

Admiral Richard W. Mies, USN

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Admiral Mies graduated from the U.S. Naval Academy in 1967 with a Bachelor of Science degree with majors in mechanical engineering and mathematics. After completing training for submarine duty, he served on two nuclear attack submarines, USS SUNFISH (SSN 649) and USS L MENDEL RIVERS (SSN 686), and a ballistic missile submarine, USS NATHAN HALE (SSBN 623) (BLUE), before commanding the nuclear attack submarine USS SEA DEVIL (SSN 664).

He has served in various command positions including Commander Submarine Development Squadron TWELVE, Commander Submarine Group EIGHT and Commander Allied Submarines Mediterranean, and Command Submarine Force U.S. Atlantic Fleet and Commander Submarine Allied Command Atlantic.

His staff positions include duty on the staff of Commander in Chief, U.S. Atlantic Fleet, Executive Assistant to the Assistant Chief of Naval Operations (Undersea Warfare), chief of Staff to Commander Submarine Force, U.S. Pacific Fleet, and Director Strategic Target Plans and Deputy Director Plans and Policy on the staff of Commander in Chief, U.S. Strategic Command.

Admiral Mies has completed post-graduate education at Oxford University, England, the Fletcher School of Law and Diplomacy, and Harvard University. He holds a master's degree in government administration and international relations. His professional education includes the Flag Officers' Capstone course, the program for Senior Executives in National and International Security at Harvard University, and the Joint Flag Officers Warfighter course.

Admiral Mies is a qualified submariner and naval aviation observer. In addition to unit and service awards, his decorations include the Distinguished Service Medal, Defense Superior Service Medal (two awards), Legion of Merit (four awards), Meritorious Service Medal (two awards), Navy Commendation Medal (four awards), and Navy Achievement Medal.

Science, Technology, and Tactics—A Magical Marriage

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Imagine for a moment a cold, January morning in New London. Standing at a window ... staring out into the misty Thames River ... a fun-loving, battle-tested veteran of World War II is faced with the problem of countering the growing Russian diesel submarine threat.

With a confidence grounded in his wartime experiences, he walks smartly into the office of his “no nonsense” boss, Rear Admiral Fife, and lays out a plan. Admiral Fife readily accepts his proposal and immediately dispatches him to Washington, D.C. to shop his idea around the Pentagon and curry favor with the bureaucracy who must approve his initiative. So taken was the OPNAV staff with this officer’s bold proposal, they immediately signed out a letter directing COMSUBLANT to establish a Submarine Development Group of four submarines—their mission, “to solve the problem of using submarines to detect and destroy enemy submarines.”

With these amazing powers of persuasion, it is no small wonder that Captain Roy Benson had a well-earned reputation of being the man you turned to in New London if you needed a date with a nurse. He was, in the late Admiral Hal Shear’s words, “a man who was on top of everything, a real hard charger.” Most would be content to say that Captain Roy Benson’s personality, big ideas, professionalism, and clear understanding of the need to involve the scientific community in Submarine Development Group efforts were enough to guarantee the SUBDEVGRP’s success. But Roy Benson knew that in order to sustain and improve the Development Group, he needed to achieve some tangible, early success. As a first step, he equipped his boats with a piece of cutting-edge technology, the underwater telephone. No submariner today needs to be reminded how critical the underwater telephone is in achieving successful exercise coordination. In hindsight, the underwater telephone probably prevented the collapse of the Development

Group before it even got started. The first exercise tasking for the Development Group, just months after its conception, involved USS TUSK, with Captain Benson embarked, and USS COCHINO conducting reconnaissance and exercise operations in the Barents Sea.

On the twenty-fifth of August 1949, COCHINO interrupted the exercise to report via the underwater telephone, “We’re having a fire! We’ve got to surface.” Had it not been for the underwater telephone, which alerted TUSK and enabled her to surface and come alongside to evacuate the COCHINO sailors, all hands aboard COCHINO might have been lost. As a direct result of the lessons learned from this saga, the underwater telephone became standard equipment for all submarines. Instead of snuffing out the life of the Development Group, this history-making incident helped to build the Development Group’s lore.

Fast forward to today—I believe we find ourselves in a similar period of uncertainty, and we are going to need similar leadership, vision—a big idea—and a willingness to innovate. So I think this reunion is both critical and timely to our future.

