



PROLIFERATED DRONES

A Perspective on Vietnam

by Dr. Tran Viet Thai

Introduction

As early as 1993, some institutions in the People's Army of Vietnam (PAVN) started to research and develop unmanned and distance-controlled flying objects – or “drones” – for military training, especially for air defense artillery and short-range missile systems. However, Vietnam has only developed civilian and military unmanned aerial vehicles (UAVs) integrated with modern technologies since 2001. So far, Vietnam has developed many kinds of multipurpose UAVs – most of which are short- and medium-range UAVs integrated with technologies such as full high-definition, long-range infrared cameras, target detection sensors, etc. Some kinds of long-range and more complicated UAVs, which may be lightly armed for use at the operational level or loaded with missiles for striking military targets, have been designed but not fully developed.¹ In addition, an increasing number of indigenous producers of drones and drone components, including the Vietnam Aerospace Association (VASA) and Vietnamese manufacturers HTI and Viettel Group, are entering the expanding UAV market in Vietnam.

Since 2011, the use of UAVs for civilian purposes such as scientific research, environmental survey, and forest fire prevention is booming in Vietnam and producing surprisingly positive results while substantially reducing costs. The quality and capabilities of “made-in-Vietnam” UAVs have also improved significantly in recent years. Interestingly, military UAVs – armed or unarmed – are still a relatively new phenomenon in Vietnam. The

application of UAVs for military activities is increasing, but they are still primarily used for training, surveillance, search and rescue, and border patrols.²

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Vietnam is facing some constraints in developing and using UAVs. The biggest one is that it lacks a legal framework regulating their development and application. Foreign partners outpace Vietnamese UAV developers, especially in terms of technology. The domestic proliferation of civilian UAVs – and especially camera-equipped UAVS, or flycams – by individuals or non-state actors may threaten the safety of low-flying planes and military helicopters. Bureaucratic procedures for testing, flying, or exporting UAVs are also quite complicated and need to be simplified soon. The market for UAVs in Vietnam is small but developing and holds great potential for further expansion. Today, however, some of the integrated modern technologies must still be imported or purchased from foreign partners.

Technology



Currently in Vietnam, UAV components and enabling technologies come from two sources: domestic development and foreign commercial purchases. Developers such as Viettel and HTI are able to independently design and develop all kinds of small, simple, and short-range UAVs. Components such as cover, frames, wings, and tails have been made from domestic polymer composites. Viettel and HTI also successfully developed software programs for positioning short- and medium-distance UAV control.³ In the late 1990s and early 2000s,

some important components such as UAV engines or electronic devices had to be imported commercially, but today they can be found easily in domestic markets.

Another developer, VASA, has signed one cooperative program with its Swedish partner to develop the medium-range Magic Eye 1 UAV with technology being transferred from Sweden. Some military UAVs, such as Orbiter 1 and 2, have been imported from Israel. Vietnam is also planning to cooperate with Israeli partners to develop UAVs based on technological transfers from Israel.⁴

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Strategic Implications

In the early 2000s, Vietnam was very surprised by the way the United States conducted its anti-terrorism war in Iraq, Pakistan, and Afghanistan. The wise application of drones in pursuing and killing suspected terrorists has greatly impacted the conduct of modern wars. The use of drones is extremely effective in terms of reducing costs and casualties in action if compared with the Vietnam War. That fact has been studied carefully in Vietnam, which has imported some UAV models for research and development. As the Institute for Space and Technology's Pham Ngoc Lang has explained, "we profoundly understand the great potential of using UAVs in various activities, both civilian and

military, such as mapping, surveying, border patrol, search and rescue, HADR [humanitarian assistance and disaster relief], and so on. However, due to the lack of financial and technological capacity, the use of UAVs in Vietnam so far is still limited and primarily for civilian purposes.”⁵

With regard to military purposes, Vietnam is at an early stage in its use of UAVs. One expert on Vietnam’s national defense strategy has noted that the Ministry of National Defence has identified some priorities for UAV development and application, such as air defense training, surveillance and reconnaissance, monitoring, search and rescue, and border and maritime patrols. Vietnam has made significant progress in these areas, and in general, the country’s way of using UAVs so far has produced changes in thinking at both strategic and tactical levels. Drones are considered to be an effective and modern tool for defending national sovereignty in the new and fast-changing regional context. Due to the great potential of drones, it is likely that Vietnam will go beyond these current priorities in the near future.

Domestically, many flycams have been imported for personal use, and the fact that more and more individuals are using short-range UAVs for recreational or civilian purposes leads to some debate regarding safety concerns for military helicopters and low-flying planes. The question of how to regulate and harmonize civilian and military uses of UAVs has not yet been fully addressed in Vietnam.

