises can dramatically improve the speed and quality of situational awareness available to friendly forces.

"This is a significant step forward in exploring the true potential of correlating various types of intelligence. We demonstrated that our open architecture, multi-INT test bed can link airborne sensors directly to defense command networks," said Jim Quinn, a vice president with Lockheed Martin's IS&GS-Defense. "The benefits of this exercise are clear: improved situational awareness, enhanced air to ground coordination and the ability to deliver critical battlefield information rapidly to tactical users."

During the exercise, the AML flew support missions for the Army's Intelligence and Information Warfare Directorate (I2WD), and was one of several sensors collecting information to support friendly forces. In a matter of seconds, the AML acquired high quality intelligence with its onboard sensors, relayed that intelligence to its ground station, which then transmitted the data immediately to the Army's Distributed Common Ground System for further analysis and distribution to the Army's battle command system.

The AML was unique in that it was able to collect radio signals and then immediately confirm its targets with an advanced High Definition Electro-Optical / Infrared sensor from FLIR systems. The U.S. Army's C4ISR On-The-Move exercise was conducted at the end of August at Lakehurst Naval Engineering Air Station and Fort Dix, N.J.

The AML, a modified Gulfstream III business jet, is predicated on advancing the science and the art of multi-INT net-centric warfare. Designed with an open architecture for interchangeability and experimentation, the AML provides a readily reconfigurable platform to rapidly test, explore, identify and validate how multiple sensors and onboard systems interact, and how to best apply them for use in military and non-military markets.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 140,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The corporation reported 2008 sales of \$42.7 billion.

# # #

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For additional information, visit our website: <http://www.lockheedmartin.com>



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# Search & Rescue

- FLIR Systems and the U.S. Coast Guard pioneered the use of Infrared Night Vision for non-combat SAR operations, beginning in 1984.
- Nations around the world now use FLIR Systems for their SAR and CSAR operations, including:
  - Austrian Air Force
  - Cyprus – RAF Akrotiri
  - Swiss Air Force
  - Spanish Air Force (CSAR) and SASEMAR
  - Portuguese Navy and Air Force
  - Royal Danish Air Force and Navy
  - Royal Belgian Air Force
  - Hellenic Navy and Coast Guard
  - Royal Norwegian Coast Guard
  - Royal Swedish Coast Guard
  - Royal Netherlands Navy and Coast Guard
  - Polish Navy and Border Guard
  - UAE Air Force
  - US Coast Guard, US Air Force (CSAR)
  - US Army (Combat Rescue and Medevac)
  - Canadian CMPH, RCMP
  - Oman Navy and Coast Guard
  - Royal Saudi Navy and Air Force
  - Japan Coast Guard and National Police
  - Korean Coast Guard, Navy and FFDR
  - Malaysian Air Force, Navy, and MMEA
  - Australian Coast Guard and Australian Maritime Safety Agency
  - Mexican Navy and Air Force
  - Italian Navy and Capitanerie di Porto





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# U.S. Coast Guard Programs

Over 250 FLIR systems are delivered or on order to the U.S. Coast Guard since 1984. The most recent programs include:

- ESS (Electro-Optical Sensor System), a variant of the Talon stabilized multi-sensor system, on H-60J and H-65 Dolphin helicopters for airborne use of force, interdiction, and search and rescue missions. The H-60J and H-65 are being upgraded and re-designated as MH-60T and MH-65C, respectively.
- SIRVSS (Shipboard Infrared Visual Sensor System (SIRVSS) , a variant of the Talon stabilized multi-sensor system aboard Coast Guard cutters including the 270' Medium Endurance Cutter and the 378' High Endurance Cutter.
- USCG Deepwater
  - Star SAFIRE III on HC-144A "Ocean Sentry" medium-range surveillance aircraft for search and rescue, law enforcement, marine environmental protection, military readiness and International Ice Patrol missions.
  - Star SAFIRE III on HC-130J long range surveillance maritime patrol aircraft.
  - Star SAFIRE III on National Security Cutter.



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Office of Public Affairs  
U.S. Coast Guard



Date: March 4, 2008

Contact: Laura Williams  
202-475-3116

## Press Release

### COAST GUARD TAKES DELIVERY OF FIRST UPGRADED HC-130J AIRCRAFT

WASHINGTON - The U.S. Coast Guard accepted delivery of its first upgraded HC-130J long range surveillance maritime patrol aircraft on Feb. 29 in Greenville, S.C.

