Command and Control of Special Operations Forces from an SSGN

Mike Morgan
Scientific Research Corporation (SRC)
(202) 781-3404
michael.r.morgan.ctr@navy.mil

Global War on Terror operations require stealth, persistent access to areas in which terrorists operate, and real-time tactical information fused with operational intelligence to enable a commander to rapidly plan and execute missions against fleeting targets. With this in mind, the Deputy Director, Systems and Test Resources (under the Director of Operational Test and Evaluation, Office of the Secretary of Defense) chartered Joint Command and Control for War on Terror Activities (JC2WTA) Joint Test and Evaluation (JT&E) to develop a series of tests and evaluations, tactics, techniques, and procedures (TTP) for the warfighter for use onboard a nuclear-powered guided missile submarine (SSGN). These tactics, techniques, and procedures were designed for special operations forces (SOF) and those that use SOF, to leverage the SSGN's C4ISR capabilities.

JC2WTA JT&E has sought to explore the extent to which command and control from a SSGN can support deployed SOF, without compromising the clandestine posture of the SSGN by examining two principal questions:

1. How can a SOF element commander, embarked on an SSGN, effectively command and control SOF without compromising the clandestine posture of the SSGN?

2. What additional capability does an SSGN provide that the warfighter doesn't already have?

To that end, JC2WTA JT&E has conducted and continues to conduct a series of tests and evaluations to develop TTP for the warfighter. The first risk-reduction event provided an opportunity to exercise the draft TTP in a simulated and controlled environment. JC2WTA JT&E then held a field test as part of Exercise Talisman Saber 2007, a U.S.-Australian combined forces exercise, to test the TTP in a field environment using actual SOF. JC2WTA JT&E will participate in a future exercise located in a real-world operational area to validate the effectiveness, timeliness, and completeness of tactical command and control on board an SSGN.

A Long Look Back: A Historical Perspective

Joint operations are not a new concept developed by the U.S. As early as 2400 B.C., the Greeks used joint operations to help themselves control and expand their civilization and sphere of influence. They were an expert seafaring civilization but also had a capable army. They relied heavily on their naval skills to foster trade, to quickly get from one part of their country to another, and to keep their enemies at bay. Maintaining their enemies at a distance was not only done by defending their own shores, but by taking the fight to the opposing shores, thereby avoiding conflict in their own home land. One way they did this was by delivering soldiers to the shores of the enemy and thus setting the stage for some of the first use of joint operations (army and navy forces) to solve problems and accomplish the objectives of their government. The Greeks were able to effectively leverage the strengths and capabilities of each of their forces, overcome the threats to their civilization, and thereby maintained their world dominance for hundreds of years.

Today's U.S. military also leverages forward looking processes and solutions to meet current and future challenges. To assist our military with this process, the Office of the Secretary of Defense (OSD), through the Director, Operational Test and Evaluation (DOT&E), established the over arching Joint Test and Evaluation Program Office in Alexandria, Virginia. The JT&E Program Office, in addition to providing oversight to all on-going JT&E projects, provides a forum for the warfighters and enables the services to:

- Assess Service system interoperability in joint operations
- Evaluate joint technical and operational concepts and recommend improvements
- Validate testing methodologies that have Joint applications
- Increase joint mission capability, using quantitative data for analysis
- Provide feedback to the acquisition and joint operations communities
- Improve joint tactics, techniques, and procedures (JTTP)

JC2WTA JT&E: WHO WE ARE

JC2WTA was chartered by the Office of the Secretary of Defense (Joint Test and Evaluation) on 15 February 2006 to develop and operationally test JTTP to:

- Position the joint task force (JTF) commander close to the fight
- Conduct distributed command and control and intelligence operations
- Centralize planning / decentralize execution
- Enable persistent intelligence, surveillance and reconnaissance (ISR)
- Fuse theater and tactical intelligence

Endorsements
JC2WTA JT&E's endorsements come from U.S. Pacific Command, U.S. Southern Command, U.S. Special Operations Command, U.S. Strategic Command, U.S. European Command, Under Secretary of Defense for Intelligence, and the Vice Chief of Naval Operations.

