



The BUG Combat Attack Group (two Ka-50s and one Ka-29 command/target designation helicopter) at the Grozny air base in early 2001. (All photos: via Author)

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“Black Sharks” in Chechnya

The History Of The Ka-50/Ka-29 Combat Attack Group

At the end of 2000, Russian media became filled with headlines over “Black Sharks in Chechnya”, while the national broadcasting channels issued footage showing a couple of Ka-50 helicopters being prepared for a combat mission. Many thought that this event would herald a new era for the Russian Army Aviation, with the introduction of new-generation military equipment.

The original euphoria, however, was quickly followed by a deafening silence, which led to all sorts of gossips and innuendos about the Ka-50 mission in Chechnya having ended in failure. But what really happened in Northern Caucasus in late 2000-early 2001? How did the Ka-50 perform during combat operations? This article tries to provide an impartial assessment based on official documents. Most names and the details of the operational orders have been removed due to security reasons.

The Combat Experimental Group

The idea to organise a special group equipped with the then brand-new Ka-50 attack helicopter arose immediately after completion of the official tests of the aircraft. On 25 April, 1995 the then First Deputy Defence Minister of the Russian Federation, A.A. Kokoshin signed the order for the formation of the Combat Experimental Group (BEG), which was to include four Ka-50s and four Ka-29s converted for target designation. The four

Ka-50s and two Ka-29s were to be detached from the Air Forces and the Army Aviation fleet, respectively while two additional Ka-29s were to come from the Navy Aviation.

The BEG was intended to test and further develop the concepts for attack helicopter operations. The Ka-50 was (and still is) a highly innovative design for a single-seat helicopter with coaxial rotor and highly automated piloting, being further equipped with new-generation weapons. Kamov and the MoD had formulated the concepts for the use of the Ka-50 in local conflicts, where combat missions would be performed by rapid-reaction helicopter groups equipped with high precision weapons, exploiting coded communication channels and data links and under provision of a common loop for control, reconnaissance and target designation. Upon completion of the operational tests a new control system for attack helicopter groups was to be developed. This new control system was to be interfaced with the ground command posts of the Air Forces and the Land Forces and operated on

the basis of continuous data exchange in real time during air-ground operations.

One of the main “motors” of the above plans was Maj.Gen. B. Vorobiev, the chief of the 344 Combat Training Centre and Flight Personnel Conversion Course of the Army Aviation at Torzhok. Gen. Vorobiev, himself an experienced helicopter pilot, rated the Ka-50 very highly and was effectively “in love” with the aircraft.

Based on the April 1995 order, Kamov proceeded to complete two Ka-50s (airframes Nos. 22 and 24) at the “Progress” Arsenyev Production Plant, while at the same time a single Ka-29 was converted with the 2A42 gun and the KSAS system (Automation and Communication Aids Package) for improved navigation accuracy, target designation and coded data communications. Later a second Ka-29 was also equipped with the KSAS system and the PrPNK RUBIKON flight, navigation and sighting system similar to the device installed on the Ka-50. This equipment enabled the helicopter to operate as an air command post for target guidance and designation. To enhance survivability both helicopters were also fitted with chaff/flare dispensers and IR suppression exhaust nozzles.

At a later date, two additional Ka-50 airframes (Nos.



The fifth Ka-50 prototype (No. 25) was one of two attack helicopters deployed to Chechnya. The fuselage numbers were painted over before the deployment.



A Ka-50 firing unguided rockets during a combat mission. S-8 rockets were the most frequently used ammunition, with a total of 929 rockets being fired.

A "Black Shark" during a low-level sortie.



20 and 21) were also delivered to the plant for completion. At that moment, however, Russia was sinking deeply into the abyss of the First Chechen War – or "activity on restoration the constitutional order on the territory of Chechen Republic and fighting against the illegal rebel forces", as it was officially designated. The meagre defence budget was being exhausted very rapidly by the demands of combat operations, and the military authorities began to lose interest in the BEG and the development of new tactics.

The two first Ka-50s were equipped at Kamov's cost, as the company's directors believed that these expenses would eventually be refunded. However, the company was not in a position to finance completion of the second batch of two helicopters, which thus never left the workshops. Meanwhile in 1997 the two upgraded Ka-50s and two Ka-29s arrived back to Torzhok, and were extensively tested during an exercise held in 25 September – 21 October at the Alabino training range.

