

Russia's Use of, and Defense Against, Loitering Munitions



Lancet loitering munition UAV.

Source: Vitaly Kuzmin, <https://photos.smugmug.com/Military/ARMY-2019-Exhibition-pavilions/i-HwGLLZC/0/3a7de479/X2/Army2019Pavilions-071-X2.jpg>, CC BY 4.0

By Charles Bartles
OE Watch Commentary

The use of loitering munitions in the recent Armenian-Azerbaijan conflict has aroused great interest in Russia. The accompanying excerpted article from *Armeyskiy Sbornik*, the military journal of the Russian Ministry of Defense, discusses the future of loitering munitions, or in Russian parlance “kamikaze drones.” The article outlines how the use of loitering munitions is ideal for situations where small groupings of forces are employed with no systematic air defense. The accompanying excerpted article from *Nezavisimoye Voyennoye Obozreniye*, a weekly military newspaper published by *Nezavisimaya Gazeta*, a large-circulation daily centrist newspaper that is occasionally critical of the Russian government, discusses how Russia may have employed such a loitering munition in Syria and potential uses of loitering munitions, such as for airspace closure. The accompanying excerpted articles from *Materialno-Tekhnicheskoye Obespecheniye*, the logistics journal of the Russian Ministry of Defense, shows how UAVs in general, and loitering munitions in particular, are being considered by not only combat arms personnel, but also by the logisticians. It is clear from the articles that if loitering munitions are the future of warfare, Russian forces are already considering the implications and possible solutions to ensure they will be able to sustain the warfighter.

“In the authors’ opinion, their [loitering munitions] massive employment permits taking a giant step toward a new, state-of-the-art, ‘smart,’ remote, precision, relatively inexpensive, and bloodless war.”

Source: A. Kalistratov “Камикадзе» XXI Века: Барражирующие боеприпасы — новое средство вооруженной борьбы (Kamikaze of the 21st Century: Loitering Munitions Are a New Means of Armed Warfare),” *Armeyskiy Sbornik* (military journal of the Russian Ministry of Defense), April 2021. <http://army.ric.mil.ru/upload/site175/48u5oj4kCF.pdf>

The mass media literally abounds with laudatory articles about results of combat employment of so-called ‘loitering munitions’ in military conflicts of recent years. In the authors’ opinion, their massive employment permits taking a giant step toward a new, state-of-the-art, ‘smart,’ remote, precision, relatively inexpensive, and bloodless war. Indeed, they fully conform to the nature of the majority of modern military conflicts being waged in local geographic areas in which, as a rule, extremely limited forces are employed, combat operations are conducted focally and sporadically over a large area, and where there is no place to employ large military formations armed with state-of-the-art weapons covered by a “multilayer” air defense system...Under these conditions loitering munitions proved effective in point destruction of the command and control system infrastructure, artillery and tanks at firing positions, air defense targets, and the enemy rear and lines of communication...

The operator detects and identifies the target, makes the decision to engage, give the command to dive, and guides the munition precisely to the target (if it is not equipped with a homing head)...In the near future the majority of these functions can be assumed by onboard artificial intelligence. It will move the munition to the loiter area, determine the optimum procedure for doing this, detect and evaluate the target independently in accordance with the “line of priorities,” evaluate the target, and then destroy it by permission of the operator or command and control facility artificial intelligence.

The advantages of loitering munitions are the capabilities of finding desired targets over a lengthy time, or waiting in the air for their appearance; delivery of precision strikes; extremely low vulnerability to state-of-the-art aircraft and air defense missiles... This is confirmed by the experience of fighting in Karabakh. Effective air defense weapons as Strela-10, Osa-AKM, and a variant of the S-300 proved ineffective-- for example, due to the absence of an infrared signature from the electric motors’ loitering munitions, it was not possible for the homing heads of man-portable air-defense systems to lock onto loitering munitions...The disadvantages of loitering munitions are low speed and flight altitude; dependence on maintaining continuous electro-optical communication with the command and control facility operator; dependence of some systems on satellite navigation; possibility of electronic warfare interfering with command and control...

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“The trial use by the army of loitering munitions in Syria can be seen as a positive sign for our manufacturers, and it indicates a transformation in the Russian military's position regarding a type of weapon that is new to it.”

