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**Red Swarm Rising: The Strategic Threat of Chinese Drones**

 Chinese drones are an underappreciated threat to U.S. power projection capabilities, and emerging technology is poised to significantly challenge traditional U.S. approaches to warfare. China is moving quickly to capitalize on the example the U.S. military has set in recent years with its own military drones. Since the attacks of September 11th, 2001, military drones have become a U.S. weapon of choice in conflicts throughout the Middle East and Africa. Until recently, the U.S. has been an unchallenged world leader in terms of armed drone development, and has been able to shape how the technology has proliferated and been utilized. Yet as technology advances and the advantages of this type of warfare become irresistible, more countries are seeking the capabilities for themselves—including those outside the sphere of U.S. influence and control.

In light of this trend, the U.S. military is facing the chilling prospect of having its own advanced technology and methods used against it. The nation leading the list of threats is China. In recent years, the Chinese military has taken significant steps to modernize its drone platforms and incorporate them into existing systems and military doctrine. China appears intent on replicating nearly every element of the U.S. military drone program and is expected to invest more than $10 billion in the next decade to produce over 41,000 land- and sea-based drone platforms. Equally alarming are indications that Chinese defense companies are moving quickly to capture the rapidly growing international market for armed drones, and doing so in a manner that does not control or influence how the new technology may be used.

The danger to the U.S. does not end there. Recent innovations in swarm intelligence—complex collective behavior achieved through simple individual actions—may soon asymmetrically threaten the U.S. military’s abilities to project power in the Asia-Pacific Region and beyond. What may have been a science fiction scenario is now poised to become the new reality in warfare: networked military drones fighting in massive, collaborative swarms. The traditional American approach of investing billions of dollars and decades of research and development for a limited number of qualitatively superior platforms may be sorely outdated in the face of a relatively low-tech, low-cost, yet quantitatively overwhelming threat. Advances in hardware and software designs, manufacturing materials, and rapid 3D printing capabilities may decisively alter how nations conceive of and amass military forces. China, with its proven, large-scale manufacturing expertise, could be a natural frontrunner in this new type of arms race and the emerging strategic threat to the U.S. could be considerable.

In response to the rapidly changing military landscape, the U.S. must take steps to preserve its power projection capabilities. In a broad sense, the U.S. should be concerned about how the proliferation of drone technology may spread strategic level capabilities to other states, non-state actors, and even individuals, which could further challenge the already complicated world in which the U.S. military is accustomed to operating. The U.S. should also be prepared for the potential application of emerging swarm technology—especially in ways that dangerously threaten existing methods of warfare. In the current, resource-strained environment, the U.S. must prioritize its responses based on the potential impact of these threats to its national security. The U.S. must consider the following recommendations to secure its vital interests:

**1) Increase vigilance in monitoring Chinese developments.**

The U.S. must increase its awareness of how drone technology is evolving and being utilized, both by its allies and security partners, as well as potential adversaries. It would be a mistake to assume other countries will use the technology as America does, or that such capability poses no strategic threat to U.S. interests. The U.S. must more closely follow Chinese interest in drone technology, along with any evolutions of their drone employment doctrine. Of vital concern is any indication of interest in practical applications of swarm intelligence, or discussions of how this technology may challenge traditional U.S. military strengths. By increasing efforts to stay informed, the U.S. will be able to monitor and better respond to vulnerabilities to its regional capabilities.

**2) Safeguard U.S. drone technology from foreign theft.**

It has been widely speculated the bulk of cutting-edge Chinese military drone technology being developed and fielded was stolen via cyber hacking or reverse engineered from U.S. platforms that fell into their possession through various means. Although the Chinese deny such claims, the U.S. must do more to protect its most advanced military technology. The U.S. should prioritize the protection of technology that will pose the greatest risks to its own forces if the technology were used against it. The U.S. needs to carefully balance the benefits of revealing such systems to the public in an act of transparency against the disadvantages of serving up blueprints to foreign hackers. More must also be done to ensure that advanced technology U.S. drones do not continue to fall into the hands of potential adversaries.