The new HC-130J model provides the Coast Guard capabilities that will greatly enhance its ability to perform its missions. Two essential features of the new modification are the nose-mounted forward-looking infrared (FLIR) electro optical (EO) sensor, and belly-mounted multi-mode radar (MMR). The 360-degree belly MMR is the first of its kind on a HC-130 aircraft.

During one of the aircraft's test flights the test team illustrated the interoperability of its features by selecting an automatic identification system (AIS) target on the mission system operator display that was approximately 22 miles from the aircraft. They then used the EO/IR sensor to immediately lock on the target. The EO/IR system maintained a lock on the target until the aircraft was close enough to make a positive identification.

Scott Yerecic, the Coast Guard flight test engineer said, "When you see the mission system in operation, you begin to get a better understanding of the huge potential this system has to enhance the Coast Guard's mission capabilities."

"This test illustrates the ability of the system to lessen the crew's workload and improve mission effectiveness," said Capt. Matt Sisson, aviation acquisition program manager.

The Coast Guard is purchasing a total of six new fully upgraded HC-130J aircraft. For more information on the Coast Guard's long range search aircraft solution, visit the Coast Guard Acquisition website at: <http://www.uscg.mil/acquisition/lrs/>.

###

The U.S. Coast Guard is a military, maritime, multi-mission service within the Department of Homeland Security dedicated to protecting the safety and security of America.





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# Lynx & Naval Embarked Helicopters

- Since 1989, FLIR Systems EO/IR imaging sensors have operated on various Lynx helicopter versions as well as a wide range of other maritime helicopters.
  - **UK RAF:** Sea King HAR3A
  - **Royal Danish Navy (Air Force):** Lynx Mk. 80, AW101
  - **Royal Netherlands Navy:** Lynx Mk. 25
  - **Royal Omani Air Force:** Super Lynx 300
  - **South African Navy:** Super Lynx 300
  - **Brazilian Navy:** Super Lynx 300
  - **Royal New Zealand Navy:** SH-2(NZ) Super Seasprite
  - **Italian Navy:** AB-212, AW101
  - **Hellenic Navy:** S-70 Sea Hawk
  - **Egyptian Navy:** SH-2(E) Super Seasprite
  - **Mexican Navy:** AS-565 Panther
  - **United States Marine Corps:** UH-1N/Y
  - **United States Coast Guard:** MH-60T, MH-65C Dolphin
  - **Canadian DND:** H-92 CMPH





**TALON SELECTED  
FOR HH-60M**

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# COMBAT SEARCH & RESCUE

- September 2009: FLIR awarded \$15.4 million delivery order from the U.S. Army Aviation and Missile Command for Star SAFIRE® systems on Army Black Hawk helicopters in support of ongoing MEDEVAC missions.
- May 2009: FLIR Talon™ system selected for US Army HH-60M
- October 2008: FLIR received a \$28.9 million order from Sikorsky Aircraft for Star SAFIRE® family systems to be installed on Army MEDEVAC Black Hawk helicopters serving in Iraq and Afghanistan.
- UH/HH-60 Black Hawk: Total over 320 in 6 nations. Recent Orders:
  - 2009: 56 Star Class systems ordered; Talon selected for HH-60M
  - April 2008: \$18.4 million for UAE GHQ, U.S. Army Black Hawk Ops.
  - Sept. 2007: \$23.8M Sikorsky order for U.S. Army MEDEVAC.
- HC-130 SAR/CSAR Aircraft
  - August 2009: FLIR received a \$7.2 million U.S. Government Foreign Military Sale (FMS) order for the Indian Air Force, for SAFIRE® III systems to be installed on C-130J Fixed Wing Surveillance Platforms.







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# Armed Scout & Reconnaissance