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It is also interesting to note that the trend of using UAVs in maritime activities will surely increase given the complexity of issues surrounding the South China Sea. This could in turn have a strategic impact on Vietnam’s national security. Indeed, the South China Sea is

an arena where great powers compete for influence and where military drones could potentially be deployed. Recently, a U.S. Defense Department report stated that China is going to produce 41,800 military UAVs by 2023, many of which are intended for striking targets.⁶ This shocked many people in Hanoi, since with the land reclamation projects in the South China Sea's Spratly Islands, China could deploy large numbers of armed UAVs there and create a huge threat to Vietnamese national security. This may push Vietnam to develop longer-range and armed UAVs more rapidly.

Currently, Vietnam can only use UAVs within its own territory, and no UAV mission has been conducted outside its borders. There are three reasons for this. First, all of Vietnam's UAVs are technically short- and medium-range. Second, Vietnam has not yet signed any bilateral or international agreement on the use of UAVs for military purposes, especially for longer-range regional or global missions beyond its borders. Third, Vietnam is pursuing a "three-no" defense policy: (i) Not allowing any foreign country to create a military base in Vietnam; (ii) Not sending Vietnamese combat troops abroad; and (iii) Not allowing any party to use Vietnam's territory to attack a third party. The deployment of military UAVs abroad is not appropriate at this moment, but all options are open to future debate.

There are extensive debates in Vietnam about how to use UAVs for national defense purposes, and the general sense is that UAVs can be legitimately used for protecting independence, sovereignty, and territorial integrity. Vietnam so far has no interests in sending UAVs abroad or using UAVs to strike targets abroad. In legal, political, and technical terms, Vietnam is neither willing nor ready to send UAVs to participate in cross-border operations, into neighboring countries' territory, in longer-range regional or global missions, or in expeditionary operations.

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One expert from the Ministry of National Defence of Vietnam has noted that UAVs, or any

kind of high technology, cannot replace traditional human-inhabited aircrafts in national security and defense.⁷ Vietnam's past experience with war shows that human beings are key in national defense. In the future, the role of UAVs may be more important, but it does not mean that UAVs can fully replace human beings. In addition, Vietnam is likely to accept more risks to UAVs compared with traditional human-inhabited aircraft, since the loss of UAVs can be viewed and accepted more easily than can the loss of human life. "We lost and sacrificed too much during the past wars, and we are not allowed to have further losses of life during peacetime for any reason," a member of the National Assembly of Vietnam explained.⁸



Reflecting on Vietnam's perception of foreign drone acquisitions, Dr. Hoang Anh Tuan, director-general of the Institute for Foreign Policy and Strategic Studies, stated:

"We consider that if any country can deploy UAVs in military operations, it means that that country has acquired greater military capability at tactical levels. The trend is new and only countries that possess great technological capability can advance the research and deploy UAVs first. But as time goes by, other small and developing countries will be catching up." In the current context, there are many countries that are able to send their drones into Vietnam's territory or its disputed area. China, Japan, the United States, and many members of the Association of Southeast Asian Nations (ASEAN) are able to send civilian and military drones into disputed areas in the South China Sea. "If Vietnam well implements the foreign policy of comprehensive international integration," Hoang continued, "foreign UAVs will not represent a threat to our security. The development of UAVs around the world is not only technological progress, but also represents the greater resolve and fiercer competition among major powers and regional countries as well."⁹

Vietnam has detected an increasing number of foreign UAVs in its territory, especially in the airspace over the South China Sea and in some border areas. However, Vietnam keeps silent on this and its reaction is mainly to monitor the intruding drone. There are several reasons why Vietnam is unwilling and not ready to shoot down foreign UAVs. First, political stability is very important at this moment. Using air defense weapons to shoot down foreign UAVs can cause concerns about instability. Second, Vietnam's monitoring system is still blind in some regions, neither good nor effective enough to cover all of the country's territory. Moreover, the air defense systems, especially in Vietnamese outposts

in the South China Sea, are limited and not designed for shooting down UAVs. Third, Vietnam can detect flying objects, but it is not easy to identify whether those objects have civilian or military purposes, whether they are armed or unarmed, or who owns and has sent them into Vietnam's territory. Therefore, shooting down a UAV is not easy and may carry some political and legal consequences.

A similar response would occur if a Vietnamese UAV were to go down. The effective control range for Vietnam's UAVs is between 100 and 200 kilometers. So, it would not be easy for Vietnam to identify the reasons why a UAV had gone down until parts of the downed UAV could be retrieved. Therefore, an immediate response to the downing of a Vietnamese UAV would be difficult.

Constraints

In addition to the technological and financial constraints discussed above, drone use in Vietnam faces legal and policy constraints. Vietnam has not yet developed a full legal framework for sending UAVs abroad or for responding to the use of a foreign UAV in its territory or in disputed areas. It has not yet signed any legal or political agreements with other countries with regard to UAVs. Vietnamese lawmakers and policymakers see some differences when sending a UAV to a disputed area or into foreign territory, but generally speaking, Vietnam retains the right to send UAVs to such locations, especially in the South China Sea. Similarly, an armed UAV would be considered a threat to security if it were sent into Vietnamese territory without mutual agreement or prior notice. Furthermore, the treatment of armed UAVs in Vietnam's airspace may be similar to that of military planes, but there have been no official regulations about foreign UAVs so far. A comprehensive strategy should be developed to cope with foreign UAVs in Vietnam's territory in the near future.

