

Die weltweite Tendenz ist die der Aufwärtsentwicklung der Navigations-Gebäude spürt Durchführung des Bruchteils der kämpferischen Maschinen der Kriegertruppen, als exakter und kontinuierlicher hinter Ausgabe der Navigations Information Apparatur, bis 100% Niveau, ausrüsten. Mehr als dies, aussichtsreiche Pläne auf Abschnitt bis 2020 j. und weiter es ist vorausgesagt, daß jeder abgesonderter Armeeingehöriger an Kampfplatz muß haben Navigationsmittel und Eingang zu erdinformationen Angaben.

Standhält spürt die Tendenz hinsichtlich Beiordnung der etlichen Navigations Gebäude in Umrahmungen vereinigten Gebäude, in partieller Apparatur der Benutzer des radionavigationer und autonomer Begleitersgebäudes .

Schöpfung und Durchforschung der Effektivität der Gebäude der Navigations Süstems und Verarbeitung der erdinformationen Information bei Streitkräften der Ukraine es kommt, beachtenswerte Richtung der wissenschaftlichen Abhandlungen in Interessen der Schöpfung der automatisierten Gebäude des Amtes Truppen an Anfangsgründe der erdinformationen Technologien zu aufzählen.

GENERATED ACOUSTIC WAVES FOR MILITARY PURPOSES Vankevych P., Nastishin Y.

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Acoustic (sound) waves and their use for military purposes have long been of interest for researchers working in the military sphere. Such waves, especially of the infrasonic range are capable to paralyze the living force of the enemy on a large area, and in some cases, can lead to fatal consequences. Intensive acoustic waves can cause the dysfunction of the central nervous system, of the capillary circulation, and lead to headaches, sleep disturbances, increased fatigue, irritability, autonomic nervous system disorders, bone disorders, impaired functions of the internal organs, changes in the auditory analyzer, etc.

Generators of sound waves of the frequency bands and capacities, which can affect human behavior, the human health or disrupt the communication facilities, fortifications, weapons or military equipment can be fairly classified as acoustic weapons. It is clear that it is not reasonable to expect the damage of buildings or military equipment by sound waves for any achievable capacities. However, enhancement of the loaded energy and

frequency of oscillations can be achieved via the phenomenon of resonance, which is the increase in amplitude of oscillation of system irradiated with the acoustic waves of the frequency, which is equal or very close to the frequencies of the own vibrations of the irradiated object. One can observe the phenomenon of resonance in confined spaces, that is, for a room one can find the frequency at which the sound begins to resonate.

In the commonly available scientific and technical literature there is a large number of publications on the influence of acoustic waves (especially infrasound) on the state of human, but publications that concern the military sphere, as a rule, do not appear in the open sources. Therefore, the study of the principles and possibilities of the influence of mechanical vibrations and of the specially generated wave fields on human organism and the corresponding protective engineering systems is greatly needed in the military sphere, since it gives an unconventional means of the influence on the enemy.

The leaders in the development of acoustic weapons were the United States and the USSR. In the early 80's, such projects were suspended due to the high costs of development and production, the problem of formation and operation of the high-intensity infrasonic beams.

During the Vietnam War, US army irradiated the enemy by the terrible sounds of a "wandering soul" from a helicopter. They had to scare the superstitious snipers of the enemy. Israeli soldiers used "sound bombs", i.e. their aircraft at very low altitudes overcame a sound barrier over the Palestinian settlements.

The situation with the development of acoustic weapons has changed considerably in the early 2000s, when research was launched on a "non-lethal weapon" in a number of countries, in particular, in the United States, Russia, Great Britain, and Israel. Actions in Yugoslavia, Somalia, Iraq, and now in Syria and Ukraine have shown that the use of weapons and aviation leads to a large number of civilian casualties. Especially when the "hot phase" of combat operations is completed, and they move into the police phase, when shooting relatively unaware, but annoyed population is prohibited. For such cases, the researchers have proposed the use of sound weapons, which is non-lethal, i.e. which can be characterized as a method of informational and psychological influence on people.

Long-range acoustic devices (LRAD) have the widest application. For the first time they were used by the American police against demonstrators in Pittsburgh at the G20 summit in 2009. And now at least 70 countries have them in their arsenal.

There are also devices called Mosquito (mosquito) which are used against teenagers who drift on through streets looking for events. These

devices produce sound in a range which adults cannot hear. In For teenagers, it causes unpleasant sensations and nausea and a desire to get away from the place where it propagates. But in the well-known recent case with the US diplomats in Cuba, such devices could hardly be used. Scientists interviewed by American journalists say it could be an ultrasound weapon. However it does not work on long distances and hardly overcomes obstacles such as windows, doors, etc.

Other reasons for accelerating the development of compact acoustic devices of the directed action concern the active pirate actions on sea trade routes. The civilian fleet of the world faced a problem of protection against pirates. It should be noticed that it is prohibited by the maritime law to arm crews of merchant ships, and, thus there is a choice of hiring armed warship support. Despite the fact that the most dangerous parts of the world's oceans is patrolled by the Navy's naval flotilla in the countries of the United Nations, pirates continue to attack. And here is a sensation: in the Gulf of Aden, on November 5, 2005, when attempting to seize Pirates cruise ship Seabourn Spirit with 151 passengers aboard an acoustic device was used to alert the directed action of the LRAD type, and the Somali pirates attack was successfully repulsed. During the operation of the LRAD device pirates were forced throw their machine guns and grenade launchers, clinging their ears with their hands unbearably.

This was the first successful application of a directed acoustic device in marine practice. Now, compact acoustic devices of directional action appeared in the arsenal of the world fleet. The term "acoustic weapon" has been replaced by "warning acoustic device" for reasons of terminology used in the maritime legislation.

This weapon is also important not only for the military, but also for the police forces as an effective measure of no lethal influence during the dispersal of demonstrations and riots; in the future it will replace the gunpowder guns, rubber bullets and sticks, tear gas and other obsolete tools. It can also be used in the Ministry of Emergencies in order to alert the population, protect strategic and security facilities, and so on.

To date, many samples of acoustic weapons have been developed. However, they do not meet the requirements for alert distance, and also are of the high cost.
