



*RSL scientists discuss flight data with pilot.*

## Global Security

# Remote Sensing Laboratory (RSL)

### Introduction

The Remote Sensing Laboratory (RSL) is a center for creating and using advanced technologies that provide a broad range of scientific, technological, and operational disciplines with core competencies in emergency response operations and support, remote sensing, and applied science and technologies in support of counterterrorism and radiological incident response.

### Background

The Atomic Energy Commission originally established the “Aerial Measurements Operations” at Nellis Air Force Base in Las Vegas, Nevada, in the 1950s. It was created to serve the worldwide emergency system by providing rapid response to radiological emergencies. In 1976, the DOE established an Aerial Measurements Operations at Andrews Air Force Base – now called Joint Base Andrews – in Maryland to provide scientific and technical support to counterterrorism efforts during U.S. Bicentennial events in Washington, D.C. With a location on each coast, the RSL has served for over 50 years as a valuable national asset for nuclear emergency response and remote sensing capabilities.

### Emergency Response Capabilities

RSL can support both deployment and home team operations with the following assets:

#### Deployable:

- Aerial Measuring System (AMS)
- Nuclear/Radiological Advisory Team (NRAT)
- Consequence Management Response Team (CMRT)
- Support personnel to render safe teams

#### Home Team:

- National AMS Reachback Center
- Search Management Center (SMC)
- Consequence Management Home Team (CMHT)
- Render safe home team support
- Emergency Communications Network (ECN)

Most of the RSL response assets can integrate into the Federal Radiological Monitoring and Assessment Center (FRMAC)

### Science and Technology

RSL has a worldwide reputation for developing and customizing state-of-the-art instruments and producing standard-setting technologies in remote sensing. A pioneer in the field, the RSL has developed accurate and credible remote sensing applications and technologies used for a variety of aerial and ground-based platforms to acquire a wide range of environmental data.

RSL can provide large-area radiological deposition and ground contamination mapping in the event of a radiological release. Algorithm research for image analysis of spectral imagery can be used to monitor environmental conditions, assess vegetation stress, and detect hard or buried targets, minefields, objects, or treaty-specific processing facilities. RSL remote sensing capabilities include:

- radiation detection, monitoring, surveillance, and analysis;
- high speed data telemetry;



*Radiation Control Technicians work with field telemetry unit to confirm connection with the command center.*



*Responder performs radiological search operations.*

- secure mobile communications;
- Geographic Information Systems;
- photography and videography.

## Homeland Security and Counterterrorism Solutions

RSL supports the Nation's counterterrorism efforts with customized products and prototyping. With a focus

on rapid turn-around and advanced-technology solutions, RSL specializes in unique technological disciplines in counter-terrorism including:

- special instruments for active and passive electromagnetic applications;
- nuclear, chemical, and biological detection systems;
- sensor development, testing and application verification; and
- real-time mission support.

RSL provides force and facility protection to U.S. domestic and international assets and activities. RSL subject matter experts conduct facility and site vulnerability assessments in order to design, install,

and maintain facility early warning systems for nuclear/radiological, biological, and chemical weapons. RSL also does similar assessments and provides technical security on a temporary basis for specific events, such as the State of the Union Address and the Olympic Games.

## RSL Personnel and Technical Assets

RSL is comprised of engineers, technologists, pilots, operations, specialists, administrators, and scientists — many of whom hold PhDs — to provide a wide-variety of education and experience. Working in sophisticated laboratories with state-of-the-art equipment, these personnel work to advance the technological and operational capabilities of the emergency response teams and other RSL customers.



*AMS personnel discuss aerial mission with pilots.*



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