



## 2015 Secretary of Defense Environmental Awards Environmental Excellence in Weapon System Acquisition, Small Program Award

Since 1962, the Department of Defense (DoD) has honored individuals, teams, and installations for their outstanding achievements and innovative work protecting the environment while sustaining mission readiness. The 2015 Secretary of Defense Environmental Awards recognize accomplishments from October 1, 2012 to September 30, 2014. A diverse panel of judges with relevant expertise representing federal and state agencies, academia, and the private sector evaluated all nominees to select one winner for each of the nine categories that cover six subject areas: natural resources conservation; environmental quality; sustainability; environmental restoration; cultural resources management; and environmental excellence in weapon system acquisition.

### About the Environmental Excellence in Weapon System Acquisition, Small Program Award

The Environmental Excellence in Weapon System Acquisition, Small Program award recognizes the efforts of individuals and teams to incorporate environment, safety, and occupational health requirements into a small (Acquisition Categories II or III) weapon system acquisition program's system engineering, contracting, and decision-making processes. Adhering to these requirements enhances DoD's acquisition process by ensuring that weapon system programs keep the safety of personnel and protection of the environment as a priority. The 2015 winner of the Environmental Excellence in Weapon System Acquisition, Small Program award is the *Halon Extinguisher Replacement Program for Aviation Weapon Systems Integrated Product Team (IPT), Redstone Arsenal, Alabama*.

### About the Halon Extinguisher Replacement Program

This nomination covers FY 2013-2014 of the Program Executive Office (PEO) Aviation research and development program to replace the Halon 1301 charged Handheld Fire Extinguisher (HHFE) that is mounted in Army rotary wing aircraft including H-60s, H-47s, and OH-58s.

Although this Halon charged extinguisher is a vital part of Army aviation mission safety, it uses a Class I Ozone Depleting Substance (ODS) whose production was banned per the Montreal Protocol starting in 1994. This initiative was in line with the Army Acquisition Executive policy for Program Managers to program for replacement of ODS when feasible, thus reducing the Army's dependency on ODS. PEO Aviation tasked the Aviation Ground Support Equipment Product Manager (PM AGSE) with finding a non-ODS, and otherwise environmentally friendly, fire suppression agent/hardware configuration. This non-ODS HHFE had to perform as well as the Halon HHFE and also had to be as near a drop-in replacement as possible.

For this difficult task, Mr. Alivio Mangieri (PM AGSE) and Mr. Fred Reed (PEO Aviation) called upon the expertise of subject matter experts with the Aviation and Missile Command (Mr. Tim



**Halon Extinguisher:** *The Non-ODS HHFE (left) uses the same weapon system bracket that holds the current Halon HHFE (right). This benefit will save many labor hours since a new bracket will not be required when fielding the new fire extinguisher.*

Helton) and the Army Test and Evaluation Command (Mr. Kevin Dowell) to spearhead a project team of stakeholders. These stakeholders, including the affected Aviation PM offices, Naval Aviation, the Air Force, the Defense Logistics Agency, and others, comprise the Non-ODS HHFE Integrated Product Team. The U.S. Army Aviation and Missile Command also recruited Dr. Joseph D. Mather to assist with the technical effort.

The final development work, over the period of consideration for this award, focused on two blended agents. One is based on ultra-fine Sodium Bicarbonate (SBC<sub>s</sub>) powder, and the other on SBC<sub>s</sub> with nano-scale particles. A very similar HHFE cylinder was chosen for consistency but new hardware (nozzle, valve assembly) was also designed, optimized, and tested.

### Major Accomplishments in FY 2013-2014

The non-ODS HHFE agent/hardware development program ran from the summer of 2008 through the fall of 2012. From October 1, 2012 through September 30, 2014, the final design was set. The Non-ODS HHFE IPT accomplished the following tasks during this phase:

- Completed over 50 formal qualification tests. The Non-ODS HHFE IPT corrected and documented test failures in the technical data package (TDP). The team provided the TDP to all stakeholders, and specifically to the Defense Logistics Agency (Troop Support) for procurement actions.
- Completed and published specifications for the HFC-227ea/SBC<sub>s</sub> agent (MIL-DTL-32412) and the new hardware (MIL-DTL-32403) for future procurement/fielding actions.
- The Aviation Engineering Directorate reviewed all test data. In September 2013, the Directorate issued airworthiness approval to use the new non-ODS HHFE on Army rotary wing aircraft.
- Established national Stock Numbers for hardware; the Defense Logistics Agency (Troop Support) is procuring the new configuration. As of September 30, 2014, a market analysis was completed and a Request for Proposal, was solicited on the Federal Business Opportunities website. DLA expects to award the first contract at the end of this calendar year for a quantity of 2,500 non-ODS HHFEs to field via attrition.



**Pan-Fire Tests:** The Army Test and Evaluation Center performed hundreds of pan-fire tests during the developmental phase of the program.



**Discharge Demonstration:** 5th Percentile Aviator demonstrating a successful discharge operation and function of the non-ODS HHFE.

For information on past winners, please go to:  
[www.denix.osd.mil/awards](http://www.denix.osd.mil/awards).