From Experimental to Combat Attack Group

After the inglorious end of the first Chechen War, the MoD focused attention on eliminating the serious shortcomings that had been identified in both the Land Forces armaments and combat personnel training, and there was neither time nor money to address the Army Aviation's problems. And then tragedy struck: on 17 June 1998, Gen. Vorobiev was killed during a test flight with the Ka-50, having exceeded the aircraft's operating limits as set in the flight manual. The tragedy involved not only the loss of one of the best Russian helicopter pilots, but it also adversely affected the further development of the Ka-50.

Under those circumstances, the decision to form a Combat Attack Group (BUG) including two Ka-50s and a single Ka-29, issued by the Deputy Defence Minister and Armed Forces Armament Chief on 29 November 1999, had a salutary effect for the very idea of aircraft testing under real combat conditions. At that time the 344 Training Centre had only one surviving upgraded Ka-50 (No 24), and it was thus decided to also assign to the BUG the fifth prototype (airframe No. 25). This was the very same aircraft which had played the leading role in the movie picture "Black Shark", which resulted in this becoming the semi-official nickname of the Ka-50 (*Chernaya Akula* in Russian).

Preparation for combat operations demanded prompt actions. A maintenance support group was formed with specialists from Kamov and the Flight Test Facility, and the helicopters received additional armour protection (cockpit sides and floor panels) and new equipment including the KABRIS digital map display system integrated with satellite navigation. During December 1999 – July 2000, 150 test flights for a total of 100 flight hours were carried out at the 344 Training Centre to validate all flight and combat modes. Finally on 24 November 2000 the Chief of General Staff of the Armed Forces of the Russian Federation ordered the BUG to deploy to Northern Caucasus for operations. The formation, including two Ka-50s, one Ka-29 and one Mi-8 left Torzhok on 3 December and arrived in Grozny (Severnyi) on 26 December.

In Northern Caucasus

The BUG personnel consisted of eight pilots and co-pilots, 26 technicians from the 344 Training Centre, two experts from the Army Aviation Command and nine Kamov representatives. The pilots were not familiar with the combat operations area, and the twin-seat version of the Ka-50, the Ka-52, at that time was only about to undergo testing. Therefore, the familiarisation flights on 28-30 December were performed with a Mi-24 helicopter. The first reconnaissance sorties with the Ka-50s

were carried out on 1st January 2001, and after 6 January combat missions started. Sorties were performed in groups, with two Ka-50s being accompanied by either a Mi-24 or a Ka-29. Among the typical targets were parking sites, rebel camps and groups, ammunition depots, field fortifications, shelters, trenches, etc. Most targets were placed in hard-to-reach mountain areas, on slopes, in gorges and on tops of mountains at elevations around 1500m.

The operational situation had changed from the first Chechen War, and in particular during the "anti-terrorist operation in Northern Caucasus", as the second Chechen War was officially named, the Chechen rebels no longer had SAM anti-aircraft systems. However, their guns and MANPADS still remained a significant threat. In addition, the weather conditions were far from ideal; January in the Caucasus mountains is hardly the best time for low altitude flights.

In these conditions the helicopter coaxial configuration revealed its well-known advantages. After the first combat sortie, the group's chief pilot, Col. R. said "Flights in the mountains should be performed only by this helicopter". In particular, the absence of the tail rotor made it easier to retain control of the aircraft in the presence of side gusts and other atmospheric disturbances, which are often originated when the sunny side of a mountain gorge is heated intensively while the opposite

side remains in the shadows. Side gusts caused a number of flight accidents with Mi-8s and Mi-24s. Furthermore, the Ka-50's advantageous performance in terms of high maneuverability and rate of climb became evident. On one occasion, when deflecting from a vertical obstacle (rock) the pilot of No 24 exceeded all calculated vertical speed data – the rate of climb was registered at 30m/s!

But of course, there also were problems. On 16 January 2001, the No 25 was performing a low-altitude attack with unguided rockets when the pilot, Lt.Col. E. felt an abnormal vibration and decided to land at Hankala airfield. A ground inspection revealed a blade tip damage. The damaged part was cut off and the helicopter flew over to its base – and then for three weeks it had to wait for a spare blade set. Due to this incident, the Combat Attack Group for a while carried out its missions at a reduced strength of one Ka-50 and the Ka-29 designator.

After No 25 was repaired, the BUG continued its mission at full strength. By mid-February, a total of 76 sorties had been completed, for a total of more than 63 flight hours. S-8 rockets were the most frequently used ammunition, with a total of 929 rockets being fired together with some 1,600 rounds of 30mm ammunition and three VIKHR missiles (there weren't that many targets worth a VIKHR).

