The Commandant's Perspective

Innovation, the Warfighting Laboratory, Sea Dragon, and the Fleet Marine

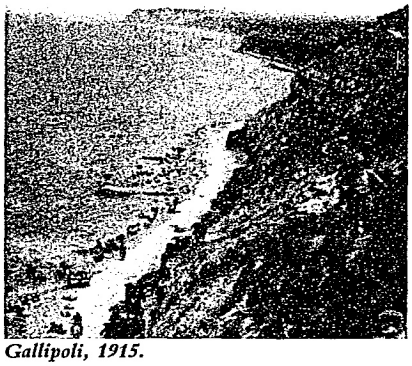
by Gen Charles C. Krulak

Our past is the prologue that will guide us into the 21st century.

"What does the Warfighting Laboratory have to do with me?"
—Fleet Marine, November 1996

"There is no progress without criticism. . . . Curiosity leads to investigation—which opens discussion—which gives rise to opinion—which breeds criticism—which results in improvement."

—Col James C. Breckinridge
MCG, December 1929



Gallipoli, 1915.

The Early Innovators

In 1921, when Maj Earl Ellis published his *Advanced Base Operations in Micronesia,* his advocacy for amphibious attacks to secure advanced naval bases shocked the conventional world. A mere 6 years after the Allied debacle at Gallipoli, the Marines were certainly a vocal minority in advocating the use of amphibious assault. To the rest of the world, including many of the military "experts" in America, the 1915 campaign in the Dardenelles only strengthened their opinion of the futility of amphibious assaults, leading them to conclude that "crossing a hostile beach was no longer feasible."

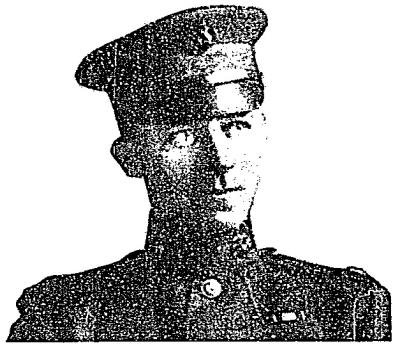
The Marines looked at the Gallipoli assault differently. From 1919 to 1939, the Marine Corps studied the Dardenelles campaign in excruciating detail, first as defenders, then ultimately as attackers. In the course of this detailed study and discussion, the Marines found opportunity where others saw limitations. Major General Commandant John A. Lejeune, embraced Maj Ellis' paper and made it the cornerstone of the Corps' operational concept for the future—even though the Corps didn't have any of the equipment, the doctrine, or the training to make it happen. From 1922 until World War II, the Marines discussed, wargamed, and experimented with the concepts that would allow them to succeed in amphibious assault where others failed. Starting in 1922 the Corps conducted as many tests (or experiments) of its new doctrine and equipment as its budget would allow. The first experiments were called Fleet Exercises or "FLEXs."

One segment of the February 1924 Fleet Exercise pitted BGen Eli K. Cole's 1,750-man landing force against Col Dion Williams' 1,550-man defense force on the island of Culebra in the Caribbean. Williams' force, schooled in the lessons learned in the Gallipoli campaign from the German and Turkish defenders, were ready for the attackers. Cole's amphibious assault force, equipped with experimental new doctrine, tactics, and equipment, was the test vehicle for operational reform in the Corps. Additionally, Cole's Marines possessed two experimental types of armored troop barges, a new amphibious tank, and rudimentary naval gunfire and aviation support.

Both Williams and Cole believed in the Corps' new operational concept. Howev-

er, even though Williams desperately wanted Cole's amphibious assault to work, he knew that he must defend the beaches at Culebra to his utmost. He had to push Cole's forces to the point where the weak areas would surface. He needed to push Cole's forces to failure. Williams did what he needed to do. The after-action report called the exercise a "fiasco." The two prototype armored troop barges didn't perform as well as expected, the amphibious tank developed by Walter Christie proved unseaworthy, the Navy coxswains didn't reach the beach at the right time, the supply offload was complete chaos, the simulated naval bombardment would have had little effect upon the defenses, and the air support was insufficient.

