The Next Fight

Marine Corps Aviation: 2030 and beyond

by LtGen Mark R. Wise

"The United States is our enemy."
—Sergei Riabkov, Russian Deputy Foreign Minister, April 2021

"The threat of a Chinese attack on Taiwan is manifest during this decade; in fact, in the next six years."
—ADM P. Davidson, (Then-outgoing) Commander, INDOPACOM, April 2021

This is second in a series of articles describing how Marine Corps aviation will support the Marine Corps of 2030 and beyond in theaters of war around the globe. We are thinking to the future, and that means we focus on expeditionary bases and how we will get our Marines to the fight at the time and place of the littoral force commander's choosing.

"Our ability to innovate is a hallmark of the Corps."

"It demands rigorous intellectual work … and a certain ruthlessness to abandon familiar ideas, capabilities, and platforms."
—Gen D. Berger, Commandant of the Marine Corps, "2021 Force Design Annual Update"

The 2030 Marine Corps

Our pacing threat is the People's Republic of China, but as Minister Riabkov reminds us, it is not the only threat. We will be prepared to act across the levels of war and in all theaters of war across the spectrum of competition. That operational agility will enable us to be ready at the time and place of the commander's choosing. We must think far ahead of the threat, innovate, and change.

Our Commandant has made clear that the Marine Corps is and will remain the Nation's expeditionary power projection force. We will:

- Operate from hardened bases at distances beyond the reach of most adversary long-range strike capacity.
- Operate from mobile, defended seabases that inject uncertainty into the adversary A2/AD targeting calculus, or from assets such as CVNs and LHAs/LHDs optimized for F-35B operations inside adversary strike capability.
- Operate from a large network of expeditionary shore-based sites, regularly displacing and shifting operations to improve survivability.
- Provide reconnaissance and counter-reconnaissance to the naval expeditionary force and to the joint force commander. This means we will have ISR assets to give the naval force the picture forward.

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"Littoral operations are inherently aviation intensive, because naval operations are inherently aviation intensive."
—TM-EABO

Ships

We are thinking constantly about innovating in the naval campaign. This means thinking about how to use ships in agile and new ways as well as protecting those ships as they control sea lanes of communication. The competition continuum demands decisive action in the world's littorals—action at which the Marine Corps excels.

Amphibious assault ships—LHD-1 *Wasp* class and LHA-6 *America* class, as well as the *Queen Elizabeth* of our British allies—are the premier platforms

for afloat MAGTF operations, and our integration into that naval capability is key to the success of tomorrow's MAGTF and naval strike force. We are getting better at this tighter integration into naval command and control, experimenting relentlessly to get it right.

As we think to 2030 and beyond—a "generational undertaking," as the Commandant describes it—it is instructive to absorb the lessons of the last time the Marine Corps executed change of this magnitude. We are standing on the shoulders, today, of the giants who built the foundations of the modern, expeditionary Marine Corps. They too were preparing for littoral operations against a peer threat. They too were using new technology, new tactics, and new thinking to maximize the warfighting punch of an agile force. They too invented or modified platforms to provide new capabilities, and their relentless focus on innovation and on swift, flattened decision-making processes yielded historic results. We are on the same path today.

Naval Innovation, Advanced Basing, and Peer Combat

The Marine Corps has a maritime soul, and a hallmark of Marine Corps success has always been naval innovation: building the technology and developing tactics to have us ready to fight from ship-to-shore and keeping a sharp lookout for new capabilities that can make us tougher, faster, and smarter. The modern Marine Corps has its roots in the driving, relentless innovation of our forefathers in the years between World Wars I and II, and that interwar period is instructive as we move into a similar period today. That period, as now, revolved around technology, doctrine, and the farsighted planners who pulled the two together.

It is difficult now to place ourselves into the worldview of the 1920s and 1930s. At the time, officers and military planners were still recovering from the brutality of the World War I trenches and the attritionist mindset that killed millions on land, at sea, and in the littorals. Jutland and Gallipoli overshadowed the views of senior Army and Navy leaders as they envisioned naval campaigns dominated by battleships and ground campaigns where amphibious operations were thought to be impossible or futile.

In the wake of the Washington Conference of 1921, prescient Marine and Navy officers foresaw a looming threat in the Pacific and knew they would need to build a different kind of naval striking force tailored to power project sea, air, and amphibious forces to wrest control of the sea and the advanced bases in Micronesia from a determined foe. The Navy and Marine Corps would need to adapt and change and experiment with new capabilities—vastly different than the ones they had employed in World War I.

