

Rethinking Logistics

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Drones, AI, robotics, oh my! Technological innovation is changing our world at a blistering pace, and it can be hard to keep up sometimes. It's transforming our homes, our daily lives, entire industries, and yes—it certainly has huge implications on warfare and the application of military force. Leaning into this future, the Marine Corps recently published the "[Marine Corps Operating Concept](#) (MOC): How an Expeditionary Force Operates in the 21st Century." The MOC describes our central problem in this way: "*The Marine Corps is currently not organized, trained, and equipped to meet the demands of a future operating environment characterized by complex terrain, technology proliferation, information warfare, the need to shield and exploit signatures, and an increasingly non-permissive maritime domain.*"¹ Certainly this is true in many respects, but in this author's humble opinion, nowhere is this statement more applicable than the realm of logistics. Indeed, the MOC makes this abundantly clear when it states, "We cannot meet the demands of an agile, distributed 21st century [Marine Air Ground Task Force (MAGTF)] with a 20th century approach to logistics."² Consider the gauntlet thrown down. It is time—past time—to rethink logistics.

From Exploitable Vulnerability to Lethal Competitive Advantage

In my role as the Secretary of Defense Executive Fellow at Morgan Stanley, I recently had a conversation with the head of the Global Transportation & Infrastructure coverage group of the Investment Banking Division. He said, "Logistics used to be a supporting function in industry-- now it's a competitive weapon."³ We could spend a fair amount of time discussing why that's true (I'll offer up Amazon as an example) but suffice it to say I concur with his

assessment. How, then, do we ensure that our own Marine Corps logistics becomes a competitive weapon against our potential adversaries? I believe this requires completely rethinking everything about logistics in the context of the 21st Century MAGTF, while considering the implications of the latest technology. No sacred cows, and nothing is off the table. We must transform our logistics from an exploitable vulnerability to a lethal competitive advantage.

The Problem

Let's start with the problem. The MOC describes several key features that are important from a logistics perspective. To focus on just a few overarching ones, we see operations that will be very expeditionary and dispersed; units fluidly concentrating or distributing; small but highly capable units widely dispersed across large geographic areas; and without the robust land based logistics structures that have dominated many historical conflicts. With this in mind, the MOC tells us that we must "[Redesign] our logistics to support distributable forces across a dynamic and fully contested battlespace – *because iron mountains of supply and lakes of liquid fuel are liabilities and not supportive of maneuver warfare.*"⁴

So, what are we doing about it? In his look at [Marine Corps Logistics in the 21st Century](#), Lieutenant General Michael Dana describes efforts in a number of areas, including unmanned cargo platforms, 3D printing / additive manufacturing, predictive maintenance, and others.⁵ All are necessary aspects to explore and critical to our advancement. He also acknowledges a key challenge--specifically, as long as the MAGTF is big and heavy, logistics will continue to be big and heavy. Given that we know our logistics needs to be "more agile, leaner, and more

responsive,⁶" this is a catch-22, right? Or is it? The Marine Corps answer is that it can't be. Failure is not an option. Thus, we need to rethink.

Consider the technological advancements described in LtGen Dana's article all together, and combine them with the advancements we can pursue in advanced analytics and data. The realm of analytics and data is underexplored—which is why I call it out separately here—but it has the potential to radically transform processes, especially when combined with other emerging technological capabilities. I recently published a post on this topic, entitled [Enabling Better Decisions: The Drive Towards an "Intelligent Organization."](#)⁷ It's certainly worth reading (shameless self-promotion aside), but suffice it to say that algorithms, machine learning, and predictive analytics can enable decisions that lead to better and measurable outcomes; decisions that are faster, more accurate, and less manpower intensive (and in many cases, automatable).

Challenging Paradigms

So, what do all these new technologies really mean to the way we operate? Let's pause and briefly look at the other elements of the MAGTF. Consider how the implementation of the F-35 Joint Strike Fighter and the V-22 Osprey has dramatically changed how the MAGTF operates with respect to aviation. It's even fair to say that the capabilities they represent have changed the way we look at the battlespace. In ground combat arms, advancements in tiny drones and communications capabilities, for example, have enabled small infantry units to conduct operations in entirely new ways. Why then, should we logisticians assume that all these new and emerging capabilities should simply enable us to do the same things we've always done, in the same ways, just a little bit better? We can't, of course.

