



# Force Design 2030

## Annual Update

June 2023

*“War is both timeless and ever changing. While the basic nature of war is constant, the means and methods we use evolve continuously.”*

- Marine Corps Doctrinal Publication 1, *Warfighting*

# INTRODUCTION

Today, the Marine Corps is better prepared to serve as a naval expeditionary force-in-readiness and operate inside actively contested maritime spaces in support of joint campaigns. While our continued experimentation and learning will undoubtedly uncover additional refinements to improve our force, we are confident our collective efforts will result in a Marine Corps organized, trained, and equipped to meet the global challenges of the 21st century.

In last year's Force Design 2030 Annual Update, we traced the genesis of Force Design 2030 (FD2030) from its roots in the 31st Commandant's Hunter Warrior (1997) and Urban Warrior (1999) experiments, to the 33rd Commandant's Concept for Distributed Operations (2005), to the 37th Commandant's testimony (2019) about our need for modernization. In addition to the observations of previous Commandants, FD2030 was informed by numerous wargames and the directions contained in the 2018 National Defense Strategy, which were reinforced and expanded in the 2022 National Defense Strategy. These milestones shaped our approach to keeping pace with the changing character of the operating environment.

This report describes FD2030's progress to date and directs follow-on actions for the next 12-24 months. We have made significant progress in both the design and delivery of the future force since initiating action in 2019 and are seeing tangible results from our modernization efforts today. The collective efforts of thousands of Marines across the combat development enterprise and Fleet Marine Force (FMF) have resulted in a Marine Corps that remains the premiere expeditionary, combined arms, and global crisis-response force. The Marine Corps, today, is capable of standing-in, alongside allies and partners, within reach of adversary weapon systems; denying the land, air, or maritime domains to an adversary; expanding maritime domain awareness for the fleet and combatant commanders; and seizing and defending key maritime terrain globally. We can now sense, makes sense, and act more rapidly than before, further expanding our advantage with maneuver warfare.

# SITUATION

To be clear, there is much to be done, especially with our installations, logistics, and sustainment efforts to ensure we deliver the force needed to prevail on a modern battlefield. Our experimentation will continue with new concepts and emerging technology in a longer-term modernization effort that will sustain the advantages we are creating today over the coming decades.

As always, we must maintain the right balance between the enduring and innovative parts of our organization. As a result, this report contains additional directed actions, many of which will have more aggressive timelines as our understanding of the threat demands. As the Commander of U.S. Indo-Pacific Command (USINDOPACOM) testified, the Marine Corps' current sight picture is correct, should remain on track, and would be better delivered sooner than later.

## YEAR IN REVIEW

While this report primarily outlines the work ahead of us, we are far enough into FD2030 that our operating forces are beginning to use many of the capabilities it describes. Due to the incredible efforts of our Marines, the critical capabilities imagined for the future force are starting to be delivered today.

The most recent deployment of the *USS Tripoli* (LHA-7) demonstrated the strategic and operational advantage that amphibious ships create. In early 2022, *Tripoli* set sail as an independent deployment, in part to test our F-35B “Lightning Carrier / Assault Carrier” concept where 16-24 F-35Bs are embarked and act in concert with a traditional carrier strike group. Not only did the deployment illustrate the potency of the Lightning Carrier in support of carrier strike group operations, it also demonstrated the versatility and value of the concept for the Navy-Marine Corps team.

In March 2022, Sixth Fleet partnered with II Marine Expeditionary Force (MEF) to create Task Force (TF) 61/2. Building on years of experimentation in the FMF, TF 61/2 was designed to provide a joint task force crisis response capability through command and control (C2) of naval forces supporting contingencies in Europe and Africa — to include ongoing responses to the Russian invasion of Ukraine. Upon creation, TF 61/2 was task-organized to conduct reconnaissance and counter-reconnaissance (RXR) and delegated tactical control of allocated amphibious forces (ARG/MEU) and rotational Marine forces (Marine Rotational Force – Europe) by Commander, U.S. European Command (USEUCOM), Commander, Naval Forces Europe/Africa and Commander, Sixth Fleet. It was so successful, the previous Commander, USEUCOM testified before Congress that distributed Marine Corps forces operating as a brown water force dramatically enhance options and are priceless for 21<sup>st</sup> century security. Today, TF 61/2 continues to operate in theater.

In summer 2022, 2d Marine Aircraft Wing (MAW) stood up the Service’s first multi-function air operations center (MAOC) in Lithuania under the command of U.S. Air Forces Europe to conduct air surveillance and multi-domain awareness in support of North Atlantic Treaty Organization (NATO) operations. The MAOC’s mission is to generate an integrated tactical picture of the operating environment to control aircraft and missiles, enable decision superiority, gain and maintain custody of adversary targets, hold targets at risk, and enable engagement of targets in all domains in support of

Marine Corps, naval, joint, ally, and partner forces. This expeditionary capability is a transformational step in fixed aviation C2. Recent exercises in USINDOPACOM demonstrated the MAOC’s ability to improve the common tactical picture for a carrier strike group and provided visible evidence of Combined Joint All Domain Command and Control (CJADC2) in practice.

Building upon the success of TF 61/2, in October 2022, the 3d Marine Expeditionary Brigade (MEB) and Naval Task Force 76 staffs merged into a completely integrated naval task force (TF 76/3) in the Indo-Pacific. Once established, TF 76/3 embarked upon an 18-month-long period of experimentation, conducting active campaigning inside a contested space. This integrated task force has demonstrated the ability to create robust information webs to support maritime domain awareness across the theater, especially in the western Pacific.

In October 2022, the Service activated the Marine Corps Information Command (MCIC). This command streamlines and simplifies much of the coordination required for information, intelligence, space, and cyberspace operations, by realigning current relationships and structure at Headquarters, Marine Corps (HQMC) from a staff officer to an operational commander.

We recently began receiving MQ-9s and activated Marine Aerial Refueler Transport Squadron (VMGR) 153 in Kaneohe Bay, Hawaii. This additional squadron will substantially increase the organic mobility of Marines in the Pacific theater. We are also approaching one year since the CH-53K program achieved initial operating capability (IOC) and are well underway to transitioning Marine Heavy Helicopter Squadron (HMH) 461 into our first fully operational CH-53K squadron.