Many of the Marines' critics said, "I told you so." Again the Marines saw it differently. In one observer's opinion, the fiasco at Culebra in 1924 identified enough errors to keep the Corps busy for 15 years. The experiments in 1924, and the subsequent experiments in the years leading up to World War II, allowed the Corps to forge ahead in the development of workable amphibious doctrine, tactics, and equipment that later proved decisive in not only the Pacific, but the European and North African theaters as well. More importantly, the FLEXs of the 1920s and 1930s provide the modern day Marine Corps with a model for experimentation and innovation that we can use as we approach the 21st century. This model is called Sea Dragon.



LtCol Earl H. "Pete" Ellis, author of **Operation Plan 712, Advanced Base Operations in Micronesia,** *which became the foundation of the Corps' island-hopping campaigns during World War II.*

Changing Times

Today, the Marine Corps serves as our Nation's force-in-readiness, ready to fight—anywhere—anytime. The 21st century, by all indications, will be a century of change. Changing global political alliances, demographics, and economic powers, when combined with the rapid infusion of accessible high-technology weapons and information systems will change the way our adversaries will fight. Our adversaries may, and probably will, look completely different from the one we saw in DESERT STORM. In the 21st century, in addition to vastly improved conventional capabilities, our adversaries may field high-technology, asymmetric counters to our Nation's military and economic areas of strength. These changes mandate that the United States field an agile and adaptable Marine Corps and Navy, a force that can quickly react to global conflict, handle missions ranging from humanitarian relief to high-intensity conflict, and function in terrain ranging from open ocean to Third World urban slums.

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BGen Eli K. Cole commanded the landing force in the 1924 Fleet Exercises.

A New Operational Concept

The strategic and operational challenges arising in the 21st century will mandate that the Navy and Marine Corps change. Merely buying new equipment and adapting to new technology as it becomes available is NOT the kind of change we need. We need change fueled by new ideas. In the words of Abraham Lincoln, "As our case is new, so we must think anew." We need to replace the 20th century "industrial/attrition" mindset with one that blends high-technology and maneuver warfare with the advantages of seabasing. This is the rationale behind the generation and development of Operational Maneuver From the Sea (OMFTS). This is the Corps' latest operational concept, and it will drive the Corps' doctrine, tactics, training, and equipment strategies for the next century.

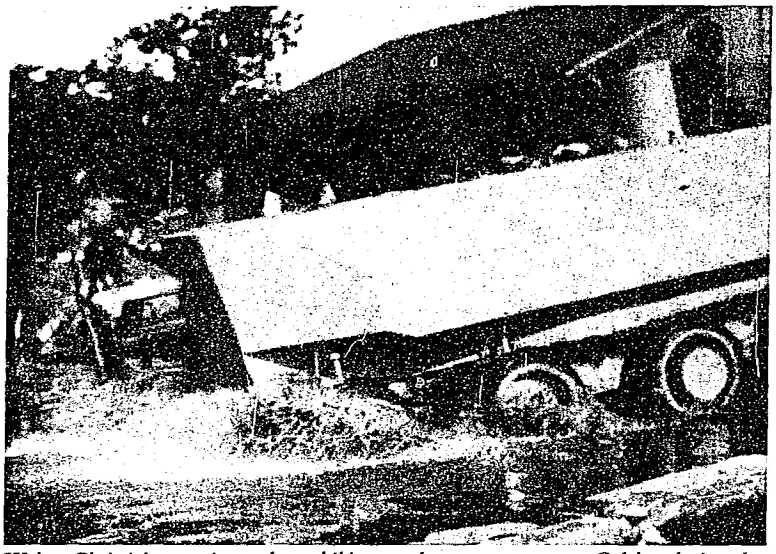
The Way Ahead

The Marine Corps is readying itself for OMFTS with three concurrent and interrelated efforts—we are making Marines; we are procuring and experimenting with advanced technologies; and we are institutionalizing innovation. Along the way, we will continue to do as we always have—to fight and win the Nation's battles.