Program Objectives
JC2WTA JT&E has two main objectives: (1) to provide joint procedures and processes used by the JTF commander to command and control joint forces from a small, clandestine forward-based command node to conduct War on Terror activities, and (2) to evolve, test and evaluation tactics, techniques and procedures that enable a JTF commander to operate from a small, forward command center while deployed to a clandestine location and utilizing existing reach-back communications capabilities to JTF Rear and other distributed elements in support of War on Terror missions.

Test Concept
JC2WTA JT&E's specific test concept is to develop, test, and validate JTTP in order to:

- Support a distributed (forward and rear) command, control and intelligence (C2I) capability
- Support forward deployed special operations and/or conventional forces
- Operate within a small footprint, clandestine forward command center

Test Methodology
JC2WTA JT&Es test methodology involved an initial risk reduction event, followed by two test events. The test results and lessons learned from each risk reduction and test event is incorporated into the TTP, providing continuous improvement.

WHAT WE'VE DONE SO FAR

Risk-Reduction Event (RRE)

JC2WTA JT&Es test approach began with an RRE executed at the Naval War College in Newport, Rhode Island in December 2006. The RRE provided a first opportunity to "exercise" the TTP under production, in a simulated and controlled environment. The resulting comments and recommendations proved invaluable for TTP refinement. JC2WTA JT&E held further review conferences according to these recommendations before planning field test 1 (FT 1).

Field Test 1

FT 1 was held as part of Exercise Talisman Saber 2007 (TS07): a U.S.-Australian combined forces exercise. JC2WTA JT&E used TS07 to test the TTP in a real field environment using actual SOF. Special Operations Command Pacific (SOCPAC), JC2WTA's hosting SOF command, used the TTP to establish a distributed combined joint special operations task force (CJSOTF), incorporating a small, clandestine, forward-based command node during the exercise. The primary observation by warfighters from FT 1 was that splitting the CJSOTF was not considered viable. The warfighters viewed the forward node as a redundant command and control (C2) node between the CJSOTF and the tactical headquarters. Additionally, much of the staff activity and focus devolved onto internal battle staff functions rather than the C2 of the assigned forces.

FT 1 still proved to be a success for JC2WTA JT&E, providing the first operational test of the TTP. While the results and feedback from the warfighters were mixed, they proved no less valuable in providing very significant insight as to what worked, what didn't, what was worth keeping, and what needed additional development. With that, JC2WTA JT&E executed another TTP rewrite that not only further refined the content of the material, but altered the direction of the project.

NEW DIRECTION

As a result of the FT1 findings, the project has narrowed its focus to concentrate on the ability to enable C2 of SOF from a clandestine, forward operating base, alternate CJSOTF, jump JOC (joint operations center), or an afloat advanced operations base (AOB). JC2WTA's next field test (FT 2), planned for early 2008, will test a key example of a clandestine afloat AOB: a commander embarked on an SSGN to effectively C2 distributed SOF without compromising the clandestine posture of the platform. JC2WTA JT&E presented the new TTP to a joint warfighter advisory group in October 2007 (prior to FT 2) so they could begin filling in the blanks based on the new direction and focus of the project.

The final TTP will inform the force providers, tasking authorities, embarked commanders, staff, operators, and submarine crews, of the methods to conduct C2 of SOF operations from an SSGN, in clandestine operations throughout the spectrum of hostile, non-permissive operational environments.

Benefiting the Warfighter

How will our products benefit the warfighter and some of our possible future recommendations?

