## **AIR FORCE TECHNICAL APPLICATIONS CENTER**



Office of Public Affairs \*\* 10989 S. Patrick Drive, Suite 4222 Patrick Air Force Base, Florida 32925 (321) 494-7688 \* DSN 854-7688 \* aftac.pa@us.af.mil

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**Tech Ops Squadron is heartbeat of nuke treaty monitoring from air, sea, space** *By Susan A. Romano, AFTAC Public Affairs* 

**PATRICK AIR FORCE BASE, Fla.** – When the Department of Defense needs bombs on target or fighters in the air, they reach out to any number of flying wings within the Air Force to task their squadrons to accomplish that mission. Yet when they need near-real time data of potential nuclear detonations, to include ballistic missile detection, radioactive plume debris collection, seismic activity or gamma ray emissions, there is only one wing within DoD that can meet that need.



The Air Force Technical Applications Center is the sole

organization in the Defense Department whose mission is to detect and report technical data from foreign nuclear explosions. One of the ways that mission is accomplished is through the efforts of Airmen assigned to AFTAC's Technical Operations Squadron.

TOPS, under the command of Lt. Col. Donald W. Wittenberg, is responsible for conducting worldwide surveillance and reconnaissance missions using its maritime and airborne assets in order to provide national authorities with quality technical measurements that may involve nuclear weapons of mass destruction.

"My squadron of 11 officers, 14 enlisted and nine civilians directs and coordinates nuclear treaty monitoring efforts through the employment of the WC-135 Constant Phoenix aircraft as well as our two ship-borne radar platforms, Gray Star and Cobra King valued at more than \$2.2 billion," said Wittenberg. "These assets allow us to accurately monitor space, missile or weapons tests that may pose potential threats or hazards to our nation or our allies."

Cobra King and Gray Star are state-of-the-art mobile radar systems that consists of S- and X-band radars that AFTAC relies on to provide global, high resolution, multi-wavelength radar data to the Missile Defense Agency and DoD's strategic community.

"Essentially, each ship's main job is to monitor any tests of rockets using her S-band and X-band radars. The S-band sensor sweeps vast expanses of sky for possible missiles in flight, while the X-band radar zeroes in to closely track a target," Wittenberg explained.

According to the TOPS commander, both are capable of collecting radar data on orbiting satellites and tactical ballistic missiles. Each vessel consists of two radar systems and numerous support systems including automatic data processing equipment, navigation and a full communications suite.

"Their mobile instrumentation platforms are one-ofa-kind systems with extremely critical performance characteristics," Wittenberg said. "The radar systems aboard USNS Invincible (Gray Star) and USNS Howard O. Lorenzen (Cobra King) allow us to execute our treaty monitoring responsibilities. But what makes it unique is the mission commander aboard these U.S. Navy ships is an Air Force company grade officer – an Airman assigned right here in TOPS. Traditionally, the MCs are captains from the space and missile career field and the combination of those skill sets really complement each other and enhance the understanding of foreign tests and capabilities."



Typically, MCs will be at sea for 60 to 90 days at a time, with most officers going out to sea twice a year. During the last 12 months, TOPS has included nuclear missile officers with a 13N Air Force Specialty Code into the mix for leadership opportunities.

The mission commander's ultimate responsibility is to ensure the platform team members are able to successfully collect mission data. In addition to daily mission taskings, the MC works closely with experts from Military Sealift Command to schedule port visits and develop a prioritized listing of necessary ship-related maintenance whenever the vessel is in port or at the shipyard.

From sea to air, Wittenberg's Airmen are involved in nearly all aspects of AFTAC's treaty monitoring responsibilities. The center's airborne platform is an integral part of TOPS' mission execution.

Commonly referred to by the media as a 'sniffer plane,' the WC-135 has been in the Air Force inventory since 1965 and currently supports the Limited Test Ban Treaty of 1963, which prohibits any nation from testing nuclear weapons above ground. The Constant Phoenix is the only aircraft in the USAF that conducts air sampling operations. The cockpit crews are from the 45th Reconnaissance Squadron at Offutt AFB, Neb., while the special equipment operators are from AFTAC's Detachment 1, also at Offutt.

"The WC-135 flies in direct support of the U.S. Atomic Energy Detection System and maintains the most advanced atmospheric research equipment in the Air Force," said Wittenberg. "The SEOs are highly proficient and well-trained to perform this complex mission. While we don't discuss specific ongoing operational taskings as a matter of policy, my team has averaged more than 160 days of temporary duty or deployment over the past year flying background sorties to establish baseline levels of atmospheric debris. These Airmen are incredibly motivated to get the job done, no matter where in the world that job may be."

He added, "We conduct these airborne sampling missions to help us understand what already exists in the atmosphere. We typically fly over the Indian Ocean, Mediterranean Sea, Bay of Bengal, the Polar Regions, the Far East, and off the coasts of South America and Africa to ensure signatories are adhering to established nuclear treaties. It's a busy mission, and an incredibly invaluable one as well."

TOPS is one of five squadrons within AFTAC's wing structure, and the center's commander had nothing but the highest of praise for Wittenberg and his Airmen.

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"The Airmen of TOPS are truly just that – the tops at what they do," said Col. Steven M. Gorski, AFTAC commander. "They are responsible for a critical link of information that has the potential to be up-channeled as high as the desk of the President of the United States, and that is a huge responsibility. They continuously demonstrate their expertise, sometimes under austere and exhausting conditions, and I couldn't be more proud of them."

Wittenberg matched his commander's accolades.

"I am humbled to be a part of such a tight-knit team that takes pride in performing the mission," he said. "From the youngest Airmen to the most senior civilian, I see an organization that cares for each other and epitomizes the Wingman ideals. Their professionalism and teamwork inspire me every day!"

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