Source: Darya Lyubovik, “Удар «Ланцетом» (Strike of the ‘Lantset’),” *Nezavisimoye Voyennoye Obozreniye* (a weekly military newspaper published by *Nezavisimaya Gazeta* a large-circulation daily centrist newspaper that is occasionally critical of the Russian government), 22 April 2021. https://nvo.ng.ru/nvoweeek/2021-04-22/1_1138_drones.html

The Lancet is a brand-new loitering munition which the Russian military is actively employing for pinpoint missions to destroy infrastructure and hardware of the banned ISIS terrorist organization. Rossiya-1's Vesti Nedeli program has broadcast the first footage of one of these flying robots being used in the Syrian Republic, in which it hits a moving jeep and machine-gun nest. The Lantset is the first serial-production weapon at the Russian army's disposal that can not only destroy individual targets but also operate in a swarm, creating an aerial minefield.

Kamikaze drones played a starring role in the recent fighting in Nagorno-Karabakh: Azerbaijan's army made extensive use of Israeli-made unmanned vehicles. They were such an outstanding success that several countries without air forces of their own seriously believed that drones will let you wage war to great effect without risking your own soldiers' lives. Russia's Lancet, made by the ZALA Aero company (part of the Kalashnikov group in the Rostec state corporation) is one such drone. Aerodynamically, it is configured as a pair of X-shaped fins. This makes it compact in size and more stable than a conventional aircraft configuration when diving or maneuvering. It has a television transmitter for sending target images and confirming a successful engagement.

ZALA Aero chief designer Aleksandr Zakharov points out that kamikaze drones can not only hit ground targets with surgical precision but be used against aerial targets as well. The Rossiya-1 report showed an “aerial minefield:” several Lantsets took up position for patrolling and when a hostile drone appeared rammed it, blowing it up with their three-kilogram warheads. The footage included computer graphics in which a drone similar to the Turkish Bayraktar was destroyed. “They fly at about 150 kph and we can easily get that to 300 kph when diving,” Zakharov said, commenting on the video clip...

Leading unmanned aviation expert Denis Fedutinov commented to Nezavisimoye Voyennoye Obozreniye... “The trial use by the army of loitering munitions in Syria can be seen as a positive sign for our manufacturers, and it indicates a transformation in the Russian military's position regarding a type of weapon that is new to it,” he emphasized.

Source: Colonel Sergey Viktorovich Shishkov, Lieutenant Colonel Yuriy Nikolayevich Borshchin, and Igor Kolesnikov, “Как Защититься от Дронов-«Камикадзе» Часть I (How to Defend Against Kamikaze Drones Part I),” *Materialno-Tekhnicheskoye Obespecheniye* (logistics journal of the Russian Ministry of Defense), April 2021. <http://mto.ric.mil.ru/upload/site193/2BSnkrjCJ6.pdf>

Subunits of the Material-Technical Support (MTO) Troops currently hold one of the leading positions in increasing the combat readiness of Defense Ministry formations, units, and organizations and strengthening the defense capability of Russia as a whole. MTO subunits meet troop needs for arms and military equipment, missiles, munitions, fuel, food, and other kinds of supplies necessary for day-to-day life and combat activities. Reserves of equipment and supplies are established both at military unit permanent stationing locations as well as in the field.

It is obvious that by taking advantage of sabotage teams or precision-guided munitions (PGMs), the enemy will take all steps to prevent effective support of our troops with supplies. These teams can use small UAVs not only for reconnaissance, but also for engaging targets. These articles have small dimensions and can be imperceptible to personnel...where a small UAV is making a television film of fueling organized under field conditions...The boundary among PGMs, UAVs, and robotic complexes is fading...

Source: Colonel Sergey Viktorovich Shishkov, Lieutenant Colonel Yuriy Nikolayevich Borshchin, and Igor Kolesnikov, “Как Защититься от Дронов-«Камикадзе» Часть II (How To Defend Against Kamikaze Drones Part II),” *Materialno-Tekhnicheskoye Obespecheniye* (logistics journal of the Russian Ministry of Defense), May 2021. <http://mto.ric.mil.ru/upload/site193/d5VauJv52T.pdf>

For effective detection and combat against small enemy UAVs, a system can be developed based upon item 9S482M7 [a modernized air defense battery command and control vehicle mounted on a BTR-80 chassis], which permits processing of large streams of information from various sensors and will work in conjunction with tactical air defense command and control systems...

Thus, anti-small UAV systems will be able to reduce the threat of attack on logistic units, storage depots, evacuation and repair, road commandant activities, motor transport units, supply regiments, missile storage bases, rail brigades, as well as material-technical support brigades...