What the SSGN brings to the Warfighter

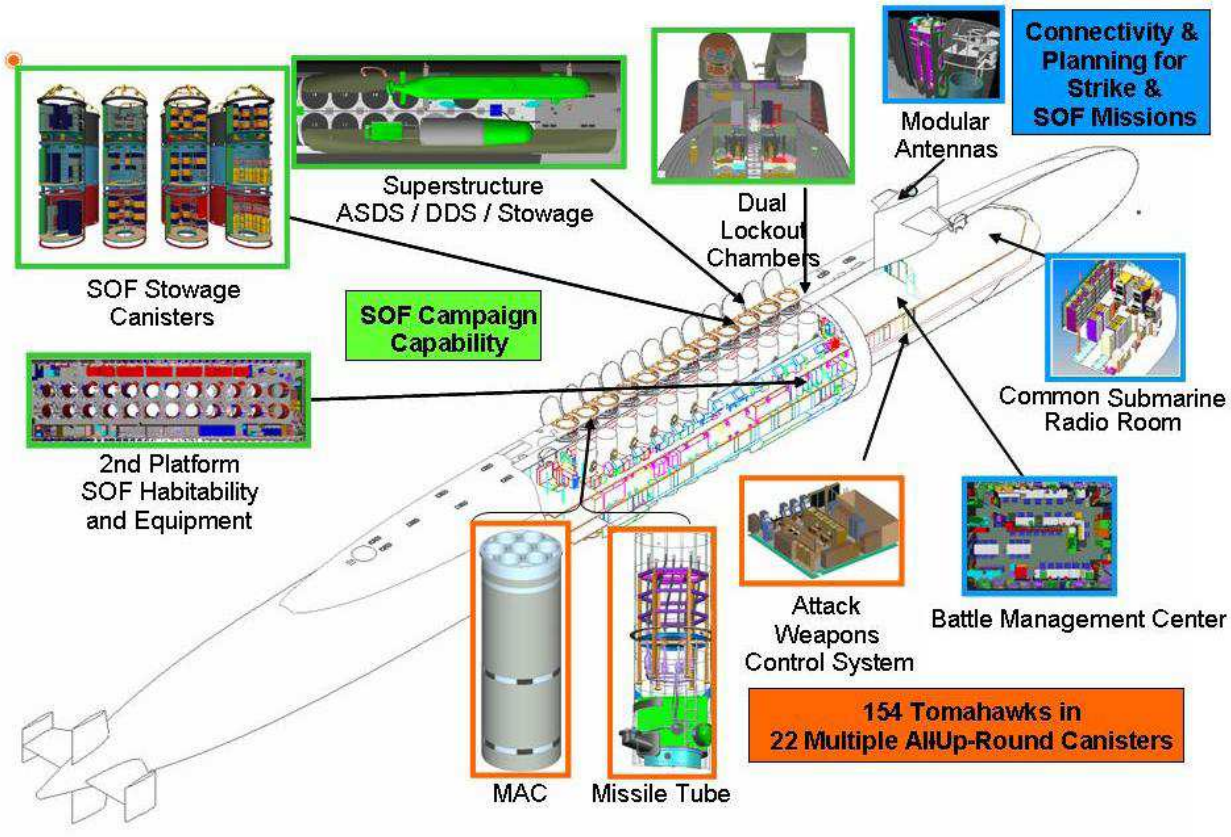
Inherent SSGN Warfighting Capabilities

What sets SSGN apart from other nuclear submarines is the volume available for strike weapons, SOF personnel and their specialized equipment, and the command and control equipment and spaces to support embarked mission specialists. SSGN brings significant inherent capabilities to joint commanders focused on conducting stability operations or winning the Global War on Terror. The SSGN also delivers flexibility and endurance needed to quickly transition to support major combat operations.

SOF Support
SSGN offers the unique capability to employ and sustain a sizable SOF (66 personnel for extended periods and 102 personnel for shorter duration) across a wide variety of missions. Additionally, SSGN provides more than a 40-fold increase in stowage volume relative to current nuclear-powered attack submarine (SSN) capability. SSGN facilitates precise and reliable insertion and extraction of SOF to and from shore objectives with minimal risk of detection. SSGN ability to host the ASDS and / or the SEAL Delivery Vehicle, mounted inside the DDS, enhances the range and endurance of deploying SOF.

Strike Warfare
SSGN will operate in a forward posture and be capable of carrying up to 154 long-range precision strike Tomahawk missiles. To put this figure into context, a single fully loaded SSGN adds a significant percentage to a Carrier Strike Group's (CSG) normal complement of Tomahawk missiles. Neither area denial weapons, such as coastal cruise and tactical ballistic-missiles, nor weapons of mass destruction, pose a significant threat to SSGN. SSGN strike operations leverage undetected close-in presence to enable early surprise attack against an adversary's integrated air defense system and other anti-access systems.