The Marine Corps achieved its 2023 milestones with the establishment of 3d Marine Littoral Regiment (MLR), which recently completed the first Service-level force-on-force training exercise designed to assess its ability to operate as a distributed naval expeditionary force. Upon completion of this exercise, 3d MLR deployed again on short notice to the Republic of the Philippines to participate in Exercise BALIKATAN with joint and multi-lateral forces. MLR experimentation continues, and with it, learning and adapting to new and emerging capabilities such as support for anti-submarine warfare as part of the stand-in force (SiF).

Perhaps most consequential, during the past year, Congress demonstrated its support for the Marine Corps’ continued role in crisis response and counter-maritime-gray-zone warfare by establishing a minimum amphibious warfare ship requirement of 10 LHA/LHDs

and 21 LPDs/LSDs. Congress similarly recognized the trends emerging from the conflict in Ukraine, which provide evidence to support our close-combat lethality initiatives, focus on counter-UAS and air and missile defense, and investments in precision fires to support distributed operations and maneuver.

However, we should not lose sight of the fact that the Ukrainians succeeded in the early phases of the conflict not because of superior equipment, but because their people were adaptable — especially at the tactical level — and rapidly innovated new concepts of employment to address specific areas where the Russians maintained an advantage. The lethality of Ukraine’s infantry was fortified by their mindset, unit cohesion, and method of command and control. These observations only strengthen our continued adherence to maneuver warfare, talent management, and training and education modernization.

Finally, FD2030 is manifesting across the supporting establishment. This year we released *Training & Education 2030 (T&E2030)*, *Installations & Logistics 2030 (I&L2030)*, and an update to *Talent Management 2030 (TM2030)*. Collectively, these efforts will ensure we maintain balance across the Service’s Title 10 responsibilities and an integrated, single-battle approach to modernization across the enterprise.

## **TRAINING AND EDUCATION 2030**

To fully realize the warfighting advantage of our combined arms teams, we must make a similar commitment to modernizing our training and education system. To that end, we published T&E2030 — a pillar of Force Design modernization. It builds upon three years of exercises, wargames, and operating force experiments (sometimes in intense force-on-force competitions) that established a foundation for organizational learning and informed how our training and education continuum must evolve. It also identifies areas requiring further study, so we can broaden the scope of our organizational learning across the entire training and education enterprise.

Project Tripoli is a training initiative that will enable greater experimentation with FD2030 concepts and capabilities. It is not a specific system or program of record, nor exclusively a Marine Corps training solution, but rather a live, virtual, and constructive training *environment* (LVC-TE) that allows the simultaneous training of geographically dispersed units and/or training on cost-prohibitive or sensitive capabilities. This will allow units to replicate, to the greatest extent possible,

the conditions and threats they will experience on tomorrow’s battlefields. The first iteration of the LVC-TE will deploy to Twentynine Palms, CA in Fiscal Year 2023 (FY23). By FY25, the LVC-TE will be deployed to five Marine Corps installations, establishing an enterprise-level capability. Eventually, we want to migrate this initiative to coalition exercises to gain more command-and-control repetitions.

## **INSTALLATION AND LOGISTICS 2030**

In February, we published I&L2030, which charts the way ahead for our Marine Corps Installations and Logistics Enterprise: the organizations that support force generation, power projection, employment, and sustainment of ready Marine forces. Like other FD2030 efforts, it is based on iterative planning and experimentation from our campaign of learning and serves as the primary reference for how we will logistically support the future force. I&L2030 captures the capabilities required to support naval expeditionary forces in the future operating environment and directs change across the spectrum of doctrine, organization, training/education, materiel, leadership/communications synchronization, personnel, and facilities (DOTMLPF).

## **TALENT MANAGEMENT 2030**

In March, we published an update to TM2030, which directed accelerated personnel reforms and oriented the Service toward retaining more experienced Marines. More experienced Marines does not necessarily mean older Marines, but rather Marines with more repetitions. In February 2022, the Assistant Commandant of the Marine Corps (ACMC) established a Talent Management Strategy Group to align and harmonize Service-wide talent management efforts. This group focuses on future demographic, economic, and human capital trends, while working with academic and research organizations to identify initiatives that will better align individual abilities, skills, and desires with the warfighting needs of the Service. Since the release of TM2030, we have better aligned departments and organizations and have defined interdependencies of total force personnel policies.

## WHERE WE ARE GOING

Emerging capabilities will enable us to fully realize our operating concepts and maintain a relative warfighting advantage over peer threats. Those capabilities span all warfighting functions and include the Unmanned Logistics System-Aerial/Tactical Resupply Unmanned Aircraft System, the Marine Air Defense Integrated System (MADIS), and the Navy-Marine Expeditionary Ship Interdiction System.

We are investing heavily in the next generation of research, development, test, and evaluation (RDT&E) efforts for the Marine Corps, placing emphasis on resilience, the future of contested logistics, Marine aviation, CJADC2, and persistent sensing. In fact, with the support of the Office of the Under Secretary of Defense for Research and Engineering, we will begin the Long-Range Attack Munition project to rapidly develop and field a low-cost, air launched family of loitering, swarming munitions.

Our capstone research and development project is a family of integrated targeting cells. This effort accelerates the evolution of combined arms and multi-domain formations. We can do this by fusing operations, intelligence, and fires functions together in a single center, creating the means for Marine units to participate in and control joint fires, while also gaining and maintaining persistent custody of adversary targets. Other projects include developing a common launcher for the family of ground launched loitering munitions and testing a low-cost, hypersonic booster in a form factor the Marine Corps can logistically support in a contested environment. We are also investing in our first Stern Landing Vessel prototypes to bridge the gap until additional resources are applied to Medium Landing Ship (LSM) procurement.

## AMPHIBIOUS WARFARE SHIPS

Since 2019, three Department of the Navy studies have confirmed a requirement for 28-31 L-class amphibious warfare ships and 35 LSMs for maritime mobility. These are necessary for naval expeditionary forces to sustain consistent, forward-deployed, sea-based campaigning forces that can also respond to unforeseen contingencies. However, combining these findings with readiness trends over the past 10 years and projected ship availability rates demonstrates the need for no fewer than 31 traditional L-class ships to ensure the warfighting readiness and global responsiveness of amphibious naval forces.

