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Experience of Using Aviation in Recent Military Conflicts

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Abstract: This article discusses the experience of using aviation in recent military conflicts and armed clashes, its role in combat operations, its place in modern warfare, and the conclusions drawn from these lessons.

Keywords: Aviation grouping, air operations, combat missions, fighter aviation, tactical aviation, special aviation, strategic aviation, army aviation, military transport aviation, unmanned aerial vehicles (UAVs), aerial reconnaissance.

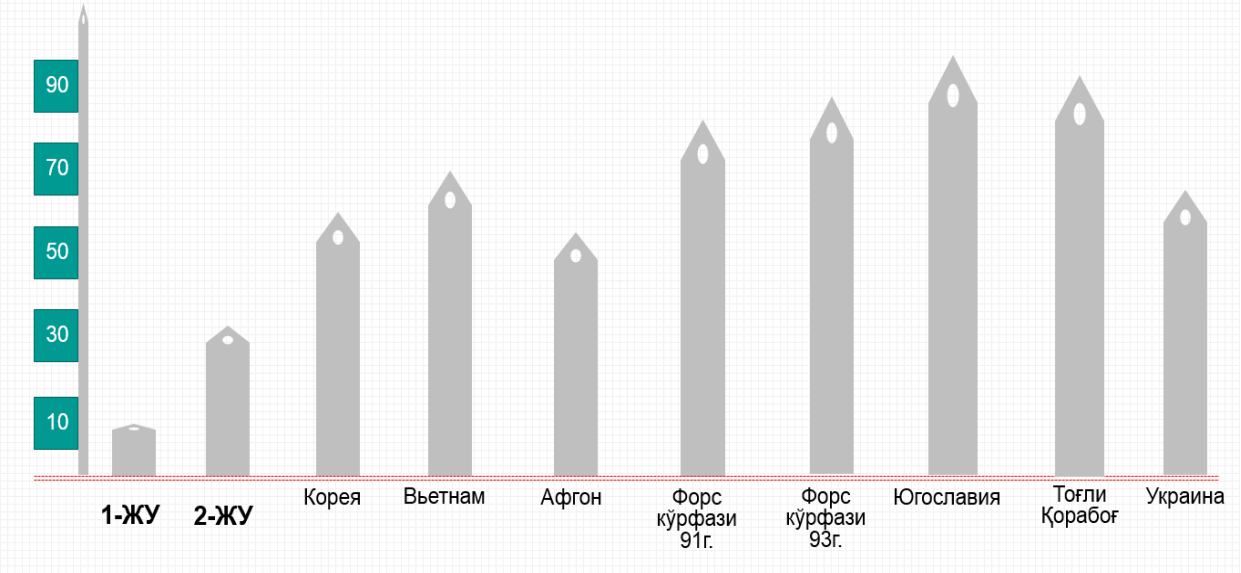
INTRODUCTION

In recent years, the role of aviation in achieving the goals of wars and armed conflicts has steadily increased. In the wars of Korea, Vietnam, the Middle East, Afghanistan, Iraq, Nagorno-Karabakh, and Ukraine, aviation usually carried out air operations, supported ground troops, and at times performed independent primary missions. Moreover, in large-scale wars of recent decades, aviation played a decisive role, as seen in the war in Yugoslavia, where air operations alone led to achieving the final objectives.

The possible directions of aviation use in future wars can be determined not only based on the past but also through a deep and comprehensive study of its current development experience and trends. Over the past century, the scale of combat use of aviation in wars is reflected in the provided data.

Analysis shows the steadily growing role of aviation in defeating the enemy. According to the chart, while in World War I aviation contributed no more than 4% to defeating the enemy, 30 years later, at the start of World War II, this figure rose to 28–30%. In the latest wars, aviation's contribution reached 80–85%, and in the war in Yugoslavia it became decisive.

The scope of combat missions carried out by aviation forces.



Specific Features of Aviation Employment

In all recent local wars and armed conflicts, the U.S. command, NATO, and their allies used land-based and carrier-based aviation as decisive forces. Ground troops were usually engaged only in the final stages of combat, after aviation had been massively employed to suppress air defense systems, clearing the way for the destruction of enemy forces and infrastructure.

The presence of many aircraft carriers in NATO countries (the U.S. alone has 12 carriers with about 1,000 aircraft) gives them the ability to rapidly and effectively accomplish missions in any region of the world's oceans and to quickly increase the size of their aviation strike groups.

Aviation Forces and Assets Participating in Air Operations

All types of aviation have been employed in local wars and armed conflicts. Equipping supersonic aircraft with long-range guided weapons has significantly changed combat tactics. The tempo of air battles increased sharply, combat control and coordination became more complex, and decision-making times shortened. The flow of information to be processed both onboard aircraft and at command posts increased dramatically. Coordination of aviation with ground forces and naval forces has been further developed.