**3) Develop a comprehensive U.S. drone proliferation policy.**

For years the U.S. has adhered to a strict policy regarding the export of military drones. Only select nations, such as the United Kingdom, France, and Italy, have been permitted to buy military drones from U.S. companies. Of those countries, only the United Kingdom has been allowed to purchase armed drones. In sharp contrast, the Chinese are striving to gain a foothold in the rapidly growing international market for military drones; many countries throughout the Middle East and Africa have already purchased them. Although current Chinese exports may not yet pose serious danger, the relationships and dependences that evolve between China and its client nations will keep the door open for future exports that may seriously threaten U.S. interests. The U.S. amended its policy for exporting drones earlier this year, but more can be done for the U.S. to assert control over how drone capabilities will spread throughout the world. The U.S. must review its export policy to ensure stable and mutually beneficial relationships are formed. It will be too late for the U.S. to exert influence once Chinese companies have established marketplace dominance.

**4) Establish a more transparent moral precedent with U.S. drones.**

As drone targeted killing capabilities begin to spread throughout the world, many nations will naturally look to the example the U.S. has set with its own targeted killing programs. By maintaining secrecy about these programs, the U.S. perpetuates the impression it is conducting strikes without regard to international laws governing warfare, as well as those protecting humanitarian and international human rights. The U.S. might quiet some anti-American propaganda and guide the future, worldwide use of drones by being more open about the benefits and methods of the drone warfare it conducts. By shying away from a more public discussion about drone programs, the U.S. misses an opportunity to establish limits and guidelines that allies, as well as potential adversaries, must recognize (if not follow) when utilizing such technology. America seems to be focused on the short-term tactical benefits of its drone targeted killing programs, while ignoring the potential strategic consequences of nations like China and their clients imitating what they perceive to be a lawless program. Now is the time for the U.S. to demonstrate an ethical model for the world to follow.

**5) Asset leadership with Asia-Pacific allies and security partners.**

To date, there has been limited U.S. military drone presence in the Asia-Pacific Region. The U.S. may have overlooked the potential benefit of some U.S. drone systems in the region, especially in the current peacetime environment, or in possible limited scale conflicts. In contrast, regional allies and security partners have expressed great interest in procuring drones for their own militaries and are looking to the U.S. for technological and doctrinal guidance. The U.S. must take a more strategic and assertive approach when guiding allies and partners in the process of developing military drone capabilities. USPACOM must be prepared for its Asia-Pacific allies and security partners to apply their own strategic cultures and use their drones in a manner that fits with their own perceptions of the security challenges they face. By not asserting leadership, the U.S. risks facilitating escalations when drones are employed in careless or tactically near-sighted ways.

**6) Recognize and prepare for the threat of swarm intelligence.**

In addition to near-term, practical steps the U.S. can take to counter the threat of Chinese drones in the Asia-Pacific Region and beyond, U.S. policymakers must prepare for the possible consequences of China exploiting military applications of swarm intelligence and other new technologies. Policymakers must recognize swarm intelligence may expose vulnerabilities to its military systems and preferred methods of warfare. The U.S. should pay special attention to any signs China is interested in aligning such technology with its existing drone programs. The convergence of China’s manufacturing abilities, advances in swarm theory and 3-D printing, and the country’s demonstrated interest in drones may lead to a threat that could overwhelm current U.S. forces. To prepare for the likelihood of swarms entering the battlefield, the U.S. must reevaluate the way it conceives of its own military might and consider investments in platforms and systems that are less expensive, faster to make, and more nimble. While these recommendations may be difficult to follow considering the cultural, bureaucratic, and systemic challenges facing the U.S. military, policymakers must understand that drone technological developments and doctrinal evolutions are poised to rapidly change the way nations conceive of, procure, and employ air power.