



"Silent Hammer:" SSGN is Clandestine Sea Base in upcoming Sea Trial

SSGN Silent Hammer Sea Trial Experiment FACT SHEET



Washington, DC – The Undersea Technology Directorate (SEA 073) of the Naval Sea Systems Command plans to conduct a Sea Trial Experiment, “Silent Hammer,” in October 2004 off the coast of San Diego, CA. The principal objective of this experiment is to show how a **network of forces** consisting of SOF Sea Based on an SSGN can fill Joint Gaps (**ISR and Time Sensitive Strike**) by conducting a **clandestine** operation, aided by application of advanced unmanned systems to reduce risk and increase capabilities. The experiment is being coordinated with the Trident Warrior SEA Trial experiment being conducted at the same time in the Southern California Operating Areas adjacent to San Clemente Island.

The US Navy’s Sea Power 21 Sea Trial initiative is implementing a continuing process of rapid concept and technology development that swiftly delivers enhanced capabilities to our Sailors. A key Navy goal is to operate in a Joint Network Centric environment by connecting multi-service systems and platforms under the operational control of a Joint Warfare commander. During the “Silent Hammer” Sea Trial, the Navy will evaluate the capability improvements offered by a Clandestine Sea Base of networked undersea, surface, air, and ground forces in a coordinated operation. Using that network, participants in “Silent Hammer” will conduct intelligence, surveillance and reconnaissance (ISR) and strike operations against an enemy force in the littoral battlespace.

Platforms and forces presently scheduled to participate in “Silent Hammer” include an unconverted SSGN, the USS Georgia as an SSGN surrogate, Special Operations Forces (SOF), two SSNs, two Unmanned Aerial Vehicle (UAV) surrogates, Blue Force Tracking Technologies, and Air Force assets.

The SSGN will be “Silent Hammer’s” Clandestine Sea Base platform. Sea Basing serves as the foundation from which operations are conducted. The SSGN will provide the SOF with their logistics and command and control requirements while also deploying manned and unmanned vehicles, and conducting ISR and strike missions. “Silent Hammer” will continue to evaluate Universal Encapsulation, which could provide for the future deployment of unmanned off-board systems such as Unmanned Aerial Vehicles and the Submarine Littoral Warfare Weapon, a subsurface to surface or air missile, affordably. During “Silent Hammer,” a Flexible Payload Module installed in a D-5 Missile Tube will release a Stealthy Affordable Capsule (SACS) containing an inert test shape simulating a real UAV as part of SACS’ spiral development. Additionally, the SSGN will have a Demonstration Battle Management Center installed prior to the experiment. This will provide the Task Force Commander access to real-time intelligence and command and control capabilities.

Many advanced technologies and capabilities are included in “Silent Hammer” and each will be carefully evaluated as required by Sea Trial. A sample of these include: the SSGN Battle Management Center; Encapsulation Spiral Development; simulated SSGN Satellite Communication and SOF capabilities; an advanced radio for long-range, high data rate communications; direct UAV ISR down linking to SSGN; hardware and software needed to enable time critical targeting of Tactical Tomahawks; UAV and Aircraft ISR; and Unattended Ground Sensors (UGS) and associated land network. Furthermore, negotiations are on going to incorporate more technologies into “Silent Hammer.”

SOF ground forces will play a major role in “Silent Hammer” by conducting clandestine intelligence gathering

UAV Launch Scenario



and tactical missions. While some ground forces will Sea Base aboard the SSGN, other SOF will launch from an SSN equipped with the SEAL Delivery Vehicle (SDV) – these will act as surrogates for SSGN and a VIRGINIA Class (SSN 774) submarine and an Advanced SEAL Delivery System. Once ashore, the ground forces will emplace UGSs, a communications network, conduct surveillance, and accomplish other missions. The information that they gather will be passed back to the Task Force Commander, allowing for constant real-time situational awareness and time critical strike support while staying connected to the global grid for higher command interaction.

