

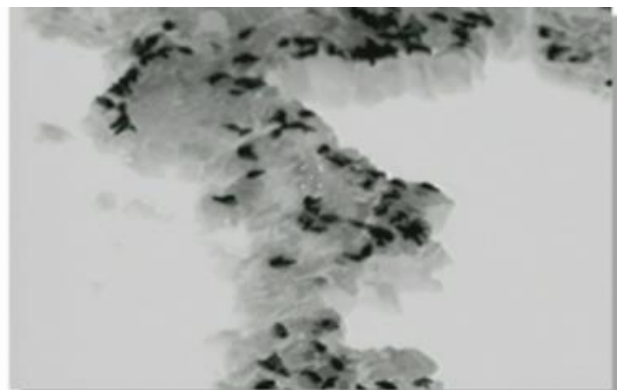
## Forget Selfies. You Can Now Be 'Droned'

By [Mary Gorges](#) September 09, 2014



Real-time data from drones is making it into our everyday lives.

While we hear a lot about drones carrying missiles for the military – or even packages some day for Amazon – the other real payload is often cameras and sensors. Drones from all over the world are being tested in Alaska's interior, and are carrying up everything from a simple consumer camera like a GoPro or Sony NEX-7 to infrared cameras and sophisticated sensors. They're capturing pictures and videos of things like the arctic ice cap, wildfires ...even sea lions.



Alaska is also where the first companies are getting FAA clearance to fly drones commercially. Oil company British Petroleum is using a copter drone to buzz around the oil and gas pipelines in giant oil field Prudhoe Bay to look for possible leaks or

corrosion. The low-definition video is fed real-time to computers over an encrypted wireless network; HD video is saved onboard.

Curt Smith, a chief technology officer for BP, says the drones can hover around and even *underneath* the pipeline – something manned aircraft can't do. And says the drones use cameras or LIDAR (Light Detection and Ranging) remote sensing technology using a technique that sounds an awful lot like getting an MRI from a doctor. "The (drones) take pictures that have lots of overlap, going back and forth almost like a 'push broom' – building up the picture from all these dots of data that get photographed."

### **Why Alaska?**

Alaska isn't the Final Frontier – that's space, but it is the Last Frontier where there's almost a zero chance of a drone (also called a UAS or unmanned aerial system), running into a building, person or plane. "This is literally the end of the road," says Ro Bailey, deputy director for Alaska's Center for UAS Integration. "Alaska is remote, has lots of non-restricted airspace and enormous terrain diversity."

This is literally the end of the road. - RO BAILEY, DEPUTY DIRECTOR FOR ALASKA'S CENTER FOR UAS INTEGRATION

In a wild fire this summer in Alaska, drones with infrared cameras flew into a smoke-filled sky to look for hot spots. The drone carried an Iridium modem to send its data back real time over the Iridium satellite network. Rayjan Wilson, an aerospace engineer who crunches much of the data that comes back from the drones, says, "The pictures showed the hot zone was much farther out than originally thought so they knew not to send back fire fighters as the fire could flare back up."



Drones are also being tested in staged crisis scenarios where drones (instead of people) can monitor an emergency situation and send data back real time over a

special FCC licensed wireless network using an ISM (or industrial, scientific and medical) radio band. Below are pictures taken using infrared technology.



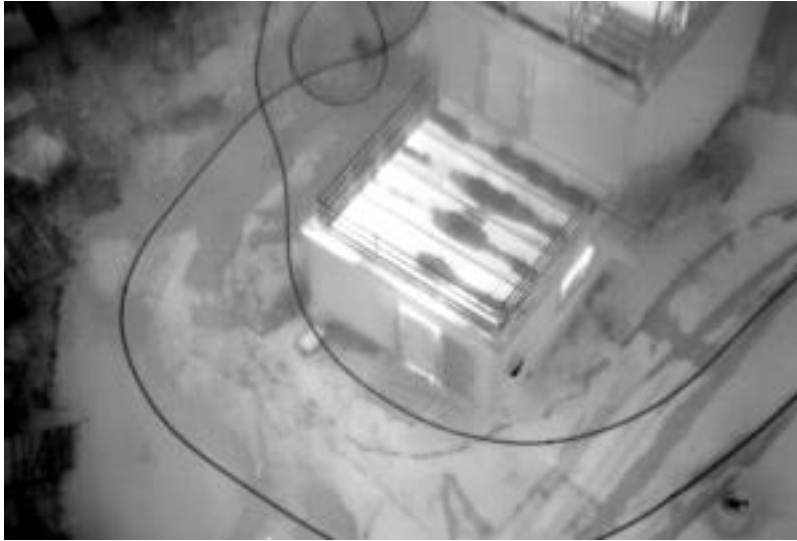
### **Bear Bite**

Drones found the 'victims' in 2 hours. It took conventional searchers 12 hours.



### **Bad Guys**

Real-time video shows 'bad guy' has moved inside and is not looking out any window. Tactical teams on the ground move in while bad guy is out of view.



### **Burning Building**

Real-time video shows precise location of fire in the building, and later, the hot spots still burning.

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### **Consumerizing drone data**

Keith Cunningham works with Wilson and is a professor at the University of Alaska Fairbanks. "As soon as someone changes a noun to a verb – you know an industry has morphed. People are starting to 'dronie' themselves from the beach or you can get 'droned'."

He adds, "We're moving toward applications on smart devices to control drones. Someday, if the technology is sophisticated enough, we'll be able to count the leaves in your gutter. You'll download an application to instruct the drone to put up Christmas lights on your house."

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Cunningham says in the near future, drones may be used to monitor air pollution that moves into Alaska from China, or to fly into the smoke and ash of an erupting volcano. The applications of using drones, he says, are as unlimited as the airspace in Alaska.