It is a distinct pleasure to be with you here today to pay tribute to a very unique and historic organization that has played such a critical role in the legacy of our Submarine Force. Having spent the past 11 months navigating a desk at U.S. Strategic Command in Omaha, it is really great to be back in New London and near saltwater again.

As many of you would agree, unlike the Battle of the Atlantic, the War in the Pacific was a defining moment for the Submarine Force. Prior to the war, submarines had concentrated much of their training as fleet auxiliaries, coastal patrollers, and on being “the eyes of the Fleet.” But after Pearl Harbor, submarines went forward to conduct unrestricted warfare against the Japanese. This shift in missions caught the Submarine Force flat-footed. It required new strategy and tactics.

Additionally, cautious peacetime training led to a lack of boldness and innovation in many of our Commanding Officers. We were unsuccessful until many of our senior COs were replaced by younger, bolder, more daring officers—officers like George Street.

And for much of the war we were hobbled by defective torpedoes. Our at-sea training and testing never really evaluated the weapon exploders and provided no means of determining if torpedoes ran at their preset depth. The result of this disconnect between the technical community and the operating forces was disastrous for the Submarine Force. Our submarines met with continued and inexplicable failure. Opportunities were lost, and many submarines and lives were lost. The confidence of the crews in their weapons system was also lost. Finally, when USS TINOSA conducted eight repeated point-blank attacks on a disabled vessel and watched its own torpedoes bounce off the side of the ship, serious testing began and the problem was eventually solved.

It wasn’t really a single problem but a series of problems, each one masked by the other. By the time these problems were finally fixed, it was September 1943—nearly two years after Pearl Harbor. Armed with bullets instead of duds, the Submarine Force pressed the attack and changed the tide of the war against Japan. We learned a valuable lesson from that experience—a lesson that’s become an indelible part of our Submarine Force culture, a lesson we have sworn never to repeat.

SUBDEVGRU 2 had its origins in a struggle for relevancy when, in the wake of World War II, many aviators and surface sailors thought the Submarine Force no longer had a mission. But in some measure, SUBDEVGRU 2 was also established in 1949 to ensure we didn’t repeat the

experience of World War II and to ensure that our tactics were closely integrated with our training and technology. If you look at the SUBDEVGRU seal, you will see the key principles upon which it was founded and which have remained the cornerstones of the SUBDEVRON's success: science, technology, and tactics. It is the magical marriage of these three disciplines on which I would like to focus.

At about the same time SUBDEVGRU 2 was founded, the methods of operations research—a scientific method of providing leaders with a quantitative basis for making decisions—had just come into their own. I believe SUBDEVGRU 2, and its successor SUBDEVRON 12, came far closer than their surface and aviation counterparts in embracing operations research and putting it into practice through rigorous and painstaking reconstruction and analysis of both exercise and real world results:

- Exercises were designed and controlled by trained analysts of the Tactical Analysis Group to test new technologies and tactics.
- Design engineers and submarine operators went to sea together to evaluate technical capabilities under tactical conditions that modeling and simulations could never emulate.
- Real world operations—interactions and incidents—from all ocean areas were exploited to learn not only from our successes, which became legion during the Cold War, but more importantly from our failures, which although relatively isolated, were not surprisingly the subject of high level interest.

The marriage of science, technology, and tactics within SUBDEVRON 12 has truly been a magical one. Few marriages could have survived such a stressful period as the Cold War—a period of great transitions:

- A transition from diesel submarines to nuclear powered ones—from ships that were tied to the surface through battery capacity and air to those limited only by food supplies and human endurance.
- A transition from a Submarine Force which started from scratch on Anti-Submarine Warfare (ASW), through one which quickly set the standard for ASW over nearly four decades and successfully helped drive the Russians back into their bastions and into bankruptcy, to a Submarine Force today which has come full circle to once again face multi-mission demands.
- A transition of submarine detection technology from radar to acoustics—from passive, broadband sonar, through passive narrowband, to full spectrum acoustics—and now, to detection capabilities enhanced by active acoustics and non-acoustic detection means.

