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### SKY - FOR FLYING ROBOTS

*The US Air Forces* Command elaborated the Concept of unmanned aircraft for the next 25 years. As noted in the American media, the Concept outlines the ways of development and the integration technologies of this sector of aviation. The detailed name of the program is “*The US Air Force Remotely Piloted Aircraft and Unmanned Aerial Vehicle Strategic Vision*”. This program outlines the main fields of research and development activities in the given field.

The creation of this document, as assumed in the Pentagon, has long been brewing. Indeed, only in the sky over *Iraq*, according to the newspaper "*The New York Times*", there are about 700 different UAVs of different designs. As one journalist of this newspaper had said, the sky over *Iraq* is overcrowded by flying robots. The most common drone is "*Global Hawk*", "*Predator*", "*Hunter*", "*Pioneer*", "*Shadow*", "*Dragon Eye*", "*Raven*". All of them, without exception, are used to collect intelligence information.

The longest flight time has "*Predator*" (Fig. 1). This UAV can stay in the air for 24 hours. The cruising altitude is 3-4,5 km, the cruising speed is 120 km/h. If necessary, you can equip it with "*Hellfire*", which will create the conditions for the destruction of buildings, fortifications, vehicles and manpower at the order of the operator. It is characteristic that, the Pentagon decided to increase in five times the fleet of the "*Predator*" manufactured by **GENERAL ATOMICS AERONAUTICAL SYSTEMS** and to increase their number structure to 12 squadrons. By the way, today in the *US Air Force* there are only three such units.

Each military unit of the apparatus comprises the ground control systems, satellite systems and other expensive equipment, without which the UAV is unable to solve tactical problems on the march successfully. Cruising altitude of "*Global*

*Hawk*" is 18 km. It is a *heavy spy* with *modern equipment*, including radar, electro-optical and infrared cameras, it has a broadband satellite communication channel and a communication channel in the line of sight. While in Iraq is used only one UAV of this class, "*The New York Times*" believes that it is enough, because the device is intended for strategic intelligence.



Fig. 1. Unmanned Aircraft "*Predator*", USA

Other drones that are in the service of Marines and Army have more modest characteristics. They are small machines that fly at the altitude from several hundred meters to *two kilometers*, and start from airfields or mobile-based platforms. The smallest of the existing "*Iraqi*" drone has length of no more than one meter. Yet, Americans are convinced that this drone is too noticeable over the battlefield. Therefore, some companies have begun to create micro-UAVs. One of them, "*Wasp*", started to be tested in the open the seas near the California coast. The *33-inch* device weighs only *0,2 kg*, and it can be launched by a man's hand. It is equipped with two tiny cameras that gather information and transmit it to the operator in real time. The flying robot "*Wasp*" is a production of company **AEROVIRONMENT**. But this is not the first miniature *spy plane*, which was created in the United States. Defense Advanced Research Project Agency (**DARPA**) had launched the Program for creating such devices in the mid 90-ies. As part of this program **AEROVIRONMENT** developed *15-inch* plane "*Black Widow*".

**AEROVIRONMENT** announced successful tests of a heavy armored shock drone for fighting in residential areas. Its weapon is of class "*AGM-114K Hellfire*", "*Hidra-70*" and a *134 M* machine gun *7.62 mm*. One of the new fields of further development of UAV is creation of *fighter planes*. At present, 32 countries of the world are developing more than 250 unmanned aircraft, the most active of them is *China*. Taking into consideration the danger of such armada of flying robots, **DARPA** began to develop weapons against such machines. The working title of the project is "**Peregrine UAV Killer**". The basis of defense against UAV is a cheap, small, aircraft. Its advantage is the ability to eliminate any Unmanned Aircraft of the enemy. The agency also supervises the sale of unmanned helicopters as part of the major project "**UNMANNED COMBAT ARMED ROTORCRAFT**". The American aviation corporations **LOCKHEED MARTIN**, **NORTHROOP GRUMMAN** have introduced their concepts to specialists. Within the program of creation the robokopter "*Vigilante*" have been recently carried out test launches of the rockets. Another project of an unmanned helicopter is the latest development of **BOEING** on the basis of the existing *AH-6J "Little Birci"* to the unmanned version. A similar project to transform the manned machine in the robokopter "*UH-1 Huey*" is very close to the rocket test launches. It is equipped with the controlled rockets "*Advanced Precision Kill Weapon System*". Finally, there is quite an exotic aircraft at the final stage. The company **TRITON SYSTEMS** developed the concept of drones with shapes and sizes of a normal flying saucer. It should be noted that the first combat "*saucer*" was invented in 1948 by designer Walter Morrison. The modern combat "*saucer*" is called so far **Modular disc-wing weapon for activities in urban areas**. It is assumed that due to its shape, this UAV is able to penetrate into the basement and in the cracks where the enemy is hiding and attack it with a micro-bomb. Airfields for these "*saucers*" can serve as a device for target shooting in sports. Taking into account the absolute advantages of the drones, one should pay attention to one of their essential fault - the flying machines in the hands of terrorists can be turned into "*Kamikaze Robots*." However, the measures to prevent this danger can provide the requirements for their use.