

10 Imperium, Inc.

Agency: Navy

05/06 Navy TAP Participant

► Phase III Success: \$1.5M through sales of Acoustocam

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NOT ALL SUCCESSFUL Navy-funded SBIR technologies manifest themselves in successful Navy transitions. Sometimes they form the basis of very successful commercial implementations. This was the case for Imperium, Inc.'s ultrasonic technology for locating subsurface defects in aircraft structures. Ultrasonic detection of subsurface defects is a very effective non-destructive testing that uncovers minor flaws or cracks below the surface of various aircraft components. The Imperium, Inc. technology offers a very simple, easy to use video image that highlights areas of concern.

Identification of these defects through this technology eliminates the need for highly-trained specialists to survey the aircraft, thereby resulting in less downtime for the aircraft and less man-hours for testing. The end-result is reduced maintenance, greater equipment availability and significant cost saving over the life of the aircraft.



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Finding hidden flaws in aircraft structures has traditionally been a highly complicated procedure. It required extensive training for personnel and resulted in a complicated process of data interpretation. The technology developed by Imperium has the ultrasonic capability that obviates the need for this level of sophisticated training, thereby offering a more cost effective solution to this pervasive issue.

Founded in 1996 by Dr. Marvin E. Lasser, chief scientist of the U.S. Army and former director of research for Ford's Philco Division, Imperium, Inc. is focused on developing and manufacturing advanced ultrasound imaging systems. The company's current client list includes, among others, Boeing, Airbus, Bell Helicopter, U.S. Army, U.S. Navy, U.S. Air Force, and NASA. Imperium holds several patents with many pending and its technologies can be found in industrial, medical, sub-sea and biometric settings.

Since the company's participation in the Navy Transition Assistance Program, which culminated in the 2006 Navy Opportunity Forum, Imperium has had a series of follow-on sales of its "Acoustocam" devices to various military and commercial customers including, NAVAIR, U.S. Air Force and the Boeing Corporation, to name a few. Imperium's sales of the Acoustocam have reached an excess of \$1.5 million – with the cost of each unit being approximately \$40,000. Additionally, ONR has provided a BAA Contract in excess of \$2.5 million for the development of a mine scanning capability and an underwater imaging solution as an extension of its basic ultrasonic technology.

CEO Bob Lasser said, "All of our implementations are built on our underlying ultrasonic technology. While we modify our implementations depending upon the customer's unique requirements, they are modifications of this basic technology. We benefitted from the Navy

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SBIR program which funded the development of this non-destructive approach for identifying subsurface defects."

While these Navy successes are impressive, Imperium believes that the commercial market is much larger for its Acoustocam devices. "This underlying technology propels the company in its commercial sales efforts," said Lasser. "The military funding we received under this SBIR initiative has provided Imperium with a very effective technology with broad applications in the commercial aircraft field."

In February 2009, Imperium announced a joint project with Boeing Corporation for a wireless remote expert inspection system. Imperium's ultrasonic imaging camera provides for remote, real-time, simple monitoring of potential composite damage. This handheld Acoustocam device provides a quick assessment of suspected subsurface areas for potential points of weakness. Not only is

the handheld device simple to use, but it's wireless capability provides access to remote, hard-to-reach areas of the aircraft. It also allows Acoustocam-trained inspectors to remotely inspect and review composite structures located at a separate facility in real-time.

"Imperium has been very aggressive in setting up a commercial infrastructure and sales organization to leverage its SBIR technology success. While the Navy represents an attractive market, the commercial applications far exceed those of the military. We have invested in an extensive marketing program, trade shows and a highly skilled commercial sales force to capitalize on this underlying technology. If it weren't for the initial Navy SBIR funding, we would not have this state-of-the-art technology to offer in the commercial marketplace." ◀

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