The marriage has succeeded for 50 years because SUBDEVRON also had many partners. Throughout its history, it has successfully maintained a close relationship and partnership with many other communities:

- Technical community and industry represented by NUWC, NAVSEA, Penn State, Electric Boat, Newport News and others who developed, acquired and integrated new technology into our submarines,

- Academic and analytical communities represented by groups such as the Applied Physics Labs, Sonalyst, A&T, and people like Daniel Wagner, Dave Bossard, and Bill Browning who provided analytical underpinnings and unvarnished “truth” to exercise and operational results,
- Scientific/oceanographic communities like Woods Hole, Scripps, and the Naval Oceanographic Center who enabled the submariners to better know their “terrain” and better exploit the ocean environment,
- The intelligence community represented by CIA, ONI, and the Operations Review Group—people like Rich Haver who guided, oversaw, and reaped the benefits of covert, peacetime submarine collections and provided the *raison d’être* for the Submarine Force’s ability to prepare and shape the battlespace prior to conflict,
- The tactical instructors and teachers—SUBSCHOOL, the PCO instructors, the Squadron deputies, the Tactical Readiness Evaluation teams, and the TYCOM staffs—who could “spread the word,” ensure the right lessons were being taught, and provide direct feedback from the waterfront,
- The Reserve Community who was closely integrated with the active staff—closely integrated because they frequently worked with SUBDEVRON 12 in their civilian capacities,
- The Royal Navy Submarine Force, whose close cooperation and data sharing made them virtually indistinguishable from our own submariners,
- And finally, with the submarine commanders and their crews, whose performance was the ultimate and only meaningful measure of SUBDEVRON 12’s success and a barometer of where future tactical development emphasis was needed.

In reflecting on the history of SUBDEVRON 12, this marriage of science, tactics, and technology has been successful for several fundamental reasons.

An open door. Roy Benson was the point man in establishing a culture open to all members of the scientific community and industry with a willingness to test out any new technology or tactic at sea. That tradition has continued, and the SUBDEVRON Tactical Newsletter has remained a forum for “out of the box” thinking and a free exchange of ideas.

An absolute commitment to truth. To analytically and painstakingly examine every wart, to provide an unvarnished perspective, to see things with honesty and candor—as they are and not how we and our crews would like them to be, or at least how we would like our bosses to think they were.

A unity of command. SUBDEVRON 12 has been consistently supported and recognized Force—wide as the focal point—the principal authority and the editor—if not the author—for the coordination and promulgation of tactical guidance that has been the glue of tactical development, the starting point from which a command can build unity of thought, consistency of expectation, intuitive understanding of underlying tactical precepts, and higher effectiveness in combat.

A firm footing in the reality of the present. To develop today’s tactics using today’s technology for tomorrow’s wars—not to be a hobby shop for future systems designers. To squeeze out as much capability—as many decibels as possible—from existing technology. To train crews how to harness technology and make the most out of what they are given.

A willingness to adapt and evolve. A recognition that tactical guidance is only the 51 percent right answer, that there is no monopoly on good ideas, and that success is often defined by failure. As Churchill said “Success is never final.”

And finally, *a direct tie to the waterfront.* A tie that bypassed much of the design and acquisition bureaucracy, to speed new capabilities to the Force such as the desk top computer, new tactical decision aids, and automated tools contained in the Submarine Fleet Mission Program Library.

A tie that made SUBDEVRON 12 an operational submarine squadron with organic tactical development capabilities—the envy of its surface and aviation counterparts—operational submarines which gave SUBDEVRON credibility and simultaneously kept the SUBDEVRON staff tied to the real world.

Over the course of five decades, the SUBDEVRON’s tactical guidance has continuously been the yardstick that allowed us to measure the new against the old, the catalyst for new initiatives, and the inspiration for many of our brilliant tacticians. Tactical guidance which has allowed us to understand better what can be done and what may not work, and served as the standard by which we could evaluate the readiness of the Force; tactical guidance which provided hindsight into the demands to be levied on technology and fostered Force level and even national level confidence in ship tactical operations. And, most importantly of course, the SUBDEVRON tactical “textbooks” became a vehicle to train and professionally develop a Force that over time became confident in its ability to fight and win over any adversary.

SUBDEVRON 12 has kept the Submarine Force at the tactical forefront to ensure our submarines are capable of fulfilling a myriad of missions—not just ASW, our core competency—but intelligence, surveillance, strike, anti-surface warfare, special warfare, and mine warfare—both independently and as a member of our battlegroups. It has revitalized many of our warfare publications to take undersea warfare into the littorals and help the Submarine Force develop their own special vision of the maritime strategy-”Forward from Under the Sea.”

