

2.21. MAIN RESULTS OF APPLICATION OF INSTRUMENTAL MEANS OF RUSSIAN PRODUCTION IN KAZAKHSTAN

Bashev V., LLC "SPEKTR-Asia", Almaty, Kazakhstan

Almost ten years, LLC "Spektr-Asia" is an official exclusive representative and partner of the NIIN MNPO "SPEKTR" in the Republic of Kazakhstan. Cooperation is realized mainly in the field of supplies of anti-terroristic means and equipment produced by the NIIN MNPO "SPEKTR" to the law-enforcement authorities and security agencies of the Republic of Kazakhstan. For the last three years, cooperation sphere and partnership relations have been extended. Currently, within the frames of respective agreements, some types of technical means are assembled in the Republic of Kazakhstan in accordance with transmitted documentation from individual units and subassemblies supplied in it.

Having started from individual types of equipment in single-piece quantities, currently, we are interested in the purchase of wide arsenal of anti-terroristic means produced in Russia.

Such means include mobile and portable X-ray TV sets, X-ray visualization apparatus and devices, thermal imaging devices of various execution, optical wide-spectrum surveillance means, endoscopic (fiber-optic and TV) systems, search-inspection equipment and criminalistic instruments.

Large enough number of technical means received for the years of cooperation from Russia are now in operation in the state and commercial security agencies, subdivisions of law-enforcement authorities, special operations detachments and other subdivisions of force structures and security authorities of the Republic of Kazakhstan with competence including provision of law enforcement, struggle against corruption and terrorism, as well as illegal circulations of drugs and drug-containing substances.

Efficiency of application of such equipment is confirmed by the regular reports on revealing of contraband and prevention of transit of prohibited substances, as well as by acknowledgement letters from user to the address of LLC "Spektr-Asia".

In 2008–2009, long-term plan for expansion of supplies of technical means and joint development of new equipment and complete sets was elaborated. It refers, primarily, thermal imaging equipment and systems based on it.

Thus, in order to resolve the problem of guard and monitoring of various zones (territories) with area of up to 10 sq. km, possibility of creation of two options of mobile thermal imaging surveillance means (TSM) is considered.

1. TSM for application in stationary mode with possibility of mobile system deployment in certain place. Such system represents by itself a vehicle (or car trailer) equipped by telescopic post extensible to the height of up to 4.0 – 4.5 m with combined observation system installed on it. Surveillance system includes thermal imaging channel and high-sensitive TV camera with large aperture lens ensuring magnification of up to 80 times. Such vehicle can be equipped with additional options: GPS system, communication means, TV channel for data transmission to the interim station or to the center, living compartment with all necessary things for long-term staying on duty, additional power sources (including motor-generator set), own security system, as well as other options required for efficient solution of observation problem. TSM possibilities make it possible to monitor territory with radius of up to 2,000 m with just the same efficiency in both day and night time, to record information on electronic media, to transmit information and, if required, to operate in automatic mode under given algorithm.

2. TSM in mobile option representing by itself the thermal imaging system easily installed on the roof of a car and including thermal imaging camera itself with SCU (substation control unit) and control module on the basis of modern tablet computer. TSM provides possibility to detect thermal objects in poor visibility conditions (in intense darkness, fog, and in the event of camouflage means) at the distance of up to 500 m.

The complete set of TSM can be extended by its supplementing with binocular, night viewing device, detecting long-focal-length optics equipment like one of SPIN-2 or SPRUT type, communication means and other equipment extending possibilities of system.

Thus, for guard, monitoring and observation over large areas (like Chuy Valley), TSM can be integrated at system level into some complex. Within this complex, TSM's can be connected both with each other and (through retransmitter center) with command post, which can be located at considerable distance from the object of control. With due arrangement of such a system, it is possible to receive surveillance information at the command post from any TSM in the real-time mode, to enter corrections into the surveillance mode, to control TSM and to coordinate operations of individual TSM's.

Implementation of surveillance means on the basis of pilotless aircrafts (PLAC) is one more direction of joint works. Presently, tests of such equipment called as "SPLIT" are completed. "SPLIT" complex is intended for remote survey of the land and water surface in the given area in order to control situation and detect objects with their fixation to the specific point on surface by means of real-time transmission of obtained video, thermal imaging, navigation and service data to the control post. People, transport means and floating crafts, military equipment, constructions, traces, etc. can serve as an objects. Complex consists of small-size PLAC, thermal imaging module and on-land control system based on the portable tablet computer, transceiver unit and antenna system.

Several countries possess with experience in application of PLAC. However, in Kazakhstan, application of PLAC as a search means, including for the purposes of regular monitoring over certain territories and section of the state frontier, has still character of trial operation. Therefore, works in this direction are both prospective and topical.