- September 2009: FLIR received a \$4.9 million U.S. Government Foreign Military Sale (FMS) order for the Colombian Army and Air Force, for FLIR System's Star SAFIRE® III systems for Rotary Wing Surveillance and Tactical Platforms to support Colombian MoD counter-narcotic and counter-insurgency missions.
- April 2009: FLIR announced today orders totaling \$11.4 million from NSWC, Crane Division for its BRITE Star® II multi-sensor target designation systems, pursuant to a previous \$125.3 million, five year requirements contract. The units delivered under these orders will be used by the U.S. Marine Corps and U.S. Navy.
- October 2008: FLIR received a \$125.3 million requirements contract from NSWC, Crane Division for its BRITE Star II multi-sensor target designation systems. FLIR also announced the receipt of a \$67.3 million initial delivery order under this contract. The units delivered under this contract will be used by the U.S. Marine Corps and U.S. Navy for various missions including search and rescue, reconnaissance, and attack.
- July 2008: FLIR received an international order of \$3.5 million for its BRITE Star DP stabilized, multi-sensor systems, including spare parts and select services. The BRITE Star DP system is the latest generation of the combat-proven BRITE Star laser designation system. The units delivered under this order will be used by an ally of the United States for counter-terror interdiction missions.
- Jan 2008: FLIR announced a \$13 million competitively awarded order from the Colombian Ministry of Defense for Star SAFIRE HD systems. The units delivered under this order will be used by the Colombian Air Force onboard helicopters in performance of national security and counter-narcotic missions.
- June 2004: FLIR awarded \$6.3 million contract for Star SAFIRE II systems to the Air Force Space Command, to be installed on UH-1N helicopters for use on ICBM security missions.
- May 2003: FLIR awarded \$40 million indefinite delivery/indefinite quantity development contract from the US Special Operations Command, for the delivery of up to 75 lightweight airborne multi-sensor imaging systems for use on US Army Special Operations helicopters.
- May 2003: FLIR awarded \$7.3 million contract to complete the upgrade of the infrared imaging systems used on U.S. Marine Corps' fleet of UH-1N "Huey" helicopters. Under the contract, FLIR will complete the upgrade of the U.S. Marine Corps' SAFIRE thermal imaging systems to its Star SAFIRE system [total of 125].







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Photo courtesy of U.S. Navy



## News Release

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### Northrop Grumman's Fire Scout Vertical Unmanned System Successfully Completes Testing Under Extreme Environmental Conditions

*Field trials add momentum to system readiness for domestic, international evaluation*

ABU DHABI, UAE – July 14, 2010 – With the support of the United States Navy, Northrop Grumman Corporation (NYSE: NOC) and its industry partners (Sikorsky/Schweizer, Rolls-Royce, Raytheon, FLIR Systems, Cubic, Kearfott, Rockwell-Collins, General Electric, Sierra Nevada, Telephonics, and L-3 Communications) today successfully completed a rigorous set of flight demonstrations of the MQ-8B Fire Scout vertical unmanned aerial system (VUAS) in the United Arab Emirates under extreme environmental conditions.

A social media version of this news release, which includes key facts, quotes, photos, video clip and other relevant links and information can be found at [http://www.irconnect.com/noc/press/pages/news\\_releases.html?d=196314](http://www.irconnect.com/noc/press/pages/news_releases.html?d=196314)

The test flights were conducted in early July over a ten day period in the United Arab Emirates. They validated Fire Scout's steady system maturation and helped signal its readiness for the U.S. Navy's upcoming Operational Evaluation of the system, planned for late 2010 aboard the USS Halyburton (FFG-40).

"We welcome Northrop Grumman and the U.S. Navy to the UAE for continued testing of the Fire Scout" said Ali Al Yafei of ADASI (Abu Dhabi Autonomous Systems Investment). "As a VUAS, Fire Scout has many unique capabilities to offer and we're looking forward to reviewing the results of this in-country testing."

The Fire Scout demonstrations included numerous takeoffs and landings in hot, windy and sandy conditions in temperatures as high as 47 degrees Celsius (117 degrees Fahrenheit). The VUAS also conducted various test flights at altitudes up to 3,000 meters (9,842 feet). These demonstration missions included non-line-of-sight operations that showcased Fire Scout's ability to operate autonomously in remote locations, and its FLIR Systems electro-optical/infrared (EO/IR) sensing capabilities used to locate and acquire targets.

Video imagery from the testing was presented today at a post-testing event to an audience of interested multi-national government agencies, and domestic and

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Northrop Grumman Corporation  
1840 Century Park East • Los Angeles, CA 90067  
[www.northropgrumman.com/media](http://www.northropgrumman.com/media)

### Northrop Grumman's Fire Scout Vertical Unmanned System Successfully Completes "Hot" Testing/Page 2

international media. The imagery, a compilation of video produced by Fire Scout's sensors during field trials, demonstrated the VUAS's real-time imagery-transmission capability, a vital element of the intelligence, surveillance and reconnaissance missions it performs for military forces.

"Today's demonstration was very impressive and reinforces the continued maturation of the Fire Scout system and its capabilities," said John Brooks, president of Northrop Grumman International Inc. "Northrop Grumman thanks the UAE for being such a gracious host and offering us the opportunity to test Fire Scout in the extreme heat of summer. The UAE represents an important partnership for Northrop Grumman and our customers internationally demand the best. We are committed to continuing to meet and exceed their expectations."