Results

The BUG combat deployment proved the concept of automated sighting and flight/navigation system through the RUBIKON system as an aid to lessen the pilot's workload. Based on the weather conditions and terrain features, firing was conducted in either automatic (weapon pointing by remote control) or semi-automatic mode, with the latter mode being used under limited visibility and/or short-range conditions. The KABRIS system also proved itself very favorably under real combat conditions, as the digital map enabled the pilot to continuously see the position of his own helicopter, other aircraft and the assigned targets.

Another important result was the demonstrated high reliability of the equipment. During the entire deployment Kamov experts rendered only routine assistance to the flight and ground technician personnel, and there was no downtime caused by equipment failure. The Ka-50 being jointly based with other Army Aviation helicopters also showed that it did not cause additional maintenance requirements, in that it uses the same ground servicing equipment as the Mi-24 and Mi-8.

Though the available time and weather conditions did not allow to apply all theoretically proven Ka-50 combat features (including the famous "funnel"), the pilots were greatly satisfied with the helicopter's maneuverability and combat performance. The extensive armour protection had a positive influence on the pilots' morale, this being further reinforced by the presence of an ejection seat. It was also shown that the pilots accommodated themselves very rapidly to the peculiarities of the coaxial-rotor configuration. According to Col. R., after some relatively minor modifications to



The converted Ka-29 for airborne command and target designation tasks.

the Ka-50 any combat pilot with standard-level qualification would be able to crash-land it even under conditions of poor ground visibility and adverse weather.

As normal and indeed expected, the operational deployment also identified some drawbacks which would be eliminated in series production helicopters. In particular, the pilots suggested the following upgrades: improving the cockpit display arrangement and data layout; adding a thermal imaging surveillance/sighting system for night flights; developing a different application algorithm for chaff/flare dispensers operation; and, installing an updated electronic self-defence suite. Most of these improvements have since been introduced. Other minor drawbacks involved the ergonomics of the installation of the KABRIS display onboard the Ka-29, and the lack of comfort while wearing the pilot body armour.

In general, the operation of the BUG unit under real combat conditions was recognised as positive. After the required "debugging", combat groups similar to the BUG would significantly increase the overall efficiency in armed conflicts.

Aftermath

The Combat Attack Group's return from Chechnya was close to triumphal. Both the pilots and Kamov experts were recommended for governmental awards; the latter received the 2nd-degree medal of the "For service to Mother Country" Order, while Col. R. was put forward for a "Hero of Russia" title, the engineering personnel were promoted and decorated with the combat medals, and the flight personnel received the "Courage" Order.

On 20 June 2001, based on the results of BUG experience in Chechnya the Air Forces and Army Aviation Command authorised activities for the elimination of the identified drawbacks. Shortly before that, on 1st June the Army Aviation issued a recommendation to extend the BUG strength up to three Ka-50s through the completion of an additional aircraft (No 23) to the upgraded standard, while the latest Ka-50 (No 26) that was sched-

uled for delivery from the Arsenyev plant in 2001 was also to be completed to the new standard. By the same token, the Ka-29 command/target designation helicopter was to be upgraded with the SAMSHIT 24-hour surveillance/sighting system and NVG-compatible night vision goggles. Finally, a flight/combat simulator was to be developed for the Ka-50.

However, the MoD was not able to provide the relevant funding in either 2001 or 2002, and the planned expansion of the BUG did not take place. By the same token, a Ka-50 simulator was built, but after completion of factory testing the Air Forces suspended financial backing and later closed the project.

Much more ominously, the Air Forces Command under the influence of various factors was clearly losing interest in the "Black Shark". The very existence of the BUG stood in the way of the realisation of the concept for a common new generation attack helicopter, which the Mil Bureau and Rosvertol plant had promised to develop. The final result was predictable – an order to disband the BUG and to terminate financing for the Ka-50.

Was this decision justified? Certainly it is difficult to harmonise it with the official report by the 344 Training Centre on the BUG combat operation in Northern Caucasus, which praised virtually all aspects of the Ka-50's design and operation. Be this as it may, it took another three years, a few flight accidents in mountains and strenuous efforts by various people before the MoD finally came again to the conclusion that the best tool to engage small targets in rough terrain would be a coaxial-rotor helicopter equipped with an high-performance (although admittedly high-cost) surveillance/sighting system. In early 2005, the Russian Defence Minister S. Ivanov issued a decision to restart Ka-50 series production and accelerate development activities for the Ka-52.

Whether these good intentions will be realised or not, time will show. Nevertheless, one now has reason to hope that the Russian Armed Forces will eventually introduce combat helicopters of the latest generation, which even if procured in small numbers will significantly increase the efficiency of combat operations. The experience of BUG operation in Northern Caucasus provides a very strong evidence to support this standpoint.

