

NIROPS

NATIONAL INFRARED OPERATIONS





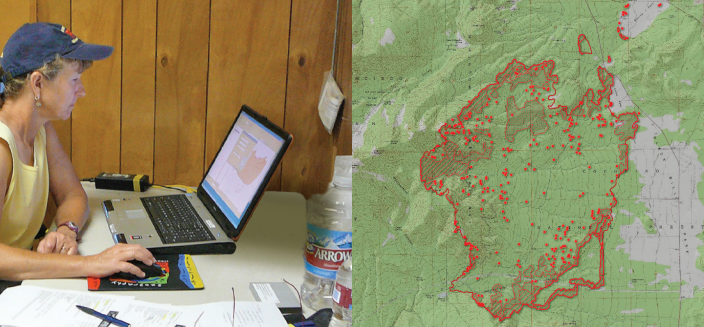
NIROPS has been flying thermal infrared detection and mapping missions since 1969. These missions provide critical fire intelligence for incident management teams.

Mission Workflow

- The incident places an Infrared Flight (IR) request through the online scanner order site (nirops.fs.fed.us).
- An A-number is generated with the local dispatch unit; incident orders an Infrared Interpreter (IRIN, O-number).
- One of the planes flies the fire and delivers the imagery to the IRIN.
- The IRIN interprets the imagery and delivers maps, logs, and GIS-ready files to the incident. These products are suitable for numerous uses at the incident.

Coverage and Features

Each NIROPS aircraft is able to cover numerous fires, often in several states, during each mission enabling shared costs of the asset. During high levels of fire activity these planes can cover 30 incidents or more each night.



Both aircraft are equipped with Phoenix Imaging Systems and AirCell telecommunications equipment.



System Features

2 Thermal Bands (3-5 μ m and 8-12 μ m).

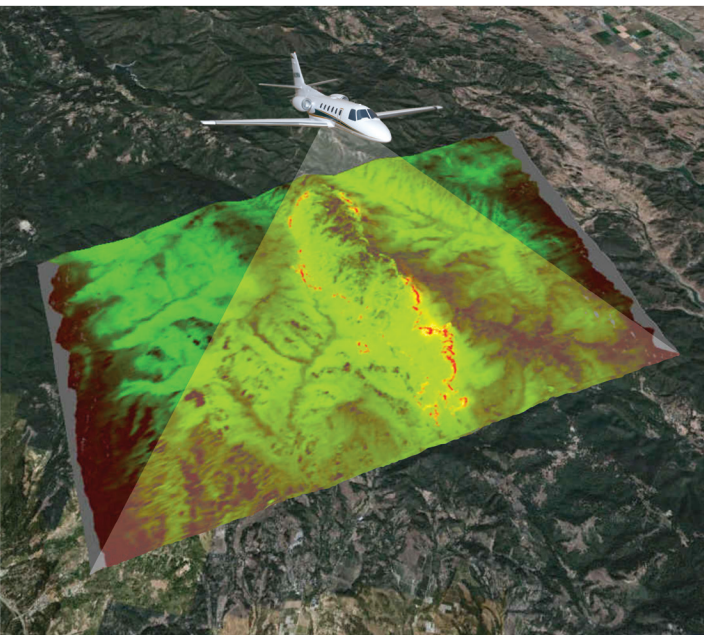
120° Field of view.

2 thermal bands distinguish fire from hot background objects.

6 mile swath width at 10,000 feet.

Ortho-rectification with GPS, IMU, DEMs.

Capable of capturing 300,000 acres per hour.





The program is made up of three overlapping resources:

① OPERATIONS

Scanners and technicians are based at the National Interagency Fire Center (NIFC) in Boise, ID. Aircraft and pilots are based at the US Forest Service Intermountain Region. The nationwide network of IRINs are from many Federal, State, and local agencies.

② TECHNICAL SUPPORT

Research and development is provided by the US Forest Service Remote Sensing Applications Center, NASA, and private industry. Program oversight, Geographic Area Liaisons, and training cadre come from the pool of IRINs.

③ COORDINATION

Facilitated by the Aircraft Desk at the National Interagency Coordination Center (NICC) at NIFC. During high levels of fire activity, regional and national infrared coordinators are utilized. NICC and NIROPS coordinate the use of private vendors and other resources to supplement the high demand for thermal intelligence during these periods.



CAPABILITIES

Dispatches from the National Interagency Coordination Center.

One mission covers multiple fires across multiple geographic areas.

Covers large fires quickly, thus low cost per acre.

Detects heat sources as small as 6 inches at 10,000 feet above ground.

Delivers timely interpreted GIS-ready intelligence.

Continuous technical improvement.





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NIROPS.FS.FED.US



PARTNERS National Interagency Fire Center (NIFC) • U.S. Forest Service – Fire and Aviation Management (FS) • Bureau of Indian Affairs (BIA) • Bureau of Land Management (BLM) • Fish and Wildlife Service – Fire Management (FWS) • National Parks Service – Fire and Aviation Management (NPS) • U.S. Geological Survey (USGS) • U.S. Forest Service Remote Sensing Applications Center (RSAC) • National Aeronautics and Space Administration (NASA) • U.S. Army Aviation & Missile Research Development & Engineering Center (AMRDEC)



Photography courtesy of the U.S. Forest Service:

2010 Schultz Wildfire: Southwestern Region, Coconino National Forest, NPS

Aircraft: Region 4 Fire & Aviation Management

Wildfire surveillance: Guy Lewis

Data interpretation and briefing: Melinda McGann

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