Intelligence, Surveillance, and Reconnaissance
SSGN is able to ensure comprehensive coverage of many information domains including visual, infrared, and electronic. Its persistent presence allows the acquisition of data and information that denial or deception would suppress in the presence of more predictable (overhead) or overt (ship-based or airborne) ISR sensors. SSGN has the ability to embark a substantial team of mission specialists to collect intelligence data and conduct real-time analysis of the data



Battle Management Center

The Battle Management Center (BMC) gives SSGN a unique joint operations center capability that supports SOF mission planning and execution. Located just aft (rear) of the submarine control room, the BMC contains up to 30 workstations; large screen displays support briefings and operational graphics. Printing capabilities, available through the Submarine Local Area Network (SUBLAN), exist throughout the BMC and SSGN.

Figure 2. USS Ohio BMC Layout

Reach-back
Direct connectivity to the Common Submarine Radio Room through the SUBLAN provides an embarked staff element with simultaneous reach-back capacity via:

- Non-Secure Internet Protocol Router Network (NIPRNET)
- SECRET Internet Protocol Router Network (SIPRNET)
- Joint World Intelligence Communications System (JWICS)
- Digital Modular Radio (DMR)

CLOSING AND SUMMARY

The SSGN will deliver key transformational warfighting capabilities to the JFC. These include all the inherent characteristics of nuclear submarines (stealth, endurance, mobility, and firepower) combined with the modular, reconfigurable stowage volume for vast improvements in flexibility, weapons, and equipment needed to perform new missions.

The SSGN retains valuable core capabilities developed by the submarine force during the Cold War. The SSGN also brings new capabilities to defeat enemy anti-access strategies and operate undetected for long periods in a contested forward littoral environment. This capability translates into attractive options

for the JFC and SOF to conduct persistent, clandestine, non-provocative operations close to shore with minimal risk of detection by an adversary. Similarly, when diplomacy or deterrence fails, the SSGN brings overt, precise, and potentially decisive striking power to the fight.

The SSGN will provide the following additional capabilities in support of joint operations throughout the spectrum of conflict:

- High readiness and platform availability
- A stealthy, survivable strike and SOF delivery platform
- Persistent presence to counter any adversary's access denial strategy

CONTACT INFORMATION

CAPT David Hahn, USN
Joint Test Director
(202) 781-3020, DSN 326-3020
david.j.hahn1@navy.mil

Mr. Jaime Degala
Technical Director
(202) 781-4200, DSN: 326-4200
jaime.degala@navy.mil

Mrs. Roberta McIntyre
Scientific Research Corporation
Program Manager
(202) 781-3560, DSN 326-3560
roberta.mcintyre.ctr@navy.mil

Mr. Jason Cronin
Senior Systems Analyst
Scientific Research Corporation
(202) 781-1191, DSN 326-1191
jason.w.cronin@navy.mil

Mr. Mike Morgan (presenting author)
Systems Engineer
Scientific Research Corporation
(202) 781-3404
michael.r.morgan.ctr@navy.mil

Web site
http://www.jc2wta.jte.osd.mil

Mike R. Morgan is an Instrumentation / Communications Systems Engineer working for Scientific Research Corporation. He supports a Joint Test & Evaluation (JT&E) project called JC2WTA (Joint Command & Control for War on Terror Activities) located at the Naval Sea Systems Command (NAVSEA) Washington Navy Yard, DC. He directly supports the test development and execution of the joint test plan for the JC2WTA / T&E program in a distributed joint test/exercise range environment and provides the coordination and facilitation of systems-of-systems data collection for both instrumented and manual data collection to ensure all test data collection plans are both feasible and achieved within both controlled and exercise environments. Mr. Morgan holds a Masters of Science in Systems Engineering and Program Management from Johns Hopkins University Applied Physics Lab, Laurel MD and a Bachelors of Science in Electronics Systems Technologies & Business Administration from Southern Illinois University Carbondale (SUIC).