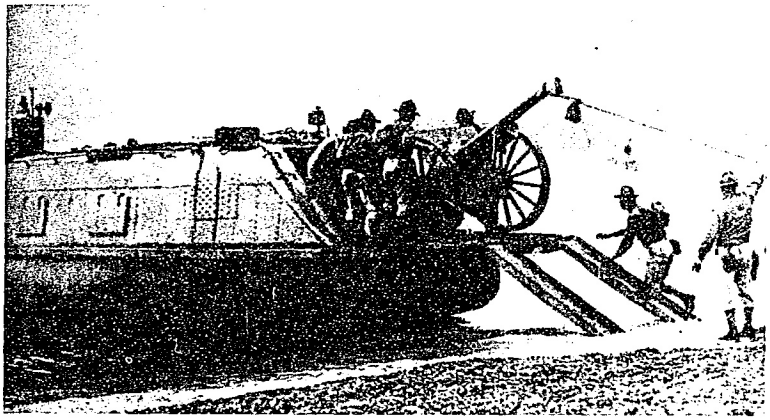
People

Before we talk about technology and equipment, we must talk about people. The Marine Corps' focus rests upon the enhancement of the individual Marine and his or her ability to win in combat. Therefore, our most important OMFTS enhancement will be in the training and education of the individual Marine. Ultimately, people, not

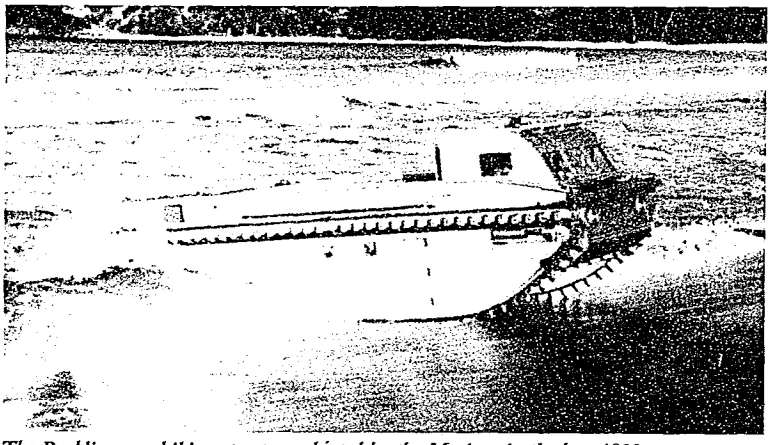
Col Dion Williams, shown here as a brigadier general, defended Culebra.



Walter Christie's experimental amphibious tank on maneuvers on Culebra during the 1924 Fleet Exercises.



Marines unload a 75mm howitzer from a "beetle boat" during an exercise on Culebra. This craft was the forerunner to the landing craft, vehicle, personnel (LCVP) used during World War II.



The Roebling amphibious tractor, adopted by the Marines in the late 1930s, was an answer derived from the experiments, problems, and failures encountered in the early Fleet Exercises.

machines, define our success in war. Accordingly, we will equip our Marines, not man our equipment.

Marines are the centerpiece of the Corps. All the technology and innovation in the world make little difference if we don't educate and train our Marines. On the battlefields of the 21st century, the junior enlisted Marine is going to have access to, and the requirement to use, more information than a battalion commander might today. This Marine must be able to improvise and innovate on the fly, on an increasingly complex and chaotic battlefield. This Marine must be comfortable with high-technology weapons and information systems and trained to know what to do with them. Above all else, the individual Marine must be a warrior without peer. We must leverage technology to provide demanding and realistic training for our Marines, allowing them to continually expand their warfighting envelope. The Marine Corps cannot wait until the 21st century to initiate these changes to our training programs. We are forging ahead with new initiatives in recruit training, cohesion, simulation, and information-age education—all designed to improve and enhance the Fleet Marine's warfighting ability.