The only U.S. Department of Defense VUAS program of record, Fire Scout is a mature, flexible and reliable system whose capabilities can serve as a true force multiplier.

"The capabilities that Fire Scout delivers to warfighters really stood out today," said Duke Dufresne, sector vice president and general manager for the Strike and Surveillance Systems Division of Northrop Grumman's Aerospace Systems sector. "It's clear from this demonstration that Fire Scout can do exactly what it's designed to do: extend the range at which we can gather crucial information during peacekeeping or wartime missions."

Northrop Grumman Corporation is a leading global security company whose 120,000 employees provide innovative systems, products, and solutions in aerospace, electronics, information systems, shipbuilding and technical services to government and commercial customers worldwide. Please visit [www.northropgrumman.com](http://www.northropgrumman.com) for more information.

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1840 Century Park East • Los Angeles, CA 90067  
[www.northropgrumman.com/media](http://www.northropgrumman.com/media)





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# Border Guard & Federal Police

- March 2009: FLIR announced strong demand for the all-digital Star SAFIRE HD from Border Guard, Federal Police and Law Enforcement agencies worldwide. The following agencies have all selected Star SAFIRE HD for their Mission Support System:
  - European Border Guard Agencies
    - Bundespolizei Germany (EC135, EC155, Super Puma)
    - Spanish Guardia Civil (fixed wing & helicopter)
    - Polish Border Guard
  - UK Law Enforcement Agencies
    - West Yorkshire
    - North Wales
    - West Midlands
    - Central Counties
    - East Midlands
    - Chiltern
    - South Wales
    - Devon & Cornwall
    - Greater Manchester
    - Suffolk
    - Humberside
    - Cheshire
    - West Mercia
    - Wiltshire
  - German State Law Enforcement Agencies
    - North Rhine Westphalia
    - Sachsen-Anhalt
    - Thuringen
    - Bavaria
  - The Netherlands Police
  - The Japan Coast Guard
  - Australian Federal Police
  - Victoria State Police
  - New South Wales Police
  - Australian Customs
  - US Customs & Border Protection
  - US FBI and DEA
  - Queensland Emergency Management







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# Maritime Surveillance & Patrol

- Hundreds of FLIR Star SAFIRE class systems are operated around the world in Maritime Patrol, ASW and related missions. They are integrated with modern mission systems such as the EADS-CASA FITS, and in legacy installations such as the P-3 Orion IRDS replacement (with full AN/APG-63/LTN-92/CASOS interface). Operators include:
  - **P-3 Orion:** US Navy, US CBP, RAAF, RoKN, German Navy, SpAF, PoAF, Chilean Navy, Brazilian Air Force
  - **HC-130J:** US Coast Guard
  - **EADS-CASA CN-235/HC-144A:** Irish Air Corps, US Coast Guard, Spanish SASEMAR & Guardia Civil, Mexican Navy
  - **EADS-CASA C295:** Portuguese Air Force, Chilean Navy
  - **CASA 212:** Swedish Coast Guard, Mexican Navy, Korean Coast Guard
  - **EMB P-99B:** Brazilian Air Force, Mexican Air Force
  - **DO-228:** German Navy, Netherlands Coast Guard
  - **DO-328:** Australian Maritime Safety Agency
  - **Gulfstream G-V:** Japan Coast Guard
  - **PZL Mielec M-28:** Polish Border Guard, Polish Navy
  - **BAe J-41 Jetstream:** Hong Kong GFS
  - **Reims-Cessna F406:** Scottish Fisheries, Hellenic Coast Guard, French Customs
  - **C-26:** Mexican Air Force, Trinidad & Tobago Coast Guard, Peruvian Air Force, Barbados Coast Guard
  - **Saab 340:** Japan Coast Guard
  - **Beech King Air 200:** Canadian Dept. of Fisheries (DFO)
  - **Beech King Air 350:** Japan Coast Guard
  - **Bombardier CL-604 Challenger:** Danish Air Force
  - **Bombardier Dash 8:** Japan Coast Guard, Dutch Antilles CG







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# Clever eyes in Afghan skies

The RAAF's Orions perform a crucial surveillance role for the coalition forces, Max Blenkins writes

High over Afghanistan's Helmand province, Orion operators aboard a Royal Australian Air Force Orion surveillance aircraft peer at computer screen images of Afghans who just might be Taliban.

There's nothing in their behaviour to scream Taliban but there is cause for suspicion.

From high above, the remote village appears typical of Afghan rural towns, with its untidy collection of dusty walled compounds.

