CASEVAC

Will our unspoken assumptions be valid in a modern war?

What can the Marine Corps learn from the war in Ukraine? What if we had to fight a similar conflict? Our recent experiences in Afghanistan and Iraq were significantly different from Ukraine, especially in terms of enemy capabilities, persistent drones, anti-aircraft missiles, long-range rockets, and aviation vulnerabilities.

Our casualty evacuation (CASEVAC) procedures are built on several unspoken assumptions: (1) Air superiority—control of the air without interference from air and missile threats, (2) Available aircraft—especially helicopters, (3) Airfield infrastructure—with maintenance and fuel, (4) Uninterrupted communications, (5) Expeditionary hospitals—at protected base camps, and (6) Unsophisticated adversaries. **What if these assumptions are no longer true?**

In Ukraine, most units have anti-aircraft missiles. Radios are jammed. Long-range artillery, rocket, and missile units—enabled by drones—strike airfields, fuel and maintenance sites, base camps, and hospitals.

1. What if helicopter casualty evacuation (CASEVAC) is not available? What if the 'golden hour' is an unrealistic goal?

Russia lost 170 helicopters in the twelve months through June 2022.[1] Helicopters are extremely vulnerable to man-portable air defense systems (MANPADS)—lightweight missiles that are now carried by most small units on the battlefield. Because of the danger from enemy (and even friendly) anti-aircraft missiles, Ukrainian helicopters no longer fly within 30 kilometers of the front lines.[2]

2. What if our casualty collection locations are observed by drones? What if casualty collection points, landing zones, evacuation routes, and treatment centers are targeted by drones, artillery, and missiles?

Drones are now everywhere, all the time. The battlefield is totally transparent. During the battle of Bakhmut, in August 2022, there were 50 drones in the sky at all times.[3] Special armed drones kill helicopters and vehicles.[4] Ukrainian units have learned to disperse all collection points, assembly areas, headquarters, and supplies because dispersal is more effective than concealment.[5]

Modern artillery fires networks—with drones—can see, strike, and destroy in 60 seconds. 86% of Ukrainian targets are derived from drones.[3] Artillery is still the greatest killer on the battlefield.[6]

3. What if CASEVAC must be done by vehicle convoys? Do we need designated CASEVAC vehicles and units?

CASEVAC convoys need vehicles, drivers, night vision devices, global positioning system (GPS) receivers, radio communications, maps, cleared routes, weapons, security, medical personnel, and refueling points—autonomous units on an organized transportation network. Marine armored vehicles were used to evacuate casualties under fire in Iraq. U.S.-made Bradley vehicles are being used to evacuate casualties in Ukraine.[15] CASEVAC convoys cannot be improvised—and medical personnel are too critical to be used to drive vehicles, plan routes, or monitor convoy locations.

4. What if CASEVAC vehicle convoys are attacked by the enemy? What if the enemy jams convoy GPS and radio communications?

If CASEVAC vehicles are tracked by drones, does every convoy need a counter-drone jamming device?[7] Does every convoy need their own drone? In Ukraine, vehicles on both sides fly their own expendable drones.[5] Does every convoy need an identification beacon to avoid friendly artillery fire?

Russia jams GPS, so Ukrainian units use paper maps for navigation.[2] Russia jams tactical radios, so Ukrainian units use alternate communications.[9] Ukrainians know that *all* emissions are targetable[2] and avoid cell phones.[8] Does a CASEVAC vehicle convoy maintain radio silence? How does the convoy communicate? Report positions? Receive route change instructions? Maintain battlefield awareness? Coordinate with a hospital? Pass through other units? Call for air support?

5. What if the expeditionary hospital is 40 kilometers away? How many hours does a CASEVAC vehicle convoy take? In the dark?

Due to the drone-artillery-missile threat, Russian headquarters now pull back from the font line and seek protection underground in reinforced structures.[10] Ukrainian facilities often relocate far from the font to avoid Russian multiple launch rocket systems (MLRS): The BM-27 Uragan can shoot 35 kilometers, the BM-21 Grad range is 52 kilometers, and the BM-30 Smerch range is 70 kilometers.

6. Can we link our CASEVAC network to civilian facilities?

How do we use commercial sources of information? What is the closest facility, number of beds, and types of treatment available? Real-time medical information should be available to CASEVAC leaders. Information—reported by civilian smartphone photos, social media, amateur drone videos, and commercial satellite imagery—is available to anyone with a laptop.[1,6,11] Crowd-sourced mobile phones can feed a real-time sensor network far more responsive than any centralized, legacy military system.[12]

7. How should the Marine Corps upgrade our CASEVAC practices?

Modern ground combat is deadly. The war in Ukraine is a long, grinding war of attrition.[11,13] Both armies have suffered crippling losses of units and people.[1] Over 47,000 Russians may have died in the first year of the war.[14] CASEVAC procedures on the modern battlefield are more critical, more challenging, and more threatened. When casualties are greater, CASEVAC becomes more important.

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Glossary:

From the ***DOD Dictionary***, Apr 2023:
air supremacy—That degree of control of the air wherein the opposing force is *incapable* of effective interference within the operational area using air and missile threats.

air superiority—That degree of control of the air by one force that permits the conduct of its operations at a given time and place *without prohibitive interference* from air and missile threats.

From NATO AJP-4.10 ***Allied Joint Doctrine for Medical Support***, Edition C, Version 1, 11 Sep 2019:
golden hour—MEDEVAC and advanced trauma care assets must reach the casualty within one hour of wounding.

Photograph:

U.S. Marine Corps photo by Corporal Mandaline Hatch. (2016). A UH-1Y helicopter evacuates a casualty near Darwin, Australia. *marines.mil*

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