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**27 FEBRUARY 1979**

**SOVIET ARMY AIR FORCE COMMAND AND STAFF  
IN THE GREAT PATRIOTIC WAR 1941-1945**

**1 OF 3**

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JPRS L/8291

27 February 1979

TRANSLATIONS ON USSR MILITARY AFFAIRS  
(FOUO 6/79)  
SOVIET ARMY AIR FORCE COMMAND AND STAFF  
IN THE GREAT PATRIOTIC WAR 1941-1945



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#### Annotation

This book is devoted to the activities of the command and staff of the Soviet Army Air Force and representatives of the Hq SHC (Headquarters, Supreme High Command) at the fronts of the Great Patriotic War. The activities of the command and staff of the Soviet Army Air Force, of many generals and officers of the central administration, of strategic aviation, of the air armies, of frontal aviation, and of many combined units and units are demonstrated on the background of the past war's greatest operations. All actions of the air force command and staff are examined in close association with the activities of the General Staff.

#### Introduction

The Great Patriotic War of the Soviet Union against fascist Germany and its allies in Europe and Asia was the greatest armed collision between socialism and the attack forces of imperialism, the hardest and cruelest of all wars ever survived by our motherland. Under the guidance of the Communist Party the Soviet people and their armed forces annihilated Hitler's Germany and its satellites, defended the liberty and independence of the socialist fatherland, completed their great mission of liberation, and honorably completed their international duty. "The victory won in the engagements of the Great Patriotic War," L. I. Brezhnev noted, "was a victory of our heroic working class, the kolkhoz peasantry, and our intelligentsia, a victory of all the multinational Soviet people. This was a victory of the glorious Soviet Army, an army created by the revolution, nurtured by the party, and inseparable from the people. This was a victory of Soviet military science, of the combat proficiency of all arms and services, of the art of Soviet troop commanders with their origins among the common people."\*

The Soviet Air Force played a significant role in the defeat of fascist German troops. Interacting closely with ground troops and the navy, it participated most actively in all frontal and all of the largest strategic operations of the groups of fronts, and it conducted independent air

\*Brezhnev, L. I., "O vneshney politike KPSS i Sovetskogo gosudarstva, Rechi i stat'i" (The Foreign Policy of the CPSU and the Soviet State. Speeches and Articles), Moscow, 1975, pp 834-835.

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operations. Concentration and massed action of the air force on the most important axes increased the scope and decisiveness of operations, being one of the most important factors imparting a maneuverable nature to the war. In a long and stubborn fight, by summer 1943 the Soviet Air Force achieved strategic air supremacy in all of the most important sectors, thus creating favorable conditions for the ground troops to conduct major offensive operations. By its actions aviation cleared the way for infantry and tanks, assisted them in penetrating defenses more quickly and pursuing the enemy swiftly, encircling and annihilating his groupings, crossing rivers, and seizing and holding important beachheads, and it foiled the plans and intentions of the Fascist German Command.

The missions of the Soviet Army Air Force commander and his staff were to organize the fight for strategic air superiority, achieve interaction among the branches of aviation (frontal, long-range bomber, air defense fighter aviation), coordinate their efforts in strategic operations conducted by groups of fronts and in independent air operations, direct management of the combat activities of long-range bomber aviation (DBA) at the beginning of the war, generalization of the air force's combat experience, and development of proposals concerning its operational application. The air force command was responsible for training air reserves, for supplying aircraft and equipment to units and formations, for developing the technical specifications on new types of airplanes and armament, for writing airfield construction and reconstruction plans, and for training and retraining aircrews and technicians. Its functions included generalizing the best experience in application of different air force arms and services in combat and operations, and introducing it into the units and formations.

Air liaison officers with the Hq SHC coordinated the actions of frontal aviation in all strategic operations. These officers were senior aviation chiefs in charge of the air force--the commander, the Military Council member, and the deputy commander of the Soviet Army Air Force. Initially they were given the responsibility of organizing massed air attacks in behalf of just one front. Beginning with 1942 the air liaison officers with the Hq SHC coordinated the efforts of aviation in several fronts with the assistance of DBA (ADD)\* forces. Jointly with frontal commanders and frontal air force commanders, Hq representatives wrote the operation plans, monitored execution of the missions of aviation, handled its efforts in the course of an operation, distributed air reserves arriving at the front, and provided air-technical and airfield support to air forces participating in the given operation. Coordinating the actions of air forces in from one to three fronts in his position as Hq SHC liaison officer, the air force commander maintained constant operational communication with the General Staff and Air Force Headquarters, he was always aware of events occurring in all other operating

\*In March 1942 long-range bomber aviation was renamed strategic [long-range] aviation (ADD).

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fronts, and he issued the necessary instructions through his operational group or through Air Force Headquarters.

The objective of the author of this work is to demonstrate the activities of the Soviet Army Air Force Command, the work of the staff, and the contribution made by liaison officers with the Supreme High Command Headquarters to coordinating the actions of the aviation of several fronts and strategic aviation.

This chronologically organized work embraces the period from September 1939 to September 1945--that is, from the beginning of World War II to the Soviet Army's victory in the Far East--defeat of the Kwantung Army and total surrender of imperialist Japan. The book describes the combat activities of Western capitalist air forces preceding fascist Germany's attack on the USSR, and it examines the work of the air force command and staff at the eve and in the initial period of the Great Patriotic War, in operations of the summer-fall campaign of 1941, in the great battles of Moscow, Stalingrad, the Northern Caucasus, and Kursk, and in the concluding offensive operations of the Great Patriotic War of 1941-1945. The work describes the structure of the air force staff, its principal directorates and sections, the directions of their activities, the mutual relationships of the air force command and the staff with the General Staff and with the command and staff of the fronts and air armies, and the role and place of the air force in defeat of fascist Germany and militarist Japan by the Soviet Armed Forces.

In writing this book the author made use of archival and published materials, his own experience as a participant of the described events, and numerous discussions held during and after the war with Chief Marshal of Aviation A. A. Novikov, who headed the Soviet Air Force during the Great Patriotic War, his deputy General A. V. Nikitin, Air Force Military Council members Generals P. S. Stepanov and N. S. Shimanov, and many war veterans.

The author expresses his sincere gratefulness to Generals V. I. Semenchikov and G. A. Pshenyanik, and Colonels Yu. V. Plotnikov, V. Ye. Sokolov, V. S. Shumikhin, F. P. Shesterin, N. Ye. Platonov, and N. N. Azovtsev for their kind advice.

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CHAPTER I. AT THE EVE OF THE GREAT PATRIOTIC WAR

The Actions of Capitalist Air Forces in the West

On 1 September 1939 Hitler's Germany attacked Poland. At 0445 hours fascist German aviation made massed attacks against the airfields, transportation junctions, and economic and administrative centers of Poland. The Wehrmacht's ground forces crossed the border and invaded Polish territory from the north out of Eastern Prussia, from the west out of East Germany, and from the south out of Slovakia. World War II began.

The forces of the sides were rather unequal on the ground and in the air. Hitler's Germany launched about 2,000 warplanes against Poland (1,000-1,100 bombers, 600-650 fighters, and 200-250 reconnaissance airplanes). The Polish Air Force had only 824 warplanes, most of which were obsolete.<sup>1</sup>

Polish air defenses were also very weak, having a strength of only about 400 medium and small caliber antiaircraft guns. Nevertheless Polish pilots courageously entered into battle with enemy aviation, knocking down 14 German airplanes on the first day and 130 in subsequent actions.<sup>2</sup> Being numerically and qualitatively superior to Polish aviation, the German Air Force easily achieved air superiority and promoted advance of the German ground troops.

The governments of England and France, which had signed treaties with Poland, were forced to declare war on Germany. On 3 September at 1100 hours the government of England and, 6 hours later, the government of France declared war on Germany. Following England, the British Commonwealth declared war on Germany. The USA and South European countries declared their neutrality. England and France declared war on Hitler's Germany not to help Poland but in the interests of their own far-reaching plans. The imperialist circles of England and France held to the hope that after seizing Poland Germany would go to war against the Soviet Union. Capitalizing on the connivances of England and France the fascist German troops swiftly defeated the Polish Armed Forces, and in the first days of October 1939 they mopped up the last centers of resistance of regular Polish units. The Wehrmacht's Polish campaign came to an end. The tremendous combat capabilities of aviation and tank troops were

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revealed in the German-Polish war. Massed use of aviation and mechanized troops in narrow sectors made it possible to quickly collapse enemy defenses throughout their entire depth, commit mobile formations to the breakthrough, and exploit the breakthrough swiftly. The increased significance of air superiority to actions of the ground troops made itself obvious.

After the defeat of Poland fascist Germany began concentrating troops and aviation on its western borders with the objective of attacking the armies of the Anglo-French alliance. In the period from 3 September 1939 to 9 April 1940 neither side engaged in active combat operations. During this time the governments of England and France incited fascist Germany to war against the USSR. This explains the slow deployment of Anglo-French troops and the passiveness of their actions on the ground and in the air. English aviation conducted air reconnaissance on the ports and roadsteads of the German Navy, while French aviation scouted groupings of German troops deployed along the French border. Fascist German aviation conducted air reconnaissance above northern France, England, Belgium, and the Netherlands. German bombers were active only sporadically against troops and industrial facilities. On 9 April 1940 fascist Germany occupied Denmark and made a surprise attack on Norway without a declaration of war. In its attack on Norway Germany committed, in addition to ground formations, up to 1,300 warplanes (1,000 bombers and 300 fighters).<sup>3</sup> The Norwegian Air Force possessed only 180 obsolete airplanes.<sup>4</sup> The Norwegian capital of Oslo was captured by a German airborne assault party, landed right at Oslo Airport and consisting of 1,500 enlisted men and officers and armed with automatic rifles, machineguns, and light guns. Abandoned by their allies (French units had abandoned their positions on 5 June, being followed 2 days later by the English), the Norwegian troops were forced to surrender on 10 June 1940.

The capture of Denmark and Norway by Hitler's troops improved Germany's strategic position, placing all countries of Northern Europe under its control. The Western powers were unable to organize and conduct active countermeasures against fascist aggression in Norway. English aviation was found to be incapable of preventing the landing of fascist German troops in Norway, supporting and covering the actions of its own and Norwegian troops, or providing air cover to Norwegian shipping. Enjoying air supremacy, German aviation provided effective support to German ground troops and once again demonstrated the growing significance of initial surprise massed strikes on troops, airfields, and ports.

Fascist Germany's aggression against Denmark and Norway did not interrupt the Wehrmacht's preparations for a Western offensive with the objective of defeating Belgian, Dutch, and Anglo-French troops. The plans of the German Command foresaw a thrust by a strong grouping of ground troops into the center of the disposition of allied armies, fracture of the allied front, isolation of the northern enemy grouping at the English Channel, and its annihilation. The core of the strike grouping was to

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consist of tank and motorized formations, the actions of which were to be supported by major forces in the air. In accordance with the plan three army groups consisting of eight armies were deployed (136 divisions in all, including 10 tank and 7 motorized divisions), the actions of which were to be supported by two German air fleets (the 2d and the 3d) with a strength of 3,824 warplanes.<sup>5</sup>

The command of the 2d and 3d air fleets was given the missions of achieving air superiority, disorganizing enemy troop command and control, and providing direct support to advancing troops. Twenty minutes prior to the offensive of the ground troops, 1,200-1,400 airplanes were to strike Allied airfields, headquarters, communication centers, and transportation junctions in the combat zone in the Netherlands, Belgium, and France. At the beginning of the offensive all of the efforts of aviation were directed at supporting the ground troops, mainly the tank formations.

France and England had 108 divisions on the Northeastern Front. In this area the French possessed 2,789 tanks (of these, 2,285 were modern) and 11,200 guns with calibers of 75 mm and above. The British Expeditionary Forces possessed 310 tanks and about 1,350 field guns. The French Air Force had 1,648 warplanes in its first line, to include 946 fighters and 219 bombers. In May 1940 British aviation possessed 1,837 airplanes in the first line, to include more than 800 fighters and 544 bombers. About 500 English airplanes were based on French airfields. The Belgian Air Force possessed 186 airplanes, while the Dutch Air Force had 120.<sup>6</sup>

The German offensive caught Allied troops and aviation unawares. It began with an air attack against airfields, command posts, military supply depots, and the most important war industry facilities of the Netherlands, Belgium, and France. In terms of design and methods of action, the actions of the Luftwaffe differed in no way from its actions during the invasion of Poland. At 0330 hours on 10 May 1940 a powerful strike was made from the air against about 100 airfields in the Netherlands, Belgium, and northern France to a depth of up to 400 km. The first groups of German paratroopers were dropped in the rear of Dutch and Belgian troops at 0430 hours. At 0535 hours the Wehrmacht's ground troops began their invasion of the Netherlands, Belgium, and Luxembourg. The massed surprise attack on the airfields by German aviation played a major role in seizure of the initiative and air superiority. Working on its mission to attain air superiority in the West, owing to its agents and air reconnaissance the main command of fascist Germany possessed exhaustive data on the composition, basing, and the state of readiness of the enemy's aviation and air defense forces. The sudden massed raids on the airfields by German aviation inflicted great losses in airplanes and personnel on the air forces of the Netherlands, Belgium, and France. During the advance of the ground troops fascist German aviation easily attained strategic air supremacy on all of the most important axes. French and English aviation did not render adequate opposition to the air attack of the Luftwaffe.

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The Dutch Armed Forces were almost totally inactive. The Belgian Army surrendered on 28 May. The attempts of the French Supreme Command to organize active countermeasures against the enemy by ground troops were not graced with success. Fascist Italy entered the war against England and France on 10 June. The French Navy did not engage in active operations at sea, and prior to 20 June 1940 it did not suffer large losses. Petain's French government hastened in its decision to surrender, signing the surrender document at 1832 hours on 22 June 1940. On the day of France's surrender English aviation based at French airfields returned to its own airfields in England. On 24 June 1940 the French Government signed a truce with Italy, after which all military actions by the French Armed Forces were halted. The Anglo-French Alliance once again suffered disaster.

What were the most typical features of the actions of fascist Germany's air force? They were: Concentration of large air forces for powerful preemptive strikes against the principal airbases with the objective of seizing the initiative in the air; broad use of transport aviation to drop numerous sabotage groups of paratroopers in the Netherlands, Belgium, and northern France; redirection of the air force's efforts following suppression of enemy aviation to support and cover advancing tank and motorized troops, together with concurrent intensified air reconnaissance.

Following France's surrender Hitler's leadership sought ways, including military, for hastening the signing of a compromise peace with England, to Germany's advantage, and turning to the East. "Our principal attention is toward the East.... We will probably have to demonstrate our force against England once again before it halts its struggle and frees our hands for the East."<sup>7</sup>

Hitler hoped that English ruling circles, considering the swift defeat of France, would be ready for peace talks with Germany and for sizable concessions. But although the reactionary ruling circles of England were prepared to negotiate with fascist Germany, they could not take this step due to the antifascist mood of the broad masses, fearing universal embarrassment. Without waiting for peace proposals, the fascist command decided to act on England with its air force. Hitler's command assigned the air offensive to the 2d and 3d air fleets, which had a strength of 1,480 bombers, 760 single-engine fighters, 220 two-engine fighters, and 140 reconnaissance airplanes.<sup>8</sup>

The 2-month breathing spell enjoyed by England following Dunkirk (the defeat and evacuation of Allied troops from the Dunkirk beachhead--from 28 May to 3 June 1940) permitted the British Command to strengthen its air force. While on 4 June 1940 English fighter aviation consisted of 446 combat ready fighters, on 11 August the number already reached 704. The reserve fleet of the RAF grew in size. The Air Defense Command had at its disposal about 2,000 antiaircraft guns of various calibers.<sup>9</sup>

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Germany also augmented its air power. Beginning in July 1940 the Luftwaffe began massed raids on England. The raids were performed in daytime by large groups of bombers accompanied by fighters. Airfields, ports, petroleum dumps, supply depots, plants, marine shipping, and city residential districts were struck. English fighters offered stubborn resistance. Combat was continuous in the air. By 18 August 1940 fascist German aviation lost 375 airplanes, while English aviation lost 213. Beginning with 5 September 1940 Hitler's command concentrated all air strikes on London. The city was subjected to strikes almost every night from 2100 to 0600. As an example, on the night of 15 September 1940 London was subjected to a massed raid by 1,000 airplanes. Repelling this air raid, English fighters and antiaircraft artillery knocked down 60 German airplanes, losing 26.<sup>10</sup> Periodic night air raids on English cities continued until the second half of February. The Luftwaffe performed its final mass raids on London in the second half of April and the beginning of May 1941. After this the main forces of the Luftwaffe began to be transferred East. German aviation was unable to inflict considerable harm on British industry. The hope of the German Command to break English resistance through the actions of its air force turned out to be false. During the raids, just from July to November 1940 fascist German aviation lost 1,733 airplanes while the RAF lost 915.<sup>11</sup>

The combat activities of the Luftwaffe were not sufficiently purposeful; for a long time it subjected too large a number of diverse facilities to periodic attacks, and damage to or annihilation of these facilities did not have a significant influence on the output of war industry.

Nor did English bombers operate purposefully. Strikes were made against German objectives by small forces, mainly at night and at rather long intervals. Such bombing operations could not do serious harm to the economy of fascist Germany or hinder its preparations for an attack on the USSR.

The Italians, who had seized Albania in 1939, invaded Greece in October 1940, but they were unable to defeat the Grecian Army. At the beginning of April 1941 fascist Germany attacked Yugoslavia and occupied its territories. Striking airfields and cities with its bombers, in April 1941 Germany occupied Greece with tank and motorized formations of the ground troops.

Having occupied Yugoslavia and Greece, in May 1941 the Germans undertook an airborne assault operation to seize the island of Crete. Encountering no active countermeasures on the part of England and the USA, the fascist commanders continued their preparations for an attack on the Soviet Union.

The greater combat capabilities of the air force and its great role in support of the missions of the ground troops revealed themselves clearly in the military activities in the West. The Soviet Command studied the actions of capitalist aviation in Western Europe. The Communist Party

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and Soviet Government arrived at specific conclusions and took efficient steps to strengthen the air force.

The Luftwaffe Prior to the Attack on the Soviet Union

By the moment of the attack on the Soviet Union the Luftwaffe had grown quantitatively and qualitatively in comparison with the situation in fall 1939. In June 1941 the Luftwaffe had a strength of 10,000 warplanes, to include reserve airplanes and trainers, Italy had 2,416, Finland had 307, Romania had 699, Hungary had 269, and the total strength of states in the fascist bloc was 13,690 airplanes.<sup>12</sup> Organizationally the Luftwaffe was subdivided into the air forces of the Main Command (air fleets), troop aviation (army and corps), and naval air forces. The composition of the air force included air defense forces and airborne assault troops. The air force rear was organizationally separate from the flying units. Commander in Chief Reichsmarschall H. Goering commanded the Luftwaffe, and General (G. Yeshonnek) was chief of general staff of the Luftwaffe.

The air fleet was the highest major air formation of the air force. In all by June 1941 there were five air fleets. Each of them had a strength from 800 to 1,600 warplanes. The air fleet consisted of air corps (one or two), an anti-aircraft corps, and a separate air squadron. The air corps was the highest tactical formation, and it usually included two or three bomber squadrons, one or two fighter squadrons, from one to three reconnaissance groups, and one or two airlift groups. The air squadron, the principal tactical air formation, contained two or three air groups. The air group had a strength of 39-47 airplanes, including the airplanes of reserve and organic subunits. Fascist German aviation was armed with airplanes of fully up-to-date design with relatively high tactical-technical data, as can be seen from Table 1.

Preparing for its attack on the Soviet Union, the German leadership built and reequipped airfields at an accelerated pace. From summer 1940 to May 1941 more than 250 airfields and 160 landing strips were erected on German territory. During this time 100 airfields and 50 landing strips were built and restored on Polish territory. Airfields were built in Romania and Hungary. The well developed airfield net permitted dispersed basing and freedom of maneuver in all directions to the Luftwaffe. The strategic plan for the war against the USSR (Operation Barbarossa) foresaw a surprise attack consisting of several powerful strikes by large air forces and tank and motorized troops with the objective of isolating, encircling, and annihilating the main forces of the Soviet Army in the western Soviet Union, followed by a swift advance deep into the country to a line extending from Arkhangel'sk to Astrakhan'. The German Command allocated 190 divisions including 19 tank and 14 motorized divisions to Operation Barbarossa; these forces also included the armed forces of German allies. The fascist German grouping had a strength of 5.5 million men, about 4,300 tanks, more than 47,000 guns and mortars, 4,980 warplanes, and 192 warships. Four out of the five air fleets were targeted for the USSR.

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Table 1. Tactical-Technical Data of Germany's Principal Airplanes as of Summer 1941\*

Type of airplane	General data				Flight characteristics				Armament	
	Year of production	Takeoff weight, kg	No. of engines	Crew, persons	Maximum speed, km/hr	Normal range, km	Practical ceiling, meters	No. of machine-guns	Caliber, mm	Bomb load, kg
<b>Bombers:</b>										
J-88 A4 ("Junkers")	1939	7,290	2	3-4	510	2,730	9,000	1	13.0	1000-
He-111 H-6 ("Heinkel")	1938	11,300	2	5	435	2,800	7,800	4	7.9	3000
Do-217 E-2 ("Dornier")	1939	8,600	2	3-4	500	2,400	9,000	1	20.0	1000-
								6	7.9	2000
								1	15.0	-
								2	13.0	
J-87 D-1 ("Junkers" dive bomber)	1939	4,250	1	2	400	1,920	7,500	3	7.9	
<b>Fighters:</b>								2	15.0	Up to
Me-109 E-1 ("Messerschmitt")	1939	2,505	1	1	570	Up to 1,000	10,450	2	7.9	1,800
Me-110 F-2 ("Messerschmitt")	1939	6,700	2	2	570	1,200	10,500	2	20.0	
<b>Scouts:</b>								5	7.9	
(KhSh-126 ("Khenshel"))	-	-	1	2	253	710	9,000	2	7.9	
FW-189 A-1 ("Fokke-Vulf")	-	-	2	3	344	940	7,000	4	7.9	
[Fokke-Wolf?]										
<b>Transporters:</b>										
J-52/3M ("Junkers")	1939	-	3	3	290	1,286	6,300	2-3	7.9	2,000 or 17 para-troopers

\*Sources: "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 3, p 323; "Istoriya Voenno-Vozdushnykh Sil Sovetskoy Armii," pp 450-453.

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On 29 May 1941 the operational formations of the Luftwaffe and troop aviation intended for action against the Soviet Union consisted of 306 combat squadrons, to include 127 bomber and 89 fighter squadrons. The reserve contained about 400 airplanes.<sup>13</sup> Bombers made up the bulk of the Luftwaffe. They contributed 57.8 percent to the entire airplane fleet. The proportions were 31.2 percent for fighters and 11 percent for reconnaissance airplanes. Hitler's strategists believed that as had been the case in Poland and France, they would be able to annihilate Soviet aviation within the first days of the war with bomber strikes on airfields. This is why they turned a great deal of attention to developing bomber aviation.

The main thrusts were to be made against Leningrad, Moscow, and Kiev. The forces and equipment of three strategic groups were deployed on these axes. Army Group North on the Leningrad axis, consisting of 29 divisions, was to destroy Soviet troops in the Baltic states and capture Leningrad and Kronshtadt. The army group was supported from the air by the 1st Air Fleet, which had a strength of 760 airplanes.

In central Poland the strongest troop grouping--Army Group Center consisting of 50 divisions and 2 brigades--prepared for the offensive. With the support of the 2d Air Fleet (1,670 airplanes) it was to fracture the strategic defensive front, encircle and annihilate Soviet Army troops in Belorussia, and exploit the offensive in the direction of Moscow.

Army Group South consisting of three German and two Romanian armies, a tank group, and a Hungarian mobile corps, 57 divisions and 13 brigades in all, had the mission of annihilating Soviet troops in the Right-Bank Ukraine, reaching the Dniepr, and developing the offensive eastward with the support of the 4th Air Fleet and Romanian aviation (1,600 airplanes).

The German Norway Army and two Finnish armies--21 divisions and 3 brigades in all--were deployed on Norwegian territory and in Finland. With the support of the 5th Air Fleet and the Finnish Air Force (547 airplanes in all), these forces were to capture Murmansk and Polyarnyy and assist Army Group North in capturing Leningrad. The main command of the ground troops had 24 divisions in reserve.

Table 2. Number of Warplanes Possessed by Countries of the Fascist Militarist Bloc That Were To Participate in the Attack Against the USSR\*

<u>Germany</u>	<u>Italy</u>	<u>Finland</u>	<u>Romania</u>	<u>Hungary</u>	<u>Total</u>
about 4,000	70**	307	623	48	4,980

\*"Istoria vtoroy mirovoy voyny 1939-1945," Vol 3, pp 328, 338.

\*\*At the end of June 1941 Italy sent 70 warplanes against the USSR as an "expeditionary" corps.

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The German Command posed the following missions to the Luftwaffe: Attaining air superiority and paralyzing the actions of Soviet aviation; disrupting the work of the lines of communication and preventing the reserves from maneuvering; supporting the swift advance of ground troops.

Thus fascist Germany made comprehensive preparations for war against the Soviet Union, and it possessed sizable armed forces, including an air force outfitted with all forms of combat equipment.

The Status of the Soviet Air Force at the Eve of the War

The Communist Party and Soviet Government were aware that an armed collision with the forces of imperialism could occur, and in the years of peaceful socialist construction they took the necessary steps to strengthen the country's defense capabilities. Much attention was devoted to strengthening and developing the Soviet Air Force. In September 1939 the Politburo of the CC VKP(b) [Central Committee of the All-Union Communist Party (of Bolsheviks)] adopted the decree "On Reconstruction of Existing Airplane Plants and Construction of New Plants." The plan was to build 9 new plants and reconstruct 9 old plants in 1940-1941. By as early as 1940 the Soviet Union's aircraft plants were producing 19 percent more warplanes than in 1939.<sup>14-15</sup>

In January 1940 the Politburo of the CC VKP(b) discussed the work of the People's Commissariat of Aviation Industry. CC VKP(b) member A. I. Shakhurin was appointed people's commissar of aviation industry, and aircraft designer A. S. Yakovlev was appointed his assistant for experimental construction. By the end of 1940 significant organizational changes had been made in aviation industry. Independent designer teams led by V. M. Petlyakov, A. A. Arkhangel'skiy, P. O. Sukhoy, and V. M. Myasishchev were separated from the experimental design office headed by A. N. Tupolev. New aircraft design offices were created with A. I. Mikoyan, M. I. Gurevich, S. A. Lavochkin, M. I. Gudkov, and V. P. Gorbunov in charge. Existing engine design offices were expanded, and new ones were established.

The technical flight characteristics of the new Soviet warplanes satisfied modern requirements. For example, the MIG-3's combat characteristics were superior to those of English, American, and German fighters of the same class. The Pe-2 was better than German bombers of the same class, the J-87 and the J-88. Capitalist air forces did not possess ground attack airplanes of the Il-2 class. In 1939 and 1940 the Soviet Union produced more airplanes than Germany, but German aircraft industry was producing new types of airplanes, while our aircraft industry was only just beginning to assimilate production of new airplanes. Owing to this the western frontier military districts still had many obsolete airplanes as of 22 June 1941; as an example they possessed 1,762 I-16 fighters and 1,549 I-153 fighters.<sup>16</sup>

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Table 3. Number of New Types of Airplanes Produced by Aircraft Industry at the Beginning of the Great Patriotic War\*

<u>Type of airplane</u>	<u>1940</u>	<u>1941, prior to 22 June</u>	<u>Total</u>
YaK-1	64	335	399
MIG-3	20	1,289	1,309
LaGG-3	--	322	322
Pe-2	2	458	460
I1-2	--	249	249
Total	86	2,653	2,739

\*TsGASA, [Central State Archives of the Soviet Army], f. 130, op. 25, d. 199, ll. 4-5.

On 25 February 1941 the CC VKP(b) and the USSR SNK [Council of People's Commissars] adopted a special decree "On Reorganization of the Red Army Air Force" approving the plan proposed by the People's Commissariat of Defense for development of the air force. The plans called for increasing the strength of aviation in frontier military districts, improving the training of aviation personnel, reorganizing the air force rear, and implementing far-reaching measures to reconstruct and expand the airfield net so that it could support the basing and combat use of new types of airplanes. By as early as spring 1941, in comparison with the beginning of 1939 the number of airplanes in the air force more than doubled, and the number of air regiments increased by 80 percent.<sup>17</sup> Formation of 106 new air regiments began in the airports at the start of 1941; of these, only 19 were formed by the beginning of the war, to include 13 long-range bomber regiments.<sup>18</sup>

Reequipping the air force and improving its organization, the Communist Party did a great deal of work to develop high moral-combat qualities in the personnel. Sixty percent of the personnel in the air force were communists and Komsomol members who played a leading role in combat and political training and in the fight for higher battleworthiness and combat readiness of their air units and formations.<sup>19</sup>

The battleworthiness and combat readiness of air units and formations and the effectiveness with which combat equipment was employed were directly dependent on the morale, skills, and creative initiative of the airmen. The high morale of Soviet pilots, being one of the most important factors of the air force's power, was a product of our socialist social and state structure, the sociopolitical and ideological unity of the Soviet people, and the tremendous amount of work done by the Communist Party in ideological theory, organization, and agitation and propaganda.

Much was also done to train personnel. A new principle was adopted in December 1940 for selecting cadets for air force schools: Candidates were selected from routine drafts of young people for military service. A decree

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Table 4. Technical Specifications of the Principal Types of Airplanes in the Soviet Army Air Force as of Summer 1941

Type of airplane	General data				Flight characteristics				Armament		
	Year of acceptance	Plane weight, kg	No. of engines	Crew	Maxi-mum speed, km/hr	Range, km	Prac-tical ceiling, meters	Land-ing speed, km	Machine-guns and guns	Cali-ber, mm	Bomb load, kg
<b>Bombers:</b>											
SB	1935	6,500	2	3	445	1,000	9,000	130	4	7.62	600-1500
Pe-2	1941	7,700	2	3	540	1,100	9,000	145	4	7.62	600-1000
DB-3f	1937	8,000	2	3	440	2,700	6,960	125	3	7.62	1000-2500
TB-3	1931	19,200	4	8	288	4,000	6,960	116	8	7.62	2000-4000
TB-7	1940	27,000	4	10	443	4,700	10,300	116	6	7.62	2000-4000
									3	12.7	
									2	20.0	
<b>Ground attack airplanes:</b>											
Il-2	1941	5,340	1	1	412	510	7,500	140	2	20.0	400-600
									2	7.62	
									8	PC 82.0	
<b>Fighters:</b>											
I-15 bis	1935	1,650	1	1	367	770	9,000	100	4	7.62	150
I-16	1934	1,878	1	1	462	625	10,800	112	4	7.62	100
I-153	1938	1,858	1	1	427	690	10,700	105	4	7.62	200
Yak-1	1941	2,917	1	1	572	700	10,500	140	1	20.0	-
									2	7.62	
LaGG-3	1941	3,380	1	1	549	556	9,600	140	1	20.0	200
									1	12.7	
MIG-3	1940	3,299	1	1	620	1,000	12,000	140	2	7.62	200
									1	12.7	
									2	7.62	
<b>Scouts:</b>											
R-5	1931	3,430	1	2	230	600	4,600	105	3	7.62	200-400

Note: Table sources: "Istoriya vtoroy mirovoy voyny 1939-1945" Vol 3, p 424; "Istoriya Voenno-Vozdushnykh Sil Sovetskoy Armii," p 441.

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of the CC VKP(b) and the USSR SNK dated 25 February 1941 established a new system for training pilots, aircraft engineers, and technicians. Three types of military aviation schools offering compressed training courses were introduced: Basic training schools offering a 4-month course in peacetime and a 3-month course in wartime; military pilot schools with a 9-month training course in peacetime and a 6-month course in wartime; aviation schools with a peacetime training course of 2 years and a wartime training course of 1 year.

Steps were taken to expand the training of aviation commanders with a higher military education. For many years this training was conducted only at the Air Force Academy imeni N. Ye. Zhukovskiy and at the Aviation Department of the Military Academy imeni M. V. Frunze. In March 1940 the following schools were created by order of the USSR people's commissar of defense at the Air Force Academy imeni N. Ye. Zhukovskiy (chief--Division Commander Z. M. Pomerantsev, military commissar--Brigade Commissar M. I. Izotov): Command, operational, correspondence command, navigator, and advanced training courses for air force commanders; these schools were reorganized into an independent academy which later came to be called the Red Army Air Force Military Academy of Command and Navigator Personnel. The last graduating class of the command school at the Air Force Academy imeni N. Ye. Zhukovskiy in 1940 included P. I. Ivashutin, S. N. Grechko, S. A. Pestov, V. A. Novikov, A. I. Podol'skiy, N. N. Ostroumov, G. A. Pshenyaniuk, G. K. Prussakov, A. C. Kravchenko, A. A. Karyagin, N. P. Kuz'min, N. N. Kozhevnikov, P. N. Aseyev, M. V. Afanas'yev, A. V. Zhat'kov, A. V. Khramchenkov, A. F. Isupov, A. S. Bolotnikov, M. I. Maksimov, A. F. Matisov, M. M. Orkin, A. Ya. Ol'shvanger, G. M. Sokolov, A. T. Shevchenko, and others. During the Great Patriotic War, graduates of the command school of the Air Force Academy imeni N. Ye. Zhukovskiy worked at command and staff posts with great energy, displaying high theoretical training, good organizational capabilities, the ability to command troops, and limitless devotion to the people and the Communist Party. The academy's executives included command school chief Colonel M. D. Smirnov, school commissar Regimental Commissar A. T. Chumakov, navigator school chief Hero of the Soviet Union Brigade Commander I. T. Spirin, officer instructors N. A. Zhuravlev, A. S. Pleshakov, A. I. Chugunov, N. F. Kudryavtsev, M. D. Tikhonov, G. D. Ban'kovskiy, V. P. Kanokotin, T. M. Artemenko, and V. S. Pyshnov, and many others.

In March 1941 the Air Force Engineering Academy was established in Leningrad, and subsequently named after A. F. Mozhayskiy. In all by the beginning of the war three air force academies were operating, training personnel with a higher military education specifically for the Soviet Air Force. The Air Force Military Command and Navigator Personnel Academy became the principal source of trained commanders and staff officers. Political officers were trained for air force units and formations by the Military Political Academy imeni V. I. Lenin.

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Extensive measures were implemented to prepare the theater of war. Construction, expansion, and reconstruction of the landing strips of more than 250 airfields assumed broad scope in spring 1941. A significant proportion of the airfields were built in the new frontier zone formed as a result of the annexation of western Belorussian and Ukrainian regions and admission of new republics--Latvia, Lithuania, and Estonia--into the USSR. Some 164 airfields were built between 8 April and 15 July 1941.<sup>20</sup>

There were plans to have three airfields (main, standby, field) for every air regiment to insure high combat readiness and permit maneuvering of aviation. One hundred airfield construction battalions were formed with the purpose of accelerating the construction of previously started airfields. In addition 25,000 laborers were transferred at the end of March from railroad construction projects to complete construction of airfields.<sup>21</sup> In western frontier military districts at many existing airfields, where new types of airplanes were to be based, the landing strips were lengthened and given a concrete surface, and fuel and ammunition dumps and airfield control posts were built. Owing to this the new types of airplanes could not operate from these airfields temporarily, while use of obsolete airplanes was restricted.

A decision adopted by the CC VKP(b) and the USSR SNK on 10 April 1941 reorganized the air force rear services.<sup>22</sup> Prior to this decree, air force rear units were within the composition of air formations. Combat practice, especially in the Soviet-Finnish War, showed that this structure reduces maneuverability of air units and rear units. To correct these shortcomings the air force rear was taken out of the air formations and organized on a territorial basis.

The entire territory of the western frontier military districts was divided into 36 airbase regions (RAB). The airbase region became the principal air force rear organ of the combined arms army and the military district (front), and it was intended to provide logistical, airfield, and medical support to three or four air divisions. Each region contained an airbase for every division. The airbase was directly subordinated to the region chief and, in operational respects, to the air division commander. The base had three or four airfield service battalions (BAO). The airfield service battalion was a separate rear unit, and it was intended to provide direct support to one air regiment armed with two-engine airplanes, or to two air regiments armed with single-engine airplanes. In operational respects the battalion commander was subordinated to the air regiment commander. This rear structure relieved the air units of cumbersome rear services, made all forms of rear support more consistent, and heightened the possibilities for maneuvering air regiments and divisions. The plans called for completing reorganization of the air force rear by 1 August 1941.

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Measures were planned to disperse and camouflage airplanes at airfields. On 14-19 June 1941 the USSR people's commissar of defense ordered the command of the frontier military districts to deploy the frontal administrations in field command posts between 21 and 25 June. Orders were published on 19 June to camouflage airfields, military units, and important facilities, to paint tanks and vehicles protective colors, and to disperse aviation.<sup>23</sup>

But the treacherous surprise attack of fascist Germany disrupted most of the measures aimed at achieving fundamental reorganization and rearmament of the Soviet Air Force. It was precisely for this reason that aviation found itself in an extremely difficult situation at the start of the war in the western frontier military districts. Construction of many airfields was not completed, the possibilities for maneuvering aviation were limited, and the air force rear had not been fully reorganized into the new system of services.<sup>24</sup> Because the air force command sent new types of airplanes coming from the plants right to the airfields in the western frontier military districts, a large number of obsolete airplanes accumulated at airfields located not far from the state border.

There were up to 100 and more airplanes at some airfields of the Western and Kiev special military districts. During the retraining period a significant proportion of the obsolete airplanes at these airfields were left without crews. For this reason the airplanes could not take off at the moment of the enemy's attack, being left defenseless against German aviation. All of this dramatically limited the combat capabilities of the Soviet Air Force.

The mission of repelling the aggressor's attack from the west was assigned by the Soviet Supreme High Command to troops of the Leningrad Military District, the Baltic Special Military District, the Western and Kiev special military districts, the Odessa Military District, the air force, and three fleets--Northern, Red Banner Baltic, and Black Sea.

