

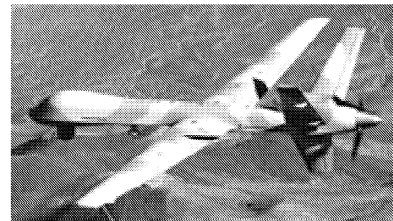
Zone Ready for Drone

(from FAA Air Traffic Organization Employees web site)

April 7 – The desolate landscape of the southwestern U.S. border with Mexico is widely known for illegal and unseen nocturnal activity. Now, the Department of Homeland Security is keeping watch from restricted airspace between 14,000 and 16,000 feet that extends from Organ Pipe Cactus National Monument in Arizona to New Mexico’s Potrillo Mountains. Their unprecedented vantage point is the result of close cooperation with the FAA and the controllers who will keep the sky clear for a remote roving eye.

Since March 29, a temporary flight restriction ([view the pdf](#)) has limited access to the airspace along almost 350 miles of the border, expanding an earlier TFR near Nogales. The restriction is in effect nightly from 6 p.m. to 9 a.m., although that time can be expanded by issuance of a Notice to Airmen. Aircraft wishing to fly in the TFR when it is active must receive authorization from air traffic control prior to entry. Once in, pilots are required to maintain two-way communication with ATC and transmit a discrete transponder code.

Though not stated outright in the NOTAM that created the restriction, the reason behind the TFR is no secret. For some time both the White House and the Department of Homeland Security have advocated the use of unmanned aerial systems to increase the Secure Border Initiative’s surveillance capability. The TFR makes it possible to fit the operation of those UASs into airspace traditionally occupied by manned military and civilian aircraft.



Predator-B, UAS. Photo: General Atomics Aeronautical Systems

“This is an extreme situation that has been presented to us,” states Stephen Glowacki, a Systems Safety and Procedures specialist with the FAA’s Air Traffic Organization, stressing the nation’s security. “We have been working with U.S. Customs and Border Protection to try and answer this situation.”

Inserting UASs into the National Airspace System is not a simple feat. According to Glowacki, the technology and certification that will permit unmanned aircraft to “see and avoid” other air traffic is still eight to ten years away. In the mean time, a carefully controlled environment is needed.

Until the advent of this TFR and its smaller forerunner, border surveillance using UASs was limited to airspace in restricted military areas. Tests conducted there helped develop the procedures now being used to safely conduct flights within the TFRs in New Mexico and Arizona.

Keeping a Homeland Security UAS separated from manned aircraft not participating in its mission requires positive control of aircraft movement within the restricted airspace. In the weeks leading up to the original TFR’s issuance, ATC personnel at Albuquerque ARTCC and Tucson ATCT were briefed on procedures for handling UAS operations in airspace that includes non-participating aircraft. IFR control standards are applied and no change in separation minima is involved.

Controllers maintain communication with all manned aircraft operating in the TFR, while simultaneously monitoring the path of the UAS and talking to its ground-based pilot. The controllers’ focus is on keeping non-participating aircraft away from the UAS, which flies under an IFR clearance within the TFR boundaries. Should the need arise to temporarily re-direct the UAS, the directions are delivered through secure communication with its pilot.

Although the TFR’s Notice to Airmen states that ATC may provide flight advisories concerning UAS operation in the TFR, doing so is neither desired nor expected to be necessary. Only aircraft with ATC permission are allowed to enter the TFR, making it possible to control non-participating aircraft in ways

that eliminate the need for such an advisory.

The TFR was not created without opposition. Even though the impact of its presence is expected to be minimal, the Aircraft Owners and Pilots Association feels that long-term operations are inappropriate for temporary restrictions. The TFR is in effect until Feb. 28, 2007. At the local level, airport management at Nogales International Airport reported a drop in business after the first, smaller TFR was created in January. However, because the restrictions are at an altitude well above that flown by aircraft using the airport, pilots may have been avoiding the area out of fear based on misunderstanding the restriction's boundaries.

ATO's Glowacki points out that the TFR was designed to cause the least amount of impact to pilots. The restricted airspace is relatively narrow vertically and is active primarily at night. Aircraft that operate at night are required to have all the equipment needed to communicate with ATC and transmit a discrete beacon code. All that is required for a pilot to enter the airspace, beyond that equipment, is permission from ATC. By flying above or below the restricted altitudes, pilots don't have to worry about what's going on in the TFR.

"It has been an amazing and ingenious way of temporarily resolving an incredible situation," Glowacki says. "Airspace studies and known aviation operations were reviewed and balanced against national security needs."

Now the challenge is to ensure safety while a relatively new technology is introduced to the NAS. Long-term TFRs like those along the southern border allow DHS time to carefully plan missions, without interruption or unexpected changes to the rules that govern them. However, fine tuning may be needed as the program continues. TFRs are flexible enough to be changed quickly based on anything new that is learned, unlike more rigid airspace restrictions such as Air Defense Identification Zones.

As Glowacki says, "the TFR is the best tool to fit the situation."

Related Information:

- [Temporary Flight Restriction \(PDF\)](#)

<http://www.ato.faa.gov>

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