

NAVSEA director cites multiple applications

NAVY EYES AEROSTATS FOR AFFORDABLE, LONG-DURATION SURVEILLANCE

The Navy is resurrecting the concept of aerostat surveillance, anticipating that the technology could operate for longer hours and at lesser expense than today's surveillance platforms.

Mike O'Neal, director for future naval capabilities at Naval Sea Systems Command, discussed Navy efforts in developing aerostat technology and its potential uses Dec. 1 in a phone interview with Inside the Navy.

He described aerostats as surveillance devices that float at high altitudes through the use of helium balloons, but also are tethered to the ground.

Aerostats can provide persistent intelligence, surveillance and reconnaissance; serve as communications relay; or conduct electronic warfare, O'Neal said.

O'Neal emphasized that aerostats have numerous advantages over other surveillance technology. For example, he said, aerostats can operate at a much lower cost than other platforms. O'Neal noted that a 71-meter aerostat can provide persistent surveillance at about \$610 an hour. Comparably, a helicopter provides surveillance at about \$3,500 an hour, the Global Hawk unmanned aerial vehicle provides surveillance at about \$2,600 an hour and an E-2C Hawkeye provides surveillance at about \$1,800 an hour, O'Neal said.

O'Neal also touted an aerostat's ability to stay in flight for long hours and the device's ability to carry heavy weight. An aerostat can stay in flight for 720 hours and lift up to 4,000 pounds, O'Neal said.

"Aerostats provide a low cost, long-endurance alternative for current and future maritime surveillance missions," O'Neal said subsequently in a prepared statement provided by Naval Sea Systems Command spokesman Landon Hutchens.

In the interview, O'Neal said the Navy's work on aerostats is the renewal of an old concept that the U.S. military used many years ago. Balloons helped provide surveillance during the American Civil War, O'Neal noted. Hutchens, also present during the phone interview, said the United States employed aerostats during World War II and the 1950s.

To develop aerostat technology for the 21st century, NAVSEA signed a memorandum of understanding Sept. 29 with Naval Air Systems Command. O'Neal said this agreement is necessary to ensure that the "best-and-brightest talent" from both organizations was working on this project.

O'Neal noted several environments in which aerostat surveillance would be useful. In his prepared statement, he said the technology has applications in the war on terrorism "in monitoring sea lanes, critical choke points, harbor and harbor approaches, border areas and open water."

In the interview, he said aerostats could monitor areas such as the Straits of Malacca where oil piracy is frequent and there are attacks on large oil carriers. O'Neal noted that for this reason Singapore has taken an interest in the Navy's aerostat technology.

O'Neal also said aerostats could provide surveillance in areas where there is significant drug trafficking. Additionally, the technology could provide early warning in case of missile launches in the littorals, he said.

Hutchens noted that aerostats could have some homeland security uses on the border.

O'Neal noted aerostats are incredibly resistant to disruption by enemy fire. An aerostat would take three hours to ground if a bullet punctured its balloon, he said. O'Neal said an aerostat would take so much time to hit the ground because at high altitudes the pressure differences on the inside and the outside of the balloon are minimal.

Despite its resistance to enemy attack, O'Neal said aerostats are less durable against natural forces. If an aerostat sustains multiple lightning strikes, it will come down, O'Neal said. The Navy is working on making developing aerostat technology to ensure that the devices can better withstand severe weather conditions, he said. O'Neal said one of the goals is ensuring that the aerostat balloon and tether have sufficient lightning protection.

O'Neal noted that NAVAIR currently has one 32-meter aerostat, but the Navy is looking to expand this capability. The Navy is seeking to work with industry on this project and has already done some work with TCOM, a company based in Columbia, MD, that focuses on aerostat development. O'Neal said the objective system is a 71-meter weather-hardened aerostat. The Navy plans to reach its objective system through spiral development over a four-year period, he said.

The objective system for the project is not yet funded, O'Neal said. He noted that congressional add-ons would be a major source of funding for the initiative. — *Chris Johnson*