Formations and units of the national air defense forces, combined into five air defense zones--Northern, Northwestern, Western, Kiev, and Southern, were to protect rear facilities from air strikes in the western frontier zone. Forty air fighter regiments possessing about 1,500 airplanes were allocated from the air force by special order for air defense.<sup>25</sup>

There were 170 divisions (103 rifle, 40 tank, 20 motorized, 7 cavalry) and two brigades in the western frontier military districts. This grouping had a strength of 2,680,000 men, 37,500 guns and mortars, 1,475 tanks of new types (KV and T-34), 1,540 warplanes of new types, and a large number of obsolete warplanes.<sup>26</sup>

At the beginning of the war the Soviet Army Air Force was composed of aviation of the Main Command (long-range bomber aviation), frontal

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aviation (the air services of the military districts), army aviation (the air services of the combined arms armies), and troop aviation (corps air squadrons). Of the total air force strength, 13.5 percent was with the Main Command while 86.5 percent was with the ground troops (frontal aviation--40.5 percent, army aviation--43.7 percent, troop aviation--2.3 percent).

The ratio of aviation arms in the air services of the western military districts was 50 percent fighters, 31 percent bombers, 4.5 percent ground attack airplanes, and 5.5 percent reconnaissance airplanes.<sup>27</sup>

Air services in the frontier military districts were headed by: Leningrad--commander, Major General of Aviation A. A. Novikov, chief of staff, Major General A. P. Nekrasov; Baltic Special--commander, Major General of Aviation A. P. Ionov, chief of staff, Major General of Aviation S. P. Sinyakov; Western Special--correspondingly Major General of Aviation I. I. Konets and Colonel S. A. Khudyakov; Kiev Special--Lieutenant General of Aviation Ye. S. Ptukhin and Major General of Aviation N. A. Laskin; Odessa--Major General of Aviation F. G. Michugin and Major General of Aviation A. Z. Ustinov. The air force commanders and chiefs of staff of the frontier military districts were experienced, and in operational respects they were well trained military leaders.

The air services of internal military districts located behind the frontier military districts were headed by: Moscow--commander, Colonel N. A. Sbytov, chief of staff, Colonel A. N. Burtsev; Orel--correspondingly Colonel N. F. Naumenko and Colonel A. F. Vanyushin; Khar'kov--Major General of Aviation S. K. Goryunov and Colonel M. A. Belishev; North Caucasus--Major General of Aviation Ye. M. Nikolayenko and Colonel N. V. Korneyev; Transcaucasus--Lieutenant General of Aviation S. P. Denisov and Brigade Commander S. P. Lavrik.

In the Far East at the eve of the war there was the Far Eastern Front,<sup>28</sup> in which the air force commander was Lieutenant General of Aviation K. M. Gusev and the chief of staff was Major General of Aviation Ya. S. Shkurin.

The air services of the internal military districts were composed of several air formations and units outfitted with obsolete aviation equipment, and a large number of aviation schools. Air regiments, divisions, and groups were formed on the territory of the internal military districts and sent to the front at the beginning of the war.

Long-range bomber aviation experienced major organizational alterations at the eve of the war. In order to improve command and control and eliminate a lengthy chain of command, the three special-purpose air armies (AON) of the Main Command, which were created back in 1936-1938, were reorganized into bomber air corps with two two-regiment air divisions each. In all five air corps and three separate air divisions were

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Table 5. Composition of the Air Forces of Western Frontier Military Districts as of 22 June 1941\*

Military district	Air divisions			Air regiments <sup>1</sup> :				Corps air squadrons (KAE)		
	Bomber (BAD)	Fighter (IAD)	Mixed (SAD)	Bomber (BAP)	Fighter (IAP)	Ground attack (ShAP)	Reconnaissance			
Leningrad	1	3 2*	4	8	9/1	13/4	1	24/5	4	
Baltic Special	-	1	4	5	8/1	8/3	2/1	1	19/5	9
Western Special	2	1 3*	3	6	13/2	12/5	2/1	2	29/8	8
Kiev Special (as of 1 June 1941)	3	2	5	10	11/4	17/5	2/1	2	32/10	11
Odessa (as of 1 June 1941)	-	- 4*	3	3	7/2	7/4	-	1	15/6	4

\*"50 Let Vooruzhennykh Sil SSSR" (50 Years of the USSR Armed Forces), Moscow, 1968, pp 238, 251.  
 1\* Numerator--Total air regiments; denominator--those retraining for new types of airplanes.  
 2\* Including 2 air defense IAD.  
 3\* Two IAD and one BAD were undergoing formation.  
 4\* Two IAD were undergoing formation.

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created. Formation of one long-range escort fighter air division was started in each air corps at the beginning of the war.

Four air corps and one separate air division were deployed in the vicinity of Novgorod, Smolensk, Kursk, Zaporozh'ye, and Skomorokha; this was a total of nine divisions (29 air regiments) with a strength of 1,346 airplanes and 931 combat crews.<sup>29</sup> Eighty-six percent of the long-range bombers were DB-3's, and 14 percent were TB-3's. There were only 11 of the latest airplanes--the TB-7 (Pe-8)--in the line units.<sup>30</sup> At the eve of the war the air corps were commanded by: I Bomber Air Corps--General V. I. Izotov, II Bomber Air Corps--Colonel K. N. Smirnov, III Bomber Air Corps--Colonel N. S. Skripko, IV Bomber Air Corps--Colonel V. A. Sudets, and 18th Separate Bomber Air Division--Colonel A. M. Duboshin. The V Air Corps was undergoing formation in the Far East. A special air arm of the air force, long-range bomber aviation, was headed by a specially created aviation directorate of the main command. Hero of the Soviet Union, Lieutenant General of Aviation I. I. Proskurov, a veteran of the war in Spain, served as the chief of the directorate until April 1941, after which he was replaced by Colonel L. A. Gorbatsevich.

At the eve of the war the Soviet Air Force was directed by the Air Force Main Directorate. The chief of the Air Force Main Directorate was Lieutenant General of Aviation P. F. Zhigarev, who had replaced Lieutenant General of Aviation P. V. Rychagov on 12 April 1941.

Pavel Fedorovich Zhigarev was transferred to aviation from the cavalry. In 1927 he graduated from a military pilot school, and in 1932 he graduated from the Air Force Academy imeni N. Ye. Zhukovskiy. He commanded air squadrons, an air brigade, and the air forces of the 2d Separate Red Banner Army in the Far East. In December 1940 he was appointed to the post of deputy chief of the Soviet Army Air Force Main Directorate. Corps Commissar P. S. Stepanov was appointed to the post of Air Force Main Directorate deputy chief for political affairs.<sup>31</sup> Organizationally the Air Force Main Directorate consisted of the air force headquarters (chief of staff, General D. N. Nikishev and, as of May 1941, General P. S. Volodin), directorates, and independent sections. The long-range bomber directorate and a number of other directorates were subordinated to the chief of the Air Force Main Directorate. The central administration of the air force did not have an independent reserve at the beginning of the war. Directives concerning the work of the rear services of military district (frontal) air services came directly from the Soviet Army Air Force Headquarters. These functions were performed by the headquarters rear services section, the chief of which was General P. V. Korotayev.

At this time the Soviet Army Air Force Headquarters consisted of several independent sections, Section One being the principal one. General B. L. Teplinskiy, one of the well known Soviet military theoreticians, was chief of Section One; he was concurrently air force deputy chief of staff.<sup>32</sup>

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The Air Force Headquarters was undergoing reorganization, and new officers were assigned to the principal sections. Section and department chiefs included General D. D. Grendal', Colonels V. V. Storozhenko and A. I. Bogdanov, and Majors N. F. Andrianov and D. K. Karpovich.

Highly skilled officers who in their time had flown warplanes and, for the most part graduated from the command or navigator school of the air force academy, worked in the headquarters: I. P. Potapov, V. I. Artem'yev, V. P. Pomekhontsev, A. Ya. Ol'shvanger, I. M. Kuz'min, Ye. S. Chalik, A. M. Vlasov, and V. A. Dmitriyev. The work of the headquarters was structured in accordance with operational axes, with one or two officers working with each of them. They maintained maps of the operational situation of the air services of several military districts, they studied the probable enemy, they computed and analyzed his combat composition and the airfield net, they maintained constant communications with the air services headquarters of the military districts, they prepared draft instructions and orders to the troops and reports to the General Staff, they monitored the work of reorganizing and rearming the air force, and they inspected air units.

After fascist invaders occupied Poland and France the situation on our western borders became more and more tense. The Germans began to violate our motherland's air borders with increasing frequency. Performing reconnaissance, between 1 January and 22 June 1941 the Fascist German Command violated the USSR air border and penetrated up to 300-350 km into our territory in some cases. A number of times Soviet fighters intercepted German reconnaissance airplanes and forced them to land. Our fighters were prohibited at that time by the Soviet Command from using machinegun fire against the violating airplanes. Explosions often occurred automatically in the cockpits of German airplanes following a forced landing. This happened, as an example, on 15 April 1941 in the vicinity of Rovno, when a Soviet fighter intercepted a J-86 reconnaissance airplane and forced it to land. Two explosions occurred after the German pilots abandoned the airplane. The airplane caught fire, but the fire was extinguished. Three cameras were discovered aboard the airplane, of which only one survived. Its film bore images of rail junctions in the Kiev-Korosten' rail section.<sup>33</sup>

Sometimes German airplanes violating our airspace opened fire at fighter-interceptors demanding them to land, and then left our territory. This was observed especially often at the eve of fascist Germany's attack on the USSR, in May and June 1941.

The intensity of violations of the USSR's western air border by German airplanes increased significantly in May-June 1941.

"Concurrently with developing Operation Barbarossa," the history of the Communist Party of the Soviet Union reads, "in summer 1940 the Fascist German Command began deploying troops on the borders of the Soviet Union.

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Saboteurs and spies began to be sent into USSR territory much more frequently, and the frequency of reconnaissance flights increased dramatically: Just in the first half of 1941 alone there were 324 documented cases of fascist airplanes violating the USSR air border."<sup>34</sup>

The Air Force General Headquarters and Command took steps to increase the number of patrolling fighters at the airfields of all five western frontier districts. As an example the following numbers of fighter flights were placed on duty every day in summer 1941 in the Western Special Military District: 5 flights of I-153 and I-16 airplanes, 3 flights of the new MIG-3's, and 8 flights held in ambush, for a total of 16 flights.<sup>35</sup> A somewhat smaller number of fighters patrolled in other frontier military districts. Patrolling fighters played a major role in the first moment of repelling the treacherous surprise attack of fascist German aviation at dawn on 22 June 1941. Together with frontier troops the Soviet pilots were the first to enter into the unequal battle with the aggressor, and they offered stubborn resistance to superior enemy forces.

In the central air force administration, the principal directorates and the main sections of the Air Force Headquarters were hastily manned by officer pilots, navigators, and engineers who had graduated from military academies. The Air Force Headquarters and its operational section wrote directives and orders to the troops concerning operational and combat training. Preparation of all aviation manuals and regulations as well as the draft 1944 Field Service Manual was also completed with the participation of the Air Force Headquarters. We know that as long ago as in January 1940, field manuals had been introduced into bomber (BUBA-40) and fighter aviation (BUFA-40) by order of the USSR people's commissar of defense, and the troops used them as their guidelines. In that same year an order from the chief of the Soviet Army Air Force Main Directorate defined the list of individual theoretical topics to be worked on the commanders of military district air services. In February 1941 the Air Force Headquarters developed a list of operational and tactical subjects to be included in the training of officers for the headquarters of military district air services and air divisions. On 28 February 1941 the chief of the Air Force Main Directorate published an order in which he stated that work on an individual topic was one of the most important measures by which to heighten the operational and tactical preparedness of higher and senior commanders in aviation.<sup>36</sup> These topics corresponded completely to the requirements of waging war against a strong enemy, and they were sufficiently well defined and concrete. Here is the list of topics: Actions of the air force in attaining air supremacy in a frontal offensive operation; actions of a frontal air force in interdicting enemy shipments and concentration; actions of a frontal air force to prevent advance of strategic enemy reserves to the place of a breakthrough; actions of a frontal air force in an encounter engagement of a mechanized cavalry group; actions of a frontal air force in annihilating major enemy mechanized formations penetrating deep into our disposition, in supporting

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an airborne landing operation, and in repelling an enemy marine assault landing.<sup>37</sup> The commanders of the frontier military district air services had to submit abstracts of their reports on the assigned topics to the Air Force Headquarters by 1 April 1941, but because of the growing tension in the international situation and the measures being conducted in the troops to reorganize and rearm air units and formations of frontier military district air services the deadline for their submission was postponed to June 1941.

The Soviet Army Air Force Headquarters also resolved the problems of organizing and maintaining interaction among the aviation arms and between aviation and the ground troops. As early as in October 1940 the command ordered the air services of the four military districts (Western Special, Leningrad, Transcaucasus, and Far East) to write draft instructions on organizing interaction of aviation with ground troops, and the fundamental premises of this draft were utilized in the beginning of the war.

In January 1941 the USSR people's commissar of defense ordered the military district commands and the chief of the Air Force Main Directorate to attach the staffs of air formations (including the staffs of long-range bomber aviation air corps) to the appropriate army directorates, and some of the staffs to the military district staffs with the goals of heightening the training level of air formation staffs and deepening the skills of higher commanders in the use of large air services in operations.<sup>38</sup>

The Air Force General Headquarters and the command conducted many air exercises of various sorts. More than 130 regimental, divisional, and district exercises were conducted in 1940 with air force air formations and units participating.<sup>39</sup>

The theory behind operational application of the air force in the future war was also sufficiently well developed at the eve of the war. Soviet military science took account of the fact that aviation was to play a major role in the fight for air superiority and in support to ground troops and the navy in their offensive and defensive operations. The draft RKKA [Workers and Peasants Red Army] Field Manual (1939) stated: "Aviation possesses powerful armament, it is swift, and it has a great effective range. It is a powerful weapon against enemy manpower and equipment; it can annihilate his aviation and destroy important objectives. Aviation provides strategic and tactical support to ground troops, it performs independent air operations against objectives deep in the enemy rear, and it fights enemy aviation, striving for air superiority."<sup>40</sup> The air force command and staff devoted special attention to resolving the issues concerning participation of aviation in offensive operations, primarily in operations in depth. According to the theory of the offensive operation in depth, the advance of the troops must "have the nature of suppression of the entire defensive zone followed by penetration, encirclement, and annihilation of the enemy."<sup>41</sup> It

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was believed that a simultaneous, powerful thrust by infantry, tanks, artillery, and aviation would break enemy defenses throughout their entire tactical depth, and that subsequent commitment of mobile formations (mechanized and cavalry) to the breakthrough with active support by aviation from the air in combination with decisive actions by airborne troops in the enemy rear would insure encirclement and annihilation of the enemy.<sup>42</sup> It was believed that the air force would perform the following missions in these operations: Attainment of air supremacy, support to ground troops in penetration of enemy tactical defenses, protection of troops and rear facilities from air strikes, performance of strikes against operational and strategic reserves and objectives in the enemy rear, support to commitment of an exploitation echelon to a breakthrough, support of the latter's combat activities at strategic depth in enemy defenses, support to airborne troops, supply of friendly forces by air, and air reconnaissance.<sup>43</sup>

Attaining air superiority was believed to be one of the most important missions of the air force. It could be achieved on strategic and operational scales. Air superiority was attained on the axes of the main thrusts by ground troops through the joint efforts of the air services of two or several contiguous fronts, by aviation of the Main Command, and by ground-based air defense resources.

It was recommended that enemy aviation be fought in two ways: Through annihilation of enemy aviation at airfields coupled with a concurrent strike against rear services--frontal bases, repair services, field and ammunition dumps, and annihilation of enemy aviation in air battles.

The air force's independent air operations were subdivided into strategic and operational in accordance with prewar viewpoints. The former included air operations conducted by the Supreme High Command in the interests of the war as a whole. They were directed against the enemy's most important military, economic, and political centers, and their objective was to undermine his war economy, disorganize the work of the rear, disrupt state administration and communication, and suppress the morale of the population and the army.

Operational air operations were to be conducted in behalf of ground troops and the navy. Their principal objectives were: Defeat of opposing aviation groupings; prevention of the maneuvering (concentration) of enemy troops; destruction of the enemy's strategic reserves; weakening of the navy and destruction of large enemy marine assault landing parties. Professor, Brigade Commander A. N. Lapchinskiy, the author of a number of scientific works including the famous work on military theory "Vozdushnaya armiya" (The Air Army), made a significant contribution to the theory of independent air operations. His basic premises were utilized in the practical activities of the command and staff of the Soviet Army Air Force at the eve and in the course of the Great Patriotic War. In particular he wrote the following about the main mission facing the

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air force: "In the end, no matter what mission aviation performs in relation to the ground war, it is always faced by the problem of attaining air superiority."

"Aviation has come into its own in warfare as a new powerful offensive factor. Hence follows the logical conclusion that land and air forces must act together to achieve a common goal." "Aviation cannot set the stage for a triumphant procession of advancing massed armies, nor will it be able to perform triumphant flights. In all subsequent operations the fight between the air forces will be stubborn and savage. Aviation will help the land front to the extent that it offers it greater possibilities for offensive actions in comparison to the enemy by conducting a number of its own successive independent operations.

"When a massive offensive army is obviously present, the main mission of an air army is to support the forward movement of this army, for which purpose all efforts must be concentrated. Once the war is seen to be maneuverable, we must win air-land engagements starting in the air and ending on the ground; this would require concentration of all air forces."<sup>44</sup>

Problems concerning the combat uses of the air force in various operations and in the war as a whole were studied to sufficient depth in the prewar years in a number of major scientific works by Soviet military leaders and scholars.<sup>45</sup>

The combat applications of aviation in the initial period of war were developed. The following were treated as the air force's main missions at the beginning of a war in the works of Corps Commander V. V. Khripin and Colonel P. I. Malinovskiy written as long ago as 1936:<sup>46</sup> Suppression of the airborne enemy throughout the entire depth of his disposition with the goal of attaining air supremacy; prevention of the concentration of enemy armies; support to the combat activities of the forward army of the ground troops by a part of the air force. Actions against the enemy's economic and political centers were not excluded in this case. These works also pointed out that to preserve aviation in the initial period of a war, it would be suitable to withdraw air units from permanent airfields to field airfields in time. The first operations of World War II permitted the Soviet Command to elaborate upon the principles of the initial period of war and determine its significance to the course and outcome of the armed conflict. The initial period was interpreted as the time interval from the beginning of military actions to the moment that both of the armed forces entered the engagement.<sup>47</sup>

The problems of utilizing all branches of the armed forces in war, including the air force, were discussed in detail at a conference of higher commanders held in December 1940 by Marshal of the Soviet Union S. K. Timoshenko on order of the CC VKP(b). General P. V. Rychagov, chief of the Air Force Main Directorate, gave the report "The Air Force in the Offensive Operation and in the Fight for Air Superiority."<sup>48</sup>

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The report pointed out that only air superiority would make it possible to dependably prepare a front's offensive, provide air cover to troops being brought up to the front, especially cavalry and mechanized formations, quickly and systematically penetrate an enemy fortified zone, and exploit a success in depth. "Attainment of air superiority," the report read, "requires annihilation of the enemy's aviation and his airfields coupled with a simultaneous strike against the air force rear (frontal bases, repair services, field and ammunition dumps) and annihilation of enemy aviation in the air above the battlefield."<sup>49</sup>

But executives were unable to arrive at a common point of view concerning a number of issues in operational use of the air force in war, especially the problems of attaining air superiority. Exaggerating the highly limited combat experience of the war in Spain and their own personal experience, some of the conference participants understated the contribution made by the Luftwaffe to the swift defeat of Polish and French aviation, which was attained mainly through massed surprise strikes against airfields. Summarizing the results of the conference S. K. Timoshenko approved the basic premises stated in the conference reports, though he did address a few critical remarks to some of these premises. In particular, he said the following concerning the use of the air force: "We have accumulated a large amount of experience in using the air force in operations, but this experience has not been generalized, and it has not been studied yet. Moreover this situation can harbor especially dangerous consequences. Our air force command has been unable to arrive at common viewpoints concerning issues such as organizing and planning operations, assessing the enemy, the methods for conducting an air war and imposing one's will on the enemy, target selection, and so on."<sup>50</sup>

Differences in interpretation of the problems concerning operational application of the air force in war also had a certain effect on the air force's organizational structure. It was concluded that aviation had to be subdivided into army aviation intended specifically for interaction with army troops, and frontal aviation operating in accordance with a front's plans, but the Great Patriotic War did not support this conclusion. It was made on the basis of combat experience acquired in combat at the Khalkhin-Gol River (May-September 1939) and in the Finnish conflict (30 November 1939 to 13 March 1940). Subdivision of aviation into army and frontal aviation was fully justified in minor wars such as these. But in a large war against a strong enemy, where massing of efforts and centralized control over all aviation participating in an operation were required, this organizational structure was unacceptable. Thus in the prewar years Soviet strategy offered a basically correct interpretation of operational use of the air force in offensive and defensive operations. Many premises of the theory of air force strategy were tested in major exercises and maneuvers conducted in the prewar years. But there also were poorly developed aspects in our military theory. Not enough work had been done on the problems of repelling an enemy surprise attack, conducting joint actions with the air force and

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ground troops in strategic defense, and bringing the troops and aviation to a higher state of readiness and full combat readiness.

At the eve of the war the command and staff of the Soviet Army Air Force devoted sufficient attention to improving the combat and political training of units and formations in frontal and long-range bomber aviation. New requirements on the combat and political training of the troops were set by the USSR people's commissar of defense in Order No 30 dated 29 January 1941, and in the directive of the Soviet Army Main Directorate of Political Propaganda "On Reorganizing Party-Political Work" published in August 1940. Troop training was based on the principle: "Teach the troops only that which they will need in war, and only the methods used in war." The air force was given the mission of working out interaction with ground troops and the navy, conducting active combat operations with large forces, and devoting more attention to flight training in poor weather and at night. One air squadron was singled out from every air regiment for a night flying course.

The combat and political training of air units and formations was systematically inspected by the Soviet Army Air Force command at the eve of the war. This can be seen from the following example. In April 1941 an inspection was conducted of the 12th Bomber Air Division of the Western Special Military District Air Service, which was lagging considerably in retraining to new types of airplanes. The group of air force officers detailed for the inspection was headed by General A. V. Nikitin, chief of the Air Force Organization and Manning Directorate.

Aleksey Vasil'yevich Nikitin threw his lot in with aviation as long ago as in 1921, enrolling in the military observer pilot school in Petrograd. He joined the Red Army in May 1919. He became a member of the Communist Party in 1925. In his aviation career he served as an observer pilot, flight commander, commander of an air detachment, and commander of an air squadron. Being chief of staff of the pilot school in Lugansk, he concurrently graduated from this school and acquired the specialty of a military pilot. Later he assumed the post of air force chief of staff of the Transcaucasus Military District and air force chief of staff of the Transbaykal Military District. He began working in the central administration of the air force in 1939.

The inspection confirmed that 104 of the division's crews were still retraining. The division command's fear of flying accidents was the reason for this. In view of this the personnel were assigned more of the easier sorties in the combat training plan than the training level of the pilots would require. Naturally, this delayed the progress of the combat training. In the inspection critique General A. V. Nikitin pointed out the impermissibility of such a faulty retraining method and the air division command's lack of responsibility for the state of combat training. The division was ordered to accelerate personnel retraining and immediately begin on the applied combat training problems. During the

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inspection the air force inspectors certified 20 of the division's pilots who had distinguished themselves in the inspection for solo flight aboard the new types of airplane, and flight crew executives of the air regiments and squadrons began working on the combat training problems.

The inspection gave a solid push to aircrew combat training, having the positive effect of increasing the division's fighting efficiency. In the first days of the war the 12th Bomber Division distinguished itself in combat and was mentioned in an order of the Western Front Military Council.<sup>51</sup>

Long-range bomber aviation units and formations underwent highly intense combat training at the eve of the war. Just in the first half of June 1941 the crews flew 8,614 hours to include 1,032 hours at night, and 679 hours were spent in high-altitude training. During this time 1,400 planned sorties were flown, there were 1,839 bombing runs over practice ranges, and there were 1,560 air gunnery practices.<sup>52</sup> Long-range bomber aviation had also acquired some combat experience in the Soviet-Finnish conflict. In January-March 1940 it completed 2,129 combat sorties against rail terminals, stations, war plants, and ports.<sup>53</sup>

At the eve of the war the Communist Party, the Soviet Government, and the Main Command did a great deal of work to strengthen the Soviet Armed Forces.

The initiation of World War II elicited a need to define the viewpoints on combat use of the air force more closely. Attention was turned to the massing of aviation on the axis of the main thrust of the ground troops, and to the exceptional importance of attaining air superiority at the beginning of military actions. It was recognized that attainment of air superiority might require independent air operations having the objective of destroying the enemy's aviation groupings.

The German-Polish war and the campaign in Western Europe confirmed that as a branch of the armed forces, the air force can perform major strategic missions.

FOOTNOTES

1. "Istoriya vtoroy mirovoy voyny 1939-1945" (History of World War II 1939-1945), Vol 3, Moscow, 1974, p 20.
2. Ibid., p 22.
3. "Istoriya Voenno-Vozdushnykh Sil Sovetskoy Armii" (History of the Soviet Army Air Force), Moscow, 1954, p 399.
4. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 3, p 71.

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5. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 3, p 81.
6. Ibid., pp 86-87, 89.
7. Gal'der, F., "Voyennyi dnevnik" (War Diary), translated from the German, Vol 1, Moscow, 1968, p 495.
8. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 3, p 132.
9. Ibid., p 133.
10. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 3, p 134.
11. Ibid., p 135.
12. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 4, p 13.
13. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 3, pp 326, 328.
14. "Istoriya Velikoy Otechestvennoy voyny Sovetskogo Soyuza 1941-1945 gg." (History of the Great Patriotic War of the Soviet Union 1941-1945), Vol 1, Moscow, 1961, p 414.
15. "Istoriya Velikoy Otechestvennoy voyny Sovetskogo Soyuza 1941-1945 gg.," Vol 1, Moscow, 1961, p 414.
16. VOYENNO-ISTORICHESKIY ZHURNAL, No 7, 1974, p 88.
17. Arkhiv MO SSSR [USSR Ministry of Defense Archives], f. 35, op. 28401, d. 22, 1.34.
18. Arkhiv MO SSSR, f. 19, op. 11282, d. 17, 1. 256.
19. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg." (The Soviet Air Force in the Great Patriotic War 1941-1945), Moscow, 1968, p 23.
20. Arkhiv MO SSSR, f. 35, op. 28737, d. 1, 11. 7,33,116.
21. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 3, p 423.
22. Arkhiv MO SSSR, f. 35, op. 30807, d. 23, 11. 15-23.
23. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 3, p 441.
24. Ibid., Vol 4, p 27.
25. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 3, p 425.
26. Ibid., Vol 4, p 25.

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27. "Sovetskiye Voyanno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945," p 13.
28. The Field Directorate of the Far Eastern Front was established on 21 June 1940.
29. Arkhiv MO SSSR, f. 35, op. 107559, d. 5, ll. 169-170.
30. Ibid., op. 11282, d. 20, l. 242.
31. Arkhiv MO SSSR, f. 35, op. 11235, d. 4, l. 67.
32. General B. L. Teplinskiy was responsible for the writing and publication of the following scientific works: "Aviatsiya v boyu nazemnykh voysk" (Aviation in Support of Combat of the Ground Troops), Moscow, 1940; "Osnovy obshchey taktiki VVS." (Fundamentals of General Air Force Tactics), Moscow, 1940.
33. Arkhiv MO SSSR, f. 35, op. 11285, d. 118, ll. 70-73.
34. "Istoriya Kommunisticheskoy partii Sovetskogo Soyuz" (History of the Communist Party of the Soviet Union), Vol 5, Book 1, p 141.
35. Arkhiv MO SSSR, f. 35, op. 11285, d. 26, l. 1.
36. Arkhiv MO SSSR, f. 35, op. 11285, d. 1, l. 50.
37. Ibid., ll. 28-45.
38. Arkhiv MO SSSR, f. 35, op. 11285, d. 1, l. 88.
39. Ibid., ll. 6, 7.
40. "Polevoy ustav RKKA (PU-39). Proyekt" (RKKA Field Manual (PU-39). Draft), Moscow, 1939, pp 23-24.
41. "Polevoy ustav Krasnoy Armii. Proyekt" (Red Army Field Manual. Draft), Moscow, 1941, p 136.
42. Ibid., p 140.
43. Arkhiv MO SSSR, f. 35, op. 29401, d. 10, l. 79.
44. Lapchinskiy, A. N., "Vozdushnaya armiya" (The Air Army), Moscow, 1939, pp 98, 119, 137, 144.



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45. Mezheninov, S. A., "Vozdushnyye sily v voyne i operatsii" (The Air Force in War and in the Operation), Moscow, 1927; Algazin, A. S., "Obespecheniye vozdushnykh operatsiy" (Support to Air Operations), Moscow, 1928; Sergeev, A. V., "Strategiya i taktika Krasnogo Vozdushnogo Flota" (Strategy and Tactics of the Red Air Force), Moscow, 1935; Ionov, P. P., "Obshchaya taktika Voenno-Vozdushnykh Sil" (General Air Force Tactics), Moscow, 1934.
46. Arkhiv MO SSSR, f. 35, op. 23373, d. 2, ll. 5-7.
47. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 3, p 411.
48. Ibid., p 409.
49. Arkhiv MO SSSR, f. 35, op. 29373, d. 2, ll. 5-7.
50. "Zaklyuchitel'naya rech' narodnogo komissara oborony Soyuzo SSR, Marshala Sovetskogo Soyuzo S. K. Timoshenko 31 dekabrya 1940 g." (Concluding Speech of USSR People's Commissar of Defense, Marshal of the Soviet Union S. K. Timoshenko on 31 December 1940), Moscow, 1941, p 35.
51. "Aviatsiya i kosmonavtika SSSR" (USSR Aviation and Cosmonautics), Moscow, 1968, p 92.
52. Arkhiv MO SSSR, f. 35, op. 11290, d. 34, ll. 12.
53. Arkhiv MO SSSR, f. 35, op. 11600, d. 380, l. 2.

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CHAPTER II. SOVIET ARMY AIR FORCE COMMAND AND STAFF AT THE BEGINNING OF THE WAR AND IN THE SUMMER-FALL OPERATIONS OF 1941

The Nature of Actions of the Aviation of the Belligerents in the First Days of the War

Violating the Nonaggression Pact, treacherously, without declaring war, at dawn on 22 June 1941 fascist Germany attacked the Soviet Union with armed forces prepared and concentrated at the borders of the USSR earlier. Between 0330 and 0400 hours fascist German aviation made massed raids on our airfields, rail junctions, naval bases, troop groupings, and the cities of Murmansk, Kaunas, Minsk, Kiev, Odessa, and Sevastopol'. Concurrently artillery opened hurricane fire on defensive fortifications and troop deployment areas. Following powerful artillery and air preparation the enemy's tank and motorized divisions went over to the offensive on a front from the Baltic to the Carpathians. Battles also began south of the Carpathians, along the Romanian border down to the Black Sea. Fascist Germany was joined by Hungary, Italy, Romania, and Finland in its war against the USSR. Savage engagements developed, distinguished by great scope, high dynamism, and dramatic changes in the situation. The Great Patriotic War of the Soviet Union against fascist Germany and its European allies began.

The Communist Party and the Soviet Government appealed to the Soviet people to repel the aggressor and expressed firm confidence in victory over the enemy. United by inviolable friendship, the peoples of the USSR all rose up as one for the holy war for liberty and independence of their motherland.

Hitler's command committed up to 50 percent of its aviation concentrated at our borders to annihilation of Soviet aviation. Air raids were made on 66 airfields at which 65 percent of the aviation of the Western frontier districts was based, to include 26 airfields of the Western, 23 of the Kiev, and 11 of the Baltic special military districts and 6 airfields of the Odessa Military District. As a result in the first day of the war the Soviet Air Force lost about 1,200 airplanes, 800 of which were parked on airfields.<sup>1</sup>

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The air services of the Western and Kiev special military districts, in which the Luftwaffe managed to annihilate and damage 1,015 airplanes in the first day of the war, suffered an especially great loss. Out of 409 airplanes present at the beginning of the war, the 9th Mixed Air Division of the Western Special Military District's air service lost 347, the 10th Mixed Air Division lost 180 airplanes out of 231, and the 11th Mixed Air Division lost 127 airplanes out of 199. On the second day of the war these three air divisions, which were in the first echelon, were rendered unfit for action and sent back to reform. In air battles fighters of the Western Special Military District's air service knocked down more than 100 fascist airplanes and dispersed large German bomber groups, but they were unable to halt their raids or at least restrict the actions of enemy aviation. In one day the enemy annihilated 387 fighters and 351 bombers.<sup>2</sup>

The air services of the frontier military districts suffered great losses in their airplane fleet for the following reasons. A telegram from the USSR people's commissar of defense warning the commands of the military districts of the time of a possible attack by fascist Germany and containing instructions to make the troops combat ready and disperse aviation at field landing strips was not transmitted to the frontier military districts until just 4 hours before the enemy's invasion.<sup>3</sup> Because many of the airfields were undergoing construction and reconstruction the extent to which air units and formations of the air services of frontier military districts could be maneuvered was limited. The degree to which the airfields were camouflaged and the cover provided to them by anti-aircraft resources were inadequate. Some air commanders inexperienced in repelling massed surprise raids were unable to protect their units from the strikes and organize decisive opposition to fascist aviation. Soviet pilots had to fight in unequal conditions. For the most part they were forced to fight in obsolete fighters against a numerically superior enemy armed with modern airplanes.

Despite the difficulty and complexity of the resulting situation Soviet pilots acted boldly and selflessly on all axes, astounding the world with their unprecedented steadfastness and unwavering courage and bravery. As an example during the first day an air squadron of the Special Military District's 127th Fighter Air Regiment commanded by Senior Lieutenant I. I. Drozdov took to the air four times to repel enemy bomber raids in the vicinity of Brest, knocking down five fascist airplanes.

On the southwestern axis at 0425 hours Senior Lieutenant I. I. Ivanov, flight commander in the 46th Fighter Air Regiment, rammed and knocked down an enemy bomber after using up all of his ammunition in aerial combat.<sup>4</sup> Pilots of the 91st and 252d fighter air regiments also distinguished themselves here. Pilots of the 67th and 55th fighter air regiments honorably performed their duty to the motherland in the southernmost sector of the Soviet-German front. Major B. A. Rudakov, commander of the 67th Fighter Air Regiment, launched his first group of fighters against enemy bombers on receiving a report of their approach.

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Several enemy craft were knocked down in aerial combat. That day the regiment's pilots repelled raids four times. They completed 117 combat sorties, foiled the bombing runs of the fascist German bombers, and knocked down 13 airplanes. Lieutenant Colonel V. P. Ivanov, commander of the 55th Fighter Air Regiment, displayed resourcefulness and decisiveness. Receiving a report of the approach of 20 German bombers and 18 fighters, he launched his duty air squadron with its new MIG-3 fighters, ordering it to attack the enemy, while the regiment's other fighters assisted in dispersing the German bombers and forcing them to turn back.<sup>5</sup>

Combat activities began on the Leningrad axis at dawn on 22 June. At 0320 hours, while the people of Leningrad were still sleeping, the first aerial engagement occurred at the far approaches to Leningrad. Fighter pilots Shavrov and Boyko engaged an Me-110 flight in combat.<sup>6</sup>

In the first day of the war Soviet pilots I. I. Ivanov, L. G. Butelin, S. M. Gudimov, A. S. Danilov, D. V. Kokorev, A. I. Moklyak, Ye. M. Panfilov, and P. S. Ryabtsev repeated the immortal deed of their compatriot, pilot P. N. Nesterov, who back on 26 August 1914 rammed and knocked down an enemy airplane for the first time in the world. Later, many comrades in arms followed the example of the hero pilots. When they ran out of ammunition but the enemy continued to advance, they rammed the enemy airplanes, knocking them down.

At 0715 hours on 22 June 1941 the people's commissar of defense assigned the mission of a retaliatory strike at the enemy to the troop commanders of the frontier military districts. The directive stated:

"1. The troops are to attack enemy forces with all available forces and resources and annihilate the former wherever they have violated the Soviet border. Ground troops are not to cross the border prior to receiving special instructions.

"2. Reconnaissance and combat aviation is to establish the places of concentration of enemy aviation and ground troop groupings. Aviation on enemy airfields is to be annihilated with powerful strikes by bomber and ground attack aviation, and the main groupings of the enemy's ground troops are to be destroyed by bombing. Air strikes are to be made to a depth of 100-150 km into German territory; Koenigsberg and Memel are to be destroyed by bombing...."<sup>7</sup>

But in view of the evolved conditions the commands of the Baltic, Western, and Kiev special military districts were unable to organize a powerful retaliatory strike.

On 22 June 1941 Soviet pilots completed about 6,000 combat sorties and annihilated more than 200 German airplanes.<sup>8</sup>

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In highly difficult conditions our country transformed itself into a single military camp under the guidance of the Communist Party and the Soviet Government within the very first days of the war. The national economy was placed on a war footing, and the Soviet Armed Forces, including the air force, were strengthened and reorganized.

On 22-25 June 1941 frontal air services were created out of aviation belonging to frontier military districts. The following were appointed commanders of the frontal air services: Northern--General A. A. Novikov; Northwestern--General A. P. Ionov (General T. F. Kutsevalov as of 1 July 1941); Western--General A. I. Tayurskiy (Colonel N. F. Naumenko as of 2 July 1941); Southwestern--General Ye. S. Ptukhin (General F. A. Astakhov as of 1 July 1941); Southern--General F. G. Michugin (General P. S. Shelukhin as of 27 June 1941). The great losses suffered by aviation in the frontier military districts and mainly the qualitative superiority of the bulk of German airplanes allowed the Luftwaffe to seize the initiative on the decisive axes. This significantly complicated the actions of ground troops in the frontier zone as they attempted to repel the developing enemy offensive. Nevertheless the Soviet Air Force remained battleworthy. The German Command's attempts at annihilating Soviet aviation by raids on airfields were not successful everywhere. Soviet aviation lost a large number of airplanes only in the western frontier military districts. Air formations of the Northern and Southern fronts and of the internal military districts, and long-range bomber aviation suffered almost no losses. Pilots in the air services of the frontier military districts that had lost their airplanes were reassigned to newly formed air regiments and divisions.

A few days prior to the war the command of the Odessa Military District inspected the combat readiness of its troops and aviation in the southern sector of the front. The air units had been redeployed at field airfields, where the airplanes were dispersed and camouflaged. The personnel were in a higher state of readiness. The military district's air force headquarters (chief of staff General A. Z. Ustinov) was transferred from Odessa to Tiraspol'. These measures made it possible to successfully repel the aerial attack. The enemy put 6 of our airplanes out of action, but he himself lost 30.