Amphibious warfare ships are the cornerstone of maritime crisis response, deterring adversaries, and building partnerships. They persist forward, are globally deployable, and offer fleet and joint force commanders flexible and tailorable force options in competition and conflict. Amphibious forces are complementary to stand-in forces in a variety of ways. They coordinate their actions directly with stand-in forces to control maritime terrain, integrate with allies and partners, and, as a result, can play an out-sized role in competition. In the future, amphibious warfare ships will offer even more capability, serving as “motherships” for a variety of manned, unmanned, and human-machine teamed systems.

## RESOURCING MODERNIZATION

To date, we have self-funded FD2030 within our budget topline. This approach succeeded with the support of civilian leaders in Congress, the Office of the Secretary of Defense, and the Department of the Navy. Self-funding required hard, sometimes unpopular decisions, but it allowed us to trade lower priority capabilities for approximately \$15.8 billion worth of high priority investments that create advantage on increasingly complex battlefields. However, further meaningful divestment is not possible without negative impacts on near-term mission requirements and modernization efforts. Our barracks, family housing, and base infrastructure need major sustained investments if they are to be capable of supporting Marines, Sailors, and their families. Therefore, to accelerate the delivery of critical joint warfighting capabilities, while maintaining and expanding force readiness and resiliency, we will seek additional budgetary resources.

## ACCELERATING MODERNIZATION

Modernization is a process without a beginning or end. It is continuous and based on our understanding of emerging and evolving threats, the trajectory of technology, and the missions we may be asked to undertake. Our continuous efforts to create and sustain warfighting advantage over the longer term will ensure Marine forces remain organized, trained, and equipped to succeed in an ever-evolving operational environment — regardless of clime or place.

Marines today are employing many of the elements of Force Design, but if we are to stay ahead of our peer competitors, we need to accelerate modernization, continuously assess our efforts, and make course corrections and adjustments as required. One critical

lesson identified in numerous congressional hearings has been to be precise when defining “acceleration.” We must clearly identify situations when additional funding can deliver an initial capability sooner, and how earlier fielding would help ensure we maintain a relative advantage.

To fully realize the objectives of FD2030, we will also need to work with the other services to integrate our modernization into the overall design of the joint force. Deeper integration and synchronization with our sister services will significantly increase the capability, lethality, and effectiveness of the joint force. Combined with additional wargames and enhancing exercises with allies and partners, we are on a path to maximize the utility of the total force.

## **KEY FINDINGS FROM THE CAMPAIGN OF LEARNING**

### **CONCEPTS, DOCTRINE, WARGAMING, AND STUDIES**

Warfighting concepts serve as the foundation for our modernization work. Most recently, we added *Global Positioning Network to Distributed Maritime Operations*, *Littoral Operations in a Contested Environment*, *Tentative Manual for Expeditionary Advanced Base Operations*, *A Concept for Stand-in Forces*, and *Reconnaissance and Counter-Reconnaissance*. To ensure our amphibious operations concepts remain current, together with the Navy, we are also developing a new concept for *21<sup>st</sup> Century Amphibious Operations*. It will describe how we will execute amphibious operations against future adversaries in this evolving and complex operational environment. It will also articulate the future role of amphibious operations in support of maritime campaigns and will describe new operating methods that incorporate agile platforms to supplement traditional amphibious ships. Examples include long-range, unmanned systems that infiltrate the adversary’s weapon engagement zone; dispersed formations of manned and unmanned ships that challenge adversary targeting; and the adoption of disruptive technologies.

The changing character of war demands we educate and train our Marines with the most relevant and contemporary doctrine. As the pace of change in the information domain accelerates, we cannot afford to allow our doctrinal efforts to languish. We must keep pace with the emerging and evolving operational environment, as well as with the agencies and organizations that will be essential to our success. In May 2022, we published Marine Corps Doctrinal Publication (MCDP) 8, *Information*. This March, we issued a revision of MCDP 4, *Logistics*, to account for changes in the operating environment since its original publication in 1997. We are currently drafting Marine Corps Warfighting Publication 8-10, *Information in Marine Corps Operations*, which we intend to publish this calendar year. We will also release a revised version of MCDP 1-0, *Operations*, in the near future.

Between July 2019 and December 2022, we executed 25 wargames and 42 integrated planning teams (IPTs) with subject matter experts from across the Marine Corps. These teams grappled with an immense challenge, as they sought to modernize the Marine Corps as a naval expeditionary force that effectively deters our competitors, while remaining ready to respond to a range of crises. This calendar year, we will conduct another nine wargames, primarily focused on reconnaissance and counter-reconnaissance, as well as deploying and sustaining a MEF in support of major combat operations.

To support our wargaming efforts, we anticipate the opening of the Marine Corps Wargaming and Analysis Center next year. This state-of-the-art facility will significantly enhance our capability development, concept development, operational plan assessment, training, and advanced technology evaluation. The facility will be the largest secure access program facility in the National Capital Region, encompassing more than 100,000 square feet. It will support up to 250 participants, link to remote sites, and employ advanced modeling and simulation systems to facilitate rigorous analysis aimed at yielding deep understanding of requirements and risk. We look forward to welcoming participation by our sister services, joint and interagency organizations, and allies and partners.

# DIRECTED ACTIONS AND ISSUES REQUIRING FURTHER ANALYSIS IN 2023-2024

## COMMAND AND CONTROL, INTELLIGENCE, AND INFORMATION

### MAGTF COMMAND AND CONTROL

The Marine Corps must be organized, trained, and resourced to effectively conduct C2 at echelon and rapidly transition across the competition continuum to enable all-domain joint and combined kill webs. To do this, we must transition from a legacy, air-land battle paradigm to a 21st century, all-domain, joint, single battle mindset. We can no longer accept multiple, disparate C2 systems optimized for single-domain awareness bound by analog/human-speed processing. There are a variety of ongoing efforts to evolve the Service's C2 capability to conduct all domain operations, enable kill webs, and further expand our value to the joint and combined force.

Our Marine Air Command and Control System remains the exemplar for the Service's evolving C2 ecosystem and has showcased an innovative capability to enable kill webs across multiple domains via the MAOC. We are also on track to create the first cadre of kill web subject matter experts through the creation of a C2 Interface Control Officer Military Occupational Specialty (MOS) in 2025.