Conclusion

In sum, the arming and use of UAVs for military purposes in Vietnam is still a relatively

new issue, and there is substantial room to refine the country's policies. The thinking on developing and deploying UAVs in Vietnam has been mainly from a defensive perspective to date and is tied down with technical, legal, and political constraints. Some civilian corporations and institutions in the PAVN have acquired enough capabilities to produce short- and medium-range UAVs. In the near future, armed UAVs with target striking capability will be developed, but Vietnam is not ready to deploy them abroad without the prior permission of concerned countries. For the foreseeable future, UAVs will only be used for national defense purposes and the use of UAVs will continue to depend very much on political relations, legal foundation, and even technical/weather issues. Vietnam thus needs to develop a better legal foundation for using and developing UAVs and devise a comprehensive strategy to deal with them in the future. It is possible that, as either the security environment or the country's capabilities change, so too will its stance on drones.



Response: Singapore Perspective

By Richard A. Bitzinger

Vietnam, like most countries, recognizes the growing military value of drones, both armed and unarmed. At the same time, its domestic drone industry is challenged by the technological requirements of unmanned aerial systems – especially for anything beyond short-range, tactical employment – and consequently, this industry is only gradually emerging. The technology for improved, and especially longer-range, drones has proliferated considerably in recent years, however, and Vietnam should begin to make significant progress on these systems over the next decade.

Vietnam appears to be dedicated both to increasingly employing drones as a military tool for surveillance and reconnaissance, and to developing a capacity to design, develop, and manufacture such drones indigenously. With that said, Singapore has not made any formal or explicit pronouncement as to its reactions to Vietnam's acquisition and use of drones. This is partly in keeping with the principles of the Association of Southeast Asian Nations, which endorses the independence and sovereignty of fellow member-states, noninterference in each other's affairs, and, basically, peaceful coexistence among all ASEAN members. So long as Vietnam's drone activities do not interfere with Singapore's security, the latter has little reason to be concerned. It is unlikely, too, that Vietnamese drones would be used in any offensive or aggressive manner against Singapore.

In addition, Singapore recognizes that Vietnam probably wants to acquire the ability eventually to operate long-endurance, long-range drones for surveillance of its territorial claims in the South China Sea. This means directly confronting China, at least so far as surveillance and reconnaissance are concerned. On the one hand, Singapore might accept these efforts as entirely legitimate, so long as they do not provoke military reactions by the Chinese or other states in the South China Sea. However, should Vietnamese drone activities contribute to rising tensions in the region, Singapore will be quite concerned that any spillover in friction or conflict could undermine its own security.

Finally, should Vietnam acquire an armed drone, that development would likely encourage Singapore to do so as well, so as not to be in an inferior position when it comes to overall regional capabilities.

Overall, Vietnam's drone efforts and activities do not constitute a direct challenge to Singapore. Vietnam's drone capabilities are still inferior to Singapore's, and even if those capabilities grow (as is likely), they will not pose a direct threat to Singapore. If there is a concern, it is that the overall increased use of drones in the South China Sea will raise tensions and insecurities in the region, impacting Singapore's national security.

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Endnotes

1. Colonel Do Van Lap, director of the Flight Instrument Center, Viettel Group, interview by *Quan Doi Nhan Dan* [*People's Army Newspaper*], July 6, 2013.
2. Colonel Le Dinh Cuong, deputy director general of the Institute for Air Defense Technology, Ministry of National Defence of Vietnam, and Colonel Do Van Lap, director of the Flight Instrument Center, Institute of Research and Development, Viettel Group, in interviews given to *Nhan Dan* [*People's Army Newspaper*], January 5, 2014.
3. Do, interview with *Quan Doi Nhan Dan*.
4. Professor Nguyen Duc Cuong (head of the Vietnam Association of Space and Aviation), "Remarks at the signing ceremony between Vietnam and Sweden marking the technological transfer and development of medium-range UAVs" (Hanoi, November 20, 2012).
5. Dr. Pham Ngoc Lang (Institute for Space Technology, the National Academy of Science and Technology of Vietnam) in an interview published on the VGP News (the portal of the Vietnamese government), May 5, 2013.
6. Zachary Keck, "China to Lead World in Drone Production," *The Diplomat* (May 2, 2014), <http://thediplomat.com/2014/05/china-to-lead-world-in-drone-production/>.
7. Author interview with a Vietnamese Ministry of National Defence senior official.
8. Quoted from a debate in the National Assembly of Vietnam about Vietnam's participation in U.N. peacekeeping operations abroad (Hanoi, November 2012).
9. Dr. Hoang Anh Tuan, director-general, Institute for Foreign Policy and Strategic Studies, Diplomatic Academy of Vietnam, in a private discussion with

the author at the Diplomatic Academy of Vietnam, May 3, 2015.

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