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For the Navy, these interwar years were mired in debate as one type of capital ship, the battleship, was supplanted by another: the aircraft carrier. Admirals of the 1920s and 1930s were battleship men, and the idea of any other ship as centerpiece of naval strategy was anathema. By the end of World War II, however, the carriers had come into their own—in many ways the center piece of the naval striking force—with now-legendary names like Halsey, Mitscher, Spruance, Fletcher, and McCain changing forever the very heart of the fighting Navy. Now the aircraft carrier reigned supreme, despite the fact that twenty of those carriers were damaged or sunk during the ferocious fighting in the latter half of the war. Such losses were attributable not to the ships themselves but to the savage nature of the A2/AD threat of the day—reminding us that these powerful instruments of war were vital, yet far from invincible.

In addition to employing big-deck carriers, the World War II Navy pioneered the CVE "escort carrier" and CVL light carrier or "jeep carrier": lighter, smaller carriers easy to produce, man, and deploy. Of all the carriers built during the war, more than 80 percent were these smaller ships, mostly built on commercial hulls and thus slower than the bigger capital ships. Light carriers were sometimes even cruisers with a flight deck simply welded on; they were very top heavy in rough seas and frighteningly difficult to handle but crucial real estate for attack aircraft and, in particular, for the then-new concept of night-attack squadrons. These escort carriers were crucial in defending task forces against aircraft and submarine attack and for supporting amphibious landings in both the European theater of war and in the Pacific campaign. Light carriers saved the day during the 1944 melee at Leyte Gulf and saved Admiral Halsey's Taffy-3 task force in the blue-water battle at Samar. Innovation wins wars.

The Marine Corps underwent its own metamorphosis during this period. In the summer of 1939, the Marine Corps stood at an authorized strength of 18,000 Marines. The whole fighting force was two brigades, totaling four battalions: one brigade in San Diego, one in Quantico, both stood up just that summer. There was neither a Camp Pendleton nor a Camp Lejeune. Marine Corps aviation, only three years old as a separate and distinct part of the Marine Corps, consisted of 1st MAG and 2nd MAG, both of which were a month old. We had only a few dozen planes, including biplanes, a budding glider program, and flying boats and inshore light amphibians.

We experimented, even then, pursuing (and then abandoning) such ideas as amphibious gliders. Marine aviation at that time was considered to be critical

to the then-new concept of amphibious operations, but no one could figure out how to get airplanes to the fight in the numbers we needed or how to maintain the planes and supply the units flying them. The obvious answer was forward expeditionary airfields, but as the Japanese threat grew in the early 1940s and came into ugly focus at Pearl Harbor, planners realized that the Pacific Ocean was too vast to use solely short-range landbased aviation. We would have to operate from a seabase, specifically Navy carriers, until such time that we could flow from that carrier to an expeditionary base ashore—like ADM Halsey and Gen Vandegrift did so successfully at Guadalcanal in 1942 and in the battles that followed. They would seize and defend islands to use as staging bases as we pushed toward the Japanese mainland.

Reflecting on that naval campaign, Vandegrift thought the power of naval aviation (Navy and Marine) flowed from the synergy and mutually supporting nature of their maneuvering seabases and expeditionary airbases ashore. Today, both Services have aviation platforms—tailhook, vertical, tiltrotor, and STOVL—that can support a naval campaign from a variety of seabases is a source of strength and a unique advantage for our naval strike forces today.

In the late 1930s, as today, our doctrine maximized our technological innovations. The *Tentative Manual for Landing Operations* was only five years old in 1939; the *Small Wars Manual* was in draft form. That latter publication, released in 1940, put forth the close air support doctrine and theory we still follow eight decades on:

> In order to secure the full measure of cooperation between air and ground forces, it is necessary that each understand the problems of the other. The aviator must know something of the tactics of the ground patrol, and he must be ready and willing to assist the ground commander. The ground commander should understand the hazards and limitations imposed on aviation operating over difficult terrain, and should not expect the impossible.[1]

The *Small Wars Manual* broke aviation into three types—reconnaissance, combat, and transport—which is not far from how we think of aviation today. For example, our current mantra of "every aircraft a sensor" and our Commandant's emphasis on maritime reconnaissance and counter-reconnaissance echoes how we thought in the 1930s:

> Primary consideration should always be given to reconnaissance ... at least twice the number of observation or scouting airplanes will be required. (They will conduct) dual missions of scouting and attack operations; visual reconnaissance will be the principal method of obtaining information.[2]

As capabilities and doctrine matured, they often adopted the personae of their creators. Gen Lejeune and the Commandants who followed him insisted that the Marine Corps think about, train for, and anticipate amphibious operations and movement to, and across, the littorals. The planners and experimenters found—in the 1930s, just as today—they needed aviation to tackle some of the problems inherent in amphibious assaults, such as attacking reverse slope artillery that naval gunfire could not address or providing close air support to ground forces.