The successful integration of intelligence, fires, and C2 is the heart of the targeting cycle and is required to enable and conduct kill webs across multiple domains. The need to expand traditional Marine Air-Ground Task Force (MAGTF) operations to address all-domain activities is compelling and requires us to address multiple challenges, including:

- The lack of established multi-domain agencies able to facilitate task force/task group target engagement authority;
- The lack of a common, fully informed MAGTF C2 system able to unlock the potential of advanced technology; and
- A C2 framework (people, process, technology, and function) that is still bound to unique warfare domains, a restrictive classification bureaucracy, and the MAGTF.

To address these challenges, the Marine Corps is conducting spiral development, leveraging the innovative spirit of our Marines to achieve an all-domain C2 capability.

### Directed Actions

1. No later than (NLT) 1 August 2023, Deputy Commandant (DC), Combat Development and Integration (CD&I) will conduct a scoped approved acquisition objective (AAO) review for systems critical to enabling multi-domain C2 to provide near-term multi-domain capability solutions for the MAGTF. This review will identify which systems to retain or eliminate.
2. NLT 1 September 2023, DC, CD&I will develop a minimum viable product that combines the capabilities of the family of integrated targeting cells, air C2 family of systems (FoS), and ground C2 FoS. These products will deliberately integrate into USINDOPACOM's joint fires network for immediate experimentation. The bridging solution must drive convergence of currently disparate air-land centric C2 programs of record to a singular, all-domain MAGTF C2 capability.
3. NLT 1 March 2024, DC, CD&I (Marine Corps Warfighting Laboratory (MCWL)) in coordination with the MEFs, will lead experimentation on all-domain operations centers and multi-domain operations centers to inform institutional level change to MAGTF formations. The Service-level Experimentation Campaign Plan will include the framework for this effort with an objective to demonstrate a MEF-level, all-domain operations center capability in Project Convergence Next in March and April 2024.
4. NLT 1 September 2024, DC, CD&I in coordination with DC, Aviation (DC, A) will institutionalize the MAOC via the DOTMLPF Working Group.
5. NLT 1 September 2024, DC, CD&I will conduct an all domain C2 wargame, to include modeling and simulation, using the outputs of the 2022 DC Aviation/DC Information multi-domain C2 operational planning team.



6. NLT 1 September 2024, DC, CD&I will conduct a C2 formations IPT to address inefficiencies in the multiple occupational fields that perform critical C2 functions in a multi-domain environment. This IPT will re-evaluate legacy formations, structure, and training across tables of organization to ensure the right Marine is in the right place with the right qualifications to enable all-domain joint and combined kill webs.
7. NLT 1 September 2024, Commanding General (CG), Training and Education Command (TECOM) will build upon the command, control, computing, communications, cyber, intelligence, surveillance, reconnaissance and targeting (C5ISR-T) leader's course proof of concept to expand the breadth of exposure and expertise across the total force to support multi-domain operations.

### Issues Requiring Further Analysis

- A. Headquarters roles & functions: What are the roles and responsibilities of the Service Component Commands (MARFORs), MEFs, and major subordinate commands in enabling multi-domain MAGTF C2 in support of kill webs?
- B. Enable joint and combined C2/kill webs: How do we organize, train, and resource to effectively conduct C2 to enable and close all-domain, MAGTF, naval, joint, and combined kill webs?

## MULTI-DOMAIN RECONNAISSANCE

Our wargames, modeling and simulation, experiments, and exercises, along with evidence from the Western Pacific to Ukraine confirm the requirement for littoral, multi-domain reconnaissance capabilities that our light armored reconnaissance (LAR) battalions do not currently provide. Our Ground Combat Element (GCE), therefore, requires organizational and equipment changes to meet requirements for lighter, more expeditionary capabilities to operate as part of a stand-in force, and to contribute to all-domain reconnaissance.

In accordance with the 2022 Annual Report, experimentation and operations within the LAR community showed steady progress toward the transition to mobile reconnaissance battalions (MRB), culminating

in development of a draft table of organization, table of equipment, and mission essential task list (METL). The proposal, consisting of maritime reconnaissance (waterborne) companies, light mobile companies, and light armored companies, all with greater reach and lethality, promises to effectively address the requirement for multi-domain reconnaissance. With this framework, MCWL and the FMF will experiment and refine organizational and equipping constructs to inform requirements.

### Directed Actions

8. NLT 1 September 2023, DC, CD&I will refine the draft MRB table of organization, table of equipment, and METL to accelerate the transition from LAR to MRB.
  - a. Be prepared to present refined products to the fall 2023 Ground Board and the DOTMLPF Working Group.
  - b. 1st LAR Bn is the office of primary responsibility (OPR) for the Maritime Reconnaissance Company design;
  - c. 2nd LAR Bn is OPR for the Light Mobile Company design;
  - d. 3rd LAR Bn is OPR for the Light Armored Company design; and
  - e. 4th LAR Bn will make recommendations for a Reserve MRB table of organization and table of equipment that optimize integration with the active component for training and employment.
9. NLT 1 September 2023, DC, CD&I in coordination with Marine Corps Systems Command (MCSC) will provide the APMC a plan for the establishment of a Program Manager (PM) for Mobile Reconnaissance to execute acquisition activities in support of the transition of LAR battalions to MRBs. The PM for Mobile Reconnaissance will be responsible for executing a synchronized sun-down of the family of light armored vehicles, while simultaneously developing, integrating, and fielding new ground, surface, and aerial systems.

10. NLT 1 October 2023, CG, MCWL will develop a MRB experimentation plan to test and refine the proposed MRB table of organization, table of equipment, and METL.
11. NLT 1 January 2024, DC, CD&I will publish an updated Ground Combat Tactical Vehicle Strategy (GCTVS), Intelligent Robotics and Autonomous Systems (IRAS) Strategy, and related references to reflect changes derived from the Infantry Battalion Experimentation (IBX) effort and the MRB table of organization and table of equipment.
  - a. NLT 1 March 2024, DC, Programs and Resources (P&R) will provide a total-cost-of-ownership of the GCTVS per vehicle, suitable for informing future planning and resource decisions.

### Issues Requiring Further Analysis

- C. Experimentation: Evaluate options and outcomes resulting from the integration of the Maritime Recon Company into the FY23-25 Littoral Maneuver Experimentation Plan to inform future capability requirements.
- D. Conduct multi-domain reconnaissance: How do we develop capabilities for operations in the littoral security area to gain and maintain custody of adversary targets and frustrate adversary reconnaissance capabilities?
- E. Employ multi-domain counter-reconnaissance/deception: How do we organize, train, and resource so that the ability to plan and implement deception becomes an integral part of each unit, training event, and materiel solution?