Equipment

The Marine Corps is aggressively pursuing new technologies to enhance our intelligence, information, communications, mobility, logistics, and fire-support systems so that we can effectively conduct OMFTS. Toward this end, the Marine Corps' latest development and procurement programs support this operational concept, with systems such as the V-22, the AAAV, the Joint Strike Fighter, as well as Navy projects such as the LPD-17 and the LHD to name but a few.

But preparing the Marine Corps for the 21st century requires more than buying new equipment, it requires an institutional commitment to change. The accelerating rate of change in our operating environment requires us to continually anticipate change, and "out-innovate" it. Just laminating future technology on current doctrine and equipment won't help us one bit. To win in the 21st century, the Corps must "steal a march" on global change. How are we going to do this? We are institutionalizing innovation.

The Warfighting Laboratory and Sea Dragon

In October 1995, we stood up a Warfighting Laboratory at Quantico. This laboratory serves as the conduit for operational reform in the Corps. It is investigating new and potential technologies and evaluating their impact on how we organize, equip, educate, and train to fight in the future. At the forefront of this effort is the testbed we call Sea Dragon. Sea Dragon is not one particular innovation or idea, but rather a commitment to innovation. It is in no way, shape, or form a predetermined force structure or a predetermined operational technique, but rather a method of evaluating potential structures and techniques.

In conjunction with the Warfighting Laboratory we have established a Special Purpose Marine Air-Ground Task Force-Experimental (SPMAGTF-X) at Camp Pendleton, similar to BGen Cole's 1924 experimental assault force. The Warfighting Laboratory will investigate and obtain new technologies that might support OMFTS in the 21st century, and then send them to the SPMAGTF-X for test and evaluation. When the situation permits it, the laboratory will send some of the new technologies directly to the Fleet Marine Force for evaluation. The laboratory will conduct several AWEs (advanced warfighting experiments), the first of which will take place in February of 1997 at Ft. Irwin, CA. These AWEs are nothing new. The parallels with the FLEXs held in the 1920s and 1930s are not accidental. The AWEs of the 1990s are the same, only they support our new operational concept—OMFTS.

In my travels to the posts and stations of the Corps, I have found that many Marines have questions about the Warfighting Laboratory, Sea Dragon, and the AWEs. Some Marines have the impression that Sea Dragon and the AWEs are about dismantling our battle-proven Marine Corps, replacing it with technology-dependent, firepower-based, squad-sized forces. Some Marines also believe that these squad-sized units are demonstrating what our new operational concept, OMFTS, is going to look like in practice. Nothing could be further from the truth. First, that is NOT what the AWEs are about. Yes, the first AWEs involve mainly smaller units, but that is only one test—one experiment—in a series of many. The first AWE deals with small teams, operating on an "extended" battlefield. From this test we hope to learn about the problems associated with such dispersed units in terms of command and control, logistics resupply, mobility, and fire support. Just as Col Williams' force did to BGen Cole's amphibious assault force at Culebra, we are going to push the units involved in the AWEs to the point where they fail—to the point where we find the weak areas and the exploitable seams. At the conclusion of each AWE, we will scrutinize all the tested concepts, technologies, and tactics. We will retain what works, investigate why some fell short, and discard those elements that showed little utility—just as our predecessors did in the 1920s. It is very possible that the first AWE will identify technologies and tactics at the small unit level that will work even better in larger units. Many of the initiatives focus on equipping the individual Marine rifleman with the new and improved warfighting equipment. In this regard, no matter the size of the operation or unit, these initiatives will pay tremendous dividends.