A great example of rethinking logistics is found in an article written by my good friend, Lieutenant Colonel Omar Randall, entitled "Support vs. Enable: A Logistics Paradigm for the Marine Corps Operating Concept."⁸ In it, he challenges our traditional paradigms of General Support (GS) and Direct Support (DS) operations that are largely supply-based; in other words, concepts of support that begin with the consumption needs of supported units and assume that units bring what they need, exhausting their own capabilities before requesting additional support. Rather, he envisions a logistics architecture that is distribution-based, where units bring only what they can't get (rather than bringing what they think they need). This implies an exquisitely refined, agile, and incredibly reliable (thus *trusted*), distribution network. When we think about this in terms of advanced analytics, predictive algorithms, capable cargo unmanned aerial systems (UAS), and others, does this not radically change the way we can operate?

Consider the operating environment described above, but now imagine the capabilities we are exploring have matured. Does not a logistics system with a reliable, agile, and responsive distribution network powered by advanced analytics and predictive algorithms mean that units can carry dramatically less "stuff?" Does not having large numbers of fairly small, autonomous cargo UAS (again, tied in with an "intelligent network") mean that small unit replenishment can occur more often, on demand, and potentially in a "single-order-single-delivery" concept (Amazon style) instead of waiting to aggregate large volumes in big convoys or aerial deliveries? With reduced demand on ground transportation, will we not require fewer vehicles and fewer movements; and thus decrease demand for fuel, ammo, water, spare parts and maintenance, and the list goes on? Ultimately, especially when we consider that even our "tail" has a tail, significant advancements here that lead to a smaller, more agile, more responsive logistics presence will have exponential impacts. When we consider these advancements

together, it is critical that we challenge our traditional paradigms of doing business, such as the “linear, sequential, and phased approaches to operations⁹” referred to in the MOC—including our tried and true methods of GS and DS logistics—as LtCol Randall does. Certainly, the potential implications on size and structure of the Logistics Combat Element (LCE) are quite radical.

The Way Ahead

So, what’s the answer? This article does not identify specific solutions or changes to implement. Rather, it represents a call for new thinking within our logistics community; a call to action for disruptive thinkers and leaders to challenge existing paradigms. It is critical that we tap into the innovation, intellect, and creativity resident within our force while exploiting what we can learn from cutting edge industry leaders. Further, it is essential that our leadership corral our efforts into a unified plan. Rather than several disparate programs and efforts centered on innovation, technology, education & training, etc., we should form a definitive campaign plan, nested with the MOC, that drives towards a cohesive logistics vision supportive of 21st Century MAGTF operations. Our leaders should avoid the temptation to make this an overarching “plan for everything” that addresses all things logistics related in our enterprise, but rather focus squarely on the key requirements, aggressively pursuing them with defined objectives and measures of success.

These changes won't occur overnight, as LtGen Dana points out in his vision of hybrid logistics. However, as the aviation and ground combat communities make dramatic shifts in operational methods to account for technological improvements, we cannot simply go back to Marine Corps leadership and ask for ever more equipment and structure, take up more space on

shipping, and operate in the same ways we always have but just a little bit better. This will be uncomfortable, and we must have tough conversations about risk. But if we truly intend to “Enhance our ability to maneuver,¹⁰” and meet the demands of the 21st Century MAGTF, we must transform. We must turn our logistics into a competitive weapon—before our potential adversaries do. Remember the famous quote from Alexander the Great: "My logisticians are a humorless lot. They know that if my campaign fails, they are the first ones I will slay." I suspect that in his office at the Pentagon, the Commandant of the Marine Corps is thinking the same. Failure is not an option; we must rethink logistics.

¹ USA. Department of the Navy. Headquarters Marine Corps. Marine Corps Operating Concept. By Gen Robert B. Neller. Washington, DC: Headquarters Marine Corps, 2016. Print pg 8.

² Ibid, 23.

³ Eli Gross, Head of Global Transportation & Infrastructure, Morgan Stanley Investment Banking Division, Jan 30, 2016.

⁴ USA. Department of the Navy. Headquarters Marine Corps. Marine Corps Operating Concept. By Gen Robert B. Neller. Washington, DC: Headquarters Marine Corps, 2016. Print pg 9.

⁵ LtGen Michael Dana “Marine Corps Logistics in the 21st Century,” Marine Corps Gazette, (Quantico, VA: October 2016), 8-11.

⁶ Ibid, 8.

⁷ <http://www.defensefellows.org/?p=367>.

⁸ At the time of this writing, this article has not yet been published; it is expected to appear in the pages of this journal.

⁹ USA. Department of the Navy. Headquarters Marine Corps. Marine Corps Operating Concept. By Gen Robert B. Neller. Washington, DC: Headquarters Marine Corps, 2016. Print pg 8.

¹⁰ Ibid, 10.

Note: A version of this article has already been posted online, at <http://www.defensefellows.org/?p=418>