

The Russian Ground Forces Improve Army-Level Communications

By Chuck Bartles
OE Watch Commentary

The Russian Ground Forces have made great efforts to modernize communications at all levels. The R-149MA1 command-staff vehicle is the latest communications suite at the battalion level, while the APE-5 mobile command post vehicle is the latest equivalent at the brigade and division levels. (See: “The Russian Ground Forces’ New Command and Control Vehicles,” *OE Watch*, August 2021). The accompanying excerpted article from *Armeyskiy Standart*, a Russian website featuring military news, discusses Russian Ground Forces communication modernization at the next echelon, the Army level. At this level, communications are now provided by the Redut-2US

multi-purpose mobile communication complex, a five-vehicle system that supports videoconferencing, data retransmission, telephone communications, automated command-and-control systems, and is capable of interfacing with legacy communication technologies (Soviet-era systems). A major component of the Redut-2US, is the R-431AM Radio Relay Station. As described by *Armeyskiy Standart*, the R-431AM is much more capable than the previous system, reportedly providing multi-band, jam resistant communications with considerably more bandwidth.

“What are the main advantages of the R-431AM? This is a fully autonomous digital telecommunications system that uses modern communication technologies and makes it possible to interact with earlier command and control systems. Whereas previously it was necessary to deploy a full-scale communication node, which was time-consuming and detectable by enemy reconnaissance devices, now one compact modular unit operates in field systems.”



R-431AM Radio Relay Station.

Source: Vitaly Kuzmin, <https://photos.smugmug.com/Military/ARMY-2018-Static-part-3/i-zDtsnmL/0/c9e5fc31/X3/Army2018part5-055-X3.jpg> Attribution: CC BY 4.0

Continued: The Russian Ground Forces Improves Army-Level Communications

Source: Peter Nikolayev, Полевой универсал: Система связи армейского звена управления вышла на новый технический уровень (Universal Fielder: The Communication System of The Army-Level of Command Level Has Reached a New Technical Level), *Armeyskiy Standart* (Russian website featuring military news), 12 July 2021. <https://armystandard.ru/news/2021791050-fBhhH.html>

...Up to the beginning of the 2010s, the field communication system was based on analogue hardware. Time-tested and reliable in the field, but clearly outdated compared to the equipment that the communication troops of a number of foreign armies had at their disposal. By and large, that was still the Soviet level of almost the 1970s, so it was finally decided to take up the introduction of digitization in the communications troops...Digitization is an important step, but it is not enough for army conditions. The configuration of the field communication hub itself was also supposed to become modern. We chose the modular option as the most effective: depending on the tasks to be performed, change the content, starting from a certain base.

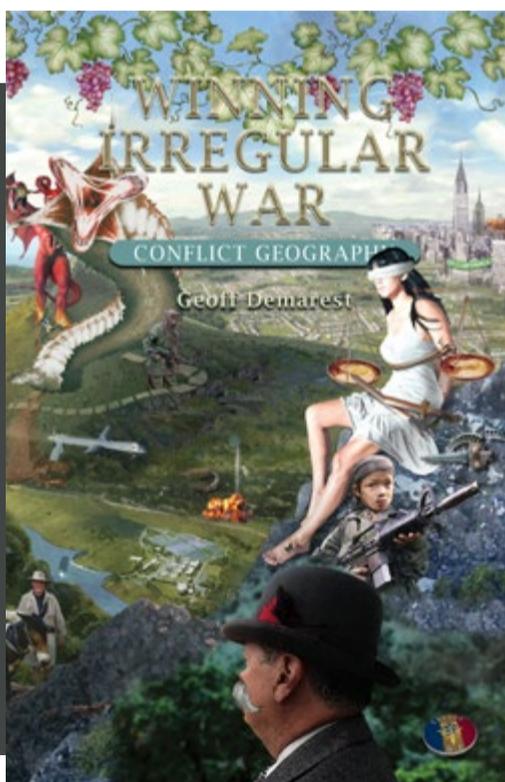
The development began in 2009 as part of the R&D carried out by the Redut-2US company. The ultimate goal was to achieve a significant increase in the capacity of stations and reduce the number of hardware communications with a simultaneous increase in the number and quality of communication services provided, plus a reduction in deployment time. The testing of the new products proposed by designers and production workers was carried out without any loss of time during tactical and operational-tactical exercises in the field. A real breakthrough in the Redut-2US telecommunications system that was created was the R-43IAM digital radio relay station (antenna module).

In fact, this is the main basic link, for which, if necessary, four model additions are provided. These are three comprehensive communications hardware types: the P-260-O, P-260-U (nodal), and P-260-T (transit), as well as the P-261 communication control hardware. What are the main advantages of the R-43IAM? This is a fully autonomous digital telecommunications system that uses modern communication technologies and makes it possible to interact with earlier command and control systems. Whereas previously it was necessary to deploy a full-scale communication node, which was time-consuming and detectable by enemy reconnaissance devices, now one compact modular unit operates in field systems.

At the same time, it is quite self-sufficient: it supports the construction of multi-interval high-speed radio relay and fiber-optic communication lines and the organization of a broadband wireless access network with a capacity of up to 200 subscribers with a data transfer rate of up to 37 megabits per second. That is, it fully meets the needs of the “regiment-brigade-army” link.

The speed of digital information transmission is impressive: it is an order of magnitude higher than that of its predecessors from the analogue series — up to 155 megabits per second (1920 channels of audio frequency) simultaneously in four directions. At the same time, the R-43IAM can function both under normal conditions and under difficult jamming conditions — secure telephone communication for officials from the control center operational staff will be reliable and of high quality...A characteristic visual sign: an antenna-mast device 32 meters in height...Hence the impressive communication range — up to 15-55 km, depending on the frequency range and transmission speed, in conditions of direct radio visibility. Broadband wireless access is up to 30 km.

It is also important that the R-43IAM and modular hardware are able to easily connect to the Unified Telecommunications Network of Russia: public networks, dedicated networks, technological networks, special-purpose communication networks, and other information transmission networks using electromagnetic systems. This relates to opportunities for increasing mobilization readiness...



Geoff Demarest's *Winning Irregular War* is about a broader set of conflicts than just 'insurgency.' In its 144 sections, Geoff Demarest uses a distinct, reconciled, more effective strategic grammar that draws on the disciplines of law and geography over political science. As Geoff Demarest puts it: "I hope that some of the ideas in it will be contagious."

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