Although much has changed, the tactical guidance SUBDEVRON 12 developed over the past 50 years reflects many of the vestiges of those hard lessons we learned in World War II, and each Commodore has left his personal imprint on some aspect of those. But in my mind, the greatest strength of SUBDEVRON 12 is not our tactics, but the tacticians and tactical thought it has fostered. The history of SUBDEVRON 12 is really a history of personal innovation within the Submarine Force and its supporting communities. Innovators like John Ekelund and Fred Spiess whose TMA techniques are named after them; inventors like Lisle Anderson, a young officer assigned on temporary duty to SUBDEVRON, who understood Doppler and helped develop our narrowband tracking capabilities.

Our tactics are far from perfect; they have continually evolved, and routinely been supplanted. As a result, they are no substitute for the imagination, resourcefulness, and innovation of our people—tacticians like Frank Lynch, Frank Andrews, Jack Fagan, Jack Darby, Jim Patton and so many others.

To paraphrase a quote from a Russian Manual: The reason that the American Submarine Force does so well in wartime is that war is chaos, and the American Submarine Force practices chaos on a daily basis. War is chaos and chaos can’t be codified. Check lists can’t be substituted for common sense and tactical intuition. Blind compliance can be just as deadly as non-compliance. Furthermore, we must always be prepared for the possibility that our tactics may fail. In peacetime, failure is seldom fatal, but failure to adapt in wartime might be. Our greatest tactic has always been the ingenuity and innovation of our people—our present and future Fluckeys, Mortons, Streets, and O’Kanes. Hence, we must never allow error avoidance to take the place

of boldness, tactical innovation, and a willingness to take risks.

Let me also speak for a moment about the importance of the training and education role SUBDEVRON tactical guidance plays—those Naval Warfare Publication “textbooks” used to teach and train all submarine crews. As a former COMSUBLANT, one of the comments I heard most frequently from submarine commanders and the PCO instructors was that our tactics were sound but, in many instances, they weren’t properly understood or executed. I believe the wide variance in the tactical proficiency we have periodically seen in our ships can be attributed to one fundamental reason—training. Let me focus on just one example.

Throughout my career, I have witnessed many submarine training approaches and attacks. Some of the approaches were executed flawlessly—some were disastrous. Yet it was impossible to tell at the outset which approach would be successful and which would be a failure. Every approach started off in a similar fashion with a TMA maneuver. But some approaches never seemed to graduate from the performance of TMA maneuvers. Yet at the same time it was impossible to codify a standard approach. The successful approach and attack is a combination of art and science. The tactics and precepts involved in an approach can be described, but the art of weaving the tactics into a successful approach is not easily committed to paper. While there is no one right way to conduct an approach, clearly there are many wrong ways. Every approach must be adapted to the tactical situation using time-honored, general precepts. And while changes to hardware, software, and tactics promise future tactical improvement, the only near-term means to better ourselves tactically is through training. If we are to improve, we must apply similar standards and discipline to our tactical training as we apply to the operation of our nuclear propulsion plants—standards of professional knowledge, formality, critical self-appraisal, and, above all, practice, practice, practice. The issue is not how well we compare against our potential adversaries, but how well we compare against our potential. And we depend on the SUBDEVRON to provide the tools to sustain that training.

If past is prologue, I believe we are the victims of our own success. Like our point man Roy Benson and his shipmates at the end of World War II, we find ourselves in the aftermath of the Cold War, in a struggle for relevance. We find ourselves stretched thin—being pulled in many different directions, in jeopardy of being “a mile wide and an inch deep.” “With the demise of the Soviet submarine threat, some people in the Navy no longer believe we have a mission.

Yet, study after study, and organization after organization, who have looked closely at warfare trends, have come to a different conclusion and clearly recognize our relevance—not just for ASW but for a wide variety of missions:

- In a 1998 study on the Submarine of the Future, the Defense Science Board recognized: “submarines are a key and enduring element of the current and future naval force—a “crown jewel” in America’s arsenal ... we need more, not fewer SSNs.”
- Similarly the National Academy of Sciences completed the “Navy 21” study to develop a vision of the Navy in the 21st century. As a result of its deliberations, the panel foresaw a profound shift in the size and look of the Navy of the future with increased emphasis on undersea warfare. A Navy where stealth is wealth. A Navy capable of delivering non-nuclear firepower from submarines similar in mass and impact to that deliverable from carriers, at much less risk in warfare, against our most capable adversaries. A Navy capable of engaging important Third World targets that threaten our interests, with much greater economy of force and with far less risk of politically embarrassing losses of forces and personnel; and the ability to sustain presence and to deter or counter hostile action against U.S. and Allies’ interests with much lower expenditure of resources than ever before possible.

