

# National Guard's eye in the sky wows firefighters

By Staff Sgt. Jim Greenhill and Sgt. 1st Class Bryan Rotherham  
National Guard Bureau

SAN BERNADINO, Ca. (11/07/2007) - In the same sky from which the National Guard drops flame-suffocating retardant and dumps water on the Southern California wildfires, a camera hanging from the belly of an aircraft gives firefighters unprecedented information about their enemy's progress.

The National Guard's fleet of 11 sleek, gray RC-26 aircraft have been a key asset assisting law enforcement counterdrug efforts. The has helped the U.S. Customs and Border Patrol improve border security. It has gleaned vital information during Hurricane Katrina. It has flown over Baghdad.

Now the aircraft are providing detailed, full-motion video from 10,000 feet above the wildfires, and a team of National Guard Citizen-Soldiers and -Airmen are decoding the footage and relaying it in real time to the federal, state and local agencies tasked with extinguishing the fires and managing the aftermath.

It's the first time the technology has been used in California for firefighting. The National Guard previously tested it in Florida wildfires.

*"Let's go eastbound to the fire's edge and we're going to want to reconnoiter the easternmost edge of the fire and work it back to where we're ... going to fly counterclockwise from the north ... and we want to look for heat signatures ... out to the west. Copy?"*

That's the voice of Ron Bollier. He's not a pilot. He's not even a member of the National Guard. He's a firefighter, the operations section chief for the 1,100-acre Grass Valley Fire near Lake Arrowhead northeast of Los Angeles, and he's talking via a National Guard radio to Lt. Col. Steven McShea, of the California Air National Guard's 144th Fighter Wing, who is the pilot of an RC-26 flying high above Bollier's fire.

As Bollier talks, he watches live footage from the RC-26 being projected onto a wall at the Snow Valley Mountain Resort in the northeast of Los Angeles, where hundreds of firefighters have made their headquarters and struck up camp.

"It has been outstanding to have live feed," Bollier said. "We're actually looking at it."

The equipment on the RC-26 that gathers the images is from the same family as the FLIR – Forward-Looking Infrared – used by the National Guard for Counterdrug and other surveillance operations.

Previously, firefighters have had to rely on information that's four to six hours old. The RC-26s have flown two, four-hour missions each day during the wildfires. They can monitor all of California's active wildfires in a single mission.

"The most useful thing we can provide is real-time, full-motion video to any customer, anywhere, anytime," McShea said. "The new technology we just applied to this California wildfire disaster we can provide that picture now via the Internet to the world – anybody that wants to log in."



An Air National Guard RC-26 aircraft sits at U.S. Naval Air Station North Island in Coronado, Calif., on Oct. 30, 2007, prior to a reconnaissance flight to acquire full-motion video images of the Southern California wildfires and feed them in real-time to incident commanders and to federal, state and local agencies tackling the fires. More than 2,700 National Guard Citizen-Soldiers and -Airmen have been assisting civilian authorities. (U.S. Army photo by Staff Sgt. Jim Greenhill)

That's made it possible for firefighters at remote locations to see the images – and for them to be seen at the Joint Operations Center in Sacramento, Calif., at U.S. Northern Command in Colorado Springs, Colo., and at the National Guard Bureau in Arlington, Va.

“It’s real-time, highly accurate, high-definition information at the direction of the customer,” McShea said. “They can talk to our aircraft real time via radio and tell us what they want to see. This is one of the most satisfying missions I’ve been part of since I’ve been a member of the National Guard. There’s nothing better than answering the call of your neighbors. I have friends and family in this area, and I have friends that have lost their homes. It doesn’t get any better than to answer the call of your home state in an emergency like we have now.”

Here’s how it works:

- The Air National Guard RC-26 flies over the fires relaying encoded images to the ground.
- An Air National Guard team on the ground uses a piece of equipment called a Dragoon to decode the images. “It’s a great feeling,” said Senior Master Sgt. Randy Chambers with the Arkansas National Guard’s 123rd Intelligence Squadron. “This is what the National Guard is for.”
- An Army National Guard team in a mobile communications station called an IC4U relays the images from the Dragoon to incident commanders and other customers such as NORTHCOM. “It’s saving a lot of lives and a lot of homes,” said Sgt. Maj. Salvatore Santangelo. Incident commanders “have been absolutely elated to see the area of operation that they’re responsible for in real time and be able to respond as quickly as they can,” Santangelo said.
- Fire managers watch the images at their command stations, talking directly with the crew on the aircraft via a National Guard radio to request images of specific areas of interest. “We’ve never had real-time capability,” said Bob Toups, a California Department of Forestry communications technology supervisor and planning officer. “I can talk on the radio and tell my ground commanders that they have a hotspot at this latitude and longitude ... and they can put ground resources in there right away.”
- The National Guard works with the fire managers to provide information that puts an exact location to the images so that they correlate with the firefighters’ maps.

Firefighters are able to be far more precise in their efforts using this technology. “We’re able to target specific areas of heat,” Bollier said. “We’re able to target problem areas, what appears to be issues that may cause an escape on the line, may let the fire get outside. Just an overall good view of how much heat is inside the fire perimeter.”

As Bollier watches images of the Grass Valley Fire, hotspots show up on the screen like jewels on black velvet or stars against a rural night sky.

“We’re able to determine where we need to place ground personnel and be effective in holding the fire where it’s at,” Bollier said. “We can see where the fire’s spreading to and the point of impacts, whether it be structures or anything else.”

The equipment can see through clouds and smoke.

“Every time I stop at a fire, we provide them a piece of information that they did not know before, and that’s changed the way they’ve fought the fire,” McShea said.

“When I can show an incident commander at the edge of the fire exactly what’s going on right now, that’s the most powerful tool we can give them. A picture is worth a thousand words.”

Firefighters say they would like to negotiate mutual support agreements to use the National Guard’s RC-26s more often.

If we had the RC-26 tasked to us, we’d use this on every fire in California over a couple of hundred acres, certainly on every large Santa Ana-driven fire,” Toups said. “We could use this for flooding; we could use this for earthquakes; this could be a great tool to enhance the incident command structure ... to help mitigate emergencies.”