But it has been the scene of fighting between insurgent and British forces. Today US Marines, now operating in this area, are intent on turning the Taliban out for a fight.

A group of Marine vehicles sit unmoving in open country outside their base, a seemingly inviting target.

Overhead, the Orion from the RAAF's 11 Squadron in South Australia is watching for a reaction. Mission system operators on the Orion scan the residential compounds around the US vehicles.

They spot some cars converging on an open area some distance from the Americans, with about 20 locals congregating, then dispersing.

Although it's just after dawn, there's no human activity or even

farm animals visible in any of the compounds. The only hint of normality is what appear to be four children running across a field.

Orion operators remark that this village is a ghost town, perhaps indicating that with a fight looming, the civilians have cleared out.

But in the absence of any Taliban reaction, the US Marine ground controller asks the Orion to scope out a nearby mountain from which insurgents had been taking potshots at the American base.

It spots what could be a cave and a firing position. Images of these features will be closely examined by analysts back on the ground.

After some hours it's time to head home, returning south across Pakistan, over the US Fifth Fleet and numerous tankers in the Straits of Hormuz, concluding a mission that started 10 hours earlier.

Squadron Leader Kevin Mulgrew of Adelaide, a former Royal Air Force officer and the squadron's standards and training officer, says this overland ISR (intelligence, surveillance and reconnaissance) mission is typical, and not without risk.

One problem is crowded air space, among others, an RAAF radar unit that will be based at Kandahar until its deployment ends in July.

"Five had an emergency on board, the problem is, where do we divert to?" Mulgrew says.

"Should we be flying in air space close to other countries such as Pakistan or Iraq, then we have the diplomatic issues of trying to get the aircraft down."

The Orions operate above the threat envelope of most missiles, although they could be a problem if the aircraft needed to make an

emergency landing in Afghanistan. In the event of a forced landing, all crew members carry sidearms and wear body armour.

The mission's navigator, Flight Lieutenant Nicola Rhodes, of the Gold Coast, says this mission is in direct support of the Marines.

"Basically we were tasked by a guy on the ground to look at individual targets that were important to them," she says. It's difficult to tell whether the figures they watched were Taliban... "but we can say to the guys on the ground, and then they can determine for themselves," she says.

The aircraft captain, Flight Lieutenant Stewart Parkinson, from Hobart, says the challenge for a pilot on such missions is to stay out of the way of other aircraft.

"There's a lot of coalition aircraft flying around over here at a lot of different altitudes, with a lot of different tasks, and they are all from a lot of different countries," he says.

The Howard government dispatched Orions to the Middle East in 2003, making their ongoing mission, along with that of the RAAF's Hercules transports, the longest-running of all Australia's commitments to the war on terror.

It's also perhaps the least known. That's because much of their mission has been top secret, and because, under an agreement with the host nation, the Government won't identify their Middle East base.

The Orion is no youngster. Based on the Lockheed Electra airliner, the first Orions entered Australian service in 1968. The current-generation P-3C aircraft were delivered from 1978. Under a major upgrade program launched in the mid-1990s, all were refurbished with new

missions systems, making them a uniquely Australian variant, designated as AP-3C.

The upgrade has produced a stunningly competent aircraft, claimed by its crews to be the best of its type in the world at its varied missions, which can include maritime surveillance, search and rescue and hunting submarines.

Most spectacular is the Star SAFIRE electro-optical surveillance system, which lets operators conduct long-range observation day or night, producing real-time video imagery that can be transmitted to the ground.

Orions, principally designed for maritime surveillance, attracted national attention in 1997 for their role in the rescue of yachtsman Tony Bullimore in the Southern Ocean.

Their ability to conduct over-ground surveillance came to the fore in Iraq. Now, in a theatre dotted with drone aircraft, Australian Orions are the only named surveillance aircraft, and are much in demand.

The standard mission crew is 14. The crew on this mission is a regular little Commonwealth and includes former Britons, Canadians and Kiwis who have transferred to the RAAF.

Warrant Officer Todd Desroches flew on the Royal Canadian Air Force's version of the Orion, the Aurora. Now he operates mission systems aboard the RAAF Orion.

"Australia does something called lateral recruitment, in which they recruit from other air forces that do the same type of work," he says.

"About three or four months after I arrived last July, I became a citizen."

**Commonwealth:** Orion AP-3C "Gold" crew members and their machine in November 2008. Australian Orions can include aircrew recruited from Britain, Canada and New Zealand.

By **Max Blenkins**, AAP, Southern Afghanistan