- A recent study by Andy Marshall's Office of Net Assessment came to very similar conclusions: "Submarines will be more important in a number of mission areas, and in some cases may be the only forces that can do certain types of operations during the early phases of conflict against an enemy with a credible anti-access system."

Submarines have the potential to alter the shape of our maritime strategy and force structure by employing their intrinsic attributes in innovative and cost-effective ways. The concept of converting Trident Submarines to deliver special forces and strike missiles ashore—a submerged arsenal ship—is but one example. The attributes of stealth, agility, endurance, versatility, survivability, and lethality enable our submarines to conduct missions and tasks well beyond traditional ASW. These attributes correlate well with our national military strategy and with the four concepts of precision engagement, full-dimensional protection, dominant maneuver, and focused logistics articulated in Joint Vision 2010.

In an age of overhead surveillance and precision munitions where if you can be detected you can be tracked, and if you can be tracked, you can be targeted, submarines are the only naval platforms that can prepare and shape the battlespace without provocation—the only naval platforms capable of waging guerrilla warfare—choosing the time, place, and method of engagement while maintaining the tactical initiative and the element of surprise. Moreover, the uncertainty an adversary faces in not knowing whether, or in what concentration, our forces are present creates leverage out of proportion to our actual force size.

The world has changed, technology has changed, and the complexity of our systems has changed in the 50 years since SUBDEVGROUPE 2 was established, but the need for a closer relationship and close coordination between the technical community and operating forces remains stronger than ever. In this modern age—an age of rapid decision-making, asymmetric threats, overhead surveillance, and precision munitions; an age where information technology undergoes a generational change every 18 months; an age where the submarine force is being pulled in many different directions—the need for a strong marriage of science, technology, and tactics is even greater.

In a recent edition of *Undersea Warfare*, Admiral Skip Bowman spoke eloquently about the need for greater technological innovation in five key areas if we are to evolve and adapt to the challenges of the 21st Century. He stated we needed to:

- ***Get connected.*** To incorporate new technologies for high data rate, interoperable, real time connectivity with the National Command Authority and our operational commanders; to broaden our tactical horizons through distributed off-board sensors and autonomous vehicles; to bring network centric warfare to the undersea.
- ***Get payload.*** To eliminate the "tyranny of the 21-inch torpedo tube"; to carry a wider variety of sensors, weapons, and countermeasures.
- ***Get modular.*** To design submarines with maximum flexibility in mission configuration; to facilitate economical technology insertion.
- ***Get electric.*** To take the next big step in acoustic stealth; to provide simpler propulsion designs with lower energy losses and greater flexibility of energy distribution and storage.
- ***Remain affordable.*** To use open architectures, customized off-the-shelf technology, "build-test-build" concepts, rapid prototyping, modularity, and simpler, reduced maintenance designs to drive down costs.

If the Surface Navy has a smart ship concept, I'd like to submit the Submarine Force has a "brilliant boat" in its new VIRGINIA Class design and in the ideas our shipbuilders and people like John Sirmalis at NUWC are bringing forward.

In closing, I'd just like to reinforce Admiral Bowman's comments and build on so many of our earlier speakers' thoughts. If some people are intent upon making us a leaner force, SUBDEVRON 12's job, and our job, is to continue to make us a meaner one. The marriage of science, technology, and tactics has been a magical one but like any marriage that's lasted 50 years, there's sometimes a potential to take each other for granted. Today, we face a challenge like the one the Submarine Force faced 50 years ago—a period of uncertainty and adversity. But as the poet Byron said, "A man can see farther through a tear than a telescope." Adversity forces us to focus on our strengths and develop them more fully. We must not become complacent or operate on decay heat. We must not let DEVRON 12 become a technological hobby shop. We must not lose sight of the bedrock principles that have defined our past tactical development successes. As we face the uncertain challenges of the 21st century and the accelerating pace of technological change, we need more than ever to renew our "marriage vows," to reforge those bonds with other communities that were first established by Roy Benson in 1949, and draw on the clarity of vision, passion, innovation, and cohesiveness which have been the hallmark of SUBDEVRON 12 and which have served our Submarine Force so well for the past 50 years.