



Laser Dazzling Of U.S. Military Pilots Spreads To Pacific

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Laser weapons with the potential to blind aircrews are increasingly being pointed at members of the U.S. military.

Within an unspecified recent period, more than 20 incidents of lasers being directed at U.S. aircraft have been reported near the East China Sea, U.S. Indo-Pacific Command confirms to Aviation Week. The incidents have originated “from a range of different sources both ashore and from fishing vessels,” says command spokeswoman Marine Maj. Cassandra Gesecki.

Lasers have been pointed at U.S. aircraft more than 20 times near the East China Sea

Central Command views incidents as a ‘nuisance tactic’

These incidents in the Pacific come on the heels of a formal complaint made in early May to the Chinese government, accusing Chinese nationals of pointing lasers at U.S. military aircraft multiple times near Djibouti in East Africa. And as incidents are increasing, so are the different types of dazzling bands.

In March, [Marine Corps](#) Commandant Gen. Robert Neller described the Navy and Marine experience with directed-energy weapons and lasers off the coast of Yemen as “a live-fire laboratory,” in testimony to the House Appropriations defense subcommittee.

In fact, more than 500 laser-dazzling incidents have affected U.S. military aircrews in the Central Command (Centcom) region since Jan. 1, 2017, says spokesman Army Maj. Josh Jacques. An unspecified number of these have resulted in injuries to aircrew, though Centcom would not comment on their severity. The lasing is mostly originating from land-based sources, and Yemen is not an area of high laser-dazzling activity. “It is more of a nuisance tactic rather than an all-out offensive operation,” Jacques says.

The main response from U.S. forces appears to accelerate acquisition of laser eye protection (LEP) gear. However, how that gear is being employed is less clear. So far, laser-dazzling management appears to be largely at the discretion of commanders at the local unit level, with no clear coordinated policy articulated.

The expectation that aircrews will fly with eye-protection gear “if threatened” seems to sum up the current read of LEP requirements/policy across the military services, including the Army, which lists only one piece of LEP gear (a helicopter helmet visor) in its Program Executive Office Soldier inventory.



In October 2017, the Navy awarded flight equipment-maker Gentex Corp. a \$13.7 million contract for LEP spectacles to counter current and emerging laser threats at multiple wavelengths. The contract includes visors for Gentex rotary-wing helmets and spectacles compatible with head-borne equipment. Naval Air Systems Command (Navair) says there is an authorized fixed-wing helmet-visor capability available for the fleet, but did not identify the vendor.

Meanwhile, Gentex confirms growing interest in its LEP products, although it has yet to establish formal links with any laser weapons systems producers or prime integrators. The company previously sold the Navy and Marines approximately 3,000 pairs of its EDU-7P laser eye protection glasses and another 500 pairs of [F-35](#) LEP training spectacles at \$500-1,000 per pair.

The Air Force Life Cycle Management Center awarded a \$30 million contract for 11,805 Aircrew Laser Eye Protection (ALEP) Block 2 glasses to Teledyne Scientific & Imaging in 2016. That works out to a per-spectacle cost of \$2,550. In early May, the Life Cycle Management Center issued a revised draft request for proposals (RFP) for 38,000 ALEP Block 3 glasses and visors capable of providing day-and-night protection from laser light.

The Air Force RFP did not specify what exact wavelengths are to be blocked but there is recognition that a wider spectrum of laser-dazzling beams from weapons such as China's BBQ-905 Laser Dazzler, WJG-2002 Laser Gun, and PY132A and PY131A Blinding Laser Weapons must be countered.

LEP spectacles, visors and goggles must be compatible with a variety of interfaces from night-vision goggles to the Joint Helmet-Mounted Cueing System, Helmet-Mounted Integrated Targeting, cockpit interior lighting and aircrew chemical warfare masks. A Canadian supplier, Metamaterial Technologies Inc. (MTI), obviates some of these compatibility issues by offering lightweight adhesive LEP filters that can be applied to any plastic or glass surface, including cockpit windows.



Company founder and CEO George Palikaras tells Aviation Week that Metamaterial Technologies has seen a significant uptick in interest from civilian and military aircraft operators.

“Last year, MTI’s solution was tested by the U.S. Coast Guard under a Collaborative Research and Development Agreement, and MTI has been in discussions with several departments in the U.S. services,” Palikaras says.

Laser-pointing threats to military aircraft are generally considered to be local rather than regional affairs. Consequently, use of LEP gear—spectacles, helmet visors, rangefinders, binoculars—by American aircrews largely depends on where they are stationed. If the threat is perceived to be low, LEP gear is apparently rarely taken off the shelf.

Air Combat Command (ACC) leads the laser eye-protection acquisition and response for the Air Force but says it has no data on the percentage of sorties in which Air Force aircrew wear LEP. While aircrews “receive initial familiarization and recurring aircrew flight equipment training” with LEP equipment, it is not currently integrated into Red Flag or Green Flag exercises for pilots and aircrew.

However, ACC spokesman Capt. Luke Nimmo says laser dazzling is a high-priority issue for the Air Force. “Lasing incidents are taken seriously, and we at Air Combat Command work to provide protective measures for our airmen,” he says.

Over the past three years, Air Force aircrews have periodically donned LEP gear in response to local laser-dazzling incidents affecting [C-17](#) and [F-15E](#) aircrews at Ramstein Air Base, Germany; [RAF](#) Lakenheath, England; and Seymour-Johnson AFB, South Carolina.

Like ACC, Navair does not track training or usage of the LEP gear it acquires. While 14 types of LEP gear are in the Navy inventory and tested by Navair’s vision laboratory, individual naval aviation communities “determine requirements and procure approved LEP” based on threat assessments, according to Navair.

Commander, Naval Air Forces (CNAF) is the Navy/Marine Corps lead for LEP. “We’re seeing increased incidence of this threat,” says spokesman Navy Cmdr. Ron Flanders. “As an enterprise, we’re seeing how much of this gear naval aviation already owns. We’ll give the gear out to units that face this threat more than others.”

Flanders says that the CNAF commander, Vice Adm. DeWolfe Miller, has given the laser-dazzling issue his personal attention, recently calling for an inventory of laser eye protection across the force. “It is expected that those who have the gear will fly with it, so they have it if threatened,” Flanders concludes.

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