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Deeply impressed by the Japanese landing craft he had seen in 1937 as an officer in Shanghai, an aggressive young captain named Victor Krulak began a one-man campaign to bring such craft—and the doctrine to maximize their capabilities—into the Marine Corps inventory. He created training events as far afield as Culebra and as close as Quantico, putting Marines aboard ship and sending them ashore over and over for months on end and driving his men to develop, practice, and perfect the foundational amphibious warfare tactics we use today.

Combat in the Pacific

In the summer of 1942, Marine aviation in the Pacific began flowing from ships and staging ashore in the first iterations of what we now call expeditionary advanced base operations (EABO) and distributed aviation operations. The now-legendary CACTUS Air Force on Guadalcanal—under the command of equally legendary Marine hero Roy Geiger, who took the title "ComAirCACTUS"—addressed and overcame the same problem that we think about today: naval forces spread across an immense ocean and 6,000 open-water miles from home bases:

> (W)hen the First Marine Division made its initial landings in the Solomons the ground forces were beyond the effective flight range of Marine fighters and dive-bombers.
>
> Denied escort carriers of their own and tied down to nearby, short-range land bases or to captured enemy airfields within actual objective areas, Marine aircraft had to be committed on a catch-as-can basis, shuttled in piecemeal ... *such a concept was at distinct variance with the expected usage if not the fundamental role of Marine aviation.*
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> Both Marine pilots and troops felt frustrated. Direct air support in the form of Marine aviation could not be supplied to the landings at Guadalcanal until thirteen days after the landing; 1st MarDiv, struggling against heavy odds to hold its perimeter, had to get along as best it could without benefit of air cover. Japanese aviation superiority was such that for the first two weeks at Guadalcanal it was definitely a one-sided affair.[3]

Ignoring his shortage of pilots, aircraft, ammunition, fuel, water, and food, Gen Geiger set up shop in a wooden shack and went to work. He built out the force: across islands and across Services. Using Marine, Navy, and Army pilots and planes scattered across tiny strips on far-flung islands, over sixty days in the fall of 1942 the CACTUS Air Force took control of the skies and of the support to Gen Vandegrift's landing forces. This lesson is instructive to us today.

In October and November 1942, when the *Enterprise* limped into port

for combat damage repairs, the Navy flew several squadrons of fighters and dive bombers to Henderson Field and operated very successfully side-by-side with their Marine and Army brothers, taking the fight to the enemy in the air, attacking their ships and aircraft, and providing close air support to the Marines until *Enterprise* was ready to return to full service.

The foresight in planning these operations paid off in the next two years as the Marines and Navy drove across the Pacific, seizing advanced airbases on islands, flowing from and to escort carriers as the situation dictated, operating carrier aircraft aboard ship as the first true iteration of the air-ground team, and carrying the fight against—and defeating—the Japanese Navy. These operations revealed an important operational insight as relevant then as it is now and will be into the future: expeditionary landbased and seabased aviation operations are *complementary* and *impose costs* on the adversary, who will be on the horns of a dilemma. This is classic maneuver warfare.

By 1945, that tiny force of 18,000 Marines had grown to 486,000. Even the Army followed the Marine Corps' amphibious landing manual, fighting their way ashore onto Sicily, Italy, and France albeit against a different enemy and in a different theater. Air-ground coordination was now theology and doctrine, written in blood. This momentum and the synergy between air and ground carried into the postwar years, as finally planners

> felt they had a solution to the ship-to-shore problem: the use of helicopters, which would fly off of well-dispersed carriers and drop attacking troops behind shore defenses. Major Generals Shepherd, Harris and O.P. Smith and the Commandant felt that "vertical envelopment" gave new life to the doctrine of amphibious warfare.[4]

The Marine Corps, through work and grit and hard thinking, had established itself as a naval expeditionary force that could innovate successfully; ADM Halsey himself insisted that these World War II Marines were "the fightingest of fighting men."

Form followed function as the Marine Corps paired new technology with new tactics and new doctrine—as an integral member of a naval team to win our Nation's war. We can learn from this period of innovation, tactical agility, operational focus, and victory in the Pacific.