At the eve and in the beginning of the Great Patriotic War the Soviet Army Air Force Main Directorate had among its command functions management of the combat activities of long-range bomber aviation subordinated directly to it. Frontal, army, and troop aviation was not subordinated to it in this respect, which had an unfavorable impact on the effectiveness with which different arms of aviation were used in combat. The chief of the Air Force Main Directorate and the staff were responsible for the combat training of air units and formations, the operational training of the frontal and long-range bomber aviation staff, the training and employment of airmen, development of the technical specifications on aviation equipment, timely supply of men and airplanes to the air units and formations, logistical and medical support, and airfield preparation.

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The commands of the air services of the frontier military districts were subordinated to the chief of the Soviet Army Air Force Main Directorate only in a special respect--that is, in relation to the problems of combat training, retraining, manning, and logistics, but not in relation to the combat use of aviation. This is why the Soviet Army Air Force Command could influence the combat activities of frontal aviation at the beginning of the war only through instructions to the air force commands of the military districts (fronts) concerning concentration of aviation, its reinforcement, retraining of personnel, and supply of airplanes, aircrews, and technicians. Thus it is no accident that the first instructions sent to the air force commanders of the frontier districts by the command and staff of the Soviet Army Air Force at the beginning of the war concerned not the combat application of frontal aviation but rather for the most part its reinforcement.

As an example on the morning of 22 June 1941 the command of the Western Special Military District's air service was instructed under General P. F. Zhigarev's signature to receive, at the Orsha airfield, 99 MIG-3 airplanes for the air force units and formations of this district.

In subsequent days the General Staff gave permission to the Soviet Army Air Force Command to instruct frontal air commanders to redeploy air divisions and regiments from internal military districts to frontal airfields, to establish flight corridors for friendly airplanes, to utilize civilian wire communication resources, to submit daily combat reports to the Air Force Headquarters, to plan combat use of frontal aviation for the following day, and to submit daily reports on the combat composition and manning of air force units and formations.

The order to make long-range bomber units and formations combat ready was transmitted by the Soviet Army Air Force Command to air corps on the morning of 22 June 1941, at 0644 hours. Long-range bomber aviation initiated its combat missions on 23 June 1941. The day before it was given the following missions: I Bomber Air Corps--destroy military objectives in the vicinity of Koenigsberg and Danzig and, in one sortie flown by the entire corps, support the counterattack of troops of the Northwestern Front against the flank and rear of the enemy's Suwalki grouping; II Bomber Air Corps--destroy objectives in the vicinities of Lublin and Katowice and, in one sortie, support troops of the Southwestern Front attacking the enemy's Lublin grouping; III Bomber Air Corps--destroy military objectives in the vicinity of Warsaw and, in one sortie, support troops of the Western Front attacking the enemy's Suwalki grouping. The IV Bomber Air Corps was left at the disposal of the Hq SHC, ready to assist the main troop grouping of the Southwestern Front and, in part, the Black Sea Fleet. The 18th Separate Bomber Air Division was given the mission of destroying objectives in the vicinity of Cracow, and it was placed within the composition of the Southwestern Front.<sup>9</sup> Naval aviation had the mission of striking enemy naval bases and ports and destroying military objectives of Romania's petroleum industry.

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Actions by Soviet aviation against objectives in the enemy rear had great political significance. They proved wrong the fabrications of German propaganda that Soviet aviation had been totally annihilated in the first 2 days of the war.

On 26 June 1941, at 1530 hours, the Headquarters of the Supreme High Command ordered the commanders of the III and I long-range bomber air corps to annihilate enemy tanks advancing from Minsk on Orsha and Mogilev. Entire regiments were to simultaneously attack day and night, making their bombing runs at low altitude (400 meters).<sup>10</sup>

Executing their combat missions, the long-range bombers struck the enemy's moving tanks and mechanized columns at crossings over the following rivers-- Western Dvina, Neman, Berezina, Drut', Prut, Dneestr, and they attacked troops on the road. On 26 June 1941 enemy tanks were subjected to strikes by 58 crews west and north of Minsk, by 54 crews in the vicinity of Rava-Russkaya, by 60 crews in the vicinity of Lutsk, by 65 crews in the vicinity of Sokol', and by 15 crews in a region southwest of Dvinsk.<sup>11</sup>

Long-range bomber aviation performed its missions persistently and with high effectiveness, but it did suffer considerable losses. For example 43 crews flying DB-3f airplanes failed to return from their mission on 26 June 1941.<sup>12</sup> The reasons for the losses included insufficient thought to the organization of day combat sorties on the part of the air force command, weak combat support by fighter escorts, and too low an altitude for day bombing, considering the high density of antiaircraft resources possessed by enemy mechanized units. This is why the Supreme High Command Headquarters published an order on 3 July 1941 limiting the actions of long-range bomber aviation to high altitude night flying. Use of long-range bomber aviation at moderate altitudes in daytime was permitted on the condition that a fighter escort was present and enemy antiaircraft artillery was suppressed.<sup>13</sup>

In the period from 23 June to 19 July 1941 long-range bomber aviation flew 2,112 combat sorties against enemy tanks and motorized columns.<sup>14</sup>

The German troops suffered losses due to the actions of Soviet aviation. In a number of cases attacks by large enemy forces were foiled owing to effective strikes by our bombers and ground attack aircraft. On the whole, however, the actions of Soviet aviation against enemy troops did not have a noticeable influence on the success of the defensive actions of ground troops in the initial period of the war. The efforts of the air force were often dispersed, airplanes were not massed adequately on the main axes, the weapons selection and the methods and altitude of bomb strikes were not always appropriate, and the tactics of bombers and ground attack airplanes did not fit the situation.

The situation was also aggravated by the fact that extensive construction of new airfields and reconstruction of existing ones, especially in the

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western Ukraine, in western Belorussia, in Latvia, Lithuania, and Estonia, where the airfield net was poorly developed, severely restricted maneuver of frontal aviation. Moreover exercises held prior to the war and plans written at that time foresaw maneuver of frontal aviation only in a forward direction and to the flanks. Air stations were not earmarked for aviation in the rear in the event of a withdrawal by ground troops. In view of these reasons a number of the air units and formations of the frontier military districts were forced to take to the air under their own responsibility and redeploy at the nearest airfields in the rear when fascist German tank or motorized columns approached our airfields in the first 2 or 3 days. Because communications were interrupted, the efforts of the frontal air force commands and the staff of the Soviet Army Air Force in the first days of the war to organize maneuvers and timely redeployment of air formations in the first echelon of frontal aviation to back-up airfields did not always produce positive results. This is why the commanders of air formations had to make their own decisions in a number of cases. Credit should be given to our remarkable air formation and unit commanders and to all flight crews and technicians who made the correct decisions in such extremely difficult conditions and continued to fight enemy aviation hard, making strikes of tangible proportions against enemy troops in some sectors.

Analyzing the evolved situation, on the third day of the war the Soviet Army Air Force Headquarters reported its ideas on how to make more effective use of frontal aviation to the General Staff. The report pointed out the serious shortcomings in the way aviation was interacting with ground troops, and the fact that aviation was dispersed into small groups devoid of unified, centralized leadership on the part of the frontal air force command. The suggestion was to conduct a number of massed strikes against enemy airfields with the participation of frontal aviation and long-range bombers. The idea of using the aviation of neighboring fronts for this purpose was boldly proposed. Ideas were ventured concerning the need for organizing interaction between aviation and the troops more efficiently and the need for assigning air liaison officers to the staffs of combined arms armies with their own communication resources. The air force proposals were accepted by the General Staff and brought to the awareness of frontal commands and staffs in the appropriate directives.

In the first days of the war the Soviet Army Air Force Command organized the fight for strategic air superiority on order of the General Staff. The initiative in the air was to be taken away from the enemy at all costs. Without this, it would have been impossible for ground troops to be successful or for the country's transportation and industry to work normally. The Germans tried to annihilate our aviation mainly at the airfields. At the beginning of the war the Soviet Command selected another form of combat, in which massed raids of the Luftwaffe were opposed by active offensive air battles fought by fighters within the limits of each front, alternating with periodic strikes against airfields. In these air battles, not only were airplanes annihilated but

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also the most experienced fascist pilots were killed. In some sectors where the situation was favorable, Soviet pilots engaged in active air battles simultaneously made powerful strikes against enemy airfields. This was the situation that evolved in the first days of the war in the northern sector of the Soviet-German front, where fascist German troops did not go over to the offensive until 29 June 1941. In order to weaken the enemy's air grouping on this axis and halt the preparations for a raid on Leningrad, the Hq SHC ordered the air force to prepare for and conduct massed strikes against airfields in Finland and northern Norway, where air units of the German 5th Air Fleet and Finnish aviation were based.

A plan to annihilate enemy airplanes at airfields on the northwestern axis was written by the air force command of the Northern Front (commander--General A. A. Novikov, deputy commander for political affairs--Brigade Commissar F. I. Usatyy, chief of staff--General A. P. Nekrasov) jointly with the air service of the Red Banner Baltic Fleet (commander--General V. V. Yermachenkov) and the air service of the Northern Fleet (commander--General A. A. Kuznetsov), and on 24 June it was approved by the Military Council of the Northern Front. In all, 540 airplanes were committed to the operation.

Early in the morning on 25 June, 236 bombers and 224 fighters made the first massed strike against 19 airfields. The enemy did not expect such a strike; he was in fact caught by surprise, and he was unable to organize any countermeasures. As a result Soviet pilots successfully bombed parked airplanes and fuel and ammunition dumps. They annihilated 41 enemy airplanes at the airfields. Our aviation suffered no losses. In the next 5 days a few more effective strikes were made against the same airfields and new ones discovered by air reconnaissance. According to film taken by nose cameras Soviet pilots attacking a total of 39 airfields completed about 1,000 sorties, annihilating and crippling 130 enemy airplanes.<sup>15</sup> The command of the fascist German troops in Finland and northern Norway was forced to withdraw its aviation to airfields in the deep rear and abandon plans for raiding Leningrad in the near future. This was the first air operation of the Soviet Air Force. It had important military significance, and it confirmed that Soviet frontal aviation was still battleworthy.

On 8 July 1941 the Hq SHC organized a massed attack on enemy airfields along almost the entire Soviet-German front.

An Hq SHC directive addressed to frontal commanders and the Soviet Army Air Force commander on 7 July reported that the Luftwaffe might raid our airfields on the morning of 8 July 1941. The air force was ordered to initiate combat activities at 0300 hours on 8 July with a strike against enemy airfields, and to subsequently transfer its efforts to the battlefield and assist in defeating German mechanized troops.<sup>16</sup>

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At dawn on 8 July long-range bomber formations attacked 14 airfields while the air services of the Northern, Northwestern, and Southwestern fronts attacked 28 airfields. In all, 429 combat sorties were flown. Many airplanes were annihilated on enemy airfields, to include 54 German airplanes put out of action by the Western Front's air service.<sup>17</sup>

In the period from 22 June to 10 July 1941 the Soviet Air Force annihilated more than a thousand enemy airplanes at airfields and in the air.<sup>18</sup>

Former fascist generals and officers who had written the book "World War 1939-1945" were forced to recognize the great losses German aviation suffered in the first days of the war on the Soviet-German front: "...the losses of German aviation were not as insignificant as some had believed. In the first 14 days of battle, more airplanes were lost than in any subsequent similar intervals of time. In the period from 22 June to 5 July 1941 the Luftwaffe lost 807 airplanes of all types, and in the period from 6 to 19 July it lost 477. These losses imply that despite the Germans the Russians managed to find the time and strength for decisive opposition."<sup>19</sup>

In contrast to the first months of World War II, when after achieving air supremacy in actions against Poland, France, and other countries of Europe fascist German aviation encountered no countermeasures whatsoever in the air, it met stubborn resistance on the Soviet-German front.

Supporting the ground troops, the air force directed its main efforts at annihilating the enemy's troops and equipment. The swift advance of the enemy's strike groupings on the most important strategic axes forced the frontal commanders to use the bulk of aviation against German mechanized columns and to support friendly defending troops. In the first 18 days of the war Soviet aviation flew 45,000 combat sorties to repel the enemy attack and support ground troops (about 10,000 by the Northern Front's air service, more than 8,000 by the Northwestern Front's air service, about 7,000 by the Western Front's air service, more than 10,000 by the Southwestern Front's air service, more than 5,000 by the Southern Front's air service, and more than 2,000 sorties by long-range bomber aviation).<sup>20</sup>

Many air units and formations distinguished themselves in these battles, receiving praise from the military councils of the combined arms armies and the fronts: In the Northern Front--the 2d Mixed Air Division (commander--Colonel P. P. Arkhangel'skiy), in the Northwestern Front--57th Mixed Air Division (commander--Colonel K. A. Katichev), in the Western Front--12th, 13th, and 46th bomber air divisions (commanders--Colonel V. I. Aladinskiy, General F. P. Polynin, and Colonel B. R. Pisarskiy), in the Southwestern Front--62d Bomber Air Division (commander--Colonel V. V. Smirnov), and in the Southern Front--21st Mixed Air Division (commander--Colonel D. P. Galunov).<sup>21</sup>

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Many pilots defending the socialist fatherland died in savage engagements, displaying unprecedented bravery and heroism. On 26 June 1941 Captain N. F. Gastello, commander of an air squadron in the 207th Air Regiment, 42d Bomber Division, and the crew members of his bomber--Lieutenants A. A. Burdenyuk and G. N. Skorobogatyy and Senior Sergeant A. A. Kalinin--committed an act of heroism in the sky above Belorussia of unparalleled bravery and selflessness. When the bomber caught fire in the air after being struck by an antiaircraft shell, rather than abandoning the aircraft by parachute all of the crew members aimed the burning craft at an accumulation of German troops.

The 401st Fighter Air Regiment commanded by Hero of the Soviet Union Lieutenant Colonel S. P. Suprin fought fascist German aviation successfully in MIG-3 airplanes. On 4 July 1941 S. P. Suprin died in an air battle against superior enemy forces. He was awarded his second "Gold Star" medal posthumously for his bravery and heroism. This was the first twice-awarded Hero of the Soviet Union in the Great Patriotic War; the first to be awarded the lofty Hero of the Soviet Union title at the start of the war were fighter pilots M. P. Zhukov, S. I. Zdorovtsev, and P. T. Kharitonov.

In a critical time for the Soviet Union the Communist Party and the Soviet Government implemented extraordinary measures to mobilize all of the country's resources to repel the aggression, and to fundamentally restructure the country's life and activity on a war footing. On 29 June 1941 a directive of the USSR SNK and the CC VKP(b) to party and soviet organizations in the combat zones presented a program for organizing the enemy's expulsion. Its basic premises were later presented and elaborated upon by I. V. Stalin in a radio broadcast on 3 July, and spelled out more concretely in a number of subsequent decisions of the party and government. The Soviet Armed Forces were given the mission of wearing down and exhausting Hitler's troops, defeating and expelling them from Soviet land, and helping the peoples of Europe to cast off the fascist yoke. Established on 30 June 1941, the State Defense Committee headed by I. V. Stalin became the organ in which all of the country's power was concentrated.

#### Organizational Reinforcement of the Soviet Air Force

The Headquarters of the Main Command was created on 23 June 1941 with S. K. Timoshenko at its head to provide strategic direction to the Soviet Armed Forces. On 10 July it was reorganized as the Supreme Command Headquarters headed by I. V. Stalin. On 19 July I. V. Stalin became the people's commissar of defense, and on 8 August he assumed the title supreme commander in chief of the USSR Armed Forces. From that time on the Headquarters began to be called the Supreme High Command Headquarters (Ilq SHC).

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An order of the Main Command Headquarters dated 29 June 1941 instituted the post of Soviet Army Air Force commander and created the Air Force Military Council. General P. F. Zhigarev was appointed air force commander, and Corps Commissar P. S. Stepanov was appointed member of the Military Council. The Air Force Main Directorate and Headquarters were subordinated directly to the air force commander.

Introduction of the post of air force commander and creation of the military council significantly broadened the command functions of the air force command and staff, which improved management of the air force, especially in relation to its strategic application, heightened the combat readiness of newly formed air units and formations, and improved their operational and logistical support. The Soviet Army Air Force commander and his staff were assigned organization of the fight for strategic air superiority, maintenance of interaction between the arms of aviation, coordination of their effort in the strategic operations of groups of fronts and the independent air operations of the air force, management of the combat activities of long-range bomber aviation, generalization of air force combat experience, and development of proposals on strategic use of the air force. Moreover the air force command retained the functions of training air reserves and managing aviation-technical supply, developing proposals on creation of new types of airplanes and armament, managing construction of airfields, training and retraining flight crews and technicians, generalizing air force combat experience and introducing it into the units and formations. These command functions differed significantly from the functions assigned to the chief of the Air Force Main Directorate at the eve of the war.<sup>22</sup>

The Soviet Army Air Force Military Council was composed of the air force commander and his deputies, the directors of the aviation sections of the CC VKP(b), the people's commissar of aviation industry, the chief of the Directorate of the Air Engineering Service, the chief of the Air Force Orders Directorate, and other executives. The military council was headed by the air force commander who, as council chairman, coordinated and directed the work of all other military council members jointly with another military council relieved of other duties. The military council discussed and resolved many issues concerning the activities of aviation. The existing organizational structure of frontal air services would still not permit adequate massing of aviation and its centralized control on the main axes. Frontal aviation continued to be dispersed among combined arms armies, and its actions were often uncoordinated.

The problem of massing and achieving centralized control of aviation was solved in part by creation of main commands for three axes--northwestern, western, and southwestern--and establishment of air force commands on these axes on 10 July 1941. The air force commanders of the appropriate fronts were appointed air force commanders of these axes: northwestern--General A. A. Novikov, western--Colonel N. F. Naumenko, southwestern--General F. Ya. Falaleyev. Such unification was advantageous to the air

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force. For example the air services of the Northern and Northwestern fronts, the air service of the Red Banner Baltic Fleet, and part of the forces of the VII Fighter Air Corps of the Leningrad Antiaircraft District were combined on the northwestern axis under the leadership of the air force commander of the northwestern axis. A single plan of the combat activities of all Leningrad aviation was developed and adopted for implementation. It not only made it possible to unite the efforts of aviation but also permitted more economical and efficient use of forces with the best results. At the end of July 1941, in 22 days of battle on the far approaches to Leningrad the combined forces of aviation flew 16,567 sorties, inflicting significant losses on the enemy.<sup>23</sup> Unification of the efforts of aviation under the sole leadership of the senior air chief on the strategic axis laid the basis for a new form of air force command and control. The aviation of the western and southwestern axes engaged in active combat operation.

Control of aviation by the command and staff of the Soviet Army Air Force also improved somewhat. On 7 July 1941 the Air Force Military Council summarized and analyzed the losses our aviation suffered at the airfields in the first 16 days of the war, and it published a directive to frontal air force commanders concerning mandatory camouflaging of airfields and measures for reducing losses of airplanes due to strikes against airfields by enemy aviation.<sup>24</sup> Implementation of this directive played a major role in reducing losses of airplanes caused by enemy air strikes.

The first days of the war also revealed imperfections in the organizational structure of a number of units within the Soviet Army Air Force Headquarters. There were not enough officers in Air Force Headquarters for 24-hour operation. For practical purposes some sections were still just beginning to form at this time.

The work of Air Force Headquarters was extremely intense. As compared to the peacetime work volume, that of all sections of Air Force Headquarters increased by several orders of magnitude. Section One needed at least three or four officers working in two shifts for every operating axis, and there were five such axes on which combat activities were proceeding--northern, northwestern, western, southwestern, and southern. Moreover there had to be two permanent officers to keep records on the combat strength of the entire air force, two officers were needed to prepare combat reports and operational summaries submitted three times a day to the General Staff, two officers were needed to maintain the maps of the general ground and air situation, and several officers were needed to handle the operational documents pertaining to air services in all the rest of the frontier and internal military districts. On the third day of the war Colonel I. N. Rukhle, who had just been assigned to the post of air force deputy chief of staff, became acting air force chief of staff. New officers were appointed deputy chiefs of staff--Colonel N. I. Krolenko from the staff of a long-range bomber corps and Colonel B. A. Ageyev from a military academy. New officers, to include several under

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the command of Colonel M. V. Shcherbakov from the instructor staff of the Air Force Military Academy of Command and Naval Personnel joined the staff to reinforce the principal sections. Colonels V. V. Storozhenko and M. V. Shcherbakov began to direct the operations of Air Force Headquarter's main section in shifts. These replacements and transfers of the first days of the war had an unfavorable effect on the rhythmicity of the air force staff's work, since the new officers were totally unfamiliar with the position of the troops, their disposition, or the situation at the front.

Organizational measures were implemented in air force units and formations in July-August. The reason for these measures lay in the fact that our air formations, corps, multiregiment divisions, and air regiments, which possessed 60 airplanes, were found to be heavy and cumbersome, making maneuverable combat difficult, and in the fact that the cumbersomeness of these formations hindered dispersal of airplanes at airfields and made it easier for the enemy to destroy them on the ground. The air force's combat experience in the first weeks of the war demonstrated that air regiments with a strength of 30 airplanes, divisions containing two air regiments, and no corps formations was the best form of organization in terms of both facility of command and control and the possibilities for maneuvering in response to an enemy attack. This is why the Hq SHC decided to gradually reorganize air regiments with a strength of 32 airplanes and air divisions consisting of two regiments.

The General Staff sent the appropriate directives to the frontal and air force commands in compliance with the State Defense Committee's 7 August 1941 decision. The Soviet Army Air Force commander published an order on 10 August 1941.

In accordance with this order tactical bomber regiments in frontal aviation were now organized with a composition of three squadrons and a strength of 32 airplanes (two bomber and one fighter air squadrons with a strength of 10 airplanes each, and two bombers assigned to the regimental command). Ground attack air regiments also assumed the same organization, but the number of airplanes in each regiment was 33.

Creation of mixed air regiments corresponded to the situation of the first months of the war, but subsequently they failed to justify their existence. Uniform regiments were created. A 20 August 1941 order of the USSR NKO [People's Commissariat of Defense] reorganized all air regiments receiving new airplanes--Il-2, Pe-2, Yak-1--into uniform regiments with a composition of two squadrons having nine airplanes each, with two airplanes in the regiment. Ways were also sought to create air reserves in frontal aviation. The experience of the first months of the war showed that if aviation were to be concentrated on the main axes of the ground troops, if strikes by the Luftwaffe were to be parried, if air groups were to be created on new axes, and if other problems were to be solved, the Supreme High Command would have to possess large, powerful, highly maneuverable air reserves.

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The aviation of internal districts was an air reserve to some extent at the beginning of the war. For example two mixed air divisions were transferred in June 1941 from the air service of the Moscow Military District to the Western and Southwestern fronts, and one fighter and one mixed air division were transferred from the Transbaykal and from the Far East. 25-26

An order of the USSR NKO dated 21 July 1941 laid the basis for creating six organic reserve air groups (RAG) subordinated to Hq SHC and used for independent missions and for assistance to frontal air services. In all by the end of 1941 six organic reserve air groups were formed, each possessing 60-100 warplanes. Reserve air groups were utilized successfully as follows: 1st and 6th in the Bryansk and Southwestern fronts, the 2d and 3d in the Leningrad and Volkhov fronts, the 4th in the Southwestern Front, and the 5th in the Southern Front.

In addition to organic reserve air groups, temporary (nonorganic) air reserve groups were created in fall 1941 out of frontal air units and newly formed air regiments commanded by Generals I. F. Petrov and G. P. Kravchenko.

A hard struggle evolved against fascist German troops on the left wing of the Western Front in July 1941 in the region between the Dniepr and Berezina rivers. The Central Front, composed of the 13th and 21st armies and frontal aviation (frontal aviation commander, General G. A. Vorozheykin), was formed on this axis on 24 July 1941 by decision of the Headquarters of the Supreme High Command. In order to strengthen the position and create deeper defenses on the western axis, a Headquarters order published on 30 July formed the Reserve Front consisting of six combined arms armies and frontal aviation (frontal aviation commander, General B. A. Pogrebov and, as of 1 August, General Ye. M. Nikolayenko). The Bryansk Front (frontal aviation commander, General F. P. Polynin) was created on 14 August to cover the Bryansk axis. The mission of the Bryansk Front was to perform two counterstrikes--one against the flank of the 2d Tank Group in the vicinity of Starodub and another in the vicinity of Roslavl' in interaction with troops of the Reserve Front--and to delay the enemy's offensive. The Central Front was disbanded by decision of the Headquarters on 25 August 1941. Its troops were transferred to the Bryansk Front.

To aid the front's troops in their mission, on 27 August Hq SHC ordered the commander of the Soviet Army Air Force to prepare an air operation with the objective of defeating Guderian's tank group in the vicinity of Pochep, Starodub, and Shostka and to halt his advance on Bryansk, and to conduct this operation in the period from 29 August to 4 September 1941 with the combined efforts of the aviation of three neighboring fronts. The 1st Reserve Air Group, and part of the forces of long-range bomber aviation.<sup>27</sup> The plan for the operation was written by officers of Air Force Headquarters. The Bryansk Front's air service contributed 95

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warplanes, the air service of the former Central Front contributed 54, the frontal air services of the reserve armies contributed 120, the 1st Reserve Air Group contributed 95, and long-range bomber aviation contributed 100 bombers, for a total of 464 warplanes (230 bombers, 55 ground attack airplanes, and 179 fighters). The plan was reviewed by the Air Force Military Council and signed by Air Force Deputy Commander General I. F. Petrov, Military Council Member Corps Commissar P. S. Stepanov, and Acting Air Force Chief of Staff Colonel I. N. Rukhle.

In its approval of the plan for the air operation dated 27 August 1941, the supreme high commander wrote: "The enemy columns must be battled constantly, wave after wave, all day from morning til night to keep the enemy from enjoying a breathing spell or regaining his senses in general."<sup>28</sup> Air Force Headquarters brought these directives of the supreme high commander to the awareness of the appropriate frontal aviation commanders. General I. F. Petrov, who was in charge of aviation, contributed to the operation, implemented the directives of the supreme high commander concretely through daily orders prepared by his operational group of air force staff officers. The air operation lasted 6 days. Beginning on 29 August bombers and ground attack airplanes made constant strikes against enemy tank columns. Thus on 30 and 31 August our pilots flew two sorties per night aboard heavy four-engine TB-3 bombers, three or four per day in SB, Pe-2, and Il-2 airplanes, and six or seven sorties per day in fighters. During the entire time of the operation Soviet aviation flew more than 4,000 sorties.<sup>29</sup>

Recalling the actions of aviation, Marshal of the Soviet Union A. I. Yeremenko wrote: "Thus on 30 and 31 August...as many as about 1,500 sorties were flown, 4,500 bombs of various types were dropped, more than 100 tanks, over 800 motor vehicles, 180-290 wagons, 20 armored vehicles, and a fuel dump were annihilated, 40 fires were started in enemy columns, and 55 airplanes were knocked down and destroyed."<sup>30</sup> (Our losses were 42 airplanes.)

Guderian, commander of the German 2d Tank Group, wrote in his memoirs: "On 29 August large enemy forces initiated an offensive against the XXIV Tank Corps from the south and west with the support of aviation. The corps was compelled to halt the advance of the 3d Tank Division and the 10th Motorized Division."<sup>30a</sup>

The supreme high commander was interested in the progress of the air operation aimed at halting the offensive of the enemy's 2d Tank Group. On 4 September 1941 he sent the following telegram: "Bryansk. To Petrov via Yeremenko. Aviation is operating well, but it could operate better if reconnaissance airplanes would call in the bombers quickly by radio, rather than upon returning to their landing points. Stay with the Bryansk Front until the end of the operation to defeat Guderian. I wish you success. Regards to all pilots. I. Stalin."<sup>31</sup>



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As a result of the strong counterstrikes by our troops and the active operations of aviation, the enemy's tank strike grouping suffered significant losses and its rate of advance was sharply reduced. But despite heroic resistance and powerful strikes by our aviation, the front's troops could not halt the enemy. The enemy's tank formations broke through the left flank of the Bryansk Front beyond the Desna River and reached the Konotop-Chernigov line on 10 September.<sup>32</sup> At the same time savage battles were going on south of Smolensk, where troops of the Western and Reserve fronts were holding back enemy troops with air support. Although Smolensk had been abandoned by our troops as long ago as on 16 July, fighting went on east of the city for another month. Long-range bomber corps were brought in to organize powerful strikes against the advancing enemy and assist frontal troops in destroying his Smolensk-Yartsevo Grouping. Thus on 26-28 July 1941, 100 airplanes were reassigned from I Bomber Corps, and 100 bombers and 150 fighters were contributed by the Reserve Front for this purpose. As a result of the strikes of these forces the enemy suffered great losses of men and equipment. The actions of Soviet aviation were also highly effective in other sectors of the Western Front. An order of Marshal of the Soviet Union S. K. Timoshenko, the front troop commander, stated the following concerning the actions of our aviation: "On 21 and 22 August the enemy attempted to halt the movement of our troops; he committed large tank forces and mechanized troops, presumptuously attacking our units. But the days of easy victories for the enemy were in the past.... The glorious 64th and 50th rifle divisions and the valorous 47th Air Division (61st and 215th Ground Attack and 129th Fighter air regiments) destroyed the fascist tanks and compelled the Germans to retreat in disorder. The enemy lost up to 130 tanks, more than 100 motor vehicles, many guns, much ammunition, and 1,000 killed and wounded."<sup>33</sup>

During the time of the Smolensk operation, which lasted 2 months, the Soviet Air Force flew about 20,000 sorties. The air services of the Western and other neighboring fronts and long-range bomber aviation annihilated 700 enemy airplanes in air battles and at airfields.<sup>34</sup>

The front line changed with every day. Enemy troops moved deeper and deeper into our country. The enemy began flying bombing raids on Moscow and Leningrad. The mission of the Germans was to destroy Moscow from the air. The first raid on the capital was made on the night of 22 July 1941, with 250 enemy airplanes participating.<sup>35</sup> The raid continued for 5 hours. The beams of dozens of searchlights crisscrossed the night sky. Antiaircraft artillery waged intense defensive fire, and fighters attacked enemy bombers in their assigned zones. In this night our fighters knocked down 12 fascist German airplanes while antiaircraft artillery destroyed 10. Only occasional enemy bombers penetrated to Moscow, and although they did manage to unload their bombs they did not cause significant damage. A few homes and structures in the city center and on its outskirts were destroyed. And yet serious shortcomings were revealed in repulsion of the enemy raid.

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Emergency measures implemented by the General Staff and the Soviet Army Air Force Command to correct the revealed shortcomings made it possible to repel subsequent enemy air raids on Moscow with greater organization and effectiveness.

German airplanes could penetrate the screens of antiaircraft fire and patrolling fighters and reach Moscow with decreasing frequency. Between 22 July and 15 August 1941 the enemy flew 18 night raids on Moscow. From 100 to 120 bombers participated in each of eight of them and from 50 to 80 airplanes participated in each of the rest. The greater share of the enemy bombers were unable to penetrate to the city. Out of 1,700 airplanes participating in the raids, only about 70 made it to the capital.<sup>36</sup>

Because the Luftwaffe was making systematic raids on Moscow and Leningrad the Soviet Supreme High Command decided to make retaliatory raids on the capital of fascist Germany--Berlin. This mission was given to an air group of the 1st Mine-Torpedo Regiment of the Red Banner Baltic Fleet's air service under the command of Regimental Commander Ye. N. Preobrazhenskiy; this group of DB-3 airplanes made its first raid on Berlin on the night of 8 August 1941 from an airfield on Ezel' Island.<sup>37</sup>

In addition to aviation of the Red Banner Baltic Fleet, the 81st Air Division of long-range bomber aviation bombed Berlin under the command of Brigade Commander M. V. Vodop'yanov (Colonel A. Ye. Golovanov as of 17 August).<sup>38</sup> Jointly with the air force's Fifth Directorate the Soviet Army Air Force staff wrote out the combat assignments of the 81st Air Division and insured safe passage through the front line for the bombers. In all prior to 4 September 1941 Soviet pilots made 10 raids on Berlin in small groups of heavy bombers. Several hundred heavy high-explosive bombs were dropped on military objectives in Berlin.

In the period from 10 July to 30 September 1941 long-range bomber aviation and bombers of the Red Banner Baltic and the Red Banner Black Sea fleets struck the enemy's industrial facilities in Koenigsberg, Danzig, Helsinki, Warsaw, Constanta, Ploesti, Bucharest, Sulina, and in other cities. Between 10 and 30 July just pilots of the IV Bomber Air Corps made eight raids on petroleum industry enterprises in Ploesti, Constanta, and Bucharest. As a result of the raids the productive capacity of the Romanian petroleum industry dropped by 30 percent.<sup>39</sup>

A 13 August 1941 ukase of the Presidium of the USSR Supreme Soviet awarded the Hero of the Soviet Union title to 10 airmen. Of these, five were naval pilots--Colonel Ye. N. Preobrazhenskiy and Captains V. A. Grechishnikov, A. Ya. Yefremov, M. N. Plotkin, and P. I. Khokhlov, and five were valorous airmen in long-range aviation--Majors V. I. Shchelkunov and V. I. Malygin, Captains V. G. Tikhonov and N. V. Kryukov, and Lieutenant V. I. Lakhonin.<sup>40</sup>

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Aviation of the fronts, the Red Banner Baltic Fleet, the VII Leningrad Air Defense Corps, and long-range bomber aviation played a great role in defensive engagements of troops on the far and near approaches to Leningrad. It actively supported and covered the ground troops, fought fascist German aviation in the air, annihilated enemy airplanes at airfields, and struck enemy facilities in the strategic rear. Between the start of the war and 30 September 1941 Soviet pilots flew about 60,000 combat sorties on the Leningrad axis.<sup>41</sup>

General Grigoriy Alekseyevich Vorozheykin was appointed to the post of Soviet Army Air Force chief of staff in August 1941. He began army service as a private back in 1915, volunteered for the Red Army in 1918, participated in the Civil War, and he became a Communist Party member in 1927; at the end of 1932 Vorozheykin was transferred to aviation from his post as commander of the 16th Rifle Division, Leningrad Military District.<sup>42</sup> In 1933 he graduated from the operations school of the Air Force Academy imeni Zhukovskiy and was appointed commander of the 200th Light Bomber Air Brigade. Soon G. A. Vorozheykin was appointed assistant to the commander of the Special Red Banner Far Eastern Army. At the eve of the Great Patriotic War he was serving as air force commander of the Volga Military District; when the war began he was given command of the air services of the 21st Army, and then the air services of the Central Front. It was from this post that G. A. Vorozheykin transferred to the Soviet Army Air Force Headquarters. The work of the Air Force Headquarters was made more efficient.

The post of air force chief of rear services was established on 19 August by order of the USSR NKO. The post was filled by General N. N. Sokolov-Sokolenok. The directorates of rear organization, airfield construction, and intendance and the field supply section were within his administration. Creation of a central air force rear services agency played a positive role in reinforcing and improving the overall system of rear support to air units and formations. As before, the problems of supplying aircraft, equipment, and ammunition remained within the responsibility of the Air Force Directorate of Orders and Technical Supply, subordinated to the commander of the Soviet Army Air Force.

The Senior Air Chiefs of the Air Force on the Fronts of the War

Fall was approaching. The enemy moved deeper and deeper into our country. The enemy's thrusts grew very strong. The situation was becoming critical at Moscow, at Leningrad, and in the Ukraine.

By the end of September 1941 the overall strategic situation was not to our advantage. German troops had reached Leningrad, captured Vitebsk and Smolensk, and reached the Melitopol'-Zaporozh'ye-Krasnograd line in the south. On the western axis the enemy concentrated new forces in the vicinities of Dukhovshchina, Yartsevo, Smolensk, Roslavl', Shostka, and Glukhov, preparing for a new offensive on Moscow. On 30 September

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the enemy began a new major offensive with a thrust by the 2d Tank Group against the troops of the Bryansk Front from the vicinity of Shostka and Glukhov in the direction of Sevsk, and on 2 October the main forces of Army Group Center attacked positions of the Western Front. The great battle of Moscow began.

As early as on the first day of the offensive the German 2d Tank Group<sup>43</sup> penetrated our defenses and reached the rear of the 13th Army. On the next day the Germans also broke through into the zone of the 50th Army.<sup>44</sup> Troops of the Bryansk Front found themselves in a difficult situation. The Hq SHC took emergency steps to bring in the main forces of long-range bomber aviation for strikes against the enemy's advancing tank grouping. On the night of 2 October 1941 the General Staff sent an order to the commander of the Soviet Army Air Force to immediately assign destruction of the enemy tank grouping that had broken through in the vicinity of Glukhov and Sevsk to the 40th, 42d, 51st, and 52d bomber air divisions of long-range bomber aviation (the division commanders were, correspondingly, Colonels V. Ye. Baturin and M. Kh. Borisenko, Lieutenant Colonel Ye. F. Loginov, and Colonel A. M. Duboshin), and to the 81st Special Purpose Air Division (commander, Colonel A. Ye. Golovanov). The command of this group of air forces was assigned to Air Force Deputy Chief of Staff Colonel I. N. Rukhle, who was ordered to place himself at the disposal of the troop commander of the Bryansk Front on 2 October. Fighter cover to the bombers was assigned to General F. P. Polynin, air force commander of the Bryansk Front.<sup>45</sup>

On that same night Air Force Headquarters formed a small operational group which left by air for the Bryansk Front under the command of Colonel I. N. Rukhle. A preliminary order from Air Force Headquarters assigned the mission of striking the enemy tank grouping to the bomber air divisions listed above, and details concerning place and time were later added by the command post of the Bryansk Front troop commander. The Bryansk Front aviation, the composition of which included the just-formed 6th Reserve Air Group (commander, General A. A. Demidov) struck enemy tank columns on roads and airplanes at airfields during the day, and the bomber divisions of long-range bomber aviation conducted their operations at night. Fighters were also brought in for this mission. Aviation's active, continuous operations day and night created bottlenecks on the roads, reduced the enemy's rate of advance, and won time for the Hq SHC reserves to regroup and occupy defensive lines. General Guderian, former German commander of the 2d Tank Group, wrote the following in his book "Memoirs of a Soldier" in his description of the events of 4 October 1941: "I was rather impressed by the activities of Russian aviation. A raid by Russian aviation occurred immediately after I landed at Sevsk Airfield.... Then enemy aviation bombed the headquarters building.... Then I set off for the road on which the 3d Tank Division was advancing. Once again we were subjected to several bomb strikes by Russian bombers."<sup>46</sup> Despite the activeness of our aviation, troops of the Bryansk Front could not hold the enemy back. Troop command

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and control on the part of the frontal command was seriously disturbed. The events developed swiftly. Attempts of Hq SHC to help the front with their operations did not produce the desired result.

