Review of Russian Electronic Warfare Strategy and Tactics
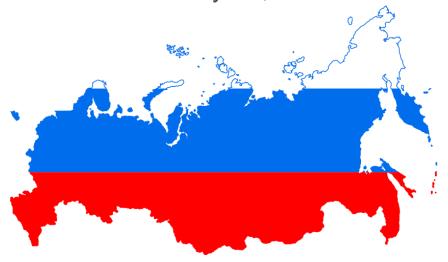
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Russia Studies Program

CNA International Affairs Group – Russia Studies Program

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Russian Electronic Warfare Strategy and Tactics

In late 2008, the Russian Government launched a series of sweeping military reforms that were subsequently paired with a large modernization program in 2011 that brought new platforms, capabilities, and substantially modernized legacy equipment deployed across the force.

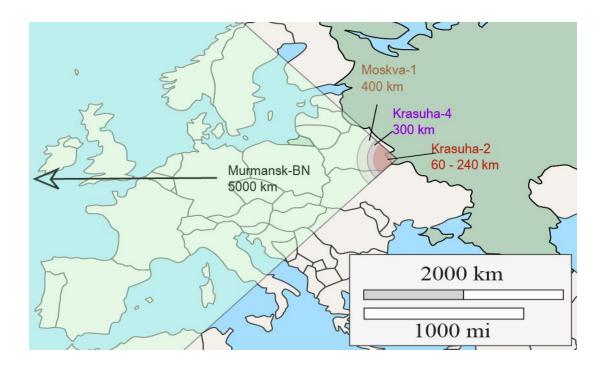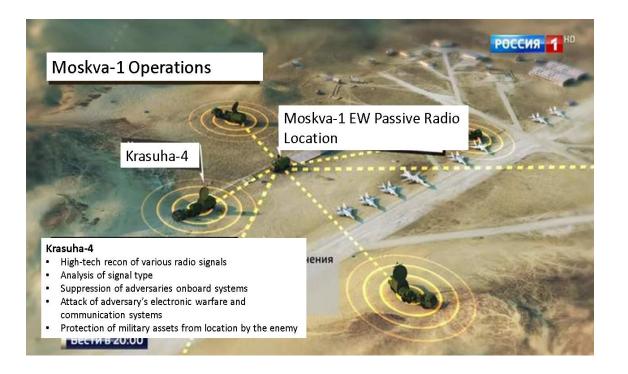# Russian Electronic Warfare Strategy and Tactics

Two factors drive the emphasis currently being placed on EW within the Russian armed forces:

- The first is a vision of future warfare;
- The second comes from an analysis of the combat capabilities of Russia compared to its potential adversaries.

Russian Electronic Warfare Strategy and Tactics

In this type of conflict, the Russian theorists see EW playing a very large role that would include operations affecting, for example, infrastructure, social media, television, and traffic signals, in addition to more traditional targets such as military platforms and command and control.

Moskva-1 Operations

Moskva-1 EW Passive Radio Location

Krasuha-4

Krasuha-4
- High-tech recon of various radio signals
- Analysis of signal type
- Suppression of adversaries onboard systems
- Attack of adversary's electronic warfare and communication systems
- Protection of military assets from location by the enemy

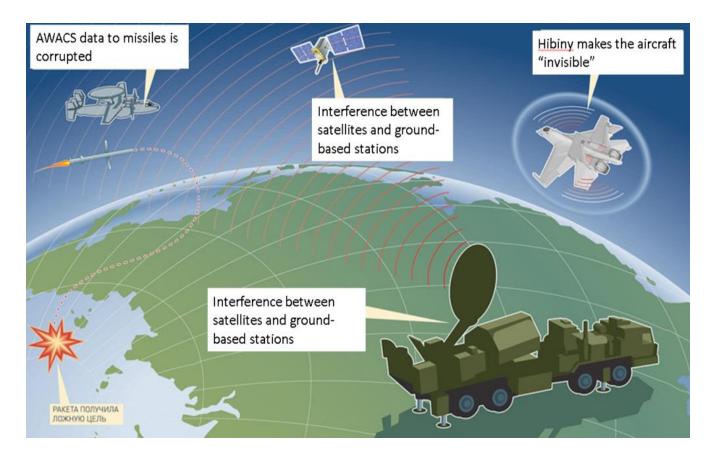# Russian Electronic Warfare Strategy and Tactics

One of the key trends in Russian EW is the integration of EW assets and training throughout the force. This integration enables the Russian military to operate and utilize EW down to the lowest tactical formations during operations.

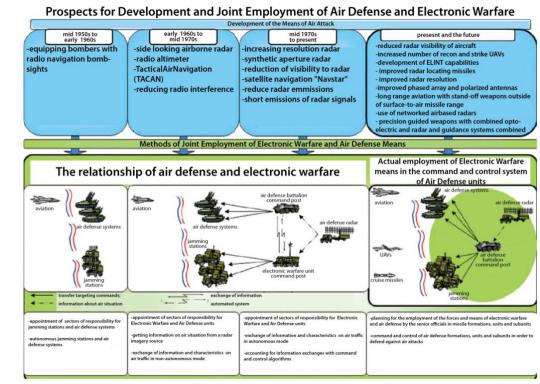# Russian Electronic Warfare Strategy and Tactics

In recent years there has been a move to better integrate air defense and EW, which will have profound implications for Russia's A2/AD capability in the future.

Russian Electronic Warfare Strategy and Tactics

The current trajectory of EW development is towards:

- further integration of the force;

- using automated C2;

- linking air defense more directly to exploiting the capabilities offered by EW;

- professionalizing the service;

- strengthening the joint or inter-service actions of air defense units, and

- combining the various levels of air defense from strategic assets down to tactical levels.

