

Kolchuga Passive Early Warning Radar

The team of designers with the Topaz state holding, who developed the sophisticated hi-tech [kol-CHOO-gah, Russian for "hauberk"] passive early warning radarequipment, was nominated for the State Science and Engineering Prize. A hauberk is a short tunic made of a mesh of interlinked metal rings. The new-generation strategic long-range passive radar complex "Kolchuga" meets the most stringent moral-ethical and environmental standards as absolutely harmless to people or the environment. It is unique because, firstly, all research, development, pre-process, and serial production works were performed by the Topaz holding, and funded through Ukrspetsexport investment and Prominvestbank credits; secondly, the high technological level of the Ukrainian radar was asserted de facto by the most developed and powerful country, the trendsetter in the military sphere.

A complex consisting of three Kolchuga radar stations makes it possible to spot ground and surface targets and trace their movement within a radius of 600 km (air targets at the 10 km altitude - up to 800 km), which makes an effective early warning air defense system. The Kolchuga station is equipped with five meter-, decimeter-, and centimeter-range aeriels, which provide for high radio sensitivity within a 110dB/W - 155 dB/W swath, depending on the frequency.

The 800-km detection range has been achieved only by the Ukrainian Kolchuga. The best the U.S. AWACS can do is 600 km, while the ground-based complexes Vera (Czech Republic) and Vega (Russia) can reach out up to 400 km - half what the Ukrainian complex can reach. The Kolchuga's lower limit of the working frequency range is 130MHz and is the lowest of all analogs. For the AWACS it is 2,000 MHz, for the Vera it is 850MHz, for the Vega it is 200MHz.

This was developed by the Special Radio Device Design Bureau public holding, the Topaz holding, the Donetsk National Technical University, the Ukrspetsexport state company, and the Investment and Technologies Company. It took them eight years (1993 - 2000) to conduct research, develop algorithms, test solutions on experimental specimens, and launch serial production. The new product dramatically changed the balance in the constant competition between offensive and defensive means. The relatively cheap Ukrainian Kolchuga radar station, which is able to detect and identify practically all known active radio devices mounted on ground, airborne, or marine objects, actually cancels out all those billions of dollars spent on stealth-based armaments.

On 15 September 2002 the US State Department made its first public accusations that President Leonid Kuchma personally approved the Kolchuga sale to Iraq via a Jordanian intermediary. The State Department said it had based its accusations on secret tape recordings made by Mykola Melnychenko, a former presidential bodyguard now in exile in the United States.

The change in U.S.-Ukraine relations was triggered by authentication of a 90-second audio recording from July 10, 2000. The excerpt contained a conversation between Kuchma and Ukrspetsexport chief Valery Malev, in which Kuchma approves a sale of Kolchuga systems to Iraq. In a transcribed nine-minute conversation Kuchma discusses not only the Kolchuga sale to Iraq, but also a deal to repair Libya's MIG-25 fighter jets. In the conversation, Kuchma gives Malev permission to bypass the State Service for Export Control for the deal. The US concluded that the recording of the Ukrainian president is authentic.

Sales of such radar systems would be a clear violation of United Nations Security Council Resolution 661, which prohibits any sale or supply of "weapons or any other military equipment" to Iraq. Equipment like the Kolchuga system could pose a threat to aircraft of the U.S.-led coalition patrolling the no-fly zones over northern and southern Iraq.

The government of Ukraine has denied selling Iraq the radar systems and invited international experts to Ukraine to investigate the charges. But as State Department spokesman Boucher

said, the government of Ukraine has not been candid on this issue. And US Ambassador to Ukraine Carlos Pascual suggested Ukrainian officials may have destroyed or manipulated evidence of the radar sales.

The U.S. Government and its NATO allies responded by downgrading Ukraine's participation in the NATO-Ukraine Commission meeting at the November NATO Summit in Prague from a summit to a ministerial. Nevertheless, concurrently, Ukraine developed with NATO a detailed and forward-leaning Action Plan to accelerate Ukraine's integration with NATO. The United States has "initiated a temporary pause in new obligations of Freedom Support Act assistance that goes to the central government in Ukraine" and is reexamining its policy towards Ukrainian President Leonid Kuchma after determining that a tape recording of Kuchma approving the sale of an early warning system to Iraq is authentic, State Department Spokesman Richard Boucher told journalists in Washington 24 September 2002. It was impossible to track the matter down by a joint American-British commission sent to Ukraine in 2002 to investigate this purported sale. As of mid-2004 the US had not located Kolchuga systems in Iraq, and the transfer might not have taken place.