## INFORMATION

Data is a strategic asset and a critical component of both creating warfighting advantage and improving enterprise management and efficiency. Possessing an information advantage over competitors enables effective and timely decisions, encouraging greater success across the competition continuum. This includes the ability to sense and make sense of the battlespace across all domains, and to translate that heightened understanding into decisive actions. To achieve this in both warfighting and the execution of our Title 10 responsibilities, we must change our approach to gathering, curating, and leveraging data. We must evolve

from our current framework of siloed data management to an integrated environment that converges data across the FMF and supporting establishment. Establishing a data collection plan with measurable objectives will be critical to this effort. Developing more open information architectures that foster a culture of collaboration with robust knowledge management practices will assist in creating measurable objectives and honest assessments of the data we do collect. Beyond data collection, we will also need to ensure Service leaders are properly educated and trained to understand the opportunities, challenges, and limitations of utilizing data to support decision-making.

Over the past few years, the Marine Corps has made progress in its strategic investments in data science, but there is much more to do. We must embrace the relevance of data as a critical element in collaboration, performance enhancement, training, talent management, and shared understanding amongst commanders for decision-making in the 21st century. By focusing on data and advanced computing power, combined with leader experience, we will foster a cultural shift to achieve fully effective decision-making.

### Directed Actions

12. NLT 1 October 2023, DC, I will publish a comprehensive Marine Corps Data Implementation Plan that supports the Department of Defense (DoD) Data Strategy.
13. NLT 31 December 2023, DC, I will develop and implement data governance policy and procedures applicable to the total force.

### Issues Requiring Further Analysis

- F. Artificial intelligence: What are the potential approaches to deploy and sustain artificial intelligence models with Marines as the primary maintainer, like coding at the edge, in accordance with the DoD Data Strategy?

## MANEUVER AND MOBILITY

### SEA-BASED EXPEDITIONARY FORCES

The Navy and Marine Corps will continue to prioritize our sea-based expeditionary forces to maximize their *forward* presence as a keystone of our contribution to integrated deterrence. To deter or respond, we must be postured forward, operating from the sea.

Over the course of decades, we have made incremental improvements to nearly every piece of equipment in the Amphibious Ready Group/Marine Expeditionary Unit (ARG/MEU) but we have not modernized the ARG/MEU construct as a whole. The joint force needs sea-based expeditionary forces that can provide immediate crisis response, flexible and platform-agnostic naval C2 capable of executing a joint/naval campaign with allies and partners, contributing to the joint force's ability to sense and make sense of the operational environment and, when necessary, enabling and contributing to joint kill webs. Traditional amphibious warfare ships remain central to these missions, but we must expand our thinking to include flexible task organizations able to employ a variety of mobility platforms to optimize our presence forward.

As I previously described, our campaign of learning activities regarding Task Force 76/3 and Task Force 61/2 are showing promising results, but there is still work to be done. We need to formalize the process for establishing integrated Navy-Marine Corps staffs with numbered fleets while giving the MEF CGs the ability to adapt organizations to the specific needs of their partner numbered fleets. Whenever feasible, and in coordination with the efforts of the appropriate combatant commanders, these integrated staffs should also include key ally and partner representation to strengthen our integrated deterrence, offering a mature approach to campaigning.

Given the exponential growth of anti-access and area-denial capabilities, coupled with the increasing range of sensors, and expanding weapons-engagement zones, we will begin experimenting with amphibious platforms as motherships to distribute and extend the range of our capabilities. These platforms will host a variety of manned, minimally-manned, and unmanned systems — air, surface, and subsurface — to sense and enable our forces with the aim of confounding adversaries and complicating their ability to target the joint force.

We must also look ahead to 2040 and beyond, to explore future requirements for amphibious platforms and initiate design and procurement decisions now. Through this approach, we will have an opportunity to impose costs on our adversaries by countering their investments, which were optimized to fight against our traditional naval formations. By focusing on volume and diversity, likely with lower cost alternatives, we will complicate the ability of our adversaries to find and target our sea-based expeditionary forces.

## LITTORAL MOBILITY

After extensive analysis, we determined a need for nine LSMs to support littoral maneuver of a single regimental sized unit. The Department of the Navy's Amphibious Force Requirements Study over the last two years validated this number. Given that current force structure plans call for three MLRs, we will ultimately require 35 LSMs to account for operational availability and mobility for those units. However, current plans for LSM funding (beginning in FY25) limits our ability to bring this capability online within an operationally relevant timeframe. We have adapted to this challenge and are developing bridging solutions: Landing Craft Utility vessels, Expeditionary Fast Transports, and commercial Stern Landing Vessels, along with other vessels of opportunity. While these platforms will inform the eventual employment of the LSM, they will fall short of desired capabilities if called upon in an operational setting. Our modernized expeditionary forces need a comparably modern mobility platform to bring the full weight of their capability to bear on competitors or adversaries, particularly in littoral regions.

### Directed Actions

14. NLT 1 September 2023, DC, CD&I will establish a general officer-led cross functional team to drive a plan of action and milestones that achieve the ARG/MEU guidance outlined in this document.
15. NLT 1 October 2023, CG, MCWL will develop a holistic mothership experimentation campaign plan that addresses surface, subsurface, airborne, and manned/unmanned teaming systems designed to accelerate modernization.
16. NLT 1 January 2024, DC, CD&I will publish an "ARG/MEU Next" concept with an aim point of 2040 to inform future requirements development.
17. NLT 1 January 2024, DC, Plan, Policies, and Operations (PP&O) will propose Global Force Management (GFM) modifications that prioritize forward-deployed, scalable MAGTFs as part of flexible sea-based constructs that include integration with allies and partners.

18. NLT 1 September 2024, Commander, Marine Corps Forces Pacific (COMMARFORPAC) and Commander, Marine Corps Forces Europe and Africa (COMMARFOREUR/AF) will formalize the establishment of O-7 staffs within Sixth and Seventh Fleet headquarters.
19. NLT 1 September 2024, DC, Manpower and Reserve Affairs (M&RA) will increase ARG/MEU subject matter expertise and currency within HQMC, the Department of the Navy, and the joint force to expand understanding of the capability. Explore options to improve our task organization to improve synchronization of efforts.