The command and staff of the Soviet Army Air Force attentively followed the operation to repel the enemy offensive. Great shortcomings could be felt in organization of interaction between aviation and troops. On 6 October 1941 a directive calling for improvement of interaction between aviation and troops was sent to the air force commanders of the fronts and the separate combined arms armies, and to the commanders of the reserve air groups. The directive stated the need for the commanders directing the air divisions personally or their deputies to visit the command posts of combined arms chiefs together with operational groups; coded maps, procedure charts, and set signals were to be in common with those of the troops; checkpoints containing air communication posts intended for transmission of commands to airplanes in the air to attack ground targets or to halt an attack had to be organized in the vicinity of the combined arms commander's command post.<sup>47</sup>

A difficult situation also evolved on the main axis of the Western Front. The enemy managed to penetrate the defenses of our troops. The enemy's strike groupings advanced swiftly, enveloping the entire Vyaz'ma grouping from the south and north. The enemy achieved a breakthrough at the boundary between the Western Front's 30th and 19th armies. On 6 October his mobile formations reached Vyaz'ma from the north. Simultaneously the Germans broke through along the Warsaw Highway within the zone of the Reserve Front's 43d Army. On 4-5 October they captured the area of Spas-Demensk and Yukhnov, having enveloped the Vyaz'ma grouping of Soviet troops from the south. By 7 October the Western Front's 19th and 20th armies and the Reserve Front's 24th and 32d armies were encircled west and northwest of Vyaz'ma. Encircled troops continued to offer stubborn resistance, pinning down 28 enemy divisions in this area. On 3 October the Germans captured Orel and raced toward Tula. On 6 October the enemy occupied Karachev and Bryansk. On 7 October 1941 at 0540 hours the chief of General Staff issued orders in the name of the Hq SHC to the troop commander of the Western Front, the chief of staff, and the Soviet Army Air Force member of the Military Council obliging Corps Commissar P. S. Stepanov to place himself at the disposal of Western Front Commander I. S. Konev and organize massed air strikes against enemy troops operating against the Western Front.

All of the Western Front's aviation was subordinated to him for these purposes for the time of the mission, and in addition the Hq SHC reserve contributed four air regiments (one regiment of ground attack airplanes, two regiments of rocket carrying MIG-3's, and one regiment of Pe-2 bombers).<sup>48</sup> Permission was given to call in some of the aviation of the Moscow Military District and long-range bomber aviation. Our aviation completed its missions in difficult conditions. In 9 days it completed 2,850 sorties and inflicted losses on the fascist German troops, but it could not stop their advance.

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The enemy continued to reign supreme in the air. In the first 9 days of the October offensive about 4,000 overflights by German aviation were registered within the zone of the Western Front.<sup>49</sup> Stubborn engagements and battles went on on land and in the air. The enemy's strike groupings wedged themselves deeply into the defenses of Soviet troops on some axes. On 5 October the State Defense Committee adopted a special decision on Moscow's defense. The Mozhaysk line of defense, which passed from Volokolamsk to Kaluga, was set as the main line of resistance of the Western Front's troops. On 10 October the Western and Reserve fronts were combined into the single Western Front under the command of Army General G. K. Zhudov by decision of the General Headquarters. Frontal aviation was combined correspondingly. The Hq SHC and the air force command took emergency steps to strengthen the Soviet aviation operating on the western axis. Two long-range bomber air divisions were transferred from the Transcaucasian Front, and newly formed air units arrived from the country's rear.

The Moscow Military District's air services were used as the basis to create an air group under the command of N. A. Sbytov; this group was reinforced by the 46th High-Speed Bomber Regiment armed with Pe-2 airplanes, the 65th and 243d ground attack regiments armed with Il-2 airplanes, and a squadron armed with Po-2 airplanes. The group provided tangible air support to troops of the 5th Army covering the Mozhaysk line of defense.<sup>50</sup>

On order of the Hq SHC the air services of the neighboring Northwestern Front and some of the forces of the VI Fighter Air Defense Corps (commander, Colonel A. I. Mitenkov) were called in to cover troops of the Western Front and make raids on enemy troops and airfields. As of 10 October 1941 the VI Fighter Air Defense Corps had one bomber and 17 fighter air regiments, 344 serviceable warplanes, and 416 pilots of whom 118 were able to fly night missions in complex weather conditions.<sup>51</sup>

Night-flying air regiments armed with PO-2, R-5, and R-Z airplanes began to be formed in this difficult period of the war out of military school instructors and pilots who had graduated from the Osoaviakhim [Society for Assistance to the Defense, Aviation, and Chemical Construction of the USSR] schools. Between October and December 1941, 71 air regiments armed with PO-2's, 27 air regiments armed with R-5's, and 5 air regiments armed with R-Z's were formed in the air force. By decision of the Hq SHC the Kalinin Front and a frontal air service consisting of five air regiments (frontal air force commander, Major General of Aviation N. K. Trifonov) were formed on 17 October out of armies on the right wing of the Western Front with the purpose of combining the troops covering Moscow from the northwest. The command did everything to alter the balance of power in the air in our favor and, through air strikes, make a maximum impact on fascist German troops attempting to break through to Moscow.

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At the beginning of October 1941 the Hq SHC became aware of preparations being made for a mass air attack by German aviation.

On 19 October 1941 the Hq SHC issued a directive to the Soviet Army Air Force commander stating that according to espionage data the enemy was to make a massed air raid on industrial and air centers, rail terminals, bridges, crossings, headquarters, supply stations, and troop combat formations along the entire western front with a force of 1,000-1,500 airplanes on 12-13 October 1941. The air force commander was ordered to organize, in the night of 11-12 October and in the morning and day of 12 October, decisive annihilation of enemy aviation at airfields on the northwestern, western, and southwestern axes; to take steps to disperse friendly airplanes at airfields; to heighten the readiness of air defense resources for repelling enemy air raids.<sup>52</sup> The directive was used by the command and staff of the Soviet Army Air Force to develop a plan for the air force's actions to annihilate enemy airplanes at airfields in the period from 11 to 18 October. Long-range bomber air formations and the air services of the Northwestern, Western, Bryansk, Southwestern, and Southern fronts were called in for this mission. The plan of the air force command was submitted to the Hq SHC through the General Staff. After its approval by the command and staff of the Soviet Army Air Force combat orders were issued to the appropriate air force commanders of the fronts and to commanders of long-range bomber air formations. In terms of scope, the forces called in, and the attained results, the air force's actions against the airfields were in essence an air force air operation, conducted on a broad front, within a short time, and with decisive goals. Its results were extremely high. The air force commander reported to the Hq SHC: "In the period from 11 to 18 October 1941 the Red Army Air Force made a number of bomb strikes against enemy airfields on the northwestern, western, and southern axes. In just 2 days (11 and 12 October) and in the night of 13 October 166 airplanes were annihilated at the airfields of Vitebsk, Smolensk, Orel, Orsha, Siversk, N. Dugin, and other cities. And according to incomplete data not less than 500 enemy airplanes were annihilated at airfields between 11 and 18 October.... The strikes against the airfields caused significant losses in enemy aviation, as a result of which the enemy's plan for a mass attack was foiled."<sup>53</sup>

The Luftwaffe weakened its strikes against the combat formations of our troops. But the front continued to approach Moscow. Another line of defense was created at the immediate approaches to Moscow by a decision of the State Defense Committee published 12 October. The city's and oblast's laborers took an active part in its construction. Responding to a party appeal, 450,000 persons, women for the most part, participated in construction of the defensive structures on the approaches to Moscow and within the city itself. Enterprises providing weapons and ammunition to the capital's defenders worked in three shifts.<sup>53a</sup>

Party-political work acquired special significance in those days. Its content was defined by decisions of the party Central Committee. The

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following slogans were publicized: "We Are Defending Our Capital," "Defeat of the Fascist German Invaders Must Begin at Moscow!"<sup>53b</sup>

All of the activities of the capital's party organization were subordinated to the interests of Moscow's defense. Within several days 25 separate communist and workers companies and battalions 75 percent manned by communists and Komsomol members were formed in Moscow. Just within the first half of October Moscow gave the front 50,000 soldiers.<sup>53c</sup>

In mid-October 1941 the personnel of the General Staff and Air Force Headquarters were divided into two echelons in compliance with a decision of the HQ SHC having the goal of insuring dependable troop command and control. The first echelon remained in Moscow while the second was evacuated eastward, to the vicinity of Kuybyshev.

The first (field) echelon of the headquarters of the standing army's air force consisted at that time of Air Force Commander General P. F. Zhigarev, Military Council Member Army Commissar 2d Rank P. S. Stepanov, Air Force Chief of Staff General G. A. Vorozheykin, Military Staff Commissar Brigade Commissar A. V. Galichev, and Deputy Chief of Staff Colonel A. P. Belyayev.

The following generals and officers were the chiefs of directorates and sections, their deputies, and principal officers of the air force's field staff: M. V. Shcherbakov, V. V. Storozhenko, V. I. Artem'yev, A. M. Vlasov, M. N. Kozhevnikov, I. M. Kuz'min, P. N. Poluektov, V. P. Poshekhontsev, V. M. Pikulin, S. V. Sychev, Yu. A. Veliko-Ivanenko, G. T. Korol'kov, N. A. Strelkov, V. I. Lugovoy, D. D. Grendal', A. I. Sokoloverov, G. K. Gvozdkov, D. K. Karpovich, F. G. Fedorov, V. I. Al'tovskiy, A. G. Prokudin, V. G. Tairov, A. G. Doroshenko, A. V. Nikitin, A. S. Shapkiy, D. S. Filatov, A. V. Vinokurov, M. P. Konstantinov, L. A. Gorbatshevich, P. P. Belichenko, N. N. Ishchenko, and V. B. Shemborskiy.

All of the rest of the officers and employees of the air force staff and directorate were evacuated to Kuybyshev on 15 October 1941 under the command of Brigade Engineer Ya. L. Bibikov, Division Commissar L. G. Rudenko, and Air Force Deputy Chief of Staff Colonel B. A. Ageyev.

After the bulk of the officers and the absolute majority of employees of the air force staff and directorate left, the generals and officers of the Air Force Field Headquarters had to work around the clock. This was elicited by the complexity of the evolved situation on the Moscow axis and the larger volume of work. An operational group of the Air Force Field Headquarters commanded all aviation concentrated on the western axis, collected data on the ground and aerial situations in other fronts, maintained maps of the operational situation, developed the plans for strategic use of aviation and combat instructions, and prepared daily air force operational summaries and special reports to the supreme high commander.



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Things became sterner in Moscow as well in those days. The city and its contiguous regions were placed on a seige status as of 20 October by a decree of the State Defense Committee dated 19 October 1941. This was necessary so that the troop rear could be strengthened and the subversive activities of enemy agents could be halted. The Communist Party appealed to the capital's public to be calm, to comply with law and order, and to render all possible cooperation to troop units. Defense of lines 100-120 km west of Moscow was given over to the commander of the Western Front, General G. K. Zhukov, while command of the city's immediate vicinity was given to the Soviet Army Air Force commander, General P. F. Zhigarev. The Politburo of the CC CPSU, the State Defense Committee, Hq SHC, and the operational group of the General Staff were located in Moscow. Leadership of the entire country and the combat activities at the fronts was exercised from here, and it was here that the main problems of the war were solved.

At the end of October Hitler's troops were halted on a line extending from Volzhskoye Reservoir east of Volokolamsk along the Nara and Oka rivers as far as Aleksin. Soviet aviation actively helped the troops repel enemy attacks. During the defensive engagement, between 30 September and 31 October 1941, the air force flew 26,000 combat sorties, of which 80 percent were intended for support and cover of the troops.<sup>54</sup> Soviet pilots fighting fascist German aviation displayed extreme bravery and heroism. On 29 October Junior Lieutenant B. I. Kovzan, a pilot of the 184th Fighter Air Regiment, rammed and knocked down a German airplane in the vicinity of Zaraysk after using up all of his ammunition.<sup>55</sup>

The advance of the fascist German troops was finally halted within the zone of the Bryansk Front in the second half of October. The Bryansk Front's 3d and 13th armies fought hard battles in the enemy rear for 3 weeks, containing the main forces of the German 2d Field and 2d Tank armies. By 23 October they extricated themselves from the encirclement, reaching a line extending from Belyayev to Mtsensk to Ponyri to L'gov. Considering their state, Hq SHC ordered the front's troops to withdraw to a line east of Dubny, Plavsk, Verkhov'ye, Livny, Kastornoye, concentrating the main efforts in the vicinity of Tula and on the Yelets axis. On 30 October formations of the German 2d Tank Army reached Tula, where they met organized resistance from troops of the 50th Army and the Tula Workers Regiment. Soviet aviation flew 3,750 sorties in 20 days in behalf of troops of the Bryansk Front.<sup>56</sup> Destroying enemy troops and equipment, the Soviet Air Force also stubbornly fought enemy aviation. The main burden of the fight against enemy aviation in the air was placed on the shoulders of fighters in the frontal air services, especially the VI Fighter Air Defense Corps.

In October the Luftwaffe flew 31 raids on Moscow. About 2,000 airplanes participated in them, but only 72 were able to break through to their bombing targets.<sup>57</sup> Some 278 airplanes were knocked down in air battles and by antiaircraft fire during repulsion of the raids.<sup>58</sup> In the first

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days of November the enemy's offensive on Moscow was halted on almost all axes.

Failing to reach its goal in October, the German Command prepared a new offensive for the middle of November, the goal of which was to make two simultaneous enveloping thrusts on Moscow with mobile groupings from the north and south, with air support from aviation of the 2d Air Fleet. In all, the Fascist German Command allocated 51 divisions for the capture of Moscow, to include 13 tank and 7 motorized divisions.<sup>59</sup>

Troops of the Kalinin, Western, and the right wing of the Southwestern fronts occupied lines of defense at the near approaches to Moscow. Despite the fact that the Western Front had been reinforced, in November the Fascist German Army still had overall numerical superiority in manpower and combat equipment at Moscow. Soviet aviation operating on the Moscow axis was reinforced, and in sum total the number of friendly airplanes surpassed enemy aviation by a factor of 1.5.<sup>60</sup>

Considering this, and attaching great significance to achieving strategic superiority in the air, the Hq SHC ordered the Soviet Army Air Force commander to conduct an air operation between 5 and 8 November to annihilate German aviation at airfields. The command and staff of the air force, which had gained experience in organizing such air operations, developed a plan requiring 32 airplanes from the air service of the Kalinin Front, 46 from the air service of the Western Front, 56 from the air service of the Bryansk Front, 32 from aviation of the Moscow Defense Zone, 80 from long-range bomber aviation, and 54 airplanes from the Supreme High Command's 81st Separate Bomber Division--300 warplanes in all to make a simultaneous strike on 19 airfields.<sup>61</sup> The plan was approved by Air Force Commander General P. F. Zhigarev and Air Force Military Council Member Army Commissar 2d Rank P. S. Stepanov, and it was signed by Air Force Chief of Staff General G. A. Vorozheykin. Instructions to the troop commanders of these fronts pertaining to the actions of aviation were written by Air Force Headquarters, signed by the General Staff, and issued to the troops. Concurrently instructions were given by the Soviet Army Air Force Command to frontal air force commanders on the means for making the airfield strikes.

Thirteen enemy airfields were raided on 5 November, 15 were raided on 6 and 7 November, and on 12 and 15 November strikes were made repeatedly against 19 airfields. As a result more than 100 airplanes were annihilated and damaged, and 61 airplanes were knocked down in aerial combat.<sup>62</sup> The two air operations conducted by the Soviet Air Force in October and November 1941 to destroy fascist German aviation at the airfields had, in the future, a positive influence on attaining strategic air supremacy by the beginning of December 1941 on the Moscow axis.

After a 2-week pause fascist German troops resumed their offensive on Moscow. At the price of high losses they managed to reach the near

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approaches to Moscow at the end of November. Soviet troops offered stubborn resistance, making strong counterstrikes with the active support of aviation. After Klin and Solnechnogorsk were captured the enemy attempted to exploit his gains northwest of Moscow. On the night of 28 November he managed to cross small forces to the east bank of the Moskva-Volga Canal in the vicinity of Yakhroma, north of Iksha.

The Hq SHC, the command of the Western Front, and the command of the Soviet Army Air Force took emergency steps to eliminate the resulting danger. Reserve formations and troops from neighboring sectors were transferred to the vicinity of Kryukova, Khlebnikovo, and Yakhroma. An air group commanded by Soviet Army Air Force Deputy Commander General I. F. Petrov (chief of staff, Colonel N. P. Dagayev) was operating on this axis. It had a strength of 160 warplanes. Operating against enemy troops in the vicinity of Yakhroma, Klin, and Solnechnogorsk, the air group flew 150-180 combat sorties daily. General I. F. Petrov's air group played an extremely great role in cooperating with troops of the 1st Strike Army, the forward units of which counterattacked and repelled enemy troops penetrating in the vicinity of Yakhroma to the canal's western bank. With its active cooperation, at the end of November and the beginning of December the 1st Strike Army and the newly formed 20th Army made a number of counterstrikes against fascist German troops, and together with the 30th and 16th armies they finally stopped their advance. The threat of an enemy breakthrough to Moscow from the northwest and north was eliminated.

On 18 November the enemy broke through defenses on the left wing of the Western Front southeast of Tula, and in 17 days he reached Venev and Kashir. The Soviet Army Air Force Command quickly formed an air group commanded by Colonel M. V. Shcherbakov with the mission of supporting the 50th Army in the vicinity of Tula. An air group commanded by twice-awarded Hero of the Soviet Union General G. P. Kravchenko and long-range bomber air units were brought in to reinforce units operating against the enemy. Supported by the front's tanks and aviation, one long-range bomber division, and a part of the forces of the VI Fighter Air Corps, on 27 November the I Guards Cavalry Corps counterattacked enemy troops breaking through to Kashir, forcing them to retreat in haste. As a result of the active operations of troops and aviation on the left wing of the Western Front, the enemy's offensive was halted forever. On 4-5 December 1941 the defensive period of the battle of Moscow ended.

Long-range bomber aviation operated against objectives on the battlefield, interdicted enemy railroad activity, and bombed enemy trains in Vyaz'ma, Sukhinichi, Mtsensk, and Zmiyevka and airplanes at airfields in the vicinities of Vyaz'ma, Vitebsk, Smolensk, and Sukhinichi. All actions of frontal, long-range bomber, and air defense aviation as well as of air groups was coordinated by the air force command, it was planned, sufficiently purposeful, and highly effective. In the entire period of the defense of Moscow the Soviet Air Force flew 51,300 combat sorties--

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86 percent in behalf of the troops and 14 percent to cover Moscow, annihilated up to 1,400 enemy airplanes, and by the beginning of December 1941 it had attained sound strategic air superiority on the Moscow axis.<sup>63</sup> It was attained through systematic destruction of enemy aviation at airfields and in active offensive air battles fought by our fighters. Attainment of strategic air superiority on the Moscow axis was on the whole a great victory for the Soviet Air Force and the armed forces. The Supreme High Command could now regroup its troops and concentrate reserves without significant interference from enemy airplanes.

The situation changed dramatically on the entire Soviet-German front at the beginning of December 1941. The first victories at Moscow, Tikhvin, and Rostov set the stage for assumption of a counteroffensive by the Soviet Army on the main axis--the Moscow axis. The Headquarters' design foresaw making the main thrust in a westerly direction with the goal of destroying the main forces of Army Group Center and decisively improving the position of Soviet troops. Troops of the Kalinin, Western, and the right wing of the Southwestern fronts, aviation from the Moscow Defense Zone, VI Fighter Air Defense Corps, two SHC reserve air groups, and the main forces of long-range bomber aviation were committed to the counteroffensive. All air services committed were combined under Soviet Army Air Force Commander General P. F. Zhigarev and his field staff.

The greater share of the mission of destroying the enemy at Moscow was assigned to the Western Front under the command of General G. K. Zhukov. Eighty percent of all aviation concentrated in the vicinity of Moscow was given missions within the Western Front's sector. In the counteroffensive the air force was to support ground troops through active operations, maintain the air supremacy it had achieved earlier, cover Moscow against enemy raids, interdict the enemy's rail shipments, and perform air reconnaissance. Preparations were made in the course of the defensive engagement, which permitted the Soviet Command to concentrate sufficient men and materiel. But the strength of troops committed to the counteroffensive was lower than that of the enemy--by 1.5 times in relation to personnel, by 1.4 times in relation to artillery, and by 1.6 times in relation to tanks. We were superior only in relation to aviation. The strength of Soviet aviation was about 1,200 warplanes, while that of the enemy was up to 700 craft.<sup>64</sup> In moral-political regards the Soviet soldiers were highly superior to fascist German troops. Limitless love for the motherland and an unshakable will for victory were the decisive force which compelled the Germans to flee from Moscow.

At dawn on 5 December 1941 the left wing of the Kalinin Front went over to the counteroffensive, and on 6 December it was joined by strike groups of the Western and Southwestern fronts. They struck the enemy within a sector from Kalinin to Yelets, which was about 1,000 km long. The Soviet Air Force Command used about 1,000 warplanes in concentrated strikes against the enemy grouping north and northwest of Moscow and only 200 airplanes against troops on the left flank.<sup>65</sup>

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With the active support of our aviation, the troops penetrated the tactical zone of the enemy defenses and began to exploit the offensive successfully on all axes.

On 9 December 1941 air reconnaissance established the fact of a massive withdrawal of the enemy on the Klin--Teryayeva Sloboda Highway. This permitted the Supreme High Command and the air force command to direct the efforts of our aviation at annihilating the retreating enemy columns. To cut off the route of withdrawal of the German troops the Soviet Command dropped a tactical airborne assault party consisting of 415 enlisted men and officers on the night of 15 December in an area west of Teryayeva Sloboda. The airborne troops were highly successful in their mission, cutting off the enemy's route of withdrawal on the roads and thus making it possible for our aviation to strike the great accumulation of enemy motor vehicles and equipment on the roads. The airborne assault party joined troops of the 30th Army at the end of December.

Here is what Marshal of the Soviet Union G. K. Zhukov writes about this in his memoirs: "The counteroffensive actions of the Western Front's right wing continued constantly. Its actions were supported actively by frontal aviation, by air defense aviation, and by long-range aviation commanded by General A. Ye. Golovanov. Aviation made powerful strikes against artillery emplacements, tank units, and command posts, and when Hitler's troops began to withdraw it attacked and bombed infantry, armored, and motor transport columns. As a result following the retreat of the enemy troops all westward roads were congested by the enemy's combat equipment and motor vehicles."<sup>66</sup>

In the course of the enemy's pursuit General I. F. Petrov's air group operated actively on the Klin axis, and General Ye. M. Nikolayenko's air group was active on the Kaluga and Sukhinichi axes.

Until 7 December long-range bomber aviation operated against enemy troops. Later its efforts were turned to strikes against rail terminals, trains, and sidings with the goal of blocking deliveries of troops and equipment to enemy troops at the front. It was pointed out at that time in a report of the Soviet Army Air Force Military Council to Supreme High Commander I. V. Stalin on 22 December 1941 that beginning with 7 December the mission of the Main Command's aviation was to destroy rail terminals and trains with the objective of interdicting deliveries of ammunition and enemy troops to the front. From 8 to 18 December the air divisions flew 251 sorties and dropped 156 tons of bombs in difficult meteorological conditions (poor visibility, snowfall, fog, icing of the airplanes). As a result of the bombing 32 rail stations, 85 ammunition and troop trains, and up to 83 tanks and vehicles were destroyed and damaged. A proposal was also made to subsequently utilize long-range bomber aviation against large objectives in the enemy rear.<sup>67</sup>

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The counteroffensive of troops of all three fronts on the Moscow axis lasted 33 days. In extremely complex winter weather conditions the Soviet Air Force flew 16,000 combat sorties, 50 percent of them with the mission of annihilating enemy troops and combat equipment.<sup>68</sup> In the counteroffensive the actions of aviation were massed on the main axes.

Seventy percent of all sorties flown by frontal aviation had the goal of destroying the northern enemy grouping. Massing of aviation on the main axis and actions of frontal and long-range bomber aviation against centers of resistance, the enemy's withdrawing groupings and his control posts, rear services, and lines of communication created favorable conditions for accelerating the pace of the offensive.

As a result of the joint actions of frontal troops and aviation enemy strike groupings threatening Moscow from the north and south were destroyed by the end of December 1941. The direct threat to the capital was eliminated. The battle of Moscow revealed the high combat capabilities of the Soviet Air Force which, given centralized control of the combined forces of aviation, played an extremely great role in the enemy's defeat. The experience of utilizing the air force in combat, accumulated in the course of the counteroffensive, was subsequently utilized extensively by the Soviet Command to improve control of the combined efforts of aviation in offensive operations conducted by groups of fronts.

The Communist Party and the Soviet Government gave a high assessment to the air force's actions. On 6 December 1941 six air regiments were reorganized as Guards regiments--the 29th, 129th, 155th, and 526th fighter regiments (commanders, Majors A. P. Yudakov, Yu. M. Berkal', A. F. Shpak, and N. P. Metelkin), the 215th Ground Attack Air Regiment (commander, Major L. D. Reyno), and the 31st Bomber Air Regiment (commander, Lieutenant Colonel F. I. Dobysh). Thousands of airmen were awarded orders and medals.<sup>69</sup> Fifty-two valorous pilots were awarded the Hero of the Soviet Union title, to include V. A. Shishov, S. G. Get'man, A. F. Loktionov, A. I. Molodchiy, A. G. Rogov, F. M. Fatkulin, A. N. Katrich, Ye. M. Gorbatyuk, V. Ye. Kovalev, V. V. Talalikhin, and others.<sup>70</sup> During the battle of Moscow pilot V. V. Talalikhin rammed an enemy airplane at night for the first time in the war, and pilot A. N. Katrich rammed an enemy airplane at high altitude for the first time.

It is difficult and perhaps even impossible to overstate the great significance of our victory over fascist German troops and the vaunted Luftwaffe at the battle of Moscow. This was a historic victory that entered the unfading pages of not only the chronicle of the Great Patriotic War but also world history. Defeat of German troops at Moscow strengthened the faith the Soviet people and their armed forces had in a final victory and raised the fighting spirit of peoples in countries of Europe occupied by the fascists. The people of the world now saw that Hitler's army could be and would be defeated.

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Victory was achieved at Moscow owing to the advantages of the socialist social and state structure, the selfless labor of our people, and the unparalleled acts of heroism and bravery of soldiers of the Soviet Army led by the Leninist Communist Party. "The historic victory at Moscow," noted L. I. Brezhnev, "inspired the Soviet people to new acts of heroism and strengthened their confidence that the enemy would invariably be defeated."<sup>71</sup>

The experience of the air force's combat activities in the battle of Moscow confirmed the need for seeking and utilizing a new form of aviation command and control--combination of committed aviation under the command of the senior air chief. A need was revealed for improving the organizational structure of units and formations of frontal and long-range bomber aviation, and of the staff and directorates of the Soviet Army Air Force, and for creating large highly maneuverable SHC air reserves. Life demanded generalization of the combat experiences of all aviation arms and services, and the fastest possible dissemination of this information among the troops, academies, and scientific institutions. The organization of interaction of aviation with major formations and formations of the ground troops required further improvement. The enemy still held the technical edge in aviation equipment and armament. Solution of these major problems required great efforts on the part of the CC CPSU and the government, the General Staff, the command, the Military Council, and Air Force Headquarters. Most of the solutions were worked out by as early as the beginning of 1942, they were submitted to the Supreme High Command General Headquarters, and they were implemented in 1942.

FOOTNOTES

1. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg." (The Soviet Air Force in the Great Patriotic War 1941-1945), Moscow, 1968, p 29.
2. "Aviatsiya i kosmonavtika SSSR" (USSR Aviation and Cosmonautics), Moscow, 1968, p 89.
3. The directive of People's Commissar of Defense S. K. Timoshenko and Chief of General Staff G. K. Zhukov was transmitted to all frontier military districts on the night of 20 June 1941 at 0030 hours.
4. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg." Moscow, 1968, p 34.
5. Ibid., p 35.
6. Novikov, A. A., "V nebe Leningrada" (In the Sky of Leningrad), Moscow, 1970, p 45.

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7. "Istoriya Velikoy Otechestvennoy voyny Sovetskogo Soyuza 1941-1945 gg." (History of the Great Patriotic War of the Soviet Union 1941-1945), Vol 2, Moscow, 1961, pp 17-18.
8. "Aviatsiya i kosmonavtika SSSR," p 87.
9. Arkhiv MO SSSR [USSR Ministry of Defense Archives], f. 35, op. 11285, d. 16, ll. 63-66.
10. Arkhiv MO SSSR, f. 96-A, op. 1711, d. 1, l. 11.
11. Arkhiv MO SSSR, f. 35, op. 11285, d. 115, ll. 3-5.
12. Ibid., ll. 3-5.
13. Arkhiv MO SSSR, f. 48-A, op. 1554, d. 19, l. 136.
14. Arkhiv MO SSSR, f. 35, op. 7879, d. 6, ll. 1-36.
15. VOYENNO-ISTORICHESKIY ZHURNAL, No 6, 1972, p 21; "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 37.
16. Arkhiv MO SSSR, f. 48-A, op. 1554, d. 9, l. 213.
17. Arkhiv MO SSSR, f. 35, op. 11285, d. 173, ll. 110-111.
18. VOYENNO-ISTORICHESKIY ZHURNAL, No 3, 1972, p 25.
19. "Mirovaya voyna 1939-1945" (The World War of 1939-1945), translated from German, Moscow, 1957, p 472.
20. "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," pp 30-39.
21. "Aviatsiya i kosmonavtika SSSR," p 92.
22. VOYENNO-ISTORICHESKIY ZHURNAL, No 2, 1974, p 31.
23. "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 44.
24. Arkhiv MO SSSR, f. 35, op. 30802, d. 10, ll. 1-3.
- 25-26. Arkhiv MO SSSR, f. 35, op. 73940, d. 2, ll. 1-10.
27. "Istoriya vtoroy mirovoy voyny 1939-1945" (History of World War II 1939-1945), Vol 4, Moscow, 1974, p 79.
28. Arkhiv MO SSSR, f. 132-A, op. 2624, d. 41, ll. 40, 42.



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29. "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," pp 52, 53.
30. Yeremenko, A. I., "Na Zapadnom napravlenii" (On the Western Axis), Moscow, 1959, p 90.
- 30a. Guderian, G., "Vospominaniya soldata" (Memoirs of a Soldier), translated from German, Moscow, 1954, p 198.
31. Arkhiv MO SSSR, f. 202, op. 3996, d. 2, l. 38.
32. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 4, p 79.
33. Arkhiv MO SSSR, f. 209, op. 19013, d. 1, l. 6.
34. Ibid., ll. 14-16.
35. "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 54.
36. "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," pp 54-55.
37. Arkhiv MO SSSR, f. 35, op. 78125, d. 3, l. 120.
38. Ibid., op. 11250, d. 8, l. 70.
39. Arkhiv MO SSSR, f. 35, op. 7879, d. t [sic], ll. 35, 73.
40. Tsykin, A. D., "Ot 'Il'i Muromtsa' do raketnostsa" (From "Il'ya Muromets" to the Rocket Carrier), Moscow 1975, p 69.
41. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 4, p 69.
42. "Krylatyye syny Rodiny" (Winged Sons of the Motherland), Moscow, 1967, pp 192-195.
43. At the beginning of October 1941 the German 1st and 2d tank groups were reorganized into tank armies.
44. "Velikaya Otechestvennaya voyna Sovetskogo Soyuza 1941-1945. Kratkaya Istoriya" (The Great Patriotic War of the Soviet Union 1941-1945. A Short History), Moscow, 1970, p 116.
45. Arkhiv MO SSSR, f. 48-A, op. 1554, d. 91, l. 308.
46. Guderian, G., "Vospominaniya soldata," p 222.

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47. "Sovetskiye VVS v Velikoy Otechestvennoy voyne 1941-1945 gg. Sbornik dokumentov" (The Soviet Air Force in the Great Patriotic War 1941-1945. Collection of Documents), No 1, Moscow, 1957, p 47.
48. Arkhiv MO SSSR, f. 48-A, op. 1554, d. 91, l. 359.
49. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 68.
50. Arkhiv MO SSSR, f. 6314, op. 11153, d. 88, ll. 306-307.
51. Arkhiv MO SSSR, f. 35, op. 1282, d. 29, ll. 139, 140.
52. Arkhiv MO SSSR, f. 208, op. 2677, d. 31, l. 67.
53. Arkhiv MO SSSR, f. 35, op. 30802, d. 8, ll. 1-2.
- 53a. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 4, Moscow, 1975, pp 96-97.
- 53b. Ibid., p 97.
- 53c. Ibid.
54. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 71.
55. Ibid., p 72.
56. Arkhiv MO SSSR, f. 202, op. 38, d. 12, l. 102.
57. Arkhiv MO SSSR, f. 208, op. 198982, d. 13, l. 88.
58. "Aviatsiya i kosmonavtika SSSR," p 108.
59. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 4, p 103.
60. "Velikaya Otechestvennaya vojna Sovetskogo Soyuza 1941-1945," p 124.
61. Arkhiv MO SSSR, f. 35, op. 30802, d. 41, ll. 85-86.
62. Arkhiv MO SSSR, f. 35, op. 11285, d. 74, ll. 85-86; VOYENNO-ISTORICHESKIY ZHURNAL, No 6, 1972, p 21.
63. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 77.
64. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 4, p 284; "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," pp 78-79.

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65. Arkhiv MO SSSR, f. 208, op. 142690, d. 3, l. 39; d. 2, ll. 19-22.
66. Zhukov, G. K., "Vospominaniya i razmyshleniya" (Recollections and Reflections), Vol 2, Moscow, 1974, p 45.
67. Arkhiv MO SSSR, f. 35, op. 11290, d. 13, l. 196.
68. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 87.
69. "Aviatsiya i kosmonavtika SSSR," pp 111, 112.
70. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 78.
71. Brezhnev, L. I., "Velikaya pobeda sovetskogo naroda" (The Great Victory of the Soviet People), Moscow, 1965, p 12.

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### CHAPTER III. FURTHER REINFORCEMENT OF THE SOVIET ARMY AIR FORCE

#### The Situation at the Fronts as of Spring 1942

The victory of the Soviet Armed Forces at Moscow in winter 1941-1942 was the outstanding military-political event of the first year of the Great Patriotic War. As a result of the counteroffensive and the general offensive Soviet troops subjected the armed forces of fascist Germany to their first major defeat in the course of all of World War II. The enemy was pushed back several hundred kilometers. The Soviet Army seized the initiative on the main strategic axis and retained it for almost half a year. The historic victory of the Soviet Armed Forces at Moscow marked the beginning of the fundamental turning point in the course of the Great Patriotic War.

The victory of Soviet troops at Moscow raised the international authority of the Soviet Union even higher and promoted unification of the states and peoples of the anti-Hitler alliance for the struggle against fascist aggression. On 1 January 1942, 26 states to include the USSR, USA and England signed a declaration uniting the military and economic resources of the countries for the defeat of the fascist bloc.

The bulk of the troops of fascist Germany and its satellites remained at the Soviet-German front as before. Some 176 divisions of the German ground troops (including 21 tank and 14 motorized) and 9 brigades, 14 Finnish divisions and 8 brigades, 7 Romanian divisions and 7 brigades, 3 Hungarian divisions and 2 brigades, and 3 Italian, 2 Slovak, and 1 Spanish divisions were operating on this front as of 1 April 1942.<sup>1</sup>

On 1 May 1942 the strength of fascist bloc armies on the Soviet-German front was 6,198,000 men, 56,941 guns and mortars (not including 50-mm mortars), 3,229 tanks and assault guns, and 3,395 warplanes (2,815 German, 295 Finnish, 164 Romanian, 50 Hungarian, and 70 Italian).<sup>2</sup>

In May 1942 the operating army of the Soviet Armed Forces had a strength of 5.5 million persons, 43,643 guns and mortars, 1,220 rocket launchers, 4,065 tanks, and 3,160 warplanes (not counting 320 obsolete reconnaissance airplanes and 375 U-2 night light bombers).<sup>3</sup>

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The situation became stabilized on the Soviet-German front by spring 1942. The front line passed from Leningrad along the Volkhov River east of Staraya Russa, skirted about the Demyansk area on the east and west, then it proceeded along a line east of Kholm, Velikiye Luki, Velizh, Demidov, and Belyy, north of Yartsevo, formed the Rzhev-Vyaz'ma salient, embraced terrain west of Yukhnov and Kirov, then followed a line east of Lyudinovo, Zhizdra, and Bolkhov, west of Verkhov'ye, Tim, and Volchansk, protruded as a westward salient in the vicinity of Balakleya, Lozovaya, and Barvenkovo, fell short of Krasnyy Liman, Debal'tsevo, and Kuybyshevo, and then followed the Mius River.

The Soviet Command harbored no doubts that fascist German troops would resume active offensive actions at the beginning of the summer.

The forthcoming intense struggle demanded an end to the process of rebuilding the country's national economy, an increase in war production, and further development of all branches of the Soviet Armed Forces.

Organizational Changes in the Central Administration, Operational Major Formations, and Formations of the Soviet Army Air Force

The increased scope of the Great Patriotic War, continuous quantitative and qualitative growth of the Soviet Air Force, and the ever-increasing scale of its operations on the fronts of the war required improvements in the organizational structure of the air force's central administration, the major air formations, and the formations and units. The Communist Party Central Committee perpetually kept all problems associated with strengthening and building the Soviet Air Force within its field of vision. Selection and placement of airmen in the top and senior categories was managed by the Aviation Section of the CC VKP(b) headed by General N. S. Shimanov.

The CC VKP(b) granted a major role to the Air Force Military Council in solving all major problems of the life and combat activities of aviation. Combining the functions of military and political leadership, it bore the entire responsibility for combat training, the political-moral state of the troops, the selection, training, and placement of air force command and staff personnel, flight crews, and technicians, and for logistical support to aviation.