Just as with the 1925 Oahu FLEX, during which the Corps conducted a two-division amphibious assault with only 1,500 Marines, we are trying to dis-

The Corps' Chemical/Biological Incident Response Force testing ways for Marines to counter an emerging threat.

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Marines will continue to train for possible deployment to "any clime and place," to include urban conflict.

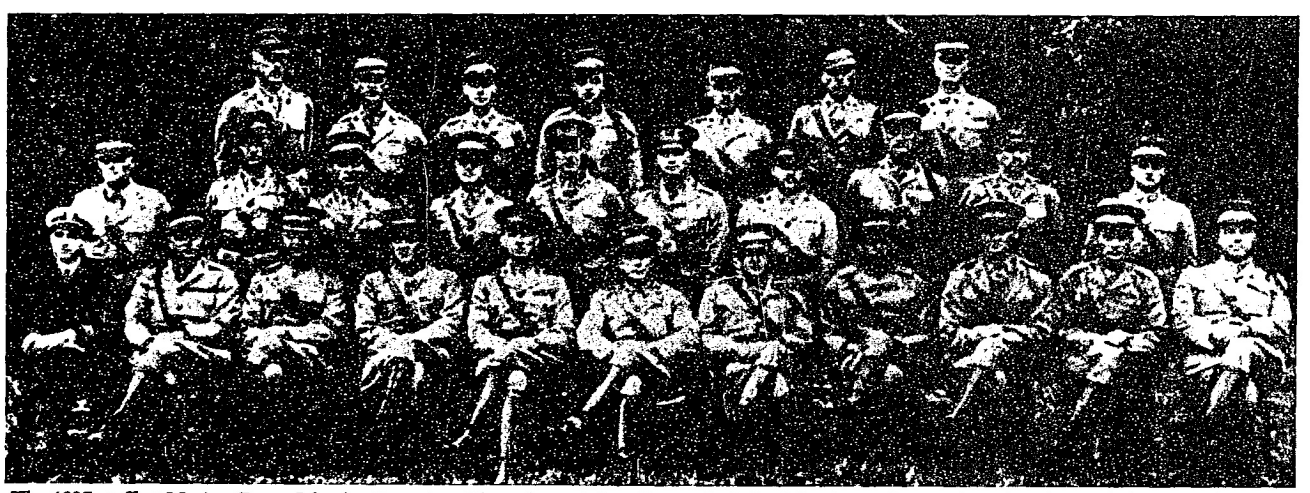
Field tests are the proving grounds for tomorrows MAGTFs.

cover what works and what doesn't work at the small unit level. It was in these small scale experiments that the Marine Corps identified and developed the doctrine, equipment, and training that was used during World War II in amphibious operations ranging from the battalion-level raid on Choiseul in 1943 to the Normandy landing in 1944.

Innovation requires risk, and I expect some of the Warfighting Laboratory's initiatives will fail. If we aren't pushing innovative technology to the point of failure—if we only test what we expect it to do—we won't find out what other things it can do. If the Marine Corps and Navy innovators didn't push amphibious assault doctrine and technology to the point of failure in the 1920s and 1930s, what would have been the impact on the Pacific, Mediterranean, and Normandy assaults? It's easy to test for the expected, we have to test for the unexpected. That is exactly what I expect the Warfighting Laboratory to do.

When I described the Warfighting Laboratory, I called it the conduit for operational reform in the Corps. That is true, but more importantly, it is the individual Fleet Marine (yes, that means you) who is the centerpiece for this reform. A warfighting organization cannot institutionalize innovation without the support and the input of the warfighters. Therefore the most important innovating mechanism in the Warfighting Laboratory is you. Without your input and support the Laboratory will go nowhere. The Marine Corps needs your ideas on innovation. The laboratory needs them. I need them. You, the Fleet Marine, walk the point in the innovation process. This is so important to me that I've instructed my staff to ensure that I see each and every Marine's input concerning the Warfighting Laboratory, whether in the form of a Marine Mail, a message, a letter, or a point paper, anything—I want to see them all—good and bad. If you have an idea or read about something you think could help, send it. If you have concerns with the Warfighting Laboratory initiatives or processes, I want to hear about them. If you think we are on track, let me know that too.