### Issues Requiring Further Analysis

- G. “Mothership” capabilities: What are the possible capabilities (current and future) that could be deployed from the existing inventory of L-Class ships? How could those capabilities create warfighting advantage across the competition continuum?
- H. ARG/MEU training: Analyze the composition and length of the ARG/MEU FRTP/PTP between U.S.-based units and the forward deployed naval force to recommend potential changes to the FRTP/PTP.

## INFANTRY BATTALIONS

The 2020 *Annual Update* directed additional live force experimentation to finalize a design that will result in formations more capable of distributed operations. The resulting effort, known as IBX, provided a sound foundation to make informed decisions about the future of Marine infantry battalions. For example, during Phase I, we held 13 live-force experiments in environments ranging from Appalachian Mountain winters to Okinawan jungle summers. These experiments demonstrated that a battalion of 735 Marines — the initial planning factor — was not operationally suitable. We have since adjusted the size of our battalions to 811 Marines. The most recent update to the infantry battalion includes the addition of persistent all-weather surveillance, additional capacity to conduct anti-armor and indirect fire, as well as organic support and services.

Phase II will be characterized by further refinements following a series of experiments at the company and battalion levels. These experiments will primarily focus on C5ISR, sustainment, sensing, and lethality.

### Directed Actions

20. NLT 1 September 2023, DC, M&RA will implement the 811 Marine battalion structure across all Active and Reserve Component infantry units.
21. NLT 1 September 2023, DC, P&R, DC, CD&I and CG, TECOM will identify options to accelerate the procurement and training of organic precision fires – infantry (OPF-I) and organic precision fires – mounted (OPF-M) (loitering munitions). We are moving too slow in OPF.

### Issues Requiring Further Analysis

- I. Along with conducting Phase II of IBX, examine the organization of persistent all-weather surveillance capabilities in the infantry battalion. What are the appropriate capabilities and composition required to execute multi-domain surveillance and strike in a distributed environment? What is the best method to formalize training for this added capability?

## AVIATION

Our campaign of learning indicates Marine aviation must also continue to evolve to meet the demands of the future operating environment. Doing so will require developing capabilities and concepts to enable persistent distributed aviation operations (DAO) across extended distances, with minimal sustainment from well-established rear-areas, and integrated with SiF C2. Transforming Marine aviation to meet these objectives will mean overcoming the unique challenges associated with littoral geography, especially in contested areas.

We have made great strides establishing capabilities required to function as a SiF, while remaining postured as a force-in-readiness capable of responding to global crisis. We have fielded transformational capabilities like the MAGTF Unmanned Expeditionary (MUX) Medium Altitude Long Endurance (MALE) platform to enhance joint maritime domain awareness (MDA). We have also invested in the development and acquisition of low-cost, long-range, modular, net-enabled weapons for vertical takeoff and landing (VTOL) aircraft, which complement our future long-range tactical aircraft (TACAIR) weapons portfolio. Continued efforts across Marine aviation seek to optimize its capabilities to address future challenges and threats.

Marine aviation is exploring future requirements for common carriage expendables to enhance survivability and operational flexibility. Meanwhile, the uncrewed/remotely piloted portfolio continues to expand. While we explore additional advanced capabilities in the Group 5 realm, smaller systems (Group 3 and below) are being integrated into other MAGTF elements to enhance their warfighting capabilities, including logistics. In addition to tactical resupply unmanned aerial systems (UAS), we are currently fielding thousands of small UAS in the GCE to provide small unit leaders with an organic intelligence, surveillance, and reconnaissance (ISR) capability. The establishment of a formal UAS operator curriculum at the School of Infantry–East was a critical component to operationalizing small UAS capabilities.

Along with the MAOC, we are exploring the idea of other multi-domain C2 capabilities that will be refined in exercises and experimentation throughout the year. The MADIS, which will significantly enhance the air defense of the MAGTF, is entering low-rate initial production and is scheduled for fielding in FY24. The Light-MADIS, an MV-22 transportable version, will also reach IOC in FY24, with 12 already fielded. The Medium Range Intercept Capability (MRIC), intended to provide cruise missile defense, has now completed two successful tests. We intend to field three batteries by FY28; a prototype platoon will be fielded in FY25.

New expeditionary airfield matting and air-transportable firefighting vehicles are being developed to enable persistent DAO. Marine aviation continues to enhance our ability to sense and make sense, and to participate in the naval integrated fire control networks. The premier Marine aviation C2 system — the Common Aviation Command and Control System — is evolving into a small form factor capability that is MV-22 transportable and could revolutionize C2 for forward deployed expeditionary forces.

Through multiple ongoing analytical activities with government research agencies and academic institutions, Marine aviation is improving our understanding of lethality, interoperability, survivability, mobility, and sustainability needs. One such effort is a HQMC sponsored study to assess sustainability gaps for Marine aviation units conducting expeditionary advance basing operations (EABO). We will use the results of this study to augment the capabilities-based assessment (CBA) and refine sustainability requirements for future aircraft,

which is part of a larger effort being developed under the VTOL FoS. Other CBAs focused on both manned and unmanned capabilities will enable the aviation enterprise to realize significant enhancements due to ongoing synchronization between requirements, resources, and acquisitions entities.

### **Directed Actions**

22. NLT 1 September 2023, DC, CD&I will develop a functional concept prospectus for DAO that describes how Marine aviation will operate in support of EABO, SiF, and broader modernization efforts.
23. NLT 1 September 2023, DC, A will determine if the 6 functions of aviation are still valid and if not, provide recommendations for change or expansion along with initial DOTMLPF implications to DC, CD&I.
24. NLT 1 March 2024, DC, CD&I will analyze future requirements for aviation digital interoperability and integrated fire control capability with the joint force to inform force development.
25. NLT 1 July 2024, DC, CDI in coordination with DC, A will identify ways to increase and maintain a persistent Marine aviation presence across the physical expanses of littoral geography and inside an adversary's weapons engagement zone.
26. NLT 1 July 2024, DC, A will analyze the requirements for aviation sustainment given the impacts of littoral geography, including the requirements for expeditionary forward arming and refueling and hasty runway repair.
27. NLT 1 September 2024, DC, CD&I will develop a roadmap for a future ground-based air defense weapons system to incorporate lasers, high power microwave, and other capabilities to enhance MAGTF survivability.