Under the guidance of the Military Council in the first half of 1942 the central air force administration developed and implemented major measures to improve the resources and methods of aviation command and control, and to improve the organizational structure of the central administration, operational major air formations, formations, and units of the air force. The Air Force Military Council displayed constant concern for political indoctrination of airmen and for heightening the level of party-political work. Much work was done to strengthen discipline and elevate the political-moral level of air force personnel. The Military

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Council was perpetually informed of party-political work going on in frontal and army air services, in frontal formations and units, and in long-range bomber aviation, making its impression upon it. Various issues concerning the availability of equipment in the air force were also discussed at meetings of the Military Council. Thus on 31 March 1942 the Military Council examined the progress made in repairing airplanes and engines, on 2 April it examined glider production and use, and on 19 April it reviewed the status of spare parts for airplanes and engines.<sup>4</sup> Military Council members penetrated deeply into the work of the staff and all administrative agencies of the air force, the air force rear, the directorates, and services of the central administration.

In February 1942 General Aleksandr Aleksandrovich Novikov, a participant of the Civil War and a CPSU member since 1920, was appointed to the post of Soviet Army Air Force first deputy commander.<sup>5</sup> He graduated from the Military Academy imeni M. V. Frunze in 1930. A. A. Novikov was transferred to aviation from the headquarters of the XI Rifle Corps, Belorussian Military District. Aircraft construction developed swiftly and aviation equipment production increased significantly during the First Five-Year Plan. The number of air units and formations increased. Aviation needed experienced personnel. Many experienced combined arms commanders, including A. A. Novikov, were transferred to the air force in the early 1930's. Serving as chief of staff of an air brigade, in 1933 A. A. Novikov passed an extramural observer pilot examination, in 1935 he became squadron commander, and in March 1936 he was awarded the rank of colonel. In June 1938 A. A. Novikov was appointed to the post of air force chief of staff of the Leningrad Military District, and in July 1940, following the military conflict with Finland, he became the air force commander of this district, and it was while serving in this capacity that the Great Patriotic War began.

After A. A. Novikov was appointed deputy commander of the Soviet Army Air Force the Hq SHC immediately sent him to the fronts to render assistance in combining the forces of aviation and massing these forces on the main axis of operations of the ground troops.

In the second half of February 1942 A. A. Novikov represented the air force in the writing of the plan for the air force operation on the western axis. At the beginning of March 1942 the Hq SHC sent A. A. Novikov to the Volkhov Front. On 8 March 1942 the Hq SHC published a directive ordering the troop commanders of the Volkhov and Leningrad fronts and the Soviet Army Air Force deputy commander to organize and perform, from 10 to 20 March, massed air strikes against combat formations and defensive fortifications of the enemy troops on the forward edge and deep within the zones of advance of the 4th, 59th, and 2d strike armies of the Volkhov Front and the 54th Army of the Leningrad Front, as well as against enemy lines of communication.

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Organization and performance of the air strikes was assigned to Soviet Army Air Force Deputy Commander A. A. Novikov and to his subordinate Major General of Aviation A. Ye. Golovanov, the strategic aviation commander.<sup>6</sup>

The decision of the Hq SHC to commit combined air forces for massed strikes against enemy troops was spurred on by the need for annihilating the enemy's Lyuban' grouping as soon as possible.<sup>7</sup> By the end of February 1942 the situation evolved in the following way on this axis. Back at the beginning of January the Volkhov Front's 4th and 59th armies went over to the offensive in the direction of Lyuban' and Tosno. Arriving formations of the 2d Strike Army were also committed to the engagement. By the end of January the 2d Strike Army advanced 75 km, cut the Novgorod-Leningrad railroad, and reached the approaches of Lyuban'. Offensive actions of the Volkhov Front's other armies were unsuccessful. The Leningrad Front's 54th Army, which attacked toward Lyuban' out of the Pogost'ya area, advanced slowly. The 2d Strike Army's attempts at widening the breach and seizing Lyuban' were unsuccessful. Powerful air support was required. To complete this mission A. A. Novikov was permitted to commit eight air regiments of the Hq SHC reserve, some of the forces of strategic aviation, and the air forces of the indicated fronts. To the extent necessary, use of the air services of combined arms armies was also permitted. The Leningrad Front possessed 12 air regiments in the frontal and combined arms army air services, to include eight fighter regiments, one ground attack regiment, and three bomber regiments. The air service of the Volkhov Front possessed 23 separate air regiments; of these 13 were combined into two reserve air groups--the 2d and 3d, which interacted correspondingly with the front's 59th and 4th combined arms armies.

A. A. Novikov wrote the plan for the actions of all aviation with the help of the command and staff of the Volkhov Front's air service (air force commander, General I. P. Zhuravlev), General S. I. Rudenko accompanying him, and his operational group consisting of three Air Force Headquarters officers. The plan was written, coordinated upon, and submitted to the frontal troop commanders. Considering the situation and the absence of a divisional level in the frontal air services, a decision was made to create a temporary air group (commander, General S. I. Rudenko, chief of staff, Major M. N. Kozhevnikov) out of eight air regiments intended for operations mainly on the right flank within the 54th Army's sector.

The actions of our aviation rendered significant assistance to troops of the Leningrad and Volkhov fronts. For the first time in the war the actions of aviation were coordinated by the senior air chief with the interests of the troops of not just one but two fronts. This was a new phenomenon in strategic interaction between the Soviet Air Force and the ground troops.

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A decree of the USSR Council of People's Commissars dated 11 April 1942 appointed General A. A. Novikov commander of the Soviet Army Air Force and, concurrently, USSR deputy people's commissar of defense for aviation.<sup>8</sup>

Immediately on assuming the post of Soviet Army Air Force commander, A. A. Novikov devoted a great deal of attention to improving the organizational structure of the air force's central administration, the air major formations, formations, and units of the fronts, and long-range bomber aviation. Staff proposals on altering the organizational structure of air force sections and directorates were examined at meetings of the Air Force Military Council.

Section One was elevated to the status of an Air Force Headquarters directorate in April 1942 in response to a directive of the General Staff. Colonel N. A. Zhuravlev was appointed chief of the directorate, and as of 27 May 1942 Regimental Commissar A. I. Kozlov was appointed military commissar.

This directorate of the Air Force Headquarters consisted of several sections headed by Colonels K. T. Burak, Ye. G. Moiseyev, and V. V. Storozhenko.

Creation of the War Experience Analysis and Generalization Section in the Air Force Headquarters had extremely great significance to the air force. Its mission was to study and generalize the combat experience of the troops, and to write instructions, directives, and information bulletins with the goal of rendering practical assistance to units, formations, academies, and military educational institutions. Its functions also included revealing the weak and strong points of the use of our aviation and enemy aviation and of the application of aviation equipment and weapons, and writing proposals on introducing new tactics and procedures for units, subunits, and individual airplanes. Officers A. A. Vasil'yev (section chief as of the beginning of 1943), A. G. Drozdov, M. D. Tikhonov, N. N. Ostroumov, I. V. Boldyrev, A. S. Kravchenko, I. V. Pimenov, and others worked in the section with extremely great efficiency throughout the entire war. The work of the War Experience Analysis and Generalization Section was extremely useful, and it had a direct influence, heightening the efficiency of our aviation's actions. Discussing the need for generalizing and disseminating the war experience, PRAVDA wrote in 1942: "The accumulated war experience and the skill of warfare are precious treasures belonging to all of our army, to all of our people."<sup>9</sup>

This was the organizational structure of the Soviet Army Air Force Headquarters until 1944. Only the section chiefs, their deputies, and a small proportion of the officers were replaced. In particular, in 1942 Colonel N. P. Dagayev was appointed air force chief of staff of the Kalinin Front, Colonel V. V. Storozhenko was appointed air force chief of staff of the Northwestern Front, and Colonel M. V. Shcherbakov was appointed commander



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of the reserve air group. New officers joined Section One: Colonels P. F. Korotkov and G. V. Vinogradov, Majors V. B. Shemborskiy and A. S. Bolotnikov, Captains F. Ya. Panyushkin, V. I. Izvalov, and G. I. Glazunov, and Senior Lieutenants A. I. Popkov and I. Ye. Savkin; new officers in other sections included Colonel P. V. Ratanov, Lieutenant Colonels M. N. Karpuk and V. M. Bogdan, Captain G. I. Kopylov, and others.

In April 1942 General Sergey Aleksandrovich Khudyakov was appointed chief of staff of the Soviet Army Air Force. While serving as chief of staff of the 8th Cavalry Regiment, in 1931 S. A. Khudyakov was transferred to the command school of the Air Force Academy imeni N. Ye. Zhukovskiy. In November 1932 he passed the flight tests and was awarded the rank of observer pilot, and after graduating from the academy he was appointed chief of a department of the headquarters of the 5th Heavy Bomber Air Brigade. Serving as chief of rear services of the Air Services Directorate, Belorussian Military District, in 1939 he retrained as a pilot without leave from his principal work, and in February 1940 he was appointed air force chief of staff of the Belorussian Military District; this was followed by his appointment as the front's air force commander in February 1942. It was while serving at this post that S. A. Khudyakov was transferred to the Soviet Army Air Force Headquarters. But he was not to work for very long in the headquarters. In July 1942, on request of the Western Front Military Council, he was appointed commander of this front's 1st Air Army.

General G. A. Vorozheykin, who held the post of air force chief of staff, was appointed first deputy commander of the air force in April 1942.

Air force rear services also underwent reorganization. The rear services included the rear organization, airfield construction, and technical supply directorates, the special motor transport and mechanization resource operation, field supply, and combined arms supply sections, and central air supply depots. General L. G. Rudenko was appointed chief of rear services.

The party organization of the Soviet Army Air Force Headquarters was strengthened. Major G. M. Shnyrev was elected secretary at-large of the party bureau of the Air Force Headquarters party organization.

Organizational changes in the central air force administration made on decision of the Supreme High Command elevated the level of leadership in the air force.

Concurrently long-range bomber and frontal aviation underwent major organizational changes. The combat experience of aviation in the summer-fall campaign of 1941 and especially in the battle of Moscow demonstrated the need for creating large air reserves and major operational air formations in frontal aviation which would permit massed use of aviation on the most important axes of operations of the ground troops, and their extensive maneuvering not only within the front but also between fronts.

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"One of the decisive conditions for a successful air war," PRAVDA stated in 1942, "is competent maneuvering of air forces. The ability to quickly concentrate a strong fist for a powerful surprise attack, to direct it at the most vulnerable point or, on the other hand, to regroup one's forces with lightning speed to repel an enemy strike, and on another occasion to disperse them at the blink of an eye: That is what warfare requires today."<sup>10</sup>

A 5 March 1942 decree of the State Defense Committee reorganized the units and formations of long-range bomber aviation into strategic aviation (ADD) subordinated directly to the Hq SHC. Major General of Aviation A. Ye. Golovanov was appointed ADD commander, Divisional Commissar G. G. Gur'yanov was appointed Military Council member, and Lieutenant General of Aviation M. I. Shevelev was appointed chief of staff.

Aleksandr Yevgen'yevich Golovanov's fate in the Great Patriotic War was quite noteworthy. He began his fighting career in 1941 as commander of the 212th Special Purpose Long-Range Bomber Air Regiment intended for action against objectives deep in the enemy rear, in complex meteorological conditions and at night.

The 212th Air Regiment began the war with combat assignments directly from the Supreme High Command Headquarters, against the enemy's deep objectives. The regiment proved itself capable of successfully completing complex missions. It was for this reason that in August 1941 A. Ye. Golovanov was appointed to the post of commander of the separate 81st Special Purpose Long-Range Bomber Air Division subordinated directly to the Hq SHC, and in March 1942 he was appointed ADD commander.

Generals and officers who had distinguished themselves the most in organizing the combat missions of air formations served in the command and staff of strategic aviation during the war. These included Deputy Commander General N. S. Skripko, Section Chief N. G. Khmelevskiy, Section Chief I. M. Talanin, navigators I. I. Petukhov, V. I. Sokolov, and S. F. Ushakov, Senior Engineer I. V. Markov, and others.

The Main Directorate of the Civil Air Fleet (GVF) (chief, General F. A. Astakhov) was subordinated to the commander of the Soviet Army Air Force by a 26 April 1942 decree of the GKO [State Defense Committee]. The GVF was given the mission of transporting cargo to the front, evacuating casualties from the front, and maintaining air communication with partisan detachments in the enemy rear.

The rights of the Soviet Army Air Force Command and of the air force commanders of the fronts and combined arms armies steadily expanded. On order of the Hq SHC, beginning in January 1942 the Soviet Army Air Force Command was permitted to use national air defense aviation located near the front to cover the front's forward units as necessary. Air force commanders of the fronts and armies were given the posts of deputy

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frontal and army commanders for aviation, as well as members of the frontal and army military councils, while still retaining the rights and responsibilities of frontal and army air force commanders. Concurrently the army air force commanders were given responsibility for timely redeployment of fighters at airfields abandoned by the enemy and making them ready to serve as bases. It was for this purpose that the air service of the combined arms army was instructed to maintain two or three reserve airfield maintenance battalions (BAO) reinforced with sappers from the ground troops.<sup>11</sup> Concurrently the General Staff and the Soviet Army Air Force Command sought ways to improve the organizational structure of frontal aviation. Its dispersal among combined arms armies prevented unification of all of the front's air forces and their massed use on the main axis of operations of the ground troops. Combined arms army commanders felt an acute need for the help of aviation on the battlefield, and they could not release any forces at all from subordinate air units to perform missions in behalf of a neighbor or the front as a whole. This led to dispersal of aviation and constriction of its combat capabilities, which had an unfavorable effect on the effectiveness of its strikes. In March 1942 the Soviet Army Air Force Headquarters wrote and the Air Force Military Council examined proposals for improving the organizational structure of frontal aviation. The air force commander submitted the proposals to the State Defense Committee. The proposals suggested that our aviation lacked the organizational unity and the unity of command required for successful battle with the enemy. With aviation dispersed as it was, it could strike anywhere but all of the strikes were weak. The suggestion was to combine aviation into large formations.<sup>12</sup> The State Defense Committee approved the idea of creating large air formations.

In March 1942 a decision was made to form 10 air strike groups (UAG) with a mixed composition, each containing six to eight air regiments; the mission of these groups was to reinforce the air services of fronts that had begun the general offensive in the first half of 1942. The air strike groups were formed in accordance with directives of the General Staff, on the basis of which the Air Force Headquarters prepared the appropriate orders and instructions.

Orders of the Soviet Army Air Force commander published 16 and 17 March 1942 created the first four air strike groups, the other six being created later. Their composition varied--from three to eight air regiments. As an example the first group was formed with a composition of two bomber air regiments flying Pe-2 airplanes, two ground attack air regiments armed with Il-2 airplanes, two fighter air regiments flying Yak-1 and LaGG-3 airplanes, and two heavy bomber air regiments flying DB-3f airplanes.<sup>13</sup> All 10 air strike groups were created by May 1942 and assigned to the following fronts: Volkhov--1st and 6th, Northwestern--2d, Southern--3d, Western--4th and 5th, Bryansk--7th, Southwestern--8th, Crimean--15th, and North Caucasian Front--16th. They were committed to battle as the air regiments were made ready. The idea of creating air strike groups was basically correct. But the altered situation, which

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required unification of all of the front's air forces, required a change in viewpoints on organization of reserves as well. Air strike groups existed until the beginning of June 1942. A new, more sensible organizational structure of air reserves was sought.

By spring 1942 the material conditions for a new structure of frontal aviation were created. The number of airplanes in the operating army increased constantly. While in December 1941 the operating army possessed 2,495 airplanes, in May 1942 the figure had climbed to 3,164. Aviation industry increased the growth rate of aircraft production. In December 1941 the industry provided 693 airplanes, it provided 976 in January 1942, 822 in February, 1,532 in March, and 1,432 airplanes in April 1942.

By this time our aviation industry was producing airplanes of predominantly new design--LaGG-3, YaK-1, YaK-7b. Production of new Tu-2 bombers and YaK-9 fighters was started. New Pe-2, YaK-1, YaK-7b, and Il-2 airplanes made up more than 50 percent of the strength of line units. In 1941 USSR aviation industry produced 15,735 airplanes, to include 12,377 warplanes. It produced 3,301 warplanes in the first quarter of 1942, 4,967 in the second, 6,219 in the third, and 7,124 in the fourth, for a total of 21,681 airplanes produced in 1942.<sup>14-15</sup>

Considering all of this as well as the combat experience of frontal aviation, in April 1942 the Soviet Army Air Force Military Council examined the problem of a new organizational structure for frontal aviation, and it decided to create air armies to replace the previously existing frontal air services and army air services. These air armies were major operational air formations permitting the massing of frontal aviation on the main axes of operations of the troops, and they insured centralized control and effective air strikes. These proposals were submitted to the air force command and to the Hq SHC, which approved them and ordered the General Staff and the air force command to implement them.

The first air army was created by order of the USSR NKO on 5 May 1942. The order read: "For the purposes of heightening the striking power of aviation and permitting successful application of massed air strikes, combine the air forces of the Western Front into a single air army, naming it the 1st Air Army."<sup>16</sup>

Initially the 1st Air Army's composition included: two fighter air divisions, each containing four fighter air regiments; two mixed air divisions, each containing two fighter, two ground attack, and one bomber air regiments; a training air regiment, a long-range air reconnaissance squadron, a liaison squadron, and a night air regiment armed with U-2 airplanes. Each combined arms army of the front was left with one mixed air regiment subordinated in operational respects to the army commander and, in relation to special and aviation support, to the air army commander.<sup>17</sup> All other air services of the operating fronts were reorganized into air armies during 1942. The 1st, 2d, 3d, 4th, and 8th air armies were formed

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In May, the 5th and 6th were formed in June, the 14th and 15th were formed in July, the 16th was formed in August, and the 7th, 13th, and 17th air armies were formed in November. By November 1942 all combat aviation had been taken out of the combined arms armies. They were left with one mixed air regiment each for air reconnaissance and liaison missions. It would be difficult to overstate the extreme importance of this measure to the Soviet Air Force. The air armies turned out to be the most successful organizational structure of frontal aviation.

While introducing the new structure for frontal aviation, the Supreme High Command and the Air Force Military Council continued to seek the most convenient organization for powerful air reserves. A USSR NKO decree dated 1 July 1942 initiated the formation of two fighter air armies (commanders, Generals Ye. M. Beletskiy and V. G. Ryazanov) and one bomber air army (commander, General V. A. Sudets). The plan was for each of these armies to contain three to five air divisions with a strength of 200-300 airplanes each.<sup>18</sup> But in reality only the 1st Fighter Air Army, based in the vicinity of Yelets, formed and took part in battles. It was formed hastily and it was not fully prepared for combat activities, but in view of the difficult conditions of July 1942 it was committed to the engagement at Voronezh, where it fought savage battles on the ground and in the air in interaction with the 5th Tank Army, covering the troops against enemy air strikes and striking ground objectives in individual groups. The following report by General Ye. M. Beletskiy, commander of the Soviet Army Air Force, sent on 12 July 1942 attests to the intensity of its combat activities: "In 7 days the army's fighters fought in 104 air battles and knocked down 91 enemy airplanes. Out of 231 airplanes received by the army, 93 failed to return from their combat assignments and 23 made forced landings on friendly territory following battle. Forty-nine are down for repairs, and as of the end of 12 July 1942, 66 airplanes are serviceable."<sup>19</sup> Combat use of the 1st Fighter Air Army revealed serious shortcomings in its organizational structure. It was found to be cumbersome and insufficiently maneuverable, and because the air army was within the composition of the front it was extremely difficult to manage its formations.

Only part of the forces of the 1st Bomber Air Army were committed to battle with the mission of interdicting rail shipments and halting enemy reserves on the western axis.<sup>20</sup> At the beginning of August 1942 two bomber air divisions were removed from its composition and subordinated in operational respects to the commander of the 1st Air Army for actions against enemy troops in the vicinity of Yartsevo and Vyaz'ma, and one bomber division was transferred to strategic aviation.<sup>21</sup>

During its formation the 2d Fighter Air Army was divided into two groups of two air divisions each, which were transferred to the 1st and 3d air armies as reinforcements on 27 July 1942.

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The combat experience demonstrated the unfeasibility of having a frontal air army and air force air army within a single front. When two armies were present without a single senior air chief, many difficulties arose in organizing interaction between them and the front's troops. The Soviet Army Air Force commander concluded that the SHC air reserves must be of less powerful composition than the frontal air armies, but in terms of organizational structure they should be more mobile and maneuverable, and on joining a front they should freely enter into the organization of the frontal air army and, after completing their missions they should be easily detached.

The air corps was found to be the required form of SHC air reserve organization. The Hq SHC decided to create SHC reserve air corps and separate air divisions out of formed frontal air armies, the reserve air groups, and the air strike groups.

Formation of SHC reserve air corps was started under the guidance of the Air Force Military Council in response to a USSR NKO order dated 26 August 1942. The first four fighter air corps were formed by the end of 1942: The I Fighter Air Corps under the command of General Ye. M. Beletskiy, II under the command of General A. S. Blagoveshchenskiy, III under the command of General Ye. Ya. Savitskiy, and the IV Fighter Air Corps under the command of General I. D. Podgornyy.

The air corps participated in two-sided tactical air exercises between 5 and 15 October 1942 under the command of the Soviet Army Air Force commander with the goal of demonstrating the tactics employed by large groups of airplanes above the battlefield and developing the fundamental principles of their use in operations.<sup>22</sup>

In all by the end of 1942, 13 air corps were formed, to include four fighter, three ground attack, three bomber, and three mixed. Nine SHC reserve air corps were sent to the front during that year. The air corps were formed and manned under the direct control of the CC VKP(b). Workers of the Central Committee's aviation section, the General Staff, and the air force command systematically reported to Communist Party executives, to members of the State Defense Committee, and to the Hq SHC concerning formation and training of reserve air corps, and they always received assistance quickly from the latter. The air corps consisted of two and more divisions, and they had a strength of from 120 to 270 airplanes. At first they were created as both homogeneous (fighter, ground attack, or bomber) and mixed formations, but later the mixed air corps failed to justify their existence, and they were replaced by homogeneous formations. Concurrently the mixed air divisions and air regiments were reorganized into homogeneous formations. SHC reserve air corps were armed with new types of airplanes. They were used to reinforce frontal aviation and to create powerful air groupings on the most important strategic axes.

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Responding to instructions from the Hq SHC, the Soviet Army Air Force commander concentrated SHC reserve air corps on the indicated axes within a short time in accordance with the intent of strategic defense or offense, and after the operation was completed the corps were transferred to other axes.

Being a powerful reserve of the Supreme High Command, air corps permitted extensive maneuvering of aviation and dramatic alteration of the ratio of forces in the air in our favor.

To the Soviet Air Force, 1942 became a year of organization reinforcement, qualitative and quantitative growth of the airplane fleet, improvement of the personnel's combat skills, and maturation of commanders and staffs at all levels of troop command and control.

Coordination of Air Force Activities by Air Liaison Officers of the SHC in the 1942 Summer-Fall Operations

The Headquarters of the Supreme High Command provided strategic direction to the air force. It determined and posed missions to the air force in accordance with the objectives and intent of the strategic operations of groups of fronts and air operations, it distributed its efforts among different axes, it organized interaction with other branches of the armed forces, and it directed the activities of aviation through the General Staff, the air force command, and its own liaison officers.

The functions of Hq SHC air liaison officers at the front were not documented. In each individual case they were indicated by Headquarters directives and orders. Hq SHC liaison officers located themselves right in the areas of combat activities, and guiding themselves by decisions of the Supreme High Command they assumed direct responsibility for organizing and achieving interaction between the air force and the ground troops. They coordinated the activities of the fronts and temporarily assigned aviation in relation to targets, place, and time, they concentrated the principal efforts on the main axis, and they determined the flying sectors of frontal aviation and strategic aviation.

In the operations of 1942 the functions of Hq SHC air liaison officers were broadened. By the end of the first period of the war they were coordinating the efforts of aviation in behalf of two, three, and more fronts. The Hq SHC air liaison officer was assisted by his own operational group from Air Force Headquarters consisting of three to five officers. This group maintained the situation maps, wrote draft instructions to air army commanders, elaborated upon the missions of strategic aviation, coordinating them with the ADD commander's operational group, maintained control over the performance of air missions, and wrote the drafts of daily reports to the supreme high commander on the results of actions performed by air force formations assisting in operations.

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Much work was done in spring 1942 by the central administration of the Soviet Army Air Force to direct the combat activities of the air force. Members of the Air Force Military Council visited the fronts with small groups of staff and directorate officers to render assistance to the command in forming air armies, air corps, and separate air divisions of the SHC reserve. The Air Force Headquarters helped to write the plans for regrouping air forces on the southern axis. It also provided help locally in organizing interaction with the ground troops and maintained control over airfield construction and accumulation and delivery of bombs, shells, and fuel to the fronts.

In March-June 1942 the Soviet Army Air Force Command published a number of directives addressed to frontal aviation and air army commanders.

In March 1942 the shortcomings in interaction of aviation with frontal and army troops were pointed out to all frontal air force commanders. These directives were prepared by Section One of the Air Force Headquarters. They pointed out the need for concentrating the efforts of aviation within strictly delimited sectors and on only the most important missions. It was recommended that the combat activities of aviation be planned as a maximum effort only when ground troops were engaged in active operations. The activities of aviation interacting with the troops were to be assessed on the basis of the successes of the ground troops and the effectiveness of the air force's activities on the ground and in the air, as confirmed by photographs or control flights.<sup>23</sup> These directives played a positive role in improving interaction of aviation with the troops and in bettering the results of this interaction.

On 27 March 1942 new proposals for intensified use of radio communication to control aviation on land and in the air were submitted on order of the Soviet Army Air Force commander.

In May 1942 the Air Force Headquarters published a directive requiring correction of shortcomings in the organization and exercise of control over fighter aviation in the course of air battles. The directive was written on the basis of an analysis of serious shortcomings in the Southwestern Front's air service. It emphasized that control of the fighters meant not only providing the necessary manpower and equipment in time and monitoring the takeoffs, but mainly commitment of additional forces to the battle at the proper time, thus having an influence on the course and outcome of the battle. The directive also pointed out the need for organizing surveillance over the air situation above the battlefield from forward control posts, and for guiding the fighters from the ground.<sup>24</sup>

At the beginning of June 1942 the Air Force Headquarters prepared a directive concerning the appearance of the new German Me-109f airplane at the front and sent it under the signature of the Soviet Army Air Force commander to the air army commanders of the frontal and combined arms



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army air services. It gave the tactical flight characteristics of the Me-109f.<sup>25</sup>

It was believed that the Yak-1 fighter, which was faster at an altitude of 3,000 meters, had the same rate of climb, and maneuvered horizontally better, was the most suited for battle against the Me-109f. Thus considering these qualities pilots flying Yak-1's could successfully fight the Me-109f. Concrete recommendations tested out by the Air Force Scientific Research Institute on the means of successful air battle with the new type of enemy fighter were given--that is, the directive had great significance.

A directive to the commanders of air armies and the frontal and combined arms army air services published in July 1942 by the commander of the Soviet Army Air Force stated that the principle of concentration of forces was still not being employed as the foundation for the use of fighter aviation. The artfulness of a commander using and controlling the actions of fighters lay precisely in his ability to achieve numerical superiority at the needed time and in the needed place even with small forces, since the fullest success could be achieved through a combination of the skill of the warriors and the commander's ability to command.

A USSR NKO order prepared in June 1942 by the Soviet Army Air Force Headquarters and concerning the use of Il-2 airplanes as day bombers had great significance to the air force.

The order stated that we possessed Il-2 ground attack airplanes, which were the most effective short-range day bombers against enemy tanks and personnel. No other army possessed such short-range day bombers.... We could and should increase the frequency of our day bombing strikes against the enemy significantly, but to do so we would have to immediately do away with the harmful practice of understating Il-2 airplanes as day bombers and see that not a single Il-2 would take off for battle without a full bomb load.

A plan for the activities of the Soviet Armed Forces in the summer and fall of 1942 was examined and approved at the end of March 1942 at a joint meeting of the State Defense Committee and the Hq SHC. Considering the enemy's superiority of forces and absence of ready reserves, the Headquarters of the Supreme High Command decided to foil enemy strikes through active defensive operations at prepared lines, inflict losses on the enemy, and create favorable conditions for a subsequent transition to the offensive by the Soviet Army. Concurrently with the transition to strategic defense, offensive operations were to be conducted on the central axis, at Leningrad, in the vicinity of Demyansk, on the Khar'kov axis, and in the Crimea. During this time the air force continued its air reconnaissance, it covered the troops against air strikes, it improved its combat readiness, and it waged a stubborn fight in the air.

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At the beginning of May 1942 both sides initiated a struggle for the strategic initiative on the Soviet-German front. The battle went on for almost 2 months. Enemy aviation intensified its strikes against troops and objectives in the rear. In May 1942, 48,180 enemy sorties are known to have been flown on the Soviet-German front, while in June the figure climbed to 83,949--that is, 12 times more than in December 1941.<sup>26-28</sup>

Between 30 May and 9 June 1942 the air armies made a number of effective strikes against enemy airfields in a broad sector from Pskov to the Crimea with the mission of reducing the activity of the Luftwaffe.<sup>29</sup> In general, however, events were proceeding unfavorably for the Soviet Army. Troops of the Crimean Front suffered defeat in May. This front was formed at the beginning of 1942 with the mission of liberating the Crimea, and in May it was defending the narrowest part of the Kerch Peninsula, at the so-called Ak-Monaisk positions. On 12 May 1942 the Hq SHC issued an order temporarily subordinating the Crimean Front's aviation and strategic aviation operating on this axis to ADD Deputy Commander General N. S. Skripko.<sup>30</sup>

The Crimean Front's attempts at conducting the offensive were unsuccessful. On 8 May 1942 the enemy went over to the offensive with the intention of pushing Soviet troops off the Kerch Peninsula and then with all of his forces attacking Sevastopol', which was defending itself heroically.

On 15 May the enemy occupied Kerch'. The loss of the Kerch Peninsula dramatically worsened the position of Sevastopol's defenders. The heroic defense of the hero-city went on for 250 days and nights. But the forces were unmatched. On 4 July 1942 Soviet troops abandoned Sevastopol' with the permission of the Hq SHC.

The Southwestern Front's Khar'kov offensive operation began on 12 May 1942. It developed successfully for the first 3 days. The Soviet Command placed its main hope on anticipatory strikes. In 3 days the Soviet troops advanced 25 km in the vicinity of Volchansk and 50 km southeast of Khar'kov with active air support. Favorable conditions for exploiting the success at the Barvenkovo salient were created on 15 May.

However, on 17 May a German strike grouping concentrated in the vicinity of Kramatorsk made a hard northward strike against the flank of the advancing Soviet troop grouping and advanced 10 km in the direction of Barvenkovo. The situation in the Southwestern Front worsened dramatically. There were no strong reserves to parry the enemy's strike. In the second half of 19 May the commander in chief of troops on the southwestern axis ordered his troops to go over to the defensive along the entire Barvenkovo salient, repel the enemy strike, and recover the initial position. But this decision turned out to be late. Troops of the Southwestern Front and of the Southern Front's right wing suffered large losses. The offensive operation of the Soviet troops in the vicinity of Khar'kov ended in failure.

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On 26 June 1942 General A. M. Vasilevskiy was appointed chief of General Staff. He had arrived at the Southwestern Front together with Soviet Army Air Force Deputy Commander General G. A. Vorozheykin to provide practical assistance to the frontal command.

Savage battles were being waged at Leningrad and in the vicinity of Demyansk in May-June, concurrently with the engagement on the Khar'kov axis and in the Crimea. The offensive initiated on 3 May by troops of the Northwestern Front with the mission of destroying the enemy's Demyansk grouping ended without results. Nor were troops of the Leningrad and Volkhov fronts able to penetrate the Leningrad blockade in a joint operation. The situation on the Soviet-German front changed in favor of the enemy as a result of the failure of operations conducted by Soviet troops in May-June 1942.

In the second half of June 1942 the Fascist German Command concentrated and deployed strike groupings in areas northeast of Kursk and northeast of Khar'kov.

On 28 June enemy troops went over to the offensive from the region east of Kursk, penetrated defenses at the boundary between the 13th and 40th armies of the Bryansk Front, and in 2 days they penetrated 40 km. The Hq SHC reinforced the Bryansk Front with three tank corps. A tank corps from the frontal reserve was brought into the breakthrough sector. Army Commissar 2d Rank P. S. Stepanov was sent to the Bryansk Front from the air force as an Hq SHC liaison officer together with an operational group from the Air Force Headquarters to organize massed strikes against the penetrating enemy grouping. He was permitted to use all frontal aviation and 100 bombers belonging to strategic aviation for this purpose. The Hq SHC indicated the principal missions of aviation to P. S. Stepanov in a directive dated 29 June: "The main mission of frontal aviation is to achieve air supremacy, to create our overwhelming superiority and to force German aviation, especially bombers to leave the battlefield.

"The second mission is to utilize all of our ground attack and bomber aviation to destroy the enemy's tank and motorized columns, annihilate his manpower, and thus support our troops.

"The third mission is to use our fighter aviation not only to cover our troops but also to bomb enemy manpower to the extent possible."<sup>31</sup>

In this same directive the supreme high commander demanded that he and A. A. Novikov receive reports on the actions of our aviation and enemy aviation twice a day. Jointly with the frontal air service command P. S. Stepanov took all of the necessary steps to complete these missions. Our pilots fought courageously, displaying unprecedented heroism.

Strikes against advancing enemy troops were made by groups of ground attack airplanes and bombers. The enemy suffered losses in personnel

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and equipment, but in view of his great superiority of forces on the ground and in the air he continued to advance. Moreover the three tank corps given to the front by the Hq SHC were committed to battle by the frontal command in part, and moreover, not so much to make a simultaneous counterattack on the penetrating enemy as to close the breach. In view of this even though it did operate at high intensity, frontal aviation could not make major massed strikes against enemy troops, as had been demanded in the Headquarters directive. Maintaining the offensive, by the end of 2 July the enemy had advanced 80 km. On the morning of 30 June fascist German troops of the 6th Army struck formations on the right wing of the Southwestern Front out of Volchansk. As a result a breach formed at the boundary between the Bryansk and Southwestern fronts.<sup>32</sup> By the end of 15 July the Germans managed to penetrate defenses between the Don and the Northern Don in a sector up to 170 km wide, and reached the great bend of the Don. On the night of 12 July the enemy penetrated to the edges of Stalingrad Oblast. The German strike groupings rushed toward the Caucasus and Stalingrad. There was also a threat of an air attack on Stalingrad.

The Hq SHC ordered P. S. Stepanov to leave for Stalingrad immediately. His mission was to reveal the local possibilities for basing and providing logistical support to arriving air units and formations, and to determine our capabilities for withstanding an air attack by the enemy at Stalingrad.

P. S. Stepanov's operational group included the following officers from Soviet Army Air Force Headquarters: M. N. Kozhevnikov, I. I. Osipov, A. N. Mal'tsev, M. N. Karpuk, I. P. Selivanov, S. A. Tyurev, and P. G. Grigor'yev.<sup>33</sup>

Stalingrad was leading a productive life, all too peaceful a life it seemed. The plants, enterprises, and institutions were operating. All of the city's movie houses were open, children played in the squares and on the boulevards, and the loudspeakers blared music and at certain times summaries from the front. The city was brim full of citizens from various regions of the country's south. All had found housing and settled in. The public food supply was good. None of Stalingrad's residents believed at that time that a terrible threat was already hanging over the city, that the hardest battles of the war against fascist German troops were to begin at Stalingrad within a short time. It was clear to the Soviet Command, however, that the enemy was breaking through to the Volga, to the Stalingrad area. The Communist Party and Soviet Government took emergency defensive steps. On 14 July Stalingrad Oblast was placed in a war posture by a 14 July ukase of the Presidium of the USSR Supreme Soviet. Construction of three defense perimeters about Stalingrad, which had been started in fall 1941, was resumed at the end of June and in the beginning of July in the sector between the Volga and the Don. A decision was made to build a fourth (city) perimeter on 15 July. On 11 July the Stalingrad Oblast Party Committee and the Stalingrad Oblast

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Executive Committee adopted a decree creating a people's militia. On 15 July the oblast party committee ordered all rayon committees to immediately create partisan detachments and make them combat ready. Hospitals and children's institutions were evacuated from the city.

"Everything for the defense of Stalingrad!" This was the motto under which party, state, and military agencies implemented their measures in the July and August days of 1942.

The Stalingrad Front was created out of the administration of the South-western Front in compliance with a 12 July 1942 decision of the Supreme High Command Headquarters. The 62d, 63d, and 64th reserve armies were moved quickly to the great bend of the Don. In addition to these armies, the 21st Combined Arms Army and the 8th Air Army of the former South-western Front were placed within the composition of the Stalingrad Front. In the second half of July the 28th, 38th, and 57th armies, which had retreated into the Stalingrad Front's sector, were also attached to it. The Volga Naval Flotilla was operationally subordinated to the front. The created front had the mission of halting the enemy's advance, preventing him from reaching the Volga, and firmly defending a line passing along the Don River from Pavlovsk to Kletskaya and then to Surovikino, Suvorovskiy, and Verkhnekurmoyarskaya.<sup>34</sup>

The enemy advanced with the forces of 14 divisions in the German 6th Army (about 270,000 men, 3,000 guns and mortars, and about 500 tanks). They were supported by aviation of the 4th Air Fleet, which had a strength of up to 1,200 warplanes. On 30 July the German Command also sent the 4th Tank Army, which began its advance on the Caucasus back on 12 July, in the direction of Stalingrad. The fascist German troops surpassed Soviet troops by 1.7 times in personnel, by 1.3 times in artillery and tanks, and by more than 2 times in airplanes.<sup>35</sup> The complexity of the situation faced by the Soviet troops lay in the fact that to create a new defensive front, formations arriving from deep within the rear had to immediately occupy positions in areas devoid of prepared lines of defense. Enemy air activity was high. The forward detachments of the 62d and 64th combined arms armies were the first to encounter the advancing enemy. They began to retreat in battle to the main zone of defense.

On arriving in Stalingrad P. S. Stepanov's group surveyed the airfields by air and established communication with the command of the Stalingrad Air Defense Corps and the commander of the 102d Fighter Air Division of the National Air Defense Forces, which was covering Stalingrad against air strikes. After studying and assessing the situation and all contingencies, P. S. Stepanov sent a report containing his conclusions and suggestions to the supreme high commander and the commander of the Soviet Army Air Force. The report stated that the city's air cover was weak. The 102d Fighter Division of the National Air Defense Forces possessed 80 airplanes, mostly of obsolete types (I-16, I-15bis, I-153), and an insignificant number of Yak-1 fighters. The far approaches to the city

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were not covered by fighters. At least one good fighter regiment armed with new types of airplanes was needed initially. A thorough report was also given on the state of the airfield net and its readiness to receive air units of the air force.