Prospects for Development and Joint Employment of Air Defense and Electronic Warfare

New EW tactic: RB-341B "Leer-3" UAV-enabled system

January 2017: The Russian military has received unmanned aerial vehicles (UAVs) capable of sending text and sound messages to subscribers, as well as suppress cell tower signals. In the future, they will be able to send out videos to targeted devices.

In order to mute the mobile tower signals, the UAVs are equipped with onboard special equipment and interference transmitters that are dropped to the ground. According to available data, the new UAVs will be able to drown 3G and 4G networks.

New EW tactic: RB-341B "Leer-3" UAV-enabled system

- Frequency range of the control channel: 902 - 922MHz
- Navigation system: GPS, GLONASS
- Controlled network standard: GSM 900, GSM 1800
- Operating frequency range: 935-960 MHz, 1805-1880 MHz, 890-915 MHz, 1710-1785 MHz
- 2-3 "Orlan-10" UAVs equipped with special on-board "jammers", as well as disposable interference transmitters which are dropped to the ground.
- The fuselage transmitter power exceeds 10 W, the wing - 2 W.
- Radius of blocked cellular communication terminals: up to 6km
- Number of simultaneously blocked cellular subscribers: 2000
- Number of simultaneously blocked mobile operators: 3

New EW tactic: RB-341B "Leer-3" UAV-enabled system

Orlan-10 UAV

Speed: 90-150 km/h
Range: 120km
Maximum payload weight: 6kg
Operational ceiling: 5000m

On June 26, 2014, Russian MOD website published the report on soldiers' training with Leer-3/Orlan-10 in Siberia:
(http://mil.ru/et/news/more.htm?id=11961050@egNews)

- Leer-3 UAV complexes successfully "suppressed the cellular signal of the conventional enemy." The system suppressed more than 1,500 conventional cellular network subscribers.

- At the same, there were no inconveniences for residents of nearby settlements connected with interference in the operation of the cellular network.

- Orlan-10 detected the hidden control points of the conventional enemy via radio emission in a wide aperture of signal ranges. After receiving and transmitting the enemy's exact coordinates, the artillerymen successfully destroyed all the targets identified by the drones.

New EW technology: RB-109A "Bylina"

- Bylina is a short-wave interference station.
- It is capable of performing detailed analysis in a complex radioelectronic environment, allocating priority radio-suppression objects and optimally managing radio interference systems.
- The exchange of information and command of combat command is in real time.

New EW technology: Murmansk-BN

- Murmansk-BN is a long-range jamming system that is designed to detect and jam high-frequency military satellite communications.
- The Russian military claims that it can also affect enemy vessels' communication and navigation technology, suppress onboard weapons control systems as well as prevent the exchange of information between adversary's reconnaissance planes and ships at sea.
- Russian sources also claim that it only takes a few minutes for Murmansk-BN to recognize the unique frequencies of a given vessel and its equipment.

Russian Electronic Warfare Strategy and Tactics

In Ukraine, Russian EW was used for radio signal detection and jamming, and working closely with signals intelligence assets to analyze the Ukrainian military's radio signals.

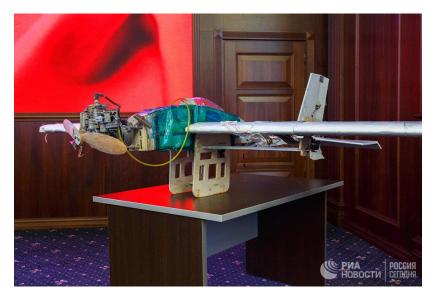# Russian Electronic Warfare Strategy and Tactics

In Syria, EW capabilities were used both defensive and offensive roles. The EW response to a January 2018 drone attack on Hmeimim base was paired with an early-warning radar and kinetic engagement by air defense systems, which ultimately disabled or destroyed all attacking drones.

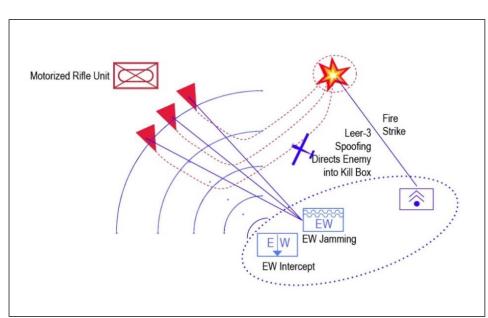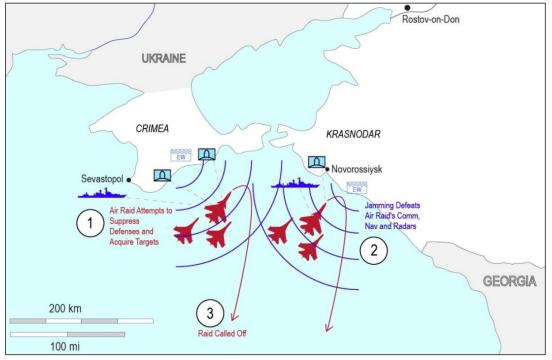# Russian Electronic Warfare Strategy and Tactics

In Russian EW drills and exercises, land-based and airborne EW assets are constantly training to attack adversary's assets. Just as important, Russian forces now train in EW-degraded environments.

Electron-2016 EW exercise - ground and AD/AD components

Russian Electronic Warfare Strategy and Tactics

- Russia's perception of US and Western high-tech, precision-guided weapons is an enduring concern. In the coming years this threat perception may lessen due to Russia's own capacity to counter such weapons with a variety of counter-measures - EW will be at the forefront of this effort.

- As the United States military debates its own EW capabilities, it will have to come to terms with a more sophisticated adversary possibly capable of blunting America's high-tech advantage on the battlefield.

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