

Fighting, Ukrainian Style

The Pentagon's Replicator Initiative points to pending change in military organizations and industrial advantage.



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The recent crash of a Russian warlord's airplane is a reminder of the ubiquity of overhead surveillance: American intelligence thinks that the cause must have been an onboard bomb, because no missile launch was detected near Moscow. The full scope of that sort of overhead surveillance has enabled a Ukrainian style of warfare that relies heavily on highly dispersed, mobile infantry splendidly equipped with precision robotics. The Pentagon's Replicator Initiative aims to duplicate some of that for the Americans, though perhaps with more robust and survivable weapons. Reforming fighting forces like 21st-century "Jock Columns" demands precision technology *en masse*, which suggests quicker program starts, faster learning curves, a shift in comparative advantage in military contracting, and less enthusiasm for horizontal mergers.

The intelligence on Prigozhin's crash points to impressive surveillance.

Let's start with the demise of Russian warlord Yevgeny Prigozhin. Recent assessments from American intelligence, for what they are worth, suggest that his aircraft was blown up by a bomb onboard, and not an anti-aircraft missile, in part because US Space Command did not track an anti-aircraft missile launch near Moscow at the time. The implication is that Space Command will generally see the high-altitude air defenses around Moscow activate when and where they do.

Indeed, this past April, General James Dickinson of Space Command asserted that his people had tracked 11,000 missile launches in the Russo-Ukrainian War in just over its first year. That is just over 26 launches per day. This suggests that the satellites can see many of the large missiles arcing up, though not the many cruising and shorter-ranged (anti-tank) weapons (see reporting by Brian Everstine in *AW&ST*). Meanwhile, the Institute for the Study of War and others are tracking the progress of the fighting by the thermal signatures of the fires created by explosions, as observed and published worldwide by NASA's Fire Information For Resource Management System ([FIRMS](#)). All this stands apart from what all those battlefield drones are seeing. Note how last week, when the Ukrainians destroyed an S-400 battery in Crimea with a land-attack Neptune missile, they filmed the explosions with a drone loitering overhead.

The Replicator Initiative replicates the Ukrainian Style.

Under that sort of surveillance, cannoners cannot simply stand in one place all day firing unguided shells for cumulative effect. Indeed, Russian artillery is being seriously attrited by Ukrainian counter-battery fire. In the estimation of statistician Ragnar Bjartur Gudmundsson, the Russians are losing one or two battalions of guns each day. This is why the US Army is effectively procuring only guided rounds (with the 'PGK' Precision Guidance Kit) for its forthcoming upgrade of its Paladin armored howitzers with the new 155 mm 58 caliber Extended Range Cannon Artillery guns from the Watervliet Arsenal (see reporting by Christopher Foss). This is why that service is experimenting with "Multi-domain Task Forces"—combined arms formations of long-range artillery and electronic warfare troops. This is why the US Marine Corps is shifting substantially to drones and long-range missiles for over-the-horizon destruction, and the greater dispersion of combined-arms littoral regiments.

Now the Pentagon wants to accelerate progress with formal process. At the "[Emerging Technologies for Defense](#)" conference of the National Defense Industries Association, in Washington DC this week, Deputy Defense Secretary Kathleen Hicks announced her department's Replicator Initiative, intended to put "multiple thousands" of autonomous systems in the hands of troops within two years. Top management in the American military is finally starting to think about fighting like Ukrainians, after weeks of anonymous "chirping from the sidelines" by the crew that had not fought a large-scale war since 1991 (for this riposte, see the editorial by retired General Jack Keane in the *WSJ*). This is good news.

The postmodern Jock Column deters with mass precision strike.

We can call the new organizational paradigm the postmodern Jock Column. That invention, of Major General "Jock" Cambell of the British Army, combined squadrons of light armor with companies of motorized infantry, to support batteries of mobile artillery, which would do most of the actual killing. In the Second World War, the columns raided Italian and German formations with long-range fire in the North African desert before quickly withdrawing. Their weakness then was their lack of concentration, but modern communications and fighting range make that less important, and indeed, the dispersion more important. On land and at sea, and even in the air, the concept is similar, and rather matches the "small and many" concept that Office of Net Assessment began imagining under Andrew Marshall in the 1990s.

After a few decades, the American military may be thinking big again. Admiral John Aquilino, head of U.S. Pacific Command, said at that NDIA conference that he wanted to be able to hit one thousand targets in the first day of a war with China (see reporting by Patrick Tucker). That may sound a bit like a movie line, uttered by Peter Sellers or Mike Myers, but that may also be the point. As Hicks put it, she wants that Chinese regime "wakes up every day, considers the risks of aggression, and concludes, 'today is not the day' – and not just today, but every day, between now and 2027, now and 2035, now and 2049, and beyond" (reporting by John Grady).

The historical precedent is remarkable. Aquilino's headquarters are already working with DARPA on a related project called Assault Breaker II, which harkens back to a project of the late Cold War that was designed to kill entire formations of Russian tanks quickly before they reached the front lines. By the late 1980s, the prospects of American technological breakthroughs and accompanying organizational adaptation were seriously scaring Marshal of the Soviet Union Nikolai Orgarkov, the highest-ranking intellectual progenitor of the Russian concept of the military technical revolution. In turn, that and the Strategic Defense Initiative of the Reagan Administration were enough to spur Mikhail Gorbachev's *glasnost* and *perestroika* initiatives. In retrospect, these attempts to reform an un-reformable system had unsurprising effect.

Technology *en masse* may change industrial structure.

Twenty-two years after Mike Rip and I wrote about this sort of military-technical change in our book *Precision Revolution*, Russians and Ukrainians are still throwing masses of unguided cannon shells at one another. The reason this style persists is that neither side has yet managed to procure enough precision systems sufficiently robust and producible to fully assume the duties. Sam Bendett of the Center for Naval Analysis told Tucker that replacing all those Chinese electronics in all those first-person-view killer drones would be challenging, at least in the short run. Hicks thinks that her department has “done its homework,” meaning she foresees no serious problems. All the same, call the sourcing issue the first problem.

Maintaining deterrence for decades as technology changes calls for constant campaigns to sustain transient advantages. Rita McGrath of Columbia University has written of how in that process, leadership is best accomplished as orchestration. Hicks says that Replicator will get her personal supervision. I wonder if that is the same thing. Hick's interposition harkens back to Defense Secretary Robert Gates effectively installing himself as program manager for the MRAP in 2007, and Prime Minister Stephen Harper's personal direction of otherwise sclerotic Canadian military procurement in the mid-2000s. Those interventions succeeded in buying important equipment, but possibly without building bureaucratic capacity for repeated awesomeness. For Hicks, the institutional challenge comes in getting the balance right—encouraging the innovators while removing the reprobate.

The economic challenge is coupled, but separate. In the early 21st century context, these columns of precision robotics means more shooters and sensors, in larger formations of more numerous platforms. Buying by the thousands or tens of thousands suggests some midcentury procurement and production, with larger production runs but rapid insertions of technology. If this is done right, we should see more use of dual sourcing, for competitive innovation and learning-by-doing. That makes room for more firms, and thus removes pressure for horizontal mergers in military contracting. The industrial winners in this technological shift may be the firms that can manage production at that rate and pace of change. Whether that is more an Anduril or a Raytheon is yet to be determined. Just consider that as our friend Byron Callan often notes, not every contractor today can claim to be “well positioned” for what comes next.

References and Further Reading

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