These conclusions and suggestions were not left unheeded. In a few days a fighter air regiment subordinated at that time directly to the Soviet Army Air Force commander and manned by the best pilots flying Yak-1 airplanes arrived at Stalingrad from Moscow. The regiment was given the mission of defending Stalingrad from the air at the far approaches. P. S. Stepanov's operational group remained in Stalingrad to manage the combat activities of fighter aviation in the area and to make preparations to receive new air formations and units scheduled to arrive.

With the participation of one of the directorates of the Soviet Army Air Force Headquarters the General Staff developed measures to reinforce the troops and aviation of the Stalingrad Front. The Hq SHC brought in 10 air regiments to reinforce the 8th Air Army; 75 percent of the airplanes in these regiments were new--YaK-1, Yak-7b, Il-2, and Pe-2.<sup>36</sup> ADD air divisions were brought in to make strikes against advancing enemy troops.

In July 1942 Major General of Aviation Fedor Yakovlevich Falaleyev was appointed chief of staff of the Soviet Army Air Force. He began his service in the air force in 1932 as an air brigade inspector. Understanding that if he was to perform the diverse functions of an air chief he had to be an expert in his affairs, and a good air specialist, he enrolled in the Kacha Military Flight School, from which he graduated successfully in December 1933, after which he soon graduated from the operations school of the Air Force Academy imeni N. Ye. Zhukovskiy. His arrival at Air Force Headquarters resulted in many innovations in the work of the staff. He focused his main attention on deeply analyzing the combat activities of our aviation and on the efficiency and coordination exhibited by all air force directorates and services. In July 1942 under Falaleyev's guidance the air force staff published a directive addressed to the commanders of the air armies and frontal aviation. The directive pointed out that the use of frontal aviation in the offensive operation must be based on the most decisive concentration of aviation in the direction of the main thrust of the troops, and that it must be used to perform a limited number of combat missions. Operations were to be conducted on secondary axes and in support of secondary troop missions only to the extent permitted by the availability of unemployed air forces and resources.

The directive noted further that such support would be possible only through centralized control of all aviation, which should not be taken to an extreme, becoming an end in itself. The tendency some senior commanders exhibited for taking charge of the operations of all units even down to individual flights and airplanes, to fully exclude initiative on the part of junior commanders could in no way be justified. It was

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recommended to air army commanders that the combat activities of aviation be supported by extensive air reconnaissance and observation over the battlefield; it was also recommended that when planning combat activities, the commander should designate an air reserve which would be committed to battle at the decisive moment. The great significance of operational superiority in the air to the success of an operation was indicated, and recommendations on how to achieve and maintain it were given.<sup>37</sup>

The work of the Air Force Headquarters underwent improvement. Samples of combat reports and operational summaries were written on the basis of combat experience on order of F. Ya. Falaleyev under the guidance of General N. A. Zhuravlev, and in July 1942 they were sent to air army and frontal air service staffs.<sup>38</sup>

In order to correct shortcomings in the work of air service staffs, in July 1942 the Air Force Headquarters recommended that air army and frontal aviation commanders reinforce the aviation staff, prohibited transfer of staff workers without the permission of higher authorities, and initiated short courses at the Air Force Academy for inadequately trained staff officers. It was pointed out that the principal mission of the staffs was to monitor execution of the commander's orders and instructions. The chiefs of staff were ordered to see that reports were submitted precisely on schedule.

Close ties were established between the Air Force Headquarters on one hand and the staffs of ADD, the National Air Defense Forces, and the Naval Air Service on the other. On order of the General Staff, beginning with July 1942 reports concerning the activities of strategic aviation began to be submitted to both the supreme high commander and the air force commander.

Daily briefs on the results of the activities of the Soviet Air Force were prepared for the supreme high commander by the main directorate of the Air Force Headquarters. They usually indicated the principal missions of the air force in the previous day, the focus of its principal efforts, the fronts with which it had interacted, the number of sorties flown during the day, the number of air battles, and the number of enemy airplanes knocked down; the distribution of air battles among the principal axes of operations of the air force and the ground troops; our losses in the air and at airfields, and the reasons for them. The actions of our air force and enemy aviation on the axes of the main strikes by ground troops, and their effectiveness were reported in terse form. Changes in the enemy's air groupings and appearance of new types of airplanes and weapons were indicated. These briefs were usually prepared by two air force staff officers singled out for this job; during the day they studied and accumulated reports from the troops and interacting staffs, and they kept special records on the results of the actions and the losses. General N. A. Zhuravlev, who had the ability to say a great deal in little space, usually wrote the final version of

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these briefs. Officers V. M. Pikulin, F. Ya. Panyushkin, P. F. Korotkov successfully prepared the drafts of the operational summaries and the combat reports of the Air Force Headquarters during the war. Officers G. V. Vinogradov and A. S. Bolotnikov handled their work in an outstanding manner.

The Soviet Army Air Force command and staff welded its main attention to Stalingrad in July-August 1942. The defensive engagement at the far approaches to Stalingrad ended on 10 August.

The plan of Hitler's command--breaking through to Stalingrad with one swift strike on the move--was foiled by the stubborn resistance of the troops and the actions of aviation. In 3 weeks of the offensive enemy troops were able to advance only 60-80 km.

The 8th Air Army and strategic aviation provided great assistance to the ground troops. Possessing 150-200 serviceable warplanes, each day the 8th Air Army flew 400-500 sorties. Pilots of the 434th Fighter Air Regiment, which was under the command of Major I. I. Kleshchev, fought in 144 air battles and knocked down 36 enemy airplanes in 18 days.

The 150th Bomber Air Regiment armed with Pe-2 dive bombers also distinguished itself. This regiment was headed by Lieutenant Colonel I. S. Polbin, a master of sniper attacks. In just 4 days the regiment's pilots annihilated 40 enemy tanks and 50 motor vehicles.<sup>39</sup>

The heroic struggle of the Soviet troops and Soviet aviation at the far approaches to the city blocked the enemy's way and earned time for the command to organize defenses at the near approaches to Stalingrad and within the city itself. The great length of the Stalingrad Front (up to 800 km) forced the Supreme High Command to subdivide it into two fronts. On 5 August the Stalingrad and Southeastern fronts were formed within new boundaries. The 8th Air Army was placed within the composition of the Southeastern Front, and the 16th Air Army (commander, General P. S. Stepanov and, as of 28 September, General S. I. Rudenko) was formed for the Stalingrad Front.

On 12 August G. M. Malenkov, a member of the State Defense Committee and secretary of the Communist Party Central Committee, arrived in Stalingrad together with Chief of General Staff General A. M. Vasilevskiy serving as Hq SHC liaison officer and, to coordinate the actions of frontal aviation and whatever strategic aviation called in, Hq SHC Air Liaison Officer, Air Force Commander General A. A. Novikov.<sup>40</sup>

The Headquarters of the Supreme High Command reinforced the Stalingrad axis with aviation. Between 20 July and 17 August 23 air regiments, or a total of about 450 airplanes, were transferred to the 8th Air Army.<sup>41</sup>



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Five strategic aviation air divisions were redeployed closer to Stalingrad from Moscow by 20 August. Strategic Aviation Commander General A. Ye. Golovanov was in charge of the combat activities of these divisions, and after his departure for Moscow he was replaced by his deputy, General N. S. Skripko, who together with an operational group of staff officers ironed out the problems of interaction locally, gave the divisions missions coordinated upon with the Soviet Army Air Force commander, and participated directly in the writing of joint battle plans of aviation and the troops.

Concurrently, from 19 August to 14 September 1942, on decision of the Hq SHC part of the forces of strategic aviation struck the capitals of fascist Germany and its satellites--Hungary and Romania. Raids were made on Berlin on 27 and 30 August and 10 September, and 212 sorties were flown. Two raids were made on Budapest on 5 and 10 September with 122 sorties flown; one raid was made on Bucharest on 14 September, in which 46 sorties were flown. Moreover three raids were made on Danzig and on war industry objectives in Warsaw, Koenigsberg, Stettin, Tilsit, Fursetenwalde, Treptow, Ploesti, and (Galats).<sup>42-43</sup>

On 17 August fascist German troops began crossing the Don in the vicinity of Vertyach'iy and Peskovatka. This became immediately known to Generals A. M. Vasilevskiy and A. A. Novikov on their arrival at the front. A decision was made to transfer the efforts of the 8th Air Army to annihilating the enemy's crossings. Soviet Army Air Force Commander A. A. Novikov demanded that all forces of aviation--ground attack, fighter, and bomber--direct their efforts at annihilating the enemy and preventing him from crossing the Don. Groups of 10-30 Pe-2 bombers and Il-2 ground attack warplanes were organized. Each group was covered by 10-15 Yak-1 and La-5 fighters. In those hot days of battle Soviet fighters and ground attack airplanes flew up to three sorties per day while bombers flew up to two sorties. From 18 to 22 August our pilots flew about 1,000 sorties against the crossings. The actions of our aviation slowed down the crossing of enemy troops. But our strength was too low. Despite heroic resistance of the troops and aviation, the enemy managed to concentrate at a beachhead in the vicinity of Peskovatka as a sizable force (6 divisions, about 250-300 tanks), and with strong air support he broke through to the Volga on 23 August south of Stalingrad. These were the most critical days. Our aviation operated at maximum intensity, covering the cities against enemy raids and engaging in air battles at the near approaches to Stalingrad.

Capitalizing on his air superiority, in the second half of 23 August the enemy made a very powerful massed strike against Stalingrad with about 400 airplanes. The German airplanes traveled in several waves, and a person looking up from the ground could gain an impression of the difficulty of repelling this raid. The roar of our fighters could already be heard in the air, and a large quantity of flak appeared in front of the assault echelon of German airplanes. Disabled German airplanes fell to

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the ground but the enemy continued to approach the city without changing course, the roar of the airplanes increasing constantly in intensity. As soon as the enemy's assault echelon dropped its high-explosive and incendiary bombs a major fire began in the city. Enemy aviation flew up to 2,000 sorties against Stalingrad before darkness. Hundreds of buildings were destroyed, and thousands of defenseless women, children, and wounded soldiers undergoing therapy in the hospitals and failing to be evacuated from the city in time were killed. Destruction of the city and its peaceful population of thousands was barbaric. Repelling the raid, our fighters engaged in 25 air battles above the city, knocking down 90 airplanes and, together with antiaircraft artillery, 120 fascist airplanes.<sup>44</sup> Late at night on the same day the headquarters of the 8th Air Army and the command post of the air force commander were transferred outside the city. The Stalingrad Front command took the necessary steps to oppose enemy troops penetrating to the Volga. Troops on the front's left wing made a number of counterattacks between 23 and 28 August with active air support. On the night of 28 August the enemy was halted at the northwestern approaches to Stalingrad.

By mid-September enemy troops reached the city's defense perimeter, wedged themselves into the defenses at the boundary between the 62d and 64th armies, captured a number of important hills, and approached to within 3-4 km of the city center. In this situation the Headquarters of the Supreme High Command gave the Stalingrad and Southeastern fronts the mission of stubbornly defending the city, exhausting the enemy with counterattacks from the north and south, holding on to a beachhead on the right bank of the Don, and accumulating forces for a subsequent transition to a decisive counteroffensive.<sup>45</sup>

Aviation was given the missions of supporting the troops making the counterattack and providing direct air support to units and formations of the 62d and 64th armies fighting right within Stalingrad for every block, street, and house. This required extremely meticulous organization of the interaction between aviation and the troops. General T. T. Khryukin's aviation in the 8th Air Army and strategic aviation annihilated enemy troops breaking into the city. Bombers struck troops, artillery at gun positions, and the enemy's rear facilities 2-3 km from the front line.

The air strikes were successively aimed at one region of the city after another. On 23 September frontal aviation and strategic aviation struck fascist German troops in the center of the city, and on 24 September it was already operating in the southern part of the city. Air officers guided our airplanes, especially ground attack aircraft, to point targets from the command posts of rifle divisions and regiments using rockets, smoke signals, and tracer shells.

Operational groups and air liaison officers were sent from the air army staff to combined arms armies operating northwest of Stalingrad. Thus

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an operational group was sent to the 1st Guards Army for the frontal counterstrike northwest of Stalingrad, and air liaison officers were sent to the 24th and 66th armies operating on the flanks. Possessing their own radio resources, they quickly transmitted the requests of combined arms commanders for air action against newly discovered targets to the air army commander, and when the groups of airplanes arrived at the battlefield they guided them to their objectives. Soviet aviation rendered considerable assistance to ground troops in their counterstrikes against the enemy. Here is how Marshal of the Soviet Union G. K. Zhukov evaluated these actions: "We must give credit to soldiers of the 24th, 1st Guards and 66th armies of the Stalingrad Front, and to pilots of the 16th Air Army and strategic aviation who, fearing no danger, provided invaluable assistance to the Southeastern Front's 62d and 64th armies in holding Stalingrad..."<sup>46</sup>

The Soviet Army Air Force Command took steps to heighten the effectiveness of fighter aviation. In September 1942 the air force commander ordered the commanders of the air armies to see that "fighter-hunter" groups would be created in each fighter air division and that "fighter-hunger" tactics would be practiced. The "fighter-hunters" were to be volunteers from among the best pilots. These had to be not only valorous pilots but also men that had perfect mastery of piloting techniques, were excellent aerial marksmen, cold blooded; calculated, and confident in themselves, in their airplane, and in their weapons.<sup>47</sup>

The intense nature of the battle of Stalingrad, the great length of the frontal defense zones, the larger number of armies in each of them, and the preparations for a counteroffensive started in mid-September made it necessary to subordinate the fronts directly to the Hq SHC. On 28 September the Stalingrad Front was reorganized as the Don Front while the Southeastern Front was renamed the Stalingrad Front. Soviet aviation operated continuously against enemy troops. Between 27 September and 8 October the 8th Air Army flew about 4,000 sorties.

Air actions against the enemy did not cease at night in Stalingrad. On 22 October 1942<sup>48</sup> the Soviet Army Air Force commander ordered the commanders of the air armies to significantly intensify the night activities of bomber aviation and to train five crews in each ground attack and fighter air regiment for actions at night and in complex meteorological conditions. This mission was completed successfully. During the defensive period Il-2 airplanes flew 406 night sorties. They attacked individual centers of resistance, troop accumulations, and enemy equipment in the city.

An experimental ground radio net intended to guide fighters to their aerial targets was organized and tested by the Don Front's 16th Air Army during the defensive engagement on order of the air force commander. While serving as frontal air force commander in Leningrad, A. A. Novikov and his assistants made the first attempt at guiding fighters to aerial

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targets by means of ground-based radio stations. General V. N. Zhdanov, the deputy commander of the 13th Air Army, Leningrad Front and Soviet Army Air Force Headquarters Signal Directorate Chief General G. K. Gvozdkov, accompanied by a group of officers, were sent to the 16th Air Army to organize the effort and share their experience; these officers helped the command of the 16th Air Army to write draft instructions on controlling, informing, and guiding fighters by radio and submitted them to the Soviet Army Air Force commander.

Fighter guidance radio stations were dispersed along the front line 2-3 km from the forward edge at a spacing of 8-10 km; these stations maintained radio communication with pilots in the air and at airfields, and with the command posts of the air army. Twenty-five commanders and deputy commanders of reserve fighter air regiments (brigades) were called up and sent to the front by the air force command to guide fighters to aerial targets with ground-based radio stations. Their mission was to set up and check out this new system, acquire combat experience, and subsequently implement the system to train flight crews. The radio station guidance net was subdivided into command and information stations. In addition to providing information on the aerial situation, guiding fighters to enemy airplanes, and controlling air battles from the ground, they also began to be used to guide ground attack airplanes to ground targets.

The experiment was used by Air Force Headquarters to develop and introduce the first Soviet Army Air Force instructions on guiding frontal fighters to aerial targets from ground-based control posts--"Instructions to the Air Force on Controlling, Informing, and Guiding Airplanes by Radio."

The fight for air superiority occupied a special place in the Stalingrad defensive operation. It reached its peak after fascist German troops reached the outskirts of Stalingrad. Air battles were the principal means of fighting the Luftwaffe. During the time of the defensive operation our fighters participated in 1,792 air battles and knocked down 1,636 enemy airplanes. Strikes were made against airfields concurrently. Thus for example between 31 October and 2 November the air army made a number of successive raids on airfields, destroying and damaging 31 enemy airplanes.<sup>49-50</sup> All of the necessary measures were implemented to weaken the enemy's air grouping. A special air operation was conducted from 27 to 29 October by forces of the 8th Air Army and three ADD divisions (24th, 53d, and 62d; commanders--Lieutenant Colonel B. V. Bitskiy, and Colonels I. V. Georgiyev and G. N. Tupikov). Some 173 frontal airplanes and 141 ADD airplanes participated in it, for a total of more than 300 airplanes. Thirteen airfields were attacked. Some 502 sorties were flown. The operation was successful: Several dozen enemy airplanes were put out of action.<sup>51</sup>

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In the defensive operation at Stalingrad Soviet aviation flew 45 percent of all of its sorties in its fight for air superiority. Between 17 July and 18 November 1942 enemy aviation lost more than 2,100 airplanes at Stalingrad.<sup>52</sup>

The Hq SHC prepared for a powerful counteroffensive during the defensive engagement at Stalingrad. The basic decision for a counteroffensive was made by Headquarters as early as on 13 September 1942. The frontal command was ordered to begin the actual work of planning the counteroffensive in the first days of October. On 9 October the frontal command submitted its initial ideas to Headquarters.

Air Force Commander General A. A. Novikov, his deputy General G. A. Vorozheykin, and Strategic Aviation Commander General A. Ye. Golovanov headed the work on problems of strategic use of the air force in the counteroffensive at Stalingrad. The Supreme High Command Headquarters played the principal role in planning and supporting this operation. The air force was given the missions of continuing the fight for strategic air superiority and supporting the strike groupings of the fronts in the offensive. By November 1942 the Soviet Air Force had grown considerably: Its strength in the fighting army was 4,544 warplanes, while that of the enemy was 3,500.<sup>53</sup> Ten SHC reserve air corps had been formed by this time. New manning tables were written for frontal air regiments, which now consisted of three rather than two air squadrons. A transition from the three airplane flight to a flight consisting of two pairs of airplanes was completed in fighter aviation.

Preparations of aviation called in for the counteroffensive were intense. There were delays, however, in concentrating aviation at airfields in the vicinity of Stalingrad. There were problems in accumulating aviation fuel and ammunition.

General A. A. Novikov reported to Marshal of the Soviet Union G. K. Zhukov, who was in the vicinity of Stalingrad, that aviation was not yet ready for the counteroffensive. There were only two rations of fuel available and ammunition was short. Air units intended as reinforcements had not finished concentrating. The marshal reported this to the supreme high commander. The response from Headquarters, which was received on 12 November, read as follows: "If air preparation for the operation is unsatisfactory at Yeremenko and Vatutin, the operation will end in failure. The experience of fighting the Germans shows that we can win an operation against the Germans only in the event that we are unchallenged in the air. In this regard our aviation must complete three tasks:

"The first--concentrate the actions of our aviation in the area of advance of our strike units, suppress German aviation, and provide solid cover to our troops;

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SOVIET ARMY AIR FORCE COMMAND AND STAFF  
IN THE GREAT PATRIOTIC WAR 1941-1945

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"The second--blaze a trail for our advancing units through systematic bombing of enemy troops opposing us;

"The third--pursue retreating enemy troops with systematic bombing and ground attacks so as to fully confuse them and prevent them from digging in at their nearest lines of defense.

"If Novikov believes that our aviation is not in a position to complete these tasks now, then it would be better to postpone the operation for a certain amount of time and accumulate more aviation.

"Speak to Novikov and Vorozheykin, explain this to them, and inform me of your general opinion."<sup>54</sup>

The response of the supreme high commander not only contained concrete directions as to how to organize the actions of the air force in the counteroffensive at Stalingrad but also presented the fundamental principles of Soviet art of war, based on the experience of the first year of the war. These principles were laid at the basis of subsequent use of aviation in all frontal and strategic offensive operations of the Soviet Armed Forces.

The 125-day defensive battle at Stalingrad ended on 18 November. With it ended the most difficult first period of the Great Patriotic War. The Soviet Air Force played an extremely important role here. Assisting the troops and fighting a continuous battle for air superiority, it flew 77,000 combat sorties, dropped 23,000 bombs on the enemy, launched 38,000 rockets, fired up to 1.2 million gunshells and about 4 million rifle rounds, and inflicted tremendous losses on the enemy.<sup>55</sup>

The acts of heroism of Soviet pilots filled yet another brilliant page of the chronicle of the Great Patriotic War. Our heroes rammed enemy airplanes 16 times. The names of V. V. Zemlyanskiy, I. P. Zazulinskiy, A. A. Rogal'skiy, M. A. Presnyakov, I. P. Vedenin, and L. Obukhovskiy, who repeated the immortal deed of Captain N. F. Gastello, will remain in the memory of the people forever.

The battle of Stalingrad also brought glory to I. S. Polbin, I. I. Kleshchev, M. D. Baranov, V. M. Golubev, V. D. Lavrinenkov, L. L. Shestakov, A. V. Alelyukhin, I. N. Stepanenko, V. S. Yefremov, S. D. Luganskiy, Amet-Khan Sultan, P. Ya. Golovachev, B. M. Gomoiko, I. P. Motorny, V. N. Makarov, Z. V. Semenyuk, and many others.<sup>56</sup>

The plan for the counteroffensive at Stalingrad was conclusively approved by the HQ SHC on 13 November 1942. According to the plan the main thrust was to be made by troops of the Southwestern and Stalingrad fronts. The Southwestern Front was to penetrate enemy defenses from beachheads in the vicinity of Serafimovich and Kletskaya and swiftly advance in the direction of Kalach and Sovetskiy. Troops of the Stalingrad Front had to

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attack from the region of the Sarpinskiye Lakes and also advance in the direction of Sovetskiy and Kalach. The forces of the 6th Army and the 4th Tank Army were to be encircled in the area between the Volga and the Don by means of powerful converging thrusts. The Don Front made two thrusts: one from the vicinity of Kletskaya to the southeast and another from the vicinity of Kachalinskaya along the left bank of the Don to the south.

Air force formations called in to participate in the counteroffensive included: The 17th Air Army, Southwestern Front (commander, General S. A. Krasovskiy, deputy commander for political affairs, Brigade Commissar V. N. Tolmachev, chief of staff, Colonel K. I. Tel'nov); 2d Air Army, Voronezh Front (commander, General K. N. Smirnov, deputy commander for political affairs, Brigade Commissar S. N. Romazanov, chief of staff, Colonel N. L. Stepanov), which was subordinated in operational respects to the commander of the Southwestern Front; the 16th Air Army, Don Front (commander, General S. I. Rudenko, deputy commander for political affairs, Regimental Commissar A. S. Vinogradov, chief of staff, General M. M. Kosykh) and the 8th Air Army of the Stalingrad Front (commander, General T. T. Khryukin, deputy commander for political affairs, Brigade Commissar A. I. Vikhorev, chief of staff, Colonel N. G. Seleznev).

Seven separate air divisions and two mixed air corps were sent to the front from Hq SHC reserves to reinforce the air armies. The I Mixed Air Corps (commander, General V. I. Shevchenko) was placed within the composition of the 17th Air Army, and the II Corps (commander, General I. T. Yeremenko) was placed within the 8th Air Army. In the second half of November 1942 the 16th Air Army was reinforced by the II Bomber Air Corps (commander, General I. L. Turkel'), and the 8th Air Army was reinforced by the III Mixed Air Corps (commander, General V. I. Aladinskiy). As before, Stalingrad was covered from the air by the 102d Air Defense Fighter Division (commander, I. G. Puntus).

In sum total our aviation had a strength of 1,414 airplanes, to include 426 that were obsolete (Po-2, R-5, SB). On this axis the enemy possessed 1,216 airplanes.<sup>57</sup> In addition five ADD divisions were committed.

The missions of Soviet aviation in the counteroffensive were spelled out in a telegram sent by the supreme high commander on 12 November 1942.

Before the beginning of combat activities, aviation had to cover the strike groupings of the fronts in the regions of their concentration, and when the troops went over to the offensive aviation's mission was to assist the troops to penetrate enemy defenses, support commitment of tank and cavalry corps to the breakthrough, and support their actions at strategic depth. Much significance was devoted to fighting enemy reserves.

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Strategic aviation was to be used within the sector of the Southwestern Front. It was given important missions--fighting operational shipments and reserves, and annihilating enemy airplanes at airfields.

Being the Hq SHC air liaison officer, A. A. Novikov participated in the development of the plans for the counteroffensive of the fronts, determined the intensity of air force combat activities, distributed air reserves on order of the Hq SHC, and involved himself a great deal with the problems of organizing interaction between aviation and the troops, and of logistical support to the combat activities of aviation.

All of the work of the air force commander was conducted in close interaction with representatives of the Hq SHC--G. K. Zhukov, A. M. Vasilevskiy, and N. N. Voronov, as well as with the frontal troop commanders and directly with the commanders of the air armies and the commanders of strategic aviation. Here is what Marshal of the Soviet Union G. K. Zhukov writes about this: "From 1 to 4 November we examined and corrected the plans of the Southwestern Front, and then we examined and coordinated the battle plans of the 21st Army and the 5th Tank Army in all details.

"In addition to me, other Headquarters representatives attended the writing of the battle plan at the Southwestern Front's headquarters: Artillery problems--General N. N. Voronov, aviation--Generals A. A. Novikov and A. Ye. Golovanov, armored troops--General Ya. N. Fedorenko; these officers were helpful in achieving a fuller understanding of the problems of the application and interaction of the most important arms and services."<sup>58</sup> This afforded a possibility to correctly plan the use of aviation in the counteroffensive of the frontal troops, to react efficiently in the course of the counteroffensive to changes in the situation, to retarget reserve air corps and ADD formations on the necessary axes, and thus have an influence on the success of the troop offensive.

Typically the actions of aviation in the 8th Air Army were planned in the form of an air offensive, the definition of which was spelled out in the Red Army Infantry Field Manual approved by the USSR people's commissar of defense on 9 November 1942. It discussed continuous support of infantry by massed, efficient fire by artillery, mortars, and aviation throughout the entire period of the troop offensive.<sup>59</sup> The Red Army Field Manual of that same year indicated that "the actions of aviation in the offensive battle essentially take the form of an air offensive, which consists of two periods--preparation for the attack, and support of the attack and action of infantry and tanks deep within enemy defenses."<sup>60</sup> The principle of massing air power on the axes of the main thrusts by frontal troops was placed at the basis of planning the combat activities of all air armies; for example all air power of the 17th Air Army was given the mission of covering and supporting the 5th Tank Army and the 21st Army, which advanced on the main axis. Formations of the 2d Air Army were to be used within the zone of advance of the 1st Guards Army, while the 16th Air Army concentrated its efforts on the breakthrough sector of the 65th

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Army. Up to 75 percent of the airplanes of the 8th Air Army were given the mission of supporting the 50th Army. Continuous aviation support to penetration of enemy defenses by frontal troops and to exploitation of the offensive in depth was foreseen. Air cover and support of tank and mechanized corps intended to exploit the breakthrough were meticulously planned.

The Soviet Army Air Force commander visited almost all airfields at which units were preparing for battle, he talked with pilots, gave instructions to commanders as to how to best solve one problem or another, and ordered his operational group to insure compliance with his instructions. He had a phenomenal memory, he could recognize almost all air division commanders, he remembered the first and last name of each of them, and he was aware of their shortcomings and their good sides. He remembered many of the commanders of air regiments and squadrons. All instructions and copies of orders issued by the Soviet Army Air Force commander to the front were concurrently transmitted to Moscow, to Air Force Headquarters. Thus members of the Military Council and Air Force Headquarters were always aware of all instructions issued by the air force commander and by his operational group. This made it possible to coordinate the actions of the staff and the appropriate air force directorates with decisions concerning the use of aviation on other fronts.

During the counteroffensive of our troops, which began on the morning of 19 November 1942 within the zone of the Southwestern and Don fronts and, on 20 November, within the zone of the Stalingrad Front, the Soviet Army Air Force commander remained at the forward command post together with A. M. Vasilevskiy, to whom Headquarters assigned the mission of coordinating the actions of all three fronts, and periodically at the forward control posts of the 17th and 16th air armies, from which he directed the actions of aviation.

On 23 November the IV Tank Corps, Southwestern Front joined units of the IV Mechanized Corps, Stalingrad Front in the vicinity of Sovetskii, thus encircling a 330,000 strong enemy grouping. Frontal air services played a great role in the swift advance of our troops, actively covering and supporting the troops from the air. In 7 days (from 24 to 30 November) the 17th, 16th, and 8th air armies flew 5,760 combat sorties, which was 5 times more than the number of enemy sorties flown in the same time interval. As a result of this and the losses the enemy suffered, the activity of his aviation decreased dramatically.

The Fascist German Command began transferring reserves on an emergency basis from other sectors and from Western Europe to the Stalingrad axis. Troops of Army Group Don went over to the offensive on 12 December with the goal of penetrating the ring of encirclement. The enemy made it more than halfway to the encircled grouping, but he was halted on the Myshkovka River by the 51st Army, which was joined by the 2d Guards Army from the Hq SHC reserve. The 8th Air Army provided active assistance to

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these armies. During the battle of Myshkovka River it flew more than 750 sorties and helped our troops halt the enemy by striking enemy columns.

From 24 to 29 December the 8th Air Army flew 1,358 combat sorties in the offensive operation undertaken by frontal troops to defeat the enemy's Kotel'nikova grouping.<sup>61</sup>

In order to weaken the enemy air grouping during the offensive of the Southwestern Front and the 6th Army of the Voronezh Front, from 3 to 15 December the 2d and 17th air armies made a number of concentrated strikes against enemy airfields, destroying 140 fascist airplanes on the ground and in the air.<sup>62</sup>

The fight for air superiority continued to be intense during the operation. Strikes were made against Morozovski, Tatsinskaya, Starobel'sk, and Voroshilovgrad airfields, where up to 65 airplanes were destroyed.<sup>63</sup>

The tank troops assisted the Soviet Air Force to destroy fascist aviation on this axis. On 24 December the XXIV Tank Corps, commanded by General V. M. Bogdanov, captured the airfields at Tatsinskaya following a 240-km raid on the move. The tank crews destroyed and captured a large number of German airplanes. During the operation, which ended on 31 December with the defeat of the Italian 8th Army and the left flank of Army Group Don, the 2d and 17th air armies flew 4,177 combat sorties, 80 percent of them in behalf of the frontal troops.<sup>64</sup>

At the same time our aviation found itself faced by an entirely new mission--conducting an active struggle against enemy air transportation attempting to supply the encircled Stalingrad grouping by air. In the first few days the enemy used up to 600 J-52, FW-200, and other airplanes to carry the cargo. Later, due to high losses the enemy was forced to use He-111 and J-58 bombers for this purpose.

On 30 November 1942 A. A. Novikov ordered General S. I. Rudenko, commander of the 16th Air Army, to detach one fighter and one ground attack air regiment specifically for the fight against enemy air transportation. The order spelled out the mission of annihilating the enemy transport airplanes at their landing strips and in the air, and blockading the most important airfields from the air--Bol'shaya Rossoshka and Podsobnoye Khozyaystvo.<sup>65</sup>

On 4 December 1942 the Soviet Army Air Force commander ordered the commanders of the 8th and 16th air armies to organize operations against enemy air transportation in the vicinity of Stalingrad. The order stated that the mission of interdicting air transportation was the air force's most important one. Concrete directives on cutting special orders to assign fighters and ground attack airplanes specifically for this purpose were issued, the boundary lines and zones of operations of the air armies

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were established, and the specific missions of blockading and photographing airfields within the ring of encirclement were set. In the conclusion the directives demanded immediate decoration of distinguished pilots with government awards and immediate telephone reports to the command post of the air force commander concerning air transportation that had been knocked down and destroyed; detailed reports were to be telegraphed in by 2200 hours.<sup>66</sup>

Creation of a network of radio broadcasting and guidance stations around the ring of encirclement and use of the radio resources of air liaison officers in the troops for these purposes played a major role. As an example on the morning of 11 December 18 fighters of the 3d and 9th Guards fighter air regiments took off under the command of Colonel I. D. Podgornyy, commander of the 235th Fighter Division, in response to a signal from a guidance radio station. In the vicinity of Bol'shiye Chepurniki they attacked 16 J-52's and He-111's carrying cargo in the direction of Stalingrad under the cover of four Me-109 fighters. As a result 15 enemy transport airplanes were knocked down.

Suffering high losses, in mid-December the enemy switched to night sorties and flight in complex meteorological conditions. On order of the Soviet Army Air Force commander these actions were counteracted by night-flying fighters of a special-purpose regiment in the 102d Fighter Air Defense Division, and by high activity on the part of our light night bombers, which shut down all enemy airfields with their attacks.

Concurrently the Soviet Army Air Force commander spelled out the missions of the 17th Air Army, the 102d Fighter Air Division of the National Air Defense Forces, and air formations of the ADD in fighting enemy air transportation. Communication was established and interaction was organized with antiaircraft artillery units, and the work of the VNOS [Aircraft Warning System] system was put in order. A map showing the zones in which air transportation was being fought was located at the command post of the air force commander and the commanders of the fronts and air armies. It was compiled and coordinated with frontal troop commanders on the basis of directives of liaison officers from the Hq SHC.

The 17th Air Army and ADD formations operated within the first zone, behind the external front of the encirclement; at the end of December 1942 these formations were joined by the 8th Air Army. Our aviation made a considerable impact on enemy airfields at Morozovskiy, Tatsinskaya, Sal'sk, Novochoerkassk, and Rostov.

The strike made by frontal aviation against the airfield at Sal'sk on 9 January was the most typical. The strike was made by seven Il-2 airplanes commanded by I. P. Bakhtin, escorted by one squadron of Yak-1 fighters under the command of Senior Lieutenant Belousov. According to air reconnaissance data more than 300 enemy transport airplanes and warplanes had accumulated at the Sal'sk airfield. The first attack by our

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airplanes was unexpected, bold, and extremely competent. Our pilots completed the next five passes extremely successfully as well, with every airplane hitting the target preassigned to it. As a result of the strike 72 German transport airplanes were destroyed at the airfield and three enemy fighters were knocked down in the air. We lost four airplanes.<sup>67</sup>

The second zone was a ring zone. It was located between the outer and inner fronts, and it was subdivided into five sectors with one fighter division of the 16th and 8th air armies and the 102d Fighter Air Division of the National Air Defense Forces operating in each of them. Two belts of radio guidance stations were created around the encircled region; liaison officers from the commands of the fighter divisions were located at the main stations. They kept the fighters informed about the flights of enemy transport airplanes and helped the fighter pilots to seek out and destroy aerial targets.

The third zone encompassed the entire encircled region, and it had a breadth from 16 to 20 km toward the southwest and up to 30 km toward the south. In this area the enemy's transport airplanes were destroyed by antiaircraft artillery fire. As of 20 December 1942 this zone contained 232 medium and low caliber antiaircraft guns and 241 antiaircraft machineguns belonging to the combined arms armies and the Stalingrad Corps Air Defense Region.<sup>68</sup>

The fourth zone included the entire encircled region. Operations were conducted within it by the 16th and 8th air armies and a specially assigned night air regiment of the 102d Fighter Air Division of the National Air Defense Forces. The enemy airfields were blockaded in daytime by fighters and at night by Po-2 airplanes. Whenever the enemy turned on the night landing lights on the airfields our aerial guards--light Po-2 bombers--immediately dropped bombs on these airfields. Po-2 night bombers put 15 J-52's out of action at the airfields and on the landing strips on 30 November 1942, 13 on 1 December, 31 on 10 December, and 58 on 11 December. In all during the time of the air blockade, 250 enemy airplanes were annihilated and put out of action at the airfields and on the landing strips of the fourth zone.<sup>69</sup>

This air blockade of the encircled enemy grouping at Stalingrad, which was maintained by the combined forces of aviation and antiaircraft artillery, operated extremely effectively. In terms of the content of the activities of our air force, the quantity of forces committed, and the results, this was for practical purposes an air force air operation, conducted by the combined efforts of three air armies in frontal aviation and ADD formations. The results of this operation were extremely great. About 1,200 enemy airplanes, of which 80 percent were transporters and bombers, were annihilated at the airfields and in the air.<sup>70</sup>

The German command's attempts at supplying the grouping encircled at Stalingrad by an "air bridge" were unsuccessful. "Every day the 6th Army

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received an average of 50-80 tons of cargo, rather than the 300 tons promised to it."<sup>71</sup>

In all during the counteroffensive, between 19 November 1942 and 2 February 1943, the Soviet Air Force flew 35,920 sorties. Enemy aviation was credited with about 18,500 sorties.<sup>72</sup>

Having attained strategic air superiority at the beginning of the counteroffensive, our air force provided effective assistance to ground troops in encircling a large enemy grouping, repelling strong enemy counterattacks, and destroying enemy troops in the ring of encirclement. The Soviet Air Force achieved air superiority by means of a stubborn struggle.

During the counteroffensive the number of sorties flown against enemy airfields was increased in comparison with the number of sorties flown during the defensive period, making about 33 percent of all sorties flown directly for the purposes of attaining air superiority. The number of enemy airplanes destroyed increased from 23.8 percent during the defensive period to 55.9 percent during the counteroffensive.<sup>73</sup> The enemy's best air units were defeated in air battles and at airfields. General (G. Derr), a German commander who had participated in the battle of Stalingrad, was forced to recognize that in this operation the Luftwaffe suffered the greatest losses since the air offensive on England. "Not only the ground troops," he wrote, "but also aviation lost an entire army at Stalingrad."<sup>74</sup>

The Soviet Air Force was able to successfully complete three highly important missions--attaining strategic air superiority, providing active air support to ground troops, and maintaining an air blockade over encircled fascist German troops--because of the combined efforts of the 2d, 8th, 16th, and 17th air armies and strategic aviation under the sole centralized command of Hq SHC Air Liaison Officer General A. A. Novikov, the competent leadership of the formations and units by air army commanders Generals S. A. Krasovskiy, S. I. Rudenko, G. G. Khryukin, and K. N. Smirnov, and by Generals A. Ye. Golovanov and N. S. Skripko commanding strategic aviation, and because of the acts of heroism of commanders, political workers, and all flight crews and technicians. For the first time in the war four air armies and five ADD air divisions interacted in organized fashion on a large scale, and for the first time we witnessed a new form of strategic use of the air force--the air offensive; the air blockade was organized and conducted extremely successfully, and the problems of organization and control were solved in an entirely new way.