During “Silent Hammer’s” overt phase, the SSGN will also play a role in the Navy’s “Trident Warrior” Sea Trial Experiment. During this phase of the experiment, the Task Force Commander aboard SSGN will change roles from the supported commander to the supporting commander for USS TARAWA Expeditionary Strike Group’s (ESG) emulated Joint Commander. At the Joint Commander’s direction, the SSGN will identify threats, conduct ISR, and provide strike support in support of the ESG.

“Silent Hammer” will provide real data for improved capabilities offered

by the SOF and SSGN team with access to a plethora of off-board assets (Joint and organic) to conduct and support an extended littoral, terrestrial, and strike operations. A carefully conceived data collection and analysis plan will ensure that the



contributions provided by new capabilities and technologies are thoroughly evaluated providing the

Navy with information needed to support investment decisions in the future.

This effort is the second in a planned series of SSGN Payloads and Sensors Demonstrations that will test SSGN capabilities beyond the SSGN baseline for employment by the joint force. The SSGN conversion concept fits well within Secretary Rumsfeld’s definition of transformation. That is because the SSGN with its tremendous payload can employ technologies developed by others to create an entirely new capability for the joint force -- and do so affordably. It reminds the SSBN to perform entirely new joint missions — ones never envisioned by its designers. And, it is being done for a fraction of the cost of developing a comparable capability from scratch.

NAVSEA has selected the Team 2020 and Forward Pass consortia, two industry teams executing the Submarine Payloads and Sensors Project, to perform the experiment in coordination with government activities, Labs and Federally Funded Research & Development Centers (FFRDCs). The Members of the Industry Consortium performing this work are:

- **Team Forward Pass**

- o Raytheon
- o Electric Boat

- **Team 2020**

- o Lockheed Martin
- o Northrup Grumman
- o Electric Boat

- Additional participants include:

- Naval Network Warfare Command
- Naval Special Warfare Command and Component Commanders
- Naval Air Systems Command
- ComSubGRU-9, Bangor, WA
- Space & Naval Warfare Systems Command (SPAWAR)
- Naval Undersea Warfare Center, Newport and Keyport Divisions
- SPAWAR Systems Center, San Diego
- MIT Lincoln Laboratories
- Naval Information Warfare Activity
- Applied Physics Laboratory, University of Texas
- Applied Research Labory, Johns Hopkins University

The robust set of technologies being integrated into Silent Hammer include:

SSGN Advanced Technologies

- Battle Management Center-Joint Command and Control of Silent Hammer Operations hosting the Command Staff and providing the C4I needed to direct the operation

- Encapsulation (UAV) Spiral Development

- o Release 2 Stealthy Affordable Capsules SACs from Flexible Payload Module FPM, Medium Size” 24 Inch OD
- o Testing Wireless communications, acquiring trajectory data for safe ship clearance

- Communications

- o High Data Rate Antenna surrogate - 256KBS reach-back to SIPRNET - COTS Link
- o Broadband Surrogate - Common Data Link - COTS Direct Downlink from UAV to SSGN Battle Management Center
- o Special High data rate Communications from ground sensors to SSGN
- o Ground Force COMM Links
- o Trident IP installation-minus DAMA

Strike Operations

- Global Command and Control System-Maritime
- TES-N, T-3
- End-to-end C4I capability supporting SOF ashore
- Supporting ESG Joint Strike in Overt portion of CONOPs

Overhead ISR

- Predator surrogate-Pelican supplied by Naval Post Graduate School
- Global Hawk Surrogate (P-3 SAR/MTI)

Seal Delivery

- Combat Rubber Raiding Craft (surrogate for ASDS from SSGN)
- SDV from SSN supporting ingress and ISR operations

Land Mesh Network

- Unattended Ground Sensors, Beach Gateway using special radio

Sub Launched Littoral Warfare Weapon

- Periscope sensors for targeting of air threats

Air Force Participation

- Paul Revere Space based radar surrogate, using Silent Hammer for target set, Airborne Command and Control