Additionally, in my planning guidance, I tasked each and every Marine to "spend part of each day talking about warfighting: learning to think, making decisions, and being exposed to tactical and operational issues." You have to understand how critical these discussions are to the innovation process. In these discussions, the collective intellect of the group can bring to light not only the problems associated with executing our current missions, but more importantly, the problems and solutions associated with our future operational concept. Attack this new concept just as tenaciously as Col Williams challenged BGen Cole's assault force at Culebra. Find the problem areas. Find the exploitable seams. Find the potential solutions to these problems. Find the



The 1927 staff at Marine Corps Schools, Quantico. They educated the officers who helped develop, refine, and employ the amphibious capability.

opportunities that others may have overlooked. Most importantly, don't keep your discoveries to yourself. Submit your group discussion points and findings, no matter how rudimentary, via the mediums listed at the end of this article, so that we can feed them into the Corps' innovation process.

One of the most successful and ultimately decisive periods of innovation in the Corps' history occurred during 1933, when Major General Commandant Ben H. Fuller stopped classes at what is now the Command and Staff College and instructed the students—Marine and Navy—to write down what we needed to do to conduct successful amphibious assaults. Many of these students had never participated in, or even seen, an amphibious assault. All they had to go on was their own intuition and common sense. Of that experience one of the students wrote, "we all approached the subject . . . about the same as every other committee, with a lantern in one hand and a candle in the other—but neither of these seemed to throw much light on the subject, so we wound up hiding our lights under a bushel and using the imagination that God gave us for this particular purpose." From the efforts of these Fleet Marines came the foundation of the seminal document, *The Tentative Manual for Landing Operations*, from which the Marine Corps developed the doctrine, tactics, and equipment requirements that allowed the Marine Corps and the U.S. Army to successfully project amphibious power in every theater of World War II.

"The demands of the 21st century mandate that we innovate for the future. If we all work together, along with our brother warriors in the Navy, we will again revolutionize the way this Nation projects power from the sea."

As MajGen J.F.C. Fuller stated, amphibious warfare was "the most far-reaching tactical innovation of the war." This innovation flowed from our experiments at Culebra, from the combined intellects of the students at the Marine Corps Schools, and, more importantly, from the inputs and vision of the Fleet Marines. Right now, we have the same potential innovators and idea generators in the Fleet Marine Force and the Navy. The Warfighting Laboratory's table of organization (T/O) allows for 36 Marines, but the most important laboratory has a T/O of 174,000. Whether you are a second lieutenant, private first class, colonel, petty officer, or admiral, the Corps needs your ideas.

My study of the interwar period shows that when the Marines innovated as a team, the Corps made its greatest progress. Yes, they failed in some of their experiments, but in spite of their failures these innovators continued to forge ahead, fueled by a tenacious quest for the possible. The demands of World War II bore testament to the fruits of their labors. Many times they found solutions for seemingly insurmountable problems in tactics, doctrine, and technology uncovered by probing the realm of the possible in peacetime. Luckily, there was no room on that team for people happy with the status quo. Neither the Corps nor the Country could bear the cost of not changing. The demands of the 21st century mandate that we innovate for the future. If we all work together, along with our brother warriors in the Navy, we will again revolutionize the way this Nation projects power from the sea. The first step is the hardest—breaking the shackles of our 20th century mindset. If we can do that, the rest will be easy.

What does the Warfighting Laboratory have to do with you? . . . . *Everything.*

US MC

You can send your inputs to Gen Krulak via normal *Marine Mail* or to the following address:

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