Fighter aviation proved itself to be the most maneuverable and long-range means of air defense, playing a decisive role in protecting troops and facilities from enemy air attacks.

Most aerial battles took place in groups; fighters were only scrambled individually to intercept bombers, reconnaissance aircraft, and UAVs. Rapid engagements (3–5 minutes) occurred on head-on courses, but maneuverable dogfights lasting up to 15 minutes were also observed. Speed ranges were 700–1,100 km/h or more. The F-15C demonstrated high effectiveness in gaining air superiority.

Tactical aviation formed the main strike component of combat aviation, carrying out multi-role missions and often proving decisive in warfare.

It included multirole fighters, attack aircraft, bombers, tactical reconnaissance aircraft, and electronic warfare aircraft.

Strikes were carried out day and night, usually in groups

of 4–12 aircraft, often without re-entering the target zone. Bombing tactics involved complex maneuvers, stealth approaches, sudden climbs, dropping bombs, and immediate departure from air defense zones with the use of infrared countermeasures. Night strikes relied heavily on illumination bombs. Despite advanced reconnaissance systems and precision weapons, the detection and destruction of small and mobile targets remains problematic. Reconnaissance-strike complexes were widely employed, integrating reconnaissance and strike actions. NATO's use of HARM anti-radar missiles proved decisive in suppressing air defenses.

Aerial reconnaissance played a crucial role. Aircraft (U-2, SR-71, Tornado, Harrier, Su-24MR), helicopters, and UAVs (Predator, Hunter, Scorpion, CL-289, CL-327, Orlan-10) were widely used. UAV flights typically began 30–40 minutes before bombing and resumed 10–15 minutes afterward, lasting around 3 hours at speeds of 120–150 km/h. Notably, in recent conflicts, all types of UAVs—including micro UAVs, so-called "electronic insects"—have been increasingly used for reconnaissance.

Military and civilian space systems, involving more than 50 satellites, were used for combat purposes, with reliance on GPS (U.S. NAVSTAR), Russia's GLONASS, Europe's Galileo, and China's Beidou systems.

In the final quarter of the 20th century, helicopter units increasingly participated in combat. For example, during the 1982 Lebanon War, Israel's Air Force deployed 174 helicopters. NATO deployed more than 100 helicopters in the Balkans. Helicopters played decisive roles in Chechnya, Afghanistan, Tajikistan, and Ukraine.

Combat missions were performed by mixed helicopter groups (attack, transport, and multipurpose). However, in all theaters of operations, helicopter strike groups often lacked adequate air defense and fighter protection. Syria lost 18 helicopters in the Middle East conflict; in the Balkans, the U.S. Air Force lost two Apache helicopters, forcing restrictions on their use. In Afghanistan, poor training of crews for night operations in mountainous terrain was revealed.

Russian Ka-52 helicopters demonstrated superiority in combat survivability and tactics. Unlike single-rotor helicopters (Mi-28, Mi-35, Mi-8), which had lower survivability when damaged, Ka-52s could sustain damage yet still land safely and save their crews.

Strategic aviation was used in the initial phase of wars with strikes involving up to 10 bombers. Later, small groups (2–4 aircraft) used cruise missiles, guided bombs, and other precision weapons. During NATO's aggression against Yugoslavia, the B-2A "Spirit" bomber was used for the first time, capable of reaching any point on Earth from U.S. territory. Bombers B-52, B-1, B-2, and B-2A carried out missions at altitudes of 6,000–12,000 m under the protection of 10–14 fighters, usually at night.

During combat, AC-130 "gunship" aircraft were used (equipped with a 105 mm howitzer, two 25 and 40 mm cannons, and two heavy machine guns). A wide range of munitions was employed, including TV- and laser-guided bombs, depleted uranium bombs (anti-tank), fuel-air explosives, graphite bombs, electromagnetic bombs, anti-tank mines, aerosols, smoke screens, and marking flares.

The use of airborne early warning and control aircraft (E-2A, E-3, A-50) significantly impacted aviation tactics, providing integrated reconnaissance, communication, and command-and-control. NATO created radar coverage over entire theaters of operations, ensuring reliable detection of aerial targets at long ranges and at almost all altitudes. U.S. aircraft also created radar contrast for ground targets by dispersing large quantities of aluminum powder along roads to track armored convoys.

Conclusions

Based on the experience of recent military conflicts, the following trends can be emphasized:

- Transition to long-range precision weapons;
- Shift from piloted aviation to operator-controlled aviation;
- Development of remote control systems, with increased importance of reconnaissance and logistics;
- Widespread use of UAVs on the battlefield;
- Growing role of aviation in modern wars and armed conflicts;
- Analysis of recent conflicts shows that a nation's military power largely depends on the development of radio electronics and its application in various military domains.

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