## Issues Requiring Further Analysis

- J. AI-enabled systems: What is the maturity level of autonomous and artificial intelligence systems capable of being introduced into the MAGTF now? What is a viable timeline for the integration of systems and manpower requirements?
- K. Survivability: What are the options to increase survivability of ground-based sensors?
- L. Sustainability: Are our existing aircraft maintenance and supply processes and procedures sustainable in near peer conflict?
- M. UAS Training Institution: Does the Department of the Navy need a Departmental-wide UAS certifying school to increase throughput given the expansion of UAS programs? If so, what is the size, scope, and cost of this effort?

## LOGISTICS

*Installations and Logistics 2030* builds upon our experimentation and learning over the past few years and identifies capabilities necessary for sustaining the future force. Our campaign of learning continues to reinforce the need for an agile, resilient, and integrated sustainment network capable of generating multiple logistics webs that provide options to commanders. Achieving this network requires a range of new capabilities and operational concepts, four of which are critical requirements:

- Multi-capable distribution platforms. Commanders will need a combination of crewed and un-crewed air, surface, and subsurface platforms operating alongside and from naval platforms to ensure continuous distribution mechanisms in the face of adversary threat systems.
- Increased forward positioning of sustainment. The 2022 Annual Report directed planning for the Global Positioning Network (GPN). The results of that work include an implementation plan with near term actions to support day-to-day campaigning and response to crisis or conflict. While we continue to mature this critical capability, initial analysis has provided the information we need to move out now.

- Installations resilience. From competition to conflict, our bases and stations are the platforms from which we project power and support integrated deterrence alongside allies and partners. Our forward installations are akin to advanced bases and must be prepared to fight in a multi-domain contested environment while serving as operational hubs in support of maritime and joint/combined campaigning.
- Integration of logistics into MAGTF C2. Integrating logistics requirements into our overall MAGTF C2 framework will require modernization of our data environment, logistics information technology (IT) systems, logistics intelligence collections, logistics organizations, and command relationships.

The 2022 *Annual Report* directed further analysis on whether the proposed Marine Logistics Group re-organization and multi-functional combat logistics battalions were sufficient to meet operational requirements. Planning and feedback from the FMF indicate that while the re-organization and new concepts better meet future force requirements, there is a need to provide additional capacity in specific functional areas. Specifically, providing greater engineering capability to SiF would increase their ability to conduct condition-setting activities, enable mobility, and contribute to sea denial and sea control, and support advanced expeditionary bases.

### Directed Actions

- 28. NLT 30 September 2023, DC, Installations and Logistics (I&L), DC, PP&O, DC, CD&I, MEFs, and MARFORs provide representatives to a governing body chaired by DC, PP&O to provide equipment sourcing recommendations to DC, PP&O in support of the GPN.
- 29. NLT 1 January 2024, DC, CD&I will implement the Commandant-approved Marine Logistics Group and multi-functional combat logistics battalion refinements recommended by the Enterprise Logistic II IPT.
- 30. NLT 1 March 2024, DC, CD&I will identify a combination of crewed and un-crewed air, surface, and subsurface logistics and sustainment platforms capable of operating alongside and from naval platforms.

31. NLT 1 April 2024, DC, CD&I in coordination with DC I&L and CG MCICOM will identify Marine Corps requirements to connect our installations in the Indo-Pacific to the joint petroleum enterprise and make recommendations for their placement within the FMF.
32. NLT 1 July 2024, DC, CD&I in coordination with MARFORPAC will increase the logistics staff section within Headquarters, MARFORPAC by FY26.
33. NLT 1 August 2024, DC, CD&I will develop A Functional Concept for Advanced Bases and conduct necessary wargaming to refine the concept to better understand installations in a multi-domain contested environment.
34. NLT 1 July 2025, DC, CD&I will establish an additional engineer company within 7th Engineer Support Battalion to provide increased rotational engineering capacity to the USINDOPACOM area of responsibility (AOR).
35. NLT 1 July 2025, DC, CD&I will establish a littoral engineer reconnaissance team capability within 9th Engineer Support Battalion.
36. NLT 1 September 2025, DC, PP&O in coordination with COMMARFORPAC will establish three GPN ashore sites in the USINDOPACOM AOR.
37. NLT 1 July 2028, DC, CD&I will develop an expeditionary initial operational capability to conduct assault bridging and the standoff detection of explosive hazards in support of stand-in force maneuver and mobility.

- P. Fight from bases and stations/critical infrastructure: How do we modernize infrastructure across the Marine Corps so that it directly contributes to generating the future force, and so that it can prepare for, respond to, and recover from all types of hazards and threats?
- Q. Installations resilience: How do we develop sufficient understanding of Marine Corps installation vulnerabilities to extreme environmental conditions, and integrate climate requirements into operations, planning, and decision-making processes?
- R. Sustainment governance: How do we employ a force sustainment governance framework focused on materiel, equipment, capability and/or program investment and divestment risk decisions, to optimize the logistics/supply chain management objectives for achieving force readiness goals?

## INTELLIGENT ROBOTICS AND AUTONOMOUS SYSTEMS

Adversaries present new operational and tactical problems that disrupt our current military efforts. Lethal, low-cost, highly proliferated technology provides a reverse offset that can potentially generate an outsized warfighting advantage. Simply put, platforms that cost thousands of dollars can defeat platforms that cost millions of dollars. As demonstrated in the 2020 Nagorno-Karabakh conflict and presently in the Russia-Ukraine conflict, UAS platforms and loitering munitions routinely defeat armor and fighting positions with top-down attacks. To succeed in future conflict, the Marine Corps must find ways to operate in contested areas in a cost-effective, risk-worthy manner, while placing adversary capabilities at risk. Formations across the total force must capitalize on technological advances to evolve from a “platform-centric” to a “capability-centric” approach, where intelligent robotics and autonomous systems (IRAS) are employed by trained specialists who contribute to all-domain operations.

### Issues Requiring Further Analysis

- N. Engineers and MRB: What are the required capabilities of the direct support combat engineering unit of employment to enhance multi-domain reconnaissance?
- O. Future bases and stations: What are the appropriate levels of multi-domain protection, MAGTF C2 integration, and U.S. Naval Construction Force integration for our logistics formations and advanced bases?