"In the battle of Stalingrad our air force destroyed the better part of the best German squadrons, and then it brilliantly maintained an air blockade on German armies encircled in Stalingrad."<sup>75</sup>

The heroic deeds of the airmen were highly assessed by the Communist Party and the Soviet Government: Nine air divisions were reorganized as Guards

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divisions, 17 pilots earned the lofty Hero of the Soviet Union title, and 1,000 were awarded orders and medals.

The German Command was forced to recognize its total defeat not only on land but also in the air. "The Luftwaffe suffered high losses at Stalingrad. From 19 November 1942 to 31 December 1942 the Germans lost about 3,000 airplanes. This figure includes not only airplanes that had been knocked down but also those captured by the Russians at airfields. An enormous amount of ammunition as well as much equipment and other property was lost."<sup>76</sup>

The victory enjoyed by the Soviet Armed Forces at Stalingrad fundamentally altered the situation on land and in the air. "When we recall the decisive events of the Great Patriotic War," said L. I. Brezhnev at a solemn meeting dedicated to the 20th anniversary of the Soviet people's victory in the Great Patriotic War on 8 May 1965, "we remember the famous battle of Stalingrad, that bloody battle of summer and fall 1942. In this battle the Red Army displayed heroism and military proficiency that had never known equals in the history of war, and it won a brilliant victory. This laid the basis for the fundamental turning point in the entire world war."<sup>77</sup> A fundamental turning point clearly took shape in the fight for strategic air superiority along the entire Soviet-German front. The battle of Stalingrad, and especially its second period, contributed a great deal to development of air force strategy and organizational structure. On arriving in Moscow Soviet Army Air Force Commander A. A. Novikov gave specific instructions to General N. A. Zhuravlev on what to write in a report to the supreme high commander concerning the results of and conclusions on air force actions at Stalingrad. On 3 February 1943 the air force commander submitted the summary report to I. V. Stalin. It presented the fundamental principles of air force actions at the time of the enemy's penetration of our defenses. It was suggested that during the time of artillery preparation, aviation should be released from actions on the forward edge and given the mission of destroying headquarters and communication centers with the goal of disrupting command and control. When ground troops begin their attack, aviation should direct its forces at destroying artillery and mortars. To fight reserves, the air army commander should have at his disposal an air reserve forming up to one-fourth of all forces. Commitment of mobile groups (mechanized and tank corps) to a breakthrough should be supported by ground attack air formations and units attached directly to the corps, which should have air liaison officers present with their own communication for calling out and guiding aviation. The report suggested that we abandon patrolling as the means of covering troops on the battlefield, resorting to it only in exceptional cases, and that we adopt fighters on alert at forward airfields, to be called out as necessary by radio, as the principal method. It was concluded that fighter and ground attack aviation was the best resource to be used against transport aviation. It was suggested that special formations and units be assigned to the fight against transport aviation, freeing them from all other missions.

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Presence of a mixed air regiment in each combined arms army means dispersal of the forces of aviation; thus it was suggested that these air regiments be disbanded and replaced by liaison air squadrons armed with 12 Po-2's. A number of proposals were made on improving air force organization and on designing a new frontal bomber to replace the Pe-2 with its limited effective radius (450 km maximum). A bomber division armed with Pe-2 airplanes should consist of two regiments of 32 airplanes each, as opposed to three with 20 airplanes each. It was pointed out that when it was necessary to coordinate the actions of aviation belonging to two or three fronts, because of their short range we could not use bombers based in one front to strike objectives in a neighboring front.

It was suitable to have mixed air corps consisting of two fighter and one ground attack or bomber divisions. In this case one fighter air division could interact with the ground attack or bomber air division while the second could be used in the fight for air superiority.

Moreover the actions of our aviation in the battle of Stalingrad were generalized by the War Experience Analysis Section and broadly publicized in informative collections published by the Soviet Army Air Force Headquarters which were sent to commands and staffs at all levels. These collections placed special emphasis on the air offensive as a new form of strategic use of frontal aviation in the offensive operations of frontal troops. It was noted that for the first time aviation was used jointly with tank and mechanized corps to exploit an offensive in depth. The system employed at Stalingrad for organizing interaction of aviation with ground troops was recommended for use in all air armies. Recommendations were also made on making broader use of ground-based radio stations to guide fighters to aerial targets.

After the battle of Stalingrad the Soviet Army initiated an offensive in other sectors of the front, from Leningrad to the Caucasus. On 18 January 1943 troops of the Leningrad and Volkhov fronts broke the blockade of Leningrad with the active support of the 13th Air Army (commander, General S. D. Rybal'chenko) and the 14th Air Army (commander, General I. P. Zhuravlev). The Hero-City once again had direct land communication with the country. The victory of Leningrad, which was besieged by the fascist invaders for 16 months, created favorable conditions for destroying the enemy's beachhead in the vicinity of Demyansk. On 15 February troops of the Northwestern Front went over to the offensive in interaction with the 6th Air Army (commander, General F. P. Polynin). Fearing destruction of its partially encircled grouping, the Fascist German Command withdrew it to the east bank of the Lovat' River. The Demyansk beachhead, which the Germans had held for almost a year and a half, was eliminated.

Great credit belongs to our aviation for this. In addition to conducting active operations against the enemy grouping it maintained an air blockade,



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causing the enemy to suffer significant losses in air transportation. German historians report that the losses of transport aviation were about 265 craft.<sup>78</sup> The actions of aviation were coordinated on this axis by General G. A. Vorozheykin and, in February, by General A. A. Novikov, who on 17 March 1943 was the country's first to be awarded the rank of marshal of aviation.

Pursuing the enemy with active support from the 3d Air Army (commander, General M. M. Gromov) and the 1st Air Army (commander, General S. A. Khudyakov), troops of the Kalinin and Western fronts liberated Rzhev on 3 March 1943 and, 3 days later, Gzhatsk; on 12 March they liberated Vyaz'ma, and on 1 April they reached a line east of the cities of Dukhovshchina and Spas-Demyansk.

Offensive actions by Soviet troops in the Northern Caucasus continued to mid-February with the support of the 4th and 5th air armies (commanders, Generals N. F. Naumenko and S. K. Goryunov). By this time the troops had moved 160-600 km forward and liberated the greater part of the Northern Caucasus and Rostovskaya Oblast.

Concurrently with this, strikes were made on the upper Don in the vicinities of Ostrogozhsk, Rossosh', and Voronezh. By 27 January 1943, 15 fascist divisions had been totally destroyed and 6 had suffered large losses. More than 86,000 enemy enlisted men and officers were captured.<sup>79</sup> Interacting with the left wing of Bryansk Front and enjoying active support of frontal aviation (2d Air Army commander, General K. N. Smirnov, 15th Air Army commander, General I. G. Pyatykhin), at the end of January 1943 the Voronezh Front penetrated the defenses of fascist German troops and began an offensive on the Kursk axis while making simultaneous strikes in the direction of Kastornoye. As a result of the Voronezh-Kastornoye operation the enemy grouping was destroyed and the greater part of Voronezhskaya and Kurskaya oblasts was liberated. Continuing their offensive, troops of the Voronezh Front liberated Kursk, Belgorod, and Khar'kov, and in the first days of March 1943 they reached the Sumy line, 30 km west of Akhtyrka and Okhochenye. Here our troops were halted by large enemy forces.

The situation did not evolve favorably for us in the Donets Basin and at Khar'kov. With the support of the 17th Air Army (commander, General S. A. Krasovskiy), troops of the Southwestern Front went over to the offensive back on 29 January 1943. In the first half of February they liberated the northern part of the Donets Basin and mobile formations reached the vicinity of Krasnoarmeyskoye; actively supported by the 8th Air Army (commander, General T. T. Khryukin), troops of the Southern Front went over to the offensive on 5 February, broke enemy resistance at the lower reaches of the Don and the Northern Donets, and on 17 February 1943 they reached the river Mius. On 19 February large enemy forces made two strikes from areas northwest of Krasnograd and south of Krasnoarmeyskoye against the right wing of the Southwestern Front. As a result in March 1943

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troops of the right wing of the Southwestern Front were forced to withdraw from the Northern Donets where the enemy's advance had been halted. On 4 March a strong grouping of fascist German troops southwest of Khar'kov went over to the offensive against troops of the Voronezh Front. Inferior to the enemy in forces, troops of the Voronezh Front abandoned Khar'kov on 15 March, and Belgorod 3 days later. By the end of March 1943 the front's troops had withdrawn and dug in on a line from Krasnopol'ye north of Belgorod down along the left bank of the Northern Donets. Thus formed the southern face of the so-called Kursk salient, fated to play such a great role in subsequent actions of the Soviet Armed Forces.

FOOTNOTES

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## CHAPTER IV. THE FIGHT FOR STRATEGIC AIR SUPERIORITY IN SPRING AND SUMMER 1943

During the winter campaign of 1942-1943 the Soviet Air Force achieved significant successes in the fight for strategic air superiority. Enemy aviation suffered serious losses, more than 4,300 airplanes being destroyed.<sup>1</sup> The Luftwaffe lost its strategic air superiority on the Stalingrad axis. The Luftwaffe command could not accept the situation, and it perpetually increased the forces of aviation in the east. From 15 March to 1 July 1943, 13 air groups were transferred from Germany, France, and Norway to reinforce the 6th and 4th air fleets. The command intended to recapture the lost initiative on the front's southern wing and retain strategic air superiority from the Barents Sea to the Black Sea. There were 2,630 German airplanes (1,710 bombers, 555 fighters, and 355 reconnaissance airplanes) on the Soviet-German front in spring 1943, not counting reserve units. Moreover 350 airplanes of the Finnish, Romanian, and Hungarian air forces were operating in this area. In all the Soviet Air Force was opposed by about 3,000 enemy warplanes. Hitler's command tried to compensate for the shortage of airplanes and flight crews by introduction of a new airplane, the Fokker-Wolf-190a.<sup>2</sup> The Khenshel'-129 began to be used as a ground attack airplane over the battlefield.<sup>3</sup> But the new airplanes could not significantly influence the change in the balance of power in the air, which was constantly turning in favor of the Soviet Air Force. The Soviet Air Force greeted the spring of 1943 with much higher strength. The air armies created in 1942 turned out to be the most successful form for organizing major operational air formations in frontal aviation. By April 1943, 13 air armies were operating within the composition of the fronts. By this time 19 SHC reserve air corps had also been formed (four fighter, nine mixed, three ground attack, and three bomber), with a total strength of more than 2,600 warplanes.<sup>4</sup> As a rule the SHC reserve air corps were attached to frontal air armies for the times of operations by the ground troops and air operations, and thus they enlarged the frontal airplane fleet. While at the end of 1942 the average strength of the air armies was not more than 350-400 airplanes, by summer 1943 the air corps increased the combat strength of the air armies by two times and that of air armies operating on the main axis by three times.

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Strategic aviation experienced quantitative and qualitative growth as well. On 30 April 1943 the State Defense Committee adopted a decision organizing eight air corps to replace the existing 11 separate ADD air divisions. The total number of airplanes within the composition of ADD increased to 700. The following were appointed corps commanders: I--General D. P. Yukhanov, II--General Ye. F. Loginov, III--General N. A. Volkov, IV--Colonel S. P. Kovalev, V--General I. V. Georgiyev, VI--General G. N. Tupikov, VII--General V. Ye. Nestertsev, and VIII Air Corps--General N. N. Buyanskiy. Soviet Air Force commanders acquired the experience of controlling major air formations, formations, and units in modern warfare.

Preparing new strategic offensive operations in spring 1943, the Hq SHC ordered the air force to perform a decisive attack on enemy aviation and achieve strategic air superiority forever. Attainment of strategic air superiority was one of the most important prerequisites for a fundamental turning point in the Great Patriotic War. All of the necessary conditions for this mission existed.

The operating army's Soviet Air Force possessed more than 5,500 warplanes in spring 1943, surpassing enemy aviation by 1.8 times.<sup>5</sup> The command and staff of the Soviet Army Air Force acquired a great deal of experience in organizing the fight against enemy aviation, both in terms of daily combat activities pertaining to defensive and offensive operations, and in regard to the conduct of special air operations.

The first signs of a turning point in the fight for strategic air superiority at Leningrad enjoyed further development in air engagements in the Kuban' and in the spring-summer air operations of the Soviet Air Force, and the turning point was completed in summer 1943 at Kursk.

## Air Engagements in the Kuban'

Air engagements in the Kuban' in spring 1943 entered history as one of the most important stages in the Soviet Air Force's fight for strategic air superiority on the entire Soviet-German front.<sup>6</sup> They were most intimately associated with operations of the ground troops, and they developed in the unique situation which evolved in response to military-political and physico-geographic factors.

The Northern Caucasian Front had to complete the destruction of fascist German troops in the Caucasus and liberate the Taman' Peninsula. In turn the Fascist German Command pursued the goal of retaining occupied positions at all costs and wiping out the beachhead southwest of Novorossiysk, where back on 4 February 1943 an assault landing party of seamen under the command of Major Ts. L. Kunikov landed in the vicinity of the fishing village of Stanichka. The assault landing troops, who were subsequently reinforced by troops of the 18th Army, held firmly to their beachhead with active air support from the Northern Caucasian Front and the Black Sea Fleet.

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The German 17th Army, which had a strength of 15 divisions, was defending itself at the lower reaches of the Kuban' River and on the Taman' Peninsula. It occupied a line east of Krymskaya, consisting mainly of strongpoints and pockets of resistance in population centers and on hills. Krymskaya Station was the enemy's most important center of defense, since the main lines of communication to Novorossiysk, Anapu, Taman', and Temryuk, passed through it. The German Supreme Command reinforced the 17th Army with two German infantry divisions and one Romanian cavalry division.

Troops of the Northern Caucasian Front were superior to the enemy in infantry and tanks by a factor of 1.5, and in artillery by a somewhat lower amount.

Feeling the shortage of troops, the enemy laid his hopes on halting the preparations for the Soviet offensive and destroying our assault landing group at Myskhako with the assistance of aviation. It was with this goal that up to 1,000 warplanes of the 4th Air Fleet (510 bombers, 250 fighters, 60 reconnaissance airplanes, and 170 transport airplanes) were concentrated at the airfields of Crimea and Taman' in mid-April.<sup>7</sup> In addition the enemy brought in 200 bombers based in the Donets Basin and in the southern Ukraine for strikes against troops of the Northern Caucasian Front. The enemy's air grouping on this axis consisted of the best Luftwaffe units--the (Udet) Fighter Squadron and the 5th (Mel'ders) Fighter Squadron, outfitted with experienced flight crews and new Me-109 and FW-190a airplanes.

Prior to 23 April 1943 the air services of the Northern Caucasian Front included the 4th Air Army possessing 250 airplanes (commander, General N. F. Naumenko) and the 5th Air Army with a strength of 200 airplanes (commander, General S. K. Goryunov). In addition the troops of the Northern Caucasian Front were assisted by 70 airplanes from the Black Sea Fleet's air service (commander, General V. V. Yermachenkov) and one strategic aviation division with a strength of 60 airplanes.<sup>8</sup> The Northern Caucasian Front's air service was headed by General K. A. Vershinin.<sup>9</sup> The previously started offensive of the Northern Caucasian Front's troops was resumed on 4 April. The design of the operation foresaw bypassing Krymskaya on the north and south, capturing it, and exploiting the offensive with troops of the right wing and center toward Varenikovskaya, and with troops on the west wing toward Verkhne-Bakanskiy and Anapu, destroying the main enemy grouping on Taman' Peninsula in parts. Fierce battles raged in the vicinities of Krymskaya and Myskhako throughout April.

In response to a directive of the supreme high commander published 18 April 1943 Headquarters liaison officers--Marshal of the Soviet Union G. K. Zhukov and Marshal of Aviation A. A. Novikov--came to Taman'.



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"I was ordered," wrote Marshal of the Soviet Union G. K. Zhukov in his memoirs, "to depart by air for the Northern Caucasian Front on 18 April. The troops of this front were fighting hard battles with the objective of destroying the enemy's Taman' grouping, consisting for the most part of the well-equipped German 17th Army.

"Destroying the enemy on the Taman' Peninsula had great importance to the Soviet Command. In addition to destroying a large enemy grouping--14-16 divisions or about 180,000-200,000 men were operating in this area--as a result of the operation we liberated Novorossiysk. Here on a small beachhead a heroic detachment of soldiers from the 18th Army and Black Sea Fleet seamen fought in the first half of February.

"I arrived together with Naval People's Commissar N. G. Kuznetsov, Air Force Commander A. A. Novikov, and General S. M. Shtemenko from the General Staff at General K. N. Leselidze's 18th Army."<sup>10</sup>

The air force commander's operational army included Colonels N. F. Andrianov and A. N. Mal'tsev and Lieutenant Colonel M. N. Kozhevnikov. There was also a small operational group of several officers from the General Staff. The Soviet Army Air Force Headquarters worked out the measures for concentrating air formations of the Hq SHC Reserve on the southern axis back in the beginning of April.

By 20 April the air service of the Northern Caucasian Front was reinforced by the Headquarters reserve's II Bomber Air Corps (commander, General V. A. Ushakov), III Fighter Air Corps (commander, General Ye. Ya. Savitskiy), II Mixed Air Corps (commander, General I. T. Yeremenko), and the 282d Fighter Air Division (commander, Colonel S. P. Danilov).<sup>11</sup> Strategic aviation sent the 50th Air Division (commander, Colonel S. S. Lebedev). The 62d Air Division (commander, Colonel G. N. Tupikov) also arrived in April. The strategic aviation forces were brought in under the command of General N. S. Skripko. Including the arriving air formations and the air service of the Black Sea Fleet, our air grouping now consisted of 900 warplanes, to include 800 airplanes in frontal aviation (270 fighters, 170 ground attack airplanes, 165 day bombers, and 195 night bombers).<sup>12</sup>

Thus when we include airplanes brought in from the air services of neighboring fronts, the balance of power in the air was approximately equal. Overall leadership and coordination of the air force's activities was the responsibility of Marshal of Aviation A. A. Novikov.<sup>13</sup> The battle-worthiness of our aviation was extremely high. There were many well trained air formations and units in the air service of the Northern Caucasian Front. The proportion of new types of airplanes in bomber aviation was 65 percent. Fighter aviation had been almost totally rearmed with new airplanes--Yak-1, Yak-7b, and La-5. In all, 11 percent were American- and English-produced airplanes--B-20 and B-3 bombers, and Aerocobra and Spitfire fighters. In regard to the ratio of forces, we

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had the advantage in fighters, and the enemy was superior to us in bomber aviation and enjoyed better basing and a larger quantity of airfields for maneuvering.

The following missions were assigned to the air force on the Northern Caucasian axis: Attain air superiority, dependably cover ground troops, support the offensive of the 56th Army, and stubbornly defend our assault landing units southwest of Novorossiysk.

Utilizing the rich experience of employing aviation at Stalingrad, the plan of an air offensive was written in full volume for the first time; it was signed by the Northern Caucasian Front's troop commander, General I. I. Maslennikov, by the front's Military Council member, General A. Ya. Fominykh, and by the front's air force commander, General K. A. Vershinin. On 20 April 1943 the plan for the air offensive of the Northern Caucasian Front's air service and aviation contributed by the Hq SHC reserve to destroy the enemy grouping on the Taman' Peninsula was approved by Marshal of the Soviet Union G. K. Zhukov and Marshal of Aviation A. A. Novikov.

The plan foresaw: Attaining air superiority; destroying enemy manpower and artillery by bomber and ground attack strikes to support the defenses of our assault landing units southwest of Novorossiysk and the advance of the 56th Army; performing air reconnaissance in behalf of the front's troops and aviation.

The following were called in for these missions: 733 airplanes from the air service of the Northern Caucasian Front, 79 from the air service of the Black Sea Fleet, 36 from the air service of the Southern Front, and 200 airplanes from strategic aviation--1,048 airplanes in all (508 bombers, 170 ground attack airplanes, and 370 fighters). A portion of the Southwestern Front's aviation was called in as well.<sup>14</sup> In the event that the enemy were to be especially active on the ground and in the air against the assault landing group southwest of Novorossiysk, all aviation was to be retargeted for its support.

During preparations for and conduct of the operation the command devoted a great deal of attention to organizing and achieving interaction between the arms and services of aviation and the ground troops. Interaction between frontal aviation and the air service of the Black Sea Fleet was to involve distribution of areas of responsibility and times of action, and transfer of some of the fighters of the 5th Air Army to the commander of the Black Sea Fleet's air service in operational respects. The front's air service deployed an auxiliary control post together with the front's forward command post in the vicinity of Abinskaya Station to control all aviation above the battlefield. The auxiliary control posts of the 4th and 5th air armies were deployed and moved to the front line. Air liaison officers were designated in the rifle divisions.

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Five radio stations were deployed at the front line to control fighters above the battlefield; three of them were in the sector of the 56th Army, including one main control radio station.<sup>15</sup> A. A. Novikov, K. A. Vershinin, 216th Fighter Air Division Commander General A. V. Borman (in charge of fighter guidance), and a group of officers from the 4th Air Army were present in the main control radio station for the time of the air engagements.

The first air engagement began on 17 April when the enemy attempted to destroy assault landing units on the beachhead near Myskhako. At 0630 hours, following intense artillery and air preparation, the enemy went over to the offensive. The enemy launched 450 bombers and about 200 fighters against troops of the 18th Army defending a beachhead with a total area of 30 km<sup>2</sup>. To oppose the enemy offensive in the vicinity of Myskhako, the Soviet Command launched 500 airplanes, including 100 bombers. On that day German bombers flew more than 1,000 sorties against Myskhako. Soviet fighters opposed them actively.<sup>16</sup> On 20 April the enemy once again undertook a powerful offensive against the defenders of the "Little Land." About 30 minutes before the beginning of the enemy's offensive frontal aviation made an effective strike with a force of 60 bombers and 30 fighters against enemy troops preparing for the attack. After a small interval of time the offensive of the enemy troops was halted for practical purposes by a second strike made by a group of 100 airplanes. General K. N. Leselidze, commander of the 18th Army, wrote the following in this regard: "The massed strikes of our aviation against the enemy, who was trying to destroy the assault landing units in the vicinity of Myskhako, foiled his plans. Personnel of the assault landing group gained confidence in their strength."<sup>17</sup>

The high morale of the defenders of the "Little Land," their steadfastness, and their bravery were constantly maintained by party-political work conducted intensively by the political department of the 18th Army, which was headed by Colonel Leonid Il'ich Brezhnev.

On subsequent days the power of our air strikes against the enemy grew continuously due to commitment of SHC reserve air corps arriving at the front. The enemy launched large fighter forces against our bombers and ground attack airplanes, and he continued making bomb runs against the defenders of the "Little Land." Fierce air battles went on continuously in the air. On 20 April Soviet fighters knocked down 50 German airplanes. Having lost 182 airplanes (152 knocked down by fighters and 30 by anti-aircraft artillery) in 8 days of battle (from 17 to 24 April), the fascist German squadrons were compelled to abandon the battlefield to our aviation.<sup>18</sup> A turning point occurred in the air situation. The activity of fascist German aviation declined noticeably. The Germans were forced to halt the offensive started on 17 April and withdraw to their starting position, and the Luftwaffe went over to defensive operations.

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"Our aviation played an important role in repelling all enemy attacks at Myskhako," wrote Marshal of the Soviet Union A. A. Grechko in his memoirs. "By its massed actions, it contained the enemy offensive and forced enemy aviation to reduce its activity. The commander of the 17th Army was forced to report to the headquarters of Army Group A: 'Today's air offensive of the Russians initiated against Novorossiysk from the landing area of the assault landing party, and the strong attack by the Russian Air Force on the airfields demonstrated the great potential of Russian aviation.' The first air engagements on the Novorossiysk axis were won by our aviation."<sup>19</sup>

Our pilots displayed great courage and heroism. On 21 April pilot N. V. Rykhlin of the 805th Ground Attack Air Regiment was attacking ground targets in his Il-2. Suddenly four German fighters ambushed him. In the unequal air battle above the battlefield pilot N. V. Rykhlin and gunner I. S. Yefremov knocked down two enemy fighters. The Il-2 had been struck many times, but the pilot managed to return the crippled airplane to his territory and land successfully at a frontline field airfield. Marshal of Aviation A. A. Novikov witnessed the entire battle from the forward command post. The pilot and gunner were ordered to appear at the forward post, and the two men were awarded an irregular promotion for bravery and valor by an order signed right there on the spot. Junior Lieutenant N. V. Rykhlin was promoted to senior lieutenant and Senior Sergeant I. S. Yefremov was promoted to junior lieutenant.<sup>20</sup>

The glory of outstanding aces resounded over the Kuban' in those days-- A. I. Pokryshkin, the brothers D. B. Glinka and B. B. Glinka, V. I. Fadeyev, V. G. Semenishin, G. A. Rechkalov, and others. After the enemy's offensive in the vicinity of Novorossiysk was halted, the Northern Caucasian Front's aviation was reassigned to support troops of the 56th Army in their offensive in the vicinity of Krymskaya Station. Concurrently, on order of the Hq SHC the Soviet Air Force made systematic strikes against enemy airfields on the Taman' Peninsula, in the Crimea, and in the southern Ukraine between 17 and 29 April. These actions evolved into an air operation. The goal of the latter was to weaken enemy aviation in the southern sector of the Soviet-German front and thus promote attainment of air supremacy.

In addition to the 4th Air Army, the participants of the operation included formations of the 8th Air Army of the Southern Front, the 17th Air Army of the Southwestern Front, the air service of the Black Sea Fleet, and strategic aviation. Airfields at Saki, Sarabuz, Kerch', Taman', and Anapa were subjected to massed attacks. Strategic aviation destroyed 170 airplanes just at the Saki and Sarabuz airfields alone. In all, between 17 and 29 April Soviet pilots put 260 airplanes out of action at enemy airfields.<sup>21</sup>

The savage battles on the "Little Land" were followed by a lull on the entire Northern Caucasian Front, lasting until 29 April. On that day at

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0740 hours, following artillery preparation and with active air support, troops of 56th Army resumed their offensive with the objective of splitting the enemy grouping on the Taman' Peninsula with a strike on Krymskaya Station and Anapa and then annihilating it. The 56th Army's offensive was preceded by air preparation, which later transformed into air support. Just during the first 3 hours alone, 144 of our bombers, 82 ground attack airplanes, and 265 fighters fought over the battlefield. Enemy bombers tried to halt the 56th Army's offensive. Battles lasting hours on end went on in the air. Forty-two group air battles, in which Soviet fighters knocked down 75 enemy airplanes, occurred on that day. During the day our aviation flew 1,268 sorties.<sup>22</sup>

By attacking north and south of Krymskaya Station, troops of the 56th Army threatened the enemy's Crimean grouping with encirclement, forcing it to withdraw its troops from this area. Krymskaya Station was liberated on 4 May. Exhausted, the 56th Army had to abandon any further offensive action. Battles on the ground gradually died down, while the fight in the air flared up with new, improbable force. In a relatively narrow sector of the front (25-30 km) up to 40 group air battles occurred in a single day, with 50-80 airplanes from both sides participating in each of them. The intensity of the air struggle persisted into the future.

In all between 29 April and 10 May the 4th Air Army of the Black Sea Fleet's air service and strategic aviation flew about 10,000 sorties, 50 percent of them against enemy troops and equipment on the battlefield. In this period 368 of the enemy's airplanes--that is, more than one-third of his initial grouping--were destroyed. The losses of the Northern Caucasian Front's aviation were 70 airplanes.<sup>23</sup>

After liberation of Krymskaya Station troops of the Northern Caucasian Front began preparing for a new offensive operation with the goal of penetrating the enemy's "Blue Line," defeating the German 17th Army, and liberating all of Taman' Peninsula. On the morning of 26 May, following powerful artillery and air preparation, troops of the 56th and 47th armies went over to the offensive on an axis between the settlements of Kiyevskoye and Moldavanskoye. Air preparation consisted of one massed attack by 338 airplanes (84 bombers, 104 ground attack airplanes, and 150 fighters).<sup>24</sup>

The enemy resisted savagely, especially in the air, concentrating up to 1,400 airplanes in a radius of up to 500 km from Krasnodar<sup>25</sup>--that is, within range of Kiyevskoye and Moldavanskoye--against troops of the Northern Caucasian Front; this required him to transfer bombers in from the Ukraine. In the first 3 hours of the offensive enemy aviation flew more than 1,500 sorties. He managed to seize the initiative in the air temporarily, and in the second half of the day he was able to make a strong attack against our troops with about 600 airplanes.<sup>26</sup> A major engagement once again took form in the air. Our fighter pilots fought

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enemy aviation heroically. The command of the 4th Air Army took steps to heighten the effectiveness of fighter aviation. Enemy bombers began to be intercepted by fighters at the far approaches, and the "independent hunting" tactic came into broader use. The number of night strikes against enemy airfields was increased. Between 26 May and 7 June 845 sorties were flown against enemy airfields.

The steps taken made it possible for our aviation to recover the initiative in the air within a relatively short period of time. In the first days of June enemy air activity began to show signs of a decline. Soviet fighters once again became the masters of the Kuban' skies. The third major air engagement at the Kuban' was once again won by our aviation. Stubborn battles continued on the ground and in the air until 7 June. But troops of the Northern Caucasian Front were unable to penetrate the entire depth of enemy defenses, and on order of the Hq SHC the offensive actions were halted.

Air battles lasted more than 2 months over the Kuban'. In the period of active operations by the ground troops they took the form of three major air engagements. These were the largest of the war thus far in relation to the number of air battles and the number of airplanes participating within them in a narrow sector of the front. During the air engagements our aviation flew about 35,000 sorties, to include 77 percent by frontal aviation, 9 percent by strategic aviation, and 14 percent by aviation of the Black Sea Fleet. The enemy lost 1,100 airplanes, to include more than 800 airplanes destroyed in the air.<sup>27</sup>

Air battles and engagements over the Kuban' demonstrated the greater skills of flight crews and air commanders. Extensive use was made of vertical maneuvering, disposition of combat formations in altitude, commitment of reserves to the engagement, and control of a group air battle from terrestrial control posts. The fighter warning and guidance system was well organized, and the strategy of intensifying air activity in the course of an air engagement was broadly employed. Fighters were often employed in the "independent hunting" strategy, and they often blockaded airfields. Bombers were intercepted by strong maneuvering groups of fighters at the far approaches to the front line. After fighters were furnished with radio sets, they were able to abandon dense, closed combat formations. While formerly a commander could control his subunit in the air only through evolutions performed with his own airplane or through personal example, which required visual communication, in the battle of Stalingrad and especially here at the Kuban' he exercised control only by radio. Owing to this the fighter combat formations could be disposed in altitude and front; this came to be called the "Kuban' formation."

In the Kuban' battles Soviet pilots displayed bravery, boldness, inventiveness, and extreme devotion to their people and their Communist Party. Fifty-two pilots were awarded the Hero of the Soviet Union title. The

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names of those who distinguished themselves in air engagements over the Kuban'--A. I. Pokryshkin, who knocked down 20 enemy airplanes over the Kuban', G. G. Golubev, A. F. Klubov, N. F. Smirnov, V. G. Semenishin, V. I. Fadeyef, B. B. Glinka, D. B. Glinka, G. A. Rechkalov, and many others--have been inscribed on a glorious page in the history of the Soviet Armed Forces.

The victory over the Kuban' was a new, important stage in the Soviet Air Force's fight for strategic air superiority along the entire front of armed conflict. The outcome of the air engagements over the Kuban' altered the subsequent course of the fight for air superiority in favor of the Soviet Air Force.

Speaking at a conference of air division and corps commanders and executives of the 4th Air Army, Northern Caucasian Front held 11 May 1943 at Pashkovskaya Station, near Krasnodar, Marshal of Aviation A. A. Novikov praised the actions of our aviation in the vicinity of Myskhako and within the 56th Army's sector of advance. He also dwelled on three of the most important problems in the theory and practice of air operations, as revealed in the battles at Stalingrad and here at the Kuban'--air superiority, the air offensive, and organization of aviation's radio control. In his statements he defined strategic air superiority and the air offensive. Summarizing the two air engagements that had occurred over the Kuban' between 17 April and 10 May, A. A. Novikov pointed out that the 4th Air Army enjoyed all the conditions for retaining the strategic air superiority it had won over the Kuban', and for successfully conducting a powerful air offensive in behalf of the front's troops. He noted that the fight for air superiority is the most important mission of frontal aviation, successful completion of which would deprive enemy bombers of the possibility for flying bomb runs against combat formations of our troops and insure completion of the missions of our bombers and ground attack airplanes. In such a case fighter aviation could destroy enemy bombers with less interference and force them to dump their bomb loads on their own troops. He once again confirmed that the air offensive concept includes the entire complex of missions performed by an air army in an offensive operation of frontal troops. He devoted special attention to organizing and exercising control of aviation by responsible air commanders guiding their airplanes from radio stations located at forward control posts next to the front line--wherever ground troops are engaged in active operations, wherever they are making the main strike.<sup>28</sup>

A. A. Novikov's speech at the commander's conference was subsequently published in an informative collection by the Soviet Army Air Force Headquarters and brought to the awareness of executives in all air armies.

The actions of aviation over the Kuban' demonstrated that the air force command and the commanders of the air units and formations had increased their skill in controlling the formations and units.

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Air Operations of the Soviet Air Force To Destroy Enemy Air Groupings in Summer 1943

By summer 1943 the center of gravity of the fight for strategic air superiority shifted to the central sector of the Soviet-German front. Preparing the country's armed forces for the summer-fall engagements, the Hq SHC attached extremely great significance to completing the fight for strategic air superiority and disorganizing concentration of German troops on the Kursk axis. The conditions favored large air operations by the air force along a broad front. Being a combination of single or successive massed strikes and air battles (engagements) following a single design and plan, the air force air operation seriously weakened opposing enemy air groupings and improved the air situation.

In May and June 1943 the Headquarters decided to conduct two large air operations with the goal of destroying the enemy's main air groupings. It was concurrently decided to fight enemy rail and motor transportation in the front's central sector. The decision to conduct the first operation was made by the Headquarters at the beginning of May. On order of the Hq SHC, on 4 May 1943 Chief of General Staff A. M. Vasilevskiy ordered the military councils of the Western, Bryansk, Central, Voronezh, Southwestern, and Southern fronts to organize destruction of enemy airplanes at airfields and in the air, to interdict rail shipments, and to disorganize motor traffic on highways and dirt roads. The plan was to contain the actions of the Luftwaffe through simultaneous surprise attacks on airfields along a broad front 1,200 km long from Smolensk to the shore of the Sea of Azov and defeat the enemy groupings near Seshcha, Bryansk, Orel, Khar'kov, and Stalino. The time for the first massed attack against the airfields was set at from 0430 to 0500 hours for the 1st, 15th, 16th, 2d, 17th, and 8th air armies; these attacks were to be followed by actions against these airfields for a period of 3 days. After a 2-day break, the enemy airfields were to be struck once again by the Soviet Air Force for 3 days. Actions against rail facilities, highways, and dirt roads were to continue for 10 days.<sup>29</sup>

Air reconnaissance was given an important role in the air operation. Its purpose was to determine the locations of airplanes at airfields, the disposition of air defense resources, and the locations of ammunition and fuel dumps, and to determine the most concealed routes to and from the airfields for our ground attack airplanes and bombers. Beginning with the start of May, the enemy's principal airfields were subjected to air reconnaissance three times a day--in the morning, in the afternoon, and at twilight--without disturbing the established pattern of reconnaissance. Lengthy surveillance revealed all of the airplane parking pads, the disposition of antiaircraft resources, and the times when all enemy airplanes and personnel were present at most of the airfields.

The plan developed for the air operation by the General Staff foresaw active participation by the air force command and staff. In a directive



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dated 5 May 1943 the air force commander issued specific instructions to the commanders of frontal air armies on the tactics they were to employ in their missions. The directive stated: "Fulfilling the order of the Headquarters, you must simultaneously attack all of the enemy's principal airfields at which airplanes are accumulated. The bulk of the enemy's aviation must be suppressed in the first day. Thus the enemy airfields must be subjected to repeated attacks on the same day, and night bombers must operate against them at night. In the next 2 days, without reducing the stubbornness and persistence of the actions, continue to strike enemy aviation both at the principal airfields and at new ones discovered by air reconnaissance.... Strike the airfields in large groups, allocating enough aircraft out of their composition to suppress enemy air defenses."<sup>30</sup>

In accordance with directives of the Hq SHC and the Soviet Army Air Force commander, the air armies were to operate against the following numbers of airfields: 1st Air Army--six, 15th--two, 16th--five, 2d--eight, 17th--two, and 8th Air Army--three airfields.

To complete these missions, the air armies were to fly the following number of sorties in 10 days: 1st Air Army--2,800, 15th--650, 16th--1,050, 2d--1,900, 17th--2,300, and 8th--1,600, for a total of 10,300.<sup>31</sup>

The covertness and carefulness of the preparations for the air operation insured full surprise and high effectiveness for the first massed strike. Some 434 airplanes participated in it, simultaneously attacking 17 enemy airfields. Caught unawares, the enemy was unable to offer organized resistance and lost 194 airplanes at the airfields and 21 in air battles. Soviet aviation lost 21 airplanes.<sup>32</sup> On the average one enemy airplane was destroyed in two of our sorties. A second strike was made on 6 May at 1500 hours by 372 airplanes against 20 airfields. The enemy offered significant resistance in the second strike. He had all of his air defenses at full readiness. Fighters were patrolling in the air, and antiaircraft artillery covered the airfields with defensive fire. The Soviet Command had expected this. Additional resources were assigned to fight the enemy's air defenses and blockade airfields at which fighters were based. Surmounting savage resistance, Soviet pilots destroyed and damaged 134 airplanes at airfields and knocked 24 German fighters, losing 46 of their own craft.

In the third massed attack, which was made on the morning of 7 May, 405 Soviet airplanes attacked 22 airfields and put 122 enemy airplanes out of action, to include 29 in air battles. Our losses were 46 airplanes.

