

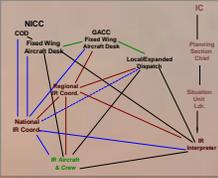


NATIONAL INFRARED OPERATIONS

<http://nirops.fs.fed.us>



The National Infrared Operations Unit has been flying infrared detection and mapping missions since 1966. The 'Unit' is made up of the scanners and technicians at NIFC; the aircraft and pilots based at Region 4 in Ogden, Utah; and a nationwide network of infrared interpreters, coordinators, and technical specialists.



The Phoenix Systems, which includes the line scanners and the hardware and software that operates them, are maintained and operated by the infrared technicians in Boise. The dual channel sensors allow for discrimination between fire and hot objects such as heated rocks.

- ❖ 2 Thermal Bands: 3-5 μm and 8-12 μm
- ❖ Field of View: 120°
- ❖ Swath Width at 10,000 feet above ground level: 6.5 miles (10.5 km)
- ❖ Ortho-rectification: GPS/IMU, National Elevation Data, 1 meter resolution
- ❖ Production Rate: 1 million acres per hour (404,000 hectares per hour)



Inside N149Z Alaska 2004



Brenda Miller Missoula, Montana 2003

Infrared interpreters (IRIN) are required to bridge the data-to-information gap. These highly skilled individuals receive the imagery from the aircraft crew and create the infrared maps and GIS datasets on which the Incident Management Teams depend. IRINs are trained in interpreting the thermal imagery during a week-long course (S-443) and then given experience in the field alongside a qualified interpreter. Today's IRINs are also well versed in computer, GIS, data management, and communication skills.

Each incident must order an IRIN to have an infrared scanner request filled. When there are many fires in a geographic area, a small group or pod of interpreters and trainees works effectively to meet the needs of all the incidents from a central location. A pod is assigned a leader to oversee filling the requests according to Geographic Area priorities. In the case of initial attack or the first days of an incident while the IRIN on order is mobilized, provisions can be made to have the interpretation completed by a remote interpreter or a local IRIN can fill the need in the interim.



Kalnauk, Winema Pod 2003

At PL 4, a National IR Coordinator takes over the infrared operations from the aviation desk at NIFC. This includes receiving the scanner order requests, making sure there are IRINs assigned to each incident, prioritizing the flights according to NMAC, planning the missions with the crews, flight following, trouble-shooting along the flight, remote data uploads, acquiring other resources and reporting accomplishments back to NIFC.



N144Z Boise, Idaho

The Forest Service operates two, full-time, aerial platforms – the Cessna Citation Bravo II (N144Z) and the Beechcraft Super King Air 200 (N149Z) – to collect infrared imagery. Thermal imagery is gathered during the night when the temperature difference between the terrain and the fire are the greatest, making it easier to identify heat sources. Other benefits of night missions are the minimal air traffic over the incidents, a decrease in extreme fire behavior so there is less saturation of the images, and the greater chance of capturing burnout operations. The sensor cannot 'see' through clouds and thick canopies or slope shadows can hide isolated heat sources. These effects are minimized by flying several overlapping strips or strips at different flight angles. NIROPS aircraft are able to cover numerous fires, often in several states, during each mission enabling shared costs of the aircraft and crew. It has become routine to have the two aircraft cover 30 incidents each night during PL 4 and PL 5 seasons. NIROPS also coordinates the acquisition of private vendors and other resources to supplement the high demand during these periods.



N149Z Prince George, British Columbia

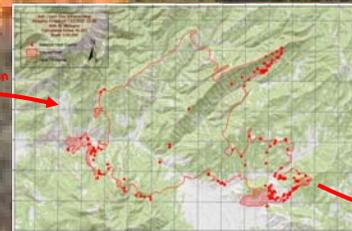
Online Scanner Request + NIFC AS + IRIN



Flight path history in GIS



Interpretation



IRP (GIS)