IRAS can greatly multiply a military force's capabilities across the competition continuum by reducing risk to human operators, accelerating task execution, and providing decisive effects. To fully leverage these effects and capitalize on the advantages IRAS brings to modern warfare, the Service must recruit, manage, professionalize, and retain Marines that are experts in the employment of IRAS. We must leverage efficiencies in our acquisition processes to deliver mature technology to the Service at the speed of relevance. We must organize our force to break down stovepipes and coordinate IRAS implementation and experimentation, so the total force benefits from a common understanding of our concepts and capabilities. Finally, we must treat data as a resource and ensure distribution of real-time intelligence and targeting data, prioritizing interoperability with the joint and coalition force.

## PRINCIPLES OF MARTIAL ROBOTICS

- The human element of armed conflict remains central in the use of IRAS.
- IRAS augment and enhance human processes, without replacing the warfighter.
- Marines must fight at machine speed or face defeat at machine speed.

## TENETS TO INFORM IRAS STRATEGIES

- Develop a lethal, agile, mobile, and resilient force.
- Deliver performance to the warfighter at the speed of relevance.
- Increase interoperability and all domain awareness across the joint force.
- Recognize and treat data as a strategic resource.
- Increase transparency and cooperation with international, government, industry, and academic partners.

## Directed Actions

38. NLT 1 July 2023, DC, CD&I in coordination with DC, PP&O will identify a MEF to assign the appropriate subordinate regiment, Marine aircraft group, and combat logistics regiment to consolidate IRAS experimentation, develop doctrine, and to conduct limited assessment.
39. NLT 1 September 2023, CG, TECOM will conduct external outreach to academia, industry, independent research institutions, joint, coalition, and allied forces to synchronize and disseminate emerging IRAS concepts to the total force.
40. NLT 1 September 2023, CG, TECOM will incorporate IRAS concepts and employment methods into formal learning centers and professional military education institutions.
41. NLT 1 September 2023, DC, CD&I will establish a process for external outreach to integrate joint force, ally, and partner IRAS initiatives.
42. NLT 1 January 2024, DC, CD&I will incorporate IRAS into the Service-Level Experimentation Plan.
43. NLT 1 April 2024, DC, CD&I will develop a strategy for integration with joint forces, allies, and partners.
44. NLT 1 April 2024, Commander, MCSC will develop a strategy to categorize IRAS to allow for more rapid acquisition of high demand, low cost, risk-worthy systems.
45. NLT 1 April 2024, Commander, MCSC will develop a strategy to consolidate responsibilities associated with land and surface IRAS materiel solutions.
46. NLT 1 April 2024, DC, I will develop a strategy to meet the data and spectrum requirements of IRAS in training and operational environments.
47. NLT 1 October 2024, DC, CD&I in coordination with Commander, Marine Corps Forces Reserve will develop a strategy to integrate robotics specialties throughout the total force.



48. NLT 1 October 2024, DC, M&RA will develop a strategy to recruit and retain personnel with IRAS knowledge that leverages alternate recruiting pathways including military and civilian sector, direct accession, and lateral entry.
49. NLT 1 January 2025, CG, TECOM will review doctrine to incorporate IRAS employment.

### **Issues Requiring Further Analysis**

- S. IRAS MOS: We need to consider an IRAS occupational field and a strategy to integrate robotics specialties in the total force, as well as a talent management strategy focused on recruiting and retaining qualified personnel.
- T. Robotics: What is the feasibility of establishing robotics competitions to promulgate awareness and recruit qualified personnel?
- U. IRAS: What are the strengths, weaknesses, opportunities, and risks associated with consolidating responsibilities among air and subsurface IRAS materiel solutions?
- V. Acquisition: What are the existing policies and regulations that govern acquisition and sustainment of IRAS? How do we build efficiencies into the IRAS implementation enterprise, allowing for input from FMF, including the purchase of commercial off-the-shelf solutions?
- W. UAS: Which MAGTF element should manage each group of UAS, considering emerging, multi-domain IRAS and systems that operate in similar parts of the battlespace (i.e., small UAS and loitering munitions)? What are the DOTMLPF implications?
- X. Sustainment: We need to examine the research and state of maturity of concepts and capabilities for enabling the development of a service-level logistics and sustainment strategy and roadmap for incorporating IRAS.
- Y. Integrate IRAS: How do we capitalize on technological advances to grow from a platform-centric approach to a capabilities-centric approach in which IRAS are employed by trained specialists?

## CONCLUSION

Force Design 2030 is a Service-wide modernization effort to make the Marine Corps lighter, more naval, more versatile, and more lethal. Modernizing the Corps in this way improves our ability to deter potential adversaries by providing credible support to naval campaigns and expanding integration with the naval and joint force, as well as our allies and partners. Today, Marines are standing-in across multiple theaters to disrupt adversary plans and prevent conflict. If necessary, they are prepared to seize and defend key maritime terrain. While still being refined, the concepts and capabilities stemming from Force Design are being used today across the globe, from Lithuania to the western Pacific and beyond.

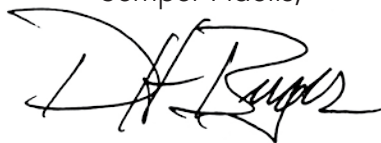
Although many elements of FD2030 are already in use, our modernization has only just begun. We must capitalize on our momentum and accelerate modernization so that we stay ahead of competitors. To accelerate most effectively, we will put capabilities as rapidly as possible into the hands of tactical commanders who are campaigning every day. Time is not on our side, and we must work at a tempo greater than our competitors. We owe the MEF CGs integrated warfighting solutions placed in the hands of their Marines as quickly as possible. Outside the Marine Corps, we must work with our sister services and industry partners to improve the design of the joint force so that we can optimize our ability to enable and leverage it. While accelerating modernization is essential, our warfighting capabilities are only as effective as the Marines employing them. Our Marines remain the key to sustaining and improving our competitive advantages.

Finally, we must continue to improve our ability to implement our modernization successes to date. The conduct of our campaign of learning and the way in which we organize to design and develop the future force have grown in recent years. This improvement must continue. We must build on our ability to innovate for the future while delivering capabilities to the warfighter today. For the Marine Corps to remain “most ready, when the Nation is least ready,” we must remain vigilant and ready to create new advantages whenever we sense changes in our operating environment.

*“Thus, we see that force planning itself is a competitive act, and the Marine Corps must retain the ability to reconfigure the force when necessary to sustain its competitive advantage, or to develop new ones.”*

- Marine Corps Doctrinal Publication 1-4, *Competing*

Semper Fidelis,



David H. Berger

General, U.S. Marine Corps  
Commandant of the Marine Corps