"Let him who desires peace prepare for war."
—Flavius Vegetius Renatus, 300 AD

Lightning Carrier

From these lessons of our history, we can draw intellectual and operational sustenance for the challenges of today. The ideas pioneered by our forebears resonate; the ships and platforms are different, but the spirit of innovation is the same. The strength of the Marine Corps is in synergy with the Navy in new capabilities used in new ways.

One of these ideas is the Lightning Carrier. This combines amphibious assault ships with the superior aviation capabilities unique to the F-35B. By employing a fifth-generation aircraft from amphibious ships, we in a stroke nearly double the number of "carriers"—to our CVNs we add LHD/LHAs—from which the United States can employ fixed wing aviation. Lightning Carriers can reposition and have operational effects anywhere within 3.9 million square miles within 24 hours; that is naval agility.

The F-35's high-end sensor suite and electronic warfare capabilities make it less dependent on Airborne Early Warning and Control and dedicated electronic attack assets in most threat environments compared to its 4th generation fighter counterparts. We will maximize F-35, and that means employing it integrated in a larger naval campaign.

Lightning Carrier is a naval amphibious assault ship equipped with up to two squadrons of F-35Bs, which equates to twenty aircraft per ship. Lightning Carriers can deploy independently, as part of an Amphibious Ready Group/Expeditionary Strike Group, or in conjunction with a Carrier Strike Group. Missions traditionally performed by specialized aircraft (air-to-air combat, air-to-ground strikes, electronic attack) can now be executed by a squadron of F-35s.

We have done this before, to include the 1991 Gulf War and Operation IRAQI FREEDOM in 2003, with "Harrier Carriers" providing seabased TACAIR sorties.

We have also done this with F-35. We sent VMFA-121 aboard *Wasp*, March and April 2019, to work this concept as part of BALIKATAN. For this exercise, VMFA-121 (-) deployed ten aircraft and ten pilots. This is the best stress-test simulation of the Lightning Carrier concept we have executed to date.

To do this, 121 experimented with two combinations of aircraft. The first was ten aircraft. Second was a six-aircraft mix. This small-scale, short-timeframe experiment was a success, yielding an 87 percent mission capable rate and 92 percent sortie completion rate once those planes were launched. The success of 121's experiment is something we can build upon, so too will be the results of VMFA-211's deployment aboard *Queen Elizabeth* later this year.

"The prospect of Chinese use of force is much closer to us than most think."
—ADM John Aquilino, (Then-incoming) Commander, INDOPACOM, March 2021

Basing

Everything we will do to prosecute a littoral campaign requires expeditionary basing, expeditionary command and control, and expeditionary fires. Lightning Carriers can provide the reach and punch, but bases ashore will be crucial to ship-to-shore movement, sustainment and protection. The ACE is uniquely postured to succeed in this environment through innovation, collaboration, and a focus on operational agility.

This spring, the Commandant of the Marine Corps wrote:

> Stand-in forces will be constantly present in key maritime terrain during periods of competition below the threshold of violence, deterring and countering nonlethal coercive behavior and other malign activity directed at U.S. allies, partners, and other interests. These same forces will remain inside an adversary WEZ to provide necessary support to naval and joint campaigning should competition escalate to war.

Critically, given the vulnerability of large, fixed bases and shore-based infrastructure to long-range precision strike and the challenges of adequately defending that infrastructure, the stand-in force must be able to perform these functions from a *strictly expeditionary and highly mobile* posture.[5]

He pointed out another truth: many people both within and without the Marine Corps advocate for posturing, training and deploying as we have always done—simply because we have always done it. This shuts down innovation and new thinking, the very things on which we are embarked today. Many assume we are going to do Camp Bastion again: a giant iron mountain of equipment built up over months and providing a huge, fixed target.

The opposite is true. We are going to be light, agile, and mobile. This is expeditionary thinking.

Getting Marines ashore and sustaining them there means building out expeditionary advanced bases, protecting those bases as aircraft cycle through, and withdrawing forces back aboard ship. It is this capability that makes us unique, and our campaign of learning will yield the force of the future our Nation demands.

Notes

1. United States Marine Corps, *Small Wars Manual,* (Washington, DC: 1940).

2. Ibid.

3. Roger Willock, *Unaccustomed to Fear*, (Princeton, NJ: Roger Wilock, 1968).

4. Gail Shisler, *For Country and Corps*, (Annapolis, MD: Naval Institute Press, 2009).

5. Gen David H. Berger, "Preparing for the Future; Marine Corps Support to Joint Operations in Contested Littorals," (Washington, DC: 2021).

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