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ОСВІТА, НАУКА ТА ВИРОБНИЦТВО: РОЗВИТОК ТА ПЕРСПЕКТИВИ

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EXPLOSIVE FUNCTION OF SAFE LITERAL APPARATUS

A.P. Seredin, A.V. Bulashenko

National technical university of Ukraine "Igor Sikorsky Kyiv polytechnic institute"
ceredin.a@gmail.com, an_bulashenko@i.ua

Today, from time to time, the suburbs occupied by Russians in Donetsk are shocked by the fierce firing of machine guns and machine guns. It seems that they are firing from all available weapons, which is a serious battle or drunken fighters have argued against each other. In fact, they shoot in the air, trying to knock down Ukrainian "unmanned aerial vehicles" over them - the visionary eyes of the All-Ukrainian Soviet Union, which see the movement and location of enemy forces.

But such devices are available to separatists, and not just intelligence. Increasingly, there are reports that bomber drones are attacking Ukrainian positions in the Donetsk and Mariupol regions. According to the ATO headquarters, the sabotage in the Svatov military warehouses, which were thrown by incendiary shells, was similarly carried out. Meanwhile, May, not every day, across the northern boundary of the Ukrainian territory, something spoiled by Russian intelligence workers. The high-tech war of drones, which until recently seemed a fantasy of a distant future, has become a reality in today's Ukraine.

The idea of unmanned flying vehicles, often called drones, has long lay on the surface [1]. It is believed that for the first time it was clearly formulated in 1971 by John Stuart Foster Jr., a nuclear physicist who headed the Livermore National Laboratory and then occupied one of the key posts in the Pentagon.

Foster Jr. was carried away by aviomodeling. Watching once again the flight of a radio-controlled aircraft, he thought that the step from a busy toy to a new kind of weapons is not so great. It's enough to add the camera, improve some of the features a bit - and that unobtrusive spy plane will be ready. If they collapse, the pilot will not fall into captivity and will not give out secrets. It is necessary to add at least a minimum combat load to the radio-controlled model, and the scout will turn into precise, lethal weapons [2].

The idea of UAV was used in the 1970s. One of the main threats to the United States was then considered by the Soviet armed forces (in particular, tank troops). It was precisely with them that they were supposed to fight high-precision strikes, using intelligence data collected with the participation of drones.

Soon the nuclear power of both superpowers increased, making a senseless war with the use of traditional weapons. About the concept of unmanned aerial vehicles have been forgotten until the nineties of the last century. It was then that the official version of the combat drone was first used during a real military operation - the NATO intervention on the Balkan Peninsula.

In February 2001, the Pentagon and the CIA conducted a test of modified versions of the Predator UAV that carried on board the Hellfire rocket [3].

When in 2003, George W. Bush invaded Iraq, the main task of the drones was to recapture. First of all, it was necessary to identify the highways along the main roads and, if possible, to track the enemy's forces to their shelter.

When Barack Obama came to replace Bush, in the first year he authorized the use of drones in Pakistan. By 2010, the number of known cases of combat use of drones has increased. At the same time, the role of drones in Yemen is growing. On the territory of this country, they have already been used even more.

The first small "unmanned aerial vehicles" began to use the welfare that they had acquired at their expense and enthusiastically related to military affairs. At first, they were buying in Ukrainian stores controlling flying toys with video cameras, and then commissioned abroad for special surveillance of UAVs used for protection of reserves or

industrial communications. In the near future Ukrainian design bureaus, clubs of aeromodelling, and just individual inventors joined the case [4].

To kill a small flying machine, at a height from several hundred meters to 3 kilometers is very difficult. In fact, when militants shoot at them from Kalashnikov machine guns and machine guns, they simply waste their cartridges uselessly - the accuracy of the ammunition reaching 5,45 and 7,62 at a moving altitude of about one hundred meters is one hundred percent of the percentage. The 12.7 and 14.5 machine guns, as well as the ZU-23 guns, are chances higher, but the fire density should be at times greater than that of the anti-aircraft installations of the Second World War (the target is small). Therefore, a small "unmanned drone" shot down in the ATO zone is a rare exception, such cases can be counted on the fingers.

It should be noted that "industrial" and military reconnaissance UAVs are protected from such a dangerous enemy of drones as means of electronic warfare. When these "mufflers" are deployed and turned on (mobile communication, TV signals, FM radio may disappear at this time), the connection of the dron with the operator is interrupted. For simple tourist multi-cartridges and airplane entertainment models, this can result in an accident, since they are driven from the ground, and therefore will not be able to go back. But the drones for professional aerial photography and patrolling, and all serially-made military intelligence officers, are autopilot.

The drum machine also has drawbacks: working only on autopilot, it can not be guided and adjusted in flight from the ground - for example, if it is necessary to "tear" from the clouds closer to the ground, if it is necessary to accompany the mobile target (military column) or to refrain from shelling. Therefore, military reconnaissance drone has swindler control - thus, if the connection with the operator is interrupted due to "silence", then the autopilot automatically turns on the drone, which turns it back. In addition, it can transmit to the earth a real-time picture that is needed to guide the battery for moving purposes. In this, and there was a mystery to such an extreme accuracy of Russian artillery near Izvarino.

Finally, the third direction of development of ATO drones - these are the fighters of enemy drones. The idea is still in the development stage, which has to solve two difficulties. First of all, you need to solve the issue of controlling the dron-fighter so that the operator can see the target. Because of the small size of small UAVs for long distances, neither the human eye nor even a mini radar can distinguish it from a creeping crane or a kite, and the absence of a thermal trace makes them invisible in the infrared range. And then you have to grab and hold it in the sight that leads to it's own shotgun.

Thus, in order to improve the defense capabilities of our armed forces, we need to develop the use of UAVs in the form of reconnaissance facilities in order to prevent further losses in the area of the Russian-Ukrainian conflict in the east of Ukraine. It is necessary to improve the technical characteristics of the reconnaissance drones, increasing their range of action, improving the resolution of their video devices and improving the means of electronic protection of the interception of drones and counter-drones of the enemy.

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