The command and staff of the Soviet Army Air Force continually monitored the actions of the air armies in support of the operation. On 8 May 1943 the air force commander published a directive stating: "Our attack on enemy airfields on 6 May 1943 was successful owing to surprise. The situation was different on 7 May 1943. Enemy fighters were on alert, at higher combat readiness, closer to the front line.... In such a situation

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the actions should be directed only at well reconnoitered airfields, and the number of fighters covering the strike groups should be increased. Ground attack groups must be constantly strong so that they could not only strike airplanes at airfields but also dependably suppress air defenses.... The tactics of the raid should now be based on strength and cunning, since we can no longer count on surprise."<sup>33</sup>

On 8 May the Soviet Air Force made a fourth strike with 181 airplanes. But this strike produced the poorest results. Our aviation destroyed only six enemy airplanes. The initial surprise was lost, and the Hq SHC ordered a temporary cessation of activities against the airfields.<sup>34</sup> On 13 May 1943 the Soviet Army Air Force commander reported the following summary data to the supreme high commander concerning the actions of our aviation in the air operation of 6, 7 and 8 May 1943. "In 3 days our air force flew 1,392 sorties, destroyed 373 enemy airplanes at airfields, damaged 51, knocked down 67 in air battles, and damaged 10 in the air. In sum total the enemy lost 501 airplanes. These data are based on pilot debriefings, information from partisans, and photographs. Our losses were 122 airplanes, to include 21 in air battles and 8 knocked down by enemy antiaircraft artillery; 93 airplanes failed to return from their missions."<sup>35</sup> The report stated that an analysis of the results of the Soviet Air Force's actions would demonstrate the high effectiveness of a simultaneous massed attack against enemy airfields situated along a broad front.

In the first massed attack two sorties were flown for every enemy airplane destroyed, 2.4 were flown in the second, as many as 3.2 were flown in the third, and 30.2 were flown in the fourth attack. This means that the enemy's opposition increased. In the first massed attack one Soviet airplane was lost in every 21.7 sorties, one was lost in every 8.1 sorties in the second attack, and one was lost in every 8.4 sorties in the third. The fourth attack, which was made on 8 May, turned out to be totally ineffective.<sup>36</sup> Thus it was correctly concluded that simultaneous surprise attacks against enemy airfields by large numbers of our airplanes were the most suitable. The report analyzed the reasons for the lower effectiveness of the subsequent strikes--the higher combat readiness of enemy aviation, especially fighter aviation, and rebasing of enemy aviation to standby airfields, which were extremely difficult to attack without preliminary detection and reconnaissance. This is why the report suggested simultaneous surprise strikes by large forces as the strategy to be used against enemy airfields with the objective of destroying his aviation.

The results of the air operation improved the air situation for the Soviet Armed Forces in the central and southern sectors of the front. But the power of the Luftwaffe had not been broken yet. It supported its troops and raided important rail terminals and industrial centers in our country, and our airfields.

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By decision of the Hq SHC on 8-10 June 1943 the Soviet Air Force conducted another very large air operation to destroy enemy aviation at airfields. Its objective was to strike bomber aviation making night raids on important industrial regions in our country--Gor'kiy, Saratov, and Yaroslavl'. The 1st, 15th, and 2d air armies and strategic aviation formations participated. First 15, and later another 13 airfields were struck. The main attention was turned to destroying airplanes at the airfields of Seshcha, Bryansk, Karachev, Orel, Olsuf'yevo, Khar'kov, Stalino, and Zaporozh'ye, where air reconnaissance revealed the greatest accumulation of enemy bombers. There were unique features to the planning and preparation of this air operation. The command and staff of the Soviet Army Air Force possessed data indicating that the Fascist German Command had given consideration to the shortcomings of air defenses against our airfield strikes in May, and that it had significantly strengthened airfield cover. This is why in his directives the air force commander ordered the air army commanders to commit larger forces to the support wave intended for suppression of antiaircraft resources. Fighters were given the mission of containing enemy fighters in the air by battle and blockading forward airfields. Up to 160 airplanes participated in strikes against individual airfields, half of them operating as fighter escorts. As a result of the massed strikes by frontal and strategic aviation 141 enemy airplanes were destroyed and damaged on 8 June; the figures were 92 airplanes for 9 June and 16 German airplanes for 10 June. In all during the air operation the Luftwaffe lost 168 airplanes at airfields and 81 in air battles.<sup>37</sup>

In all three air operations conducted in spring and at the beginning of summer 1943 the Soviet Air Force destroyed a total of more than 1,000 airplanes, which significantly accelerated our attainment of strategic air superiority in summer 1943.

In May-June the Luftwaffe attempted a number of retaliatory strikes against our airfields. About 300 raids were made against Soviet airfields, with more than 1,200 airplanes participating. But owing to dispersal and meticulous camouflage of airplanes at the parking pads, creation of dummy airfields, and strong air defenses, their effectiveness was low. Here is what the air force commander reported to the supreme high commander on 22 July 1943 in this regard: "We are employing dummy airfields with great success as one of the measures of airfield antiaircraft defense. For example the enemy dropped 2,214 bombs weighing 46,755 kg on dummy airfields of the 8th Air Army, Southern Front in the last month and a half, dropped 61 bombs weighing 2,750 kg on real airfields during this time." The enemy struck dummy airfields, the report went on, supplied with good models which could not be distinguished from real airplanes on photographs. It was requested in this connection to have the People's Commissariat of Aviation Industry build 100 dummy Pe-2's, 300 dummy Il-2's, and 500 dummy fighters.<sup>38</sup>

Thus the air operations conducted with the objective of destroying the enemy's air groupings were distinguished by great scope, decisiveness of

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the goals, and high effectiveness. They were conducted in periods of relative calm on the front, when the ground troops were making preparations for forthcoming engagements. Consequently the aviation of the air armies was not busy supporting troops of the fronts and armies. This permitted the air force to concentrate its efforts on independent missions. Nevertheless the air operations were conducted mainly in behalf of forthcoming strategic offensive operations by groups of fronts.

During the air operations enemy aviation was simultaneously suppressed along a broad front and to a great depth; close interaction was achieved between the frontal air armies and strategic aviation formations. During the operations the enemy was deprived of the possibility of maneuvering his aviation, concentrating his efforts on the axis of the main strikes made by our air force, and making retaliatory strikes on a broad front. All of this permitted the command and staff of the Soviet Army Air Force to reach the correct conclusion that air operations were an effective form for attaining strategic air superiority.

As a result of the fierce battle for strategic air superiority in spring and the beginning of summer 1943 the power of the Luftwaffe was sapped away. It lost about 3,700 airplanes on the Soviet-German front between April and June 1943.<sup>39</sup> The enemy was already losing the strategic initiative in the air, but he continued to try to maintain his grasp on it with all of his forces. The struggle was resumed with new force at the beginning of July 1943, when the Germans went over to the offensive on the Kursk axis.

#### Actions of the Soviet Air Force To Interdict Rail Shipments and Disorganize Enemy Motor Traffic

The most important mission of the Soviet Air Force was to fight the enemy's rail shipments and disorganize his motor traffic on highways and dirt roads. It acquired especially great significance during preparations for the decisive summer engagements of 1943. An order written by People's Commissar of Defense I. V. Stalin on 4 May 1943 stated: "Strikes against railroad trains and attacks on motor columns are to be the most important missions of our air force."<sup>40</sup>

The air armies of seven fronts and strategic aviation were committed to these missions. A directive published on 4 May by the Hq SHC assigned the mission of interdicting rail shipments and disorganizing motor traffic to the frontal air armies; the table below shows the sectors assigned.

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<u>Air Army</u>	<u>Rail Shipments</u>	<u>Motor Shipments</u>
3d, Kalinin Front	On the line: Sebezh, Novo-Sokol'niki, Polotsk-Nevel', Vitebsk-Nevel'	East of the line: Pustoshka, Nevel', Gorodok
1st, Western Front	East of the line: Vitebsk, Mstislavl', Pochep	East of the line: Smolensk, Roslavl', Bryansk
15th, Bryansk Front	From Bryansk to Orel and on to the front line	East of the line: Karachev, Dmitrovsk-Orlovskiy
16th, Central Front	From Unech to Mikhaylovskiy and from Konotop to Vorozhba	East of the line: Trubachevsk, Konotop
2d, Voronezh Front	From Poltava to Khar'kov	East of the line: Belopol'ye, Akhtyrka, Nov. Vodolaga
17th, Southwestern Front	On the lines: Novo-Moskovsk, Merefa, Krasnograd, Slavyansk, Pavlograd, Merefa	East of the line: Krasnograd, Krasnoarmeyskoye
8th, Southern Front	On the lines: Chaplino, Krasnoarmeyskoye, Gorlovka, Debal'tsevo; north of the lines Gorlovka, Debal'tsevo, Mariupol', Stalino, Gorlovka, Taganrog	East of the line: Krasnoarmeyskoye, Mariupol'

The objectives of frontal aviation included locomotives, railroad trains, and motor vehicles. One ground attack and one fighter air regiment were allocated from each air army for destruction of these objectives on order of the commander of the Soviet Army Air Force. Operating in small groups using the independent "hunting" strategy, these regiments effectively destroyed their assigned targets. A permanent group of "hunters" was assigned to each rail route. Owing to this, within a short time the pilots managed to determine the traffic pattern of enemy trains, the terrain, and the air defenses along each road section, and to successfully fight enemy shipments. Pilots of the 16th and 2d air armies flew about 2,000 sorties for this purpose, destroying six railroad trains, up to 260 loaded cars, seven locomotives, and more than 120 motor vehicles.<sup>41</sup>

Strategic aviation operated systematically to interdict enemy rail shipments in spring 1943. In compliance with directives of the Hq SHC it conducted a special air operation in March with the goal of disrupting enemy shipments in the deep rear.

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Later it struck rail junctions, stations, and trains at sidings for 3 months. The depth of strategic aviation's operations attained 450-600 km, and the breadth of the sector within which it made its strikes was 350-400 km.

The following rail terminals were subjected to intense night raids during this period: Bryansk--2,852 sorties, Orel--2,325, Gomel'--1,641, Unecha--762, Smolensk--523, Orsha--483, Vyaz'ma--427, and Novozybkov--400 sorties. Certain rail terminals were subjected to several strikes. As an example the rail terminal in Bryansk was struck 11 times in April, 7 times in May, and 4 times in June; the Orel terminal was struck 19, 1 and 2 times correspondingly; Gomel' was struck 3, 4, and 1 times; and Unecha was struck 3, 1, and 2 times. In all, strategic aviation flew 9,400 sorties in April, May, and June 1943.<sup>42</sup>

The effectiveness of air force operations was high. Working together with partisans, on 6 March 1943 the air force put the Unecha-Bryansk rail section out of action for several days, and in April it halted traffic in the Roslavl'-Bryansk section. As a result of a raid on the rail terminal in Gomel' 17 loaded fuel tank cars and 24 food cars were burned, and 28 ammunition cars were demolished.<sup>43</sup>

The enemy suffered significant losses and his lines of communication were systematically interdicted through the joint actions of frontal aviation and strategic aviation. Concurrently, strategic aviation struck the centers of government and war industry deep in the enemy rear.

In April the city of Koenigsberg was subjected to five air strikes, Danzig was subjected to two, Insterburg was struck once, and Tilsit was struck three times. In all during this month strategic aviation flew 920 sorties against these cities, dropping about 700 tons of bombs.<sup>44</sup> On the night of 29 April a 5-ton bomb (FAB-5000) was dropped for the first time on facilities in Koenigsberg. While strikes by strategic aviation against industrial and administrative centers deep in the enemy rear did not cause significant material losses, they did force the Fascist German Command to keep air defense forces combat ready, and they did have a certain influence on the enemy's morale.

The actions of the Soviet Air Force to interdict rail shipments and disorganize motor traffic delayed the concentration of enemy troops on the Kursk axis, hindered their maneuver, and in the end had their influence on the fact that the enemy had to postpone the offensive from June to July 1943.

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FOOTNOTES

1. "Istoriya vtoroy mirovoy voyny 1939-1945" (History of World War II 1939-1945), Vol 6, p 160.
2. A multipurpose fighter having a maximum speed of over 600 km/hr at 6,000 meters; armament--four guns and two machineguns.
3. A two-engine single-seat airplane possessing powerful gun and machinegun armament.
4. "Istoriya vtoroy mirovoy voyny 1939-1945," Vol 7, Moscow, 1976, p 101.
5. Timokhovich, I. V., "Operativnoye iskusstvo Sovetskikh VVS v Velikoy Otechestvennoy voyn:" (Soviet Air Force Strategy in the Great Patriotic War), Moscow, 1976, p 41.
6. Air engagements occurred from 17 to 24 April, from 29 April to 10 May, and from 26 May to / June.
7. Grechko, A. A., "Bitva za Kavkaz" (The Battle of the Caucasus), Moscow, 1973, p 362.
8. "Sovetskiye VVS v Velikoy Otechestvennoy voyne 1941-1945 gg." (The Soviet Air Force in the Great Patriotic War 1941-1945), p 155.
9. In response to a directive of the Hq SHC, on 24 April 1943 the administration of the 5th Air Army transferred its air formations to the 4th Air Army and withdrew to Kursk, placing itself at the disposal of the command of the Steppe District (Front). General K. A. Vershinin assumed command of the 4th Air Army. The air force staff of the Northern Caucasian Front was disbanded.
10. Zhukov, G. K., "Vospominaniya i razmyshleniya" (Recollections and Reflections), Vol 2, Moscow, 1974, p 149.
11. Arkhiv MO SSSR [USSR Ministry of Defense Archives], f. 319, op. 4798, d. 70, 1. 9.
12. Grechko, A. A., "Bitva za Kavkaz," p 372.
13. Ibid., p 363.
14. Arkhiv MO SSSR, f. 224, op. 214836, d. 5, 11. 105-107.
15. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," Moscow, 1968, p 158.

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16. Arkhiv MO SSSR, f. 6598, op. 12475, d. 140, l. 134.
17. Arkhiv MO SSSR, f. 371, op. 13995, d. 2, l. 180.
18. "Istoriya Velikoy Otechestvennoy voyny Sovetskogo Soyuz 1941-1945 gg." (History of the Great Patriotic War of the Soviet Union 1941-1945), Vol 3, Moscow, 1964, p 388.
19. Grechko, A. A., "Bitva za Kavkaz," p 367.
20. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," pp 161-162.
21. "Istoriya Velikoy Otechestvennoy voyny Sovetskogo Soyuz 1941-1945 gg.," Vol 3, p 388.
22. Grechko, A. A., "Bitva za Kavkaz," p 376.
23. "Istoriya Velikoy Otechestvennoy voyny Sovetskogo Soyuz 1941-1945 gg.," Vol 3, p 388.
24. Arkhiv MO SSSR, f. 319, op. 4798, d. 47, l. 73.
25. Ibid., l. 74.
26. Ibid.
27. Ibid., l. 81.
28. Arkhiv MO SSSR, f. 35, op. 11280, d. 88, ll. 27-42.
29. Arkhiv MO SSSR, f. 48-A, op. 2, d. 8, ll. 103-104.
30. Arkhiv MO SSSR, f. 290, op. 3280, d. 50, l. 58.
31. Including 2,500 sorties flown by night light bomber aviation.
32. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 175.
33. Timokhovich, I. V., "Operativnoye iskusstvo Sovetskikh VVS v Velikoy Otechestvennoy voyne," p 80.
34. Arkhiv MO SSSR, f. 48-A, op. 2, d. 8, l. 136.
35. Arkhiv MO SSSR, f. 35, op. 226133, d. 1, l. 99.
36. Ibid., l. 99.



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37. Timokhovich, I. V., "Operativnoye iskusstvo Sovetskikh VVS v Velikoy Otechestvennoy voyne," p 83.
38. Arkhiv MO SSSR, f. 35, op. 11285, d. 807, 11. 89-90.
39. Arkhiv MO SSSR, f. 35, op. 22614, d. 8, 1. 164.
40. VOYENNO-ISTORICHESKIY ZHURNAL, No 1, 1975, p 78.
41. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 177.
42. Arkhiv MO SSSR, f. 35, op. 283235, d. 94, 1. 4.
43. Arkhiv MO SSSR, f. 39, op. 11495, d. 13, 1. 33.
44. Ibid., op. 11519, d. 649, 11. 52-62.

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CHAPTER V. SOVIET ARMY AIR FORCE COMMAND AND STAFF IN THE BATTLE OF KURSK

The Strategic Situation on the Kursk Axis in July 1943

By summer 1943 the center of gravity of the armed conflict shifted to the central sector of the Soviet-German front.

The victory of the Soviet Armed Forces in winter and spring 1943 shook the foundation of the fascist bloc. By this time Germany's general situation worsened considerably. Displeasure with the war intensified in satellite countries. The prestige of Germany fell in the eyes of its allies. Italy was on the verge of quitting the war. But despite the undeniable facts Hitler's politicians and strategists felt that the war was not yet lost. The Fascist German Command decided to conduct a major summer offensive on the Soviet-German front with the goals of improving the army's morale, preventing disintegration of the fascist bloc, and recovering prestige. The Fascist German Army was still a large force in summer 1943. There were about 4.8 million men on the Soviet-German front, which was about 72 percent of all forces of the operating army. In addition there were 525,000 men here in satellite armies. In all, countries of the German bloc had 5,325,000 men in the Soviet-German front.<sup>1</sup> But the ratio of forces was not in favor of Hitler's troops. As of July 1943 the Soviet operating army had a strength of 6,442,000 men. We surpassed the enemy by 1.2 times in manpower. The superiority of the Soviet Armed Forces was even greater in relation to equipment: We had 98,790 guns and mortars as opposed to 54,300 enemy weapons, 9,580 tanks and self-propelled guns as opposed to the enemy's 5,850, and 8,290 warplanes as opposed to the enemy's 2,980.<sup>2</sup> The front line extended from the Barents Sea to Lake Ladoga, then along the Svir' River to Leningrad, and from there south. At Velikiye Luki it turned southeast, forming a huge salient in the vicinity of Kursk, deep into the disposition of the German troops. Next from the vicinity of Belgorod the front line passed east of Khar'kov, after which it followed the Northern Donets and Mius rivers to the east shore of the Sea of Azov. On the Taman' Peninsula the front line passed east of Temryuk and Novorossiysk.

Preparing for his offensive on the Kursk axis, the enemy concentrated about 50 of the most battleworthy divisions--up to 900,000 men, about 10,000 guns and mortars, and 2,700 tanks and self-propelled guns.<sup>3</sup>

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By striking toward Kursk on converging axes, the German Command planned to encircle and destroy Soviet troops at the Kursk salient, crush our strategic reserves on the Livny, Novyy Oskol line, and regain the strategic initiative.

The German Command placed high hopes on massed use of heavy Tiger and Panther tanks and Ferdinand self-propelled guns, which had sound armor protection and powerful armament, and on its air force.

The Fascist German Command created two powerful air groupings to support troops from the air in the vicinity of the Kursk salient. The 6th Air Fleet was to support the strike grouping in the area south of Orel. Between 15 March and 1 July the fleet was reinforced by five air groups transferred from Germany, France, and Norway.

The 4th Air Fleet supported the strike grouping north of Khar'kov. At the beginning of the offensive the fleet was reinforced by five bomber groups and one fighter group and by two groups of dive bombers, each containing 30 airplanes.

In all the enemy air grouping at Kursk had a strength of 2,050 airplanes (1,200 bombers, 108 KhSh-129 ground attack airplanes, 600 fighters, and 150 reconnaissance airplanes<sup>4</sup>).

The lines of defense of the Kursk salient were occupied by troops of the Central and Voronezh fronts. Their strength was more than 1.3 million men, 19,300 guns and mortars, and more than 3,300 tanks and SPG.<sup>5</sup> The Steppe Front, which including aviation had a strength of 573,000 men, 3,397 guns, 4,004 mortars, and 1,550 tanks and SPG,<sup>6</sup> was concentrated in the second strategic echelon.

The air grouping consisted of the Central Front's 16th Air Army, the Voronezh Front's 2d Air Army, and the Southwestern Front's 17th Air Army (commanded respectively by Generals S. I. Rudenko, S. A. Krasovskiy, and V. A. Sudets), and the main forces of strategic aviation. The composition of the Steppe Front included the 5th Air Army (commander, General S. K. Goryunov). The air armies were reinforced by air corps of the SHC reserve. The 16th Air Army contained three air corps and six separate air divisions with a total strength of 1,000 airplanes; the 2d Air Army had two fighter, one ground attack, and one bomber air corps and two separate air divisions, for a total of 880 airplanes; the 17th Air Army had three mixed air corps and two separate air divisions, for a total strength of 735 airplanes. In sum total our air grouping possessed 2,900 airplanes (1,060 fighters, 940 ground attack airplanes, 500 day bombers, and 400 night bombers), and if we consider strategic aviation, our strength was 1.4 times greater than that of the enemy air force.<sup>7</sup>

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## The Soviet Army Air Force Command and Staff During Preparations for the Battle of Kursk

The Soviet Supreme High Command discovered the enemy's plans for a summer offensive in time. To defeat the enemy with the lowest losses to ourselves, as long ago as on 12 April 1942 a preliminary decision was made to first wear out the German strike groupings with an active defense and then go over to a decisive counteroffensive ending in their final destruction. It was with this in mind that all arms and services of the Soviet Armed Forces were prepared. On receiving the basic instructions from the General Staff the command and staff of the Soviet Army Air Force began major preparations for air operations. These preparations consisted mainly of creating a strong air grouping, preparing the airfield net, manning the units and formations, and creating the necessary logistical reserves. Concurrently the air force command and staff carefully studied the enemy and the combat capabilities of the air forces of the belligerents, and took steps to insure more effective use of aviation committed to the operation.

The constantly increasing deliveries of new types of airplanes, radio stations, and material and technical maintenance resources from industry made this possible. In 1943 the average monthly output of warplanes increased from 2,100 in 1942 to 2,900 in 1943. The airplane fleet of the Soviet Air Force underwent fundamental renovation. By the beginning of the battle of Kursk basically only night bomber air units still had obsolete airplanes. Especially great changes occurred in the fighter fleet. Several modifications of the new La-5fm and Yak-9 airplanes assumed dominance in 1943.<sup>8</sup> By July 1943 all regiments in ground attack aviation were armed with Il-2's, and the overwhelming majority of them were two-seat ground attack airplanes. The bomber fleet was almost completely replaced with the Pe-2. By 1943 fighters in frontal aviation were armed with M. Ye. Berezin's large caliber machineguns (12.7 mm), which replaced the ShKAS machineguns. In addition to large caliber machineguns, 20-mm caliber guns designed by B. G. Shpital'nyy and S. V. Vladimirov (ShVAK) were installed aboard all airplanes. Beginning with spring 1943 the 37-mm gun designed by A. E. Nudel'man and A. S. Suranov (NS-37) were being installed aboard Yak-9 airplanes. The Germans did not possess an aircraft gun as powerful as this.

Invention of the PTAB-2.5-1.5 hollow-charge antitank bomb by engineer I. A. Larionov in 1943 had extremely great significance to heightening the effectiveness of ground attack aviation. This bomb was highly destructive, it was characterized by low weight and small size, and it was not expensive to manufacture. By decision of the USSR GKO, transmitting radio sets began to be installed in one out of every two fighters as of October 1942.<sup>9</sup> In 1943 every new airplane was outfitted with a radio set. The ZOS [ground aids to navigation] service enjoyed extensive development. The number of radio communication stations within it increased from 180 in 1942 to 420 in 1943. Redut and Pegmatit radar devices were adopted in frontal aviation.

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In the first half of 1943 the administration of the Soviet Army Air Force commander underwent further improvements in its organizational structure and in the methods of troop command and control. Many sections were enlarged into directorates (the Navigator Service Directorate and others). An air defense service, a rear service, a directorate of air gunnery service, and a Main Directorate of Frontal Aviation Combat Training were created. Two directorates were created within the Air Force Main Directorate of Air Engineering Service--the Field Repair Directorate and the Overhaul and Recovery Directorate. The Air Force Main Organizing Directorate was renamed the Air Force Main Organizing and Training Directorate.<sup>10</sup>

The Soviet Army Air Force Military Council was made stronger. General Nikolay Sergeyevich Shimanov was appointed full-time member of the Air Force Military Council in March 1943; he concurrently performed the duties of director of the CC VKP(b)'s Aviation Section. N. S. Shimanov remained at these posts for the rest of the war. During the war the membership of the Air Force Military Council included P. F. Zhigarev, A. A. Novikov, P. S. Stepanov, L. G. Rudenko, N. S. Shimanov, G. A. Vorozheykin, F. Ya. Falaleyev, A. V. Nikitin, A. I. Shakhurin, A. K. Repin, S. A. Khudyakov, and other troop commanders.

The Air Force Military Council discussed and resolved the most important issues concerning the life and combat activities of the Soviet Air Force. All fundamental issues pertaining to development of the Air Force were discussed as a rule at meetings of the Military Council, and decisions made by the air force commander were reported to the General Staff, the Hq SHC, or the State Defense Committee.

In its practical activity the Air Force Military Council relied on commanders, political agencies, party-political staffs, and the party organizations of air units and formations and training institutions.

In May 1943 General S. A. Khudyakov was reappointed to the post of air force chief of staff. General F. Ya. Falaleyev was appointed full-time deputy commander of the Soviet Army Air Force.

The air force command and its military council did an extremely great deal of work to organize reserve air regiments. Creation of reserve air regiments began back in the first days of the war in compliance with an order of the USSR NKO dated 11 July 1941. The most important task of the reserve air regiments was to learn to operate new airplanes. On suggestion of the air force command on 7 May 1943 the USSR GKO adopted a decree calling a halt to the practice of withdrawing air units from the front to serve as reserve air regiments and air brigades for the time required to bring these units up to strength. Replenishments were now sent to the air units at the front from air squadrons, flights, and individual crews trained in reserve regiments. As a result of this measure the number of air units temporarily assigned to reserve regiments in 1943 decreased by four times as compared to 1942. This put an end to hasty training of flight personnel, which was often the case in previous years.

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The air force command attached great significance to correct use of the air corps of the SHC reserve. On 29 March 1943 the Soviet Army Air Force commander instructed the commanders of the air armies and commanders of the air corps that SHC reserve air corps attached to air armies were to be used only on the axes of the main strikes, and that in no way were they to be dispersed for simultaneous strikes on a large number of objectives or for performance of many missions.

Discussing the results of air activities at the Kuban', the Air Force Military Council devoted much attention to making broader use of radio and keeping the air army staffs mutually informed on the operational situation. The Soviet Army Air Force commander published an order on 20 April 1943 requesting the air army commanders to make broader use of radio resources to control aviation on the ground and in the air. Another order of the air force commander dated 11 May 1943 obligated the air army staffs to inform each other about the operational situation on the front every day. These orders had a positive influence, improving control over aviation and promoting better work by staffs. The results of fulfilling these orders had an effect in the battle of Kursk, in which Hq SHC liaison officers had to organize and coordinate the air activities of several fronts and strategic aviation.

As with frontal troops, the Soviet Air Force capitalized on the 3-month pause in active operations of the ground troops preceding the battle of Kursk by making preparations for the forthcoming engagement.

At the end of June the Hq SHC ordered A. M. Vasilevskiy to put all of his efforts into preparing troops of the Voronezh Front, and G. K. Zhukov to coordinate the actions of the Central, Bryansk, and Western fronts. Soviet Army Air Force Commander A. A. Novikov and his deputies, Generals G. A. Vorozheykin and S. A. Khudyakov, who were present in the frontal air armies together with small operational groups of air force headquarters and rear services officers, were ordered to prepare aviation and coordinate its actions.

Preparations had perhaps never been so methodical, so systematic, and of such a great scale in any previous operation. In compliance with a decision of the Hq SHC, air corps and separate air divisions of the SHC reserve were rebased. On 1 May 1943 the command and an operational group from the headquarters of the 5th Air Army arrived from the Caucasus in the vicinity of the city of Usman'. By that time formations of the II Fighter, IV Ground Attack, and VII and IX mixed air corps were completing their redeployment to airfields of the Steppe Front.<sup>11-12</sup> Air corps and separate divisions of the SHC reserve were taken out of the Headquarters reserve and from other sectors of the front and concentrated on the Kursk axis. The plans for combat use of the aviation of the 16th and 2d air armies and strategic aviation were written right in the troops.

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The plans for combat use of aviation were written in accordance with the plans of the frontal troops, in four contingencies taking account of the probable axes of the enemy's main strikes against the northern and southern faces of the Kursk salient. Much attention was devoted to organizing interaction. In order that aviation could be used effectively, plans were written for interaction between the 16th and 2d and between the 2d and 17th air armies. The plan for interaction between the 2d and 17th air armies in the defensive operation of the Voronezh and Southwestern fronts was signed by General G. A. Vorozheykin and the commanders of these armies, Generals S. A. Krasovski and V. A. Sudets. The plan foresaw mutual assistance among the air armies. The 17th Air Army contributed 180 airplanes to operate with an intensity of 990 sorties in the first 3 days. The 2d Air Army contributed 170 airplanes to help the Southwestern Front, these airplanes flying 900 sorties in the first 3 days. The plan also foresaw maneuver of aviation utilizing the airfields of neighboring air armies for these purposes.<sup>13</sup>

Air reconnaissance was intense. As long ago as on 14 May 1943 A. A. Novikov reported to the Supreme High Command Headquarters that photographic air reconnaissance conducted by the 4th Reconnaissance Air Regiment established a large accumulation of enemy tanks and motor vehicles in the vicinity of Orel and Kroma at the end of 14 May. The report contained the conclusion that the enemy was obviously preparing for a powerful offensive by tank and mechanized formations, and that he was creating a strong air grouping at airfields of the Kursk axis.<sup>14</sup>

Air reconnaissance revealed the concentration areas of the enemy's main troop groupings, the locations of enemy air bases and the composition of the Luftwaffe, the airfield air defense system, the nature of defensive fortifications, and the locations of strongpoints, artillery positions, and enemy reserves. All of this helped the Soviet Command to reveal the enemy's design better, to take steps to organize a stubborn defense in time, and to prepare for the forthcoming offensive more purposefully.

The efforts of air and combined arms major formations and formations were coordinated upon in place and in time during the preparations.

On the most highly threatened axes, operational air groups were organized in combined arms armies and air liaison officers were appointed in rifle corps.

On order of the air army commanders, the air corps and division commanders traveled to the forward edge of defense with the goal of reconnoitering the terrain, defining the objectives of their strikes, and coordinating with the ground troops on the signals to be used for mutual identification and target indication.

An extremely great deal of work was done by air force political agencies and by party and Komsomol organizations, which directed their activities

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mainly at heightening the battleworthiness of the air units and formations, and at strengthening friendship between airmen and personnel of the combined arms and tank armies.

Air army rear services and their attached engineering battalions worked intensively to prepare the airfield net and accumulate reserves of munitions and materiel. With the active assistance of the public, 154 airfields were built within the zones of operation of the 16th and 2d air armies; in addition they built 50 dummy airfields.<sup>15</sup> To permit maneuver of aviation, reserve airfield maintenance battalions were created in the air armies. Logistical reserves supporting 10-15 days of active combat operations by aviation were created.

Aviation of the air armies did not halt its combat activities during the preparations for the forthcoming engagement. It covered the movements of the concentrating troops, repelled enemy raids on rail junctions and airfields with the help of fighters and antiaircraft artillery, periodically struck enemy reserves, and maintained purposeful air surveillance over all enemy troop movements.

During preparations for the summer offensive the Luftwaffe intensified its activities against rail junctions, stations, bridges, and sidings in the vicinity of the Kursk salient, attempting to paralyze the communications of the Soviet troops. The Kursk rail terminal was the principal objective of enemy aviation. The first massed raid on Kursk was undertaken by enemy aviation on 22 May. About 170 bombers participated in this raid. The raid was opposed by fighters of the 16th and 2d air armies as well as the 101st Fighter Air Division of the national air defense forces. Most of the bomber groups were dispersed by fighter attacks at the approaches to the city.

The Luftwaffe made its largest raids on the Kursk rail terminal during the day on 2 June and in the night of 3 June. More than 500 airplanes participated in the day raid, to include 424 bombers. Some 280 fighters of the 16th and 2d air armies, forces of the 106th and 101st fighter divisions of the air defense forces, and antiaircraft artillery of the Kursk Air Defense Group were called in to repel the raid.

The assault echelon of enemy aviation, consisting of more than 150 airplanes (137 bombers and 30 fighters) and flying from the direction of Orel over Patezh, was intercepted by fighters of the 16th Air Army, which boldly attacked the enemy and knocked down 58 craft. Only occasional enemy bombers penetrated to the city. There were 175 airplanes (120 bombers and 55 fighters) in the second and third echelons traveling from the same direction. Eighty-six Soviet fighters were raised into the air to repel the raid by these two echelons. The Soviet fighters attacked the enemy airplane columns continually, knocking down 34 craft. Up to 55 airplanes managed to penetrate to the city as scattered groups.

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The fourth and fifth echelons contained more than 180 enemy airplanes (167 bombers and 14 fighters). They traveled from a new direction, from Oboyan', at an altitude of 6,000-7,000 meters.

The Soviet Command called in major fighter forces--about 205 craft--to repel the enemy raid, but they were unable to intercept all bomber groups. About 100 enemy airplanes struck the Kursk rail terminal and put it out of action for 12 hours. The enemy's air losses were tremendous in the raid of 2 June. The enemy lost 145 airplanes, to include 104 knocked down by fighters and 41 brought down by antiaircraft artillery fire. Soviet aviation lost 27 fighters.<sup>16</sup>

The massed air raid on Kursk was the Great Patriotic War's last major day raid by fascist aviation against rear facilities. Hitler's command was forced to subsequently abandon activities against rear facilities during daytime, and to limit the actions of its bomber aviation to nighttime.

Thus the Hq SHC and the command of the Soviet Army Air Force did a great deal of purposeful work to prepare troops and aviation for forthcoming engagements in the central sector of the Soviet-German front. During the 3 months of preparations the 16th and 2d air armies and strategic aviation flew more than 42,000 combat sorties, completing all missions.<sup>17</sup>

Actions of Soviet Aviation in the Battle of Kursk

On 5 July 1943 powerful groupings of the fascist German troops went over to the offensive on the northern and southern faces of the Kursk salient. It was not a surprise to our ground troops and aviation. On 2 July the Hq SHC warned troop commanders of the Central and Voronezh fronts that the enemy might go over to the offensive in the next few days. Thus the troops and aviation were combat ready.

Interrogation of prisoners captured by our scouts revealed not only the day but also the hour of the attack--5 July, 0300 hours. At dawn on 5 July powerful artillery counterpreparation was initiated on order of Marshal of the Soviet Union G. K. Zhukov. Simultaneously, 417 ground attack airplanes and fighters of the air formations of the 2d and 17th air armies made a massed strike against seven of the most important airfields (Mikoyanovka, Sokol'niki, Pomerki, Osnova, Rogan', Barvenkovo, Kramatorskaya) with the objective of weakening the enemy air grouping and disorganizing his activities, destroying 60 enemy craft at these airfields. German forces were weakened by the artillery counterpreparation and the strikes against the airfields. The surprise the fascist command had counted upon failed to materialize. Fascist German troops had to postpone the beginning of the offensive from 0300 hours to 0530 hours. The offensive of the enemy troops began with the support of major air forces. Under the cover of fighters, fascist bombers flying in groups of 100-150 airplanes attacked the positions of the Soviet troops. They were met initially by pilots of the VI Fighter Air Corps (commander,

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General Ye. Ye. Yerlykin) and the 1st Guards Fighter Air Division (commander, Lieutenant Colonel I. V. Krupenin) of the 16th Air Army, as well as pilots of the IV and V fighter air corps (commanders, Generals I. D. Podgornyy and D. P. Galunov) of the 2d Air Army.

An air engagement took place over the positions of the troops. In the first half of 5 July Soviet fighters knocked down 79 fascist airplanes.<sup>18</sup> Concurrently pilots of the III Bomber Air Corps (commander, General A. Z. Karavatskiy) and the VI Mixed Air Corps (commander, General I. D. Antoshkin), and of the 2d Guards (commander, Colonel G. I. Komarov) and the 299th Ground Attack Air Divisions (commander, Colonel I. V. Krupskiy) attacked enemy tanks and infantry on the battlefield and near Yasnaya Polyana, Ozerki, and Arkhangel'sk in groups of six to eight airplanes. This was the first day our ground attack airplanes used the new PTAB-2.5-1.5 antitank bombs. They were able to penetrate the armor of fascist Tiger and Panther tanks. Just pilots of the 291st Ground Attack Air Division (commander, Colonel A. N. Vitruk) annihilated 30 enemy tanks with these bombs in 1 day at Voronezh.<sup>19</sup> General (F. Mellentin), former chief of staff of the German XLVIII Tank Corps, later wrote: "Many tanks became the sacrifice of Soviet aviation, and Russian pilots were extremely bold."<sup>20</sup>

During 5 July our aviation actively helped troops on the Central and Voronezh fronts to repel savage attacks by enemy infantry and tanks. Interacting with the 2d Air Army, Voronezh Front, the 17th Air Army, Southwestern Front struck enemy tanks and infantry crossing the Northern Donets in the vicinity of Solomino and Bezlyudovka, while units of the 15th Air Army, Bryansk Front helped the 16th Air Army, Central Front to repel raids on our troops by bomber aviation.

Within the zone of the Central Front, at particular moments there were simultaneously up to 300 German bombers and not less than 100 fighters over the battlefield on 5 July. On this day pilots of the 16th Air Army flew 1,232 combat sorties, fought in 76 group air battles, and knocked down 106 enemy airplanes. In all, the four air armies of frontal aviation flew 3,385 sorties on this day. Enemy aviation made 4,526 overflights, to include 108 within the zone of the Bryansk Front, 1,737 within the zone of the Central Front, 2,561 within the zone of the Voronezh Front, and 120 in the zone of the Southwestern Front.

During 5 July Soviet pilots knocked down 260 enemy airplanes in air battles and destroyed 60 airplanes at airfields.<sup>21</sup> Our losses were 176 airplanes.

As a result of the opposition of our fighters and the losses suffered by the enemy, the activity of enemy aviation declined somewhat in the Central Front in the second half of 5 July, while in the Voronezh Front the enemy was totally unable to surmount the resistance of our fighters. However, not everything went so smoothly. Shortcomings were revealed in

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the actions of our fighters. They were lured into battles with fighters, sometimes leaving enemy bombers untouched. The system for signalling the approach of German bombers was not organized sufficiently well. Actions by small groups of our ground attack airplanes and bombers against enemy troops prevented effective action against the enemy's antiaircraft artillery, and large numbers of fighters had to be assigned to cover these small air groups.

Considering all of this, on the following day the air force command and the air army commanders changed the forms and methods of actions by our aviation, switching to massed strikes against advancing enemy troops. Utilizing detailed air reconnaissance data, on 6 July aviation of the 16th Air Army made a massed strike against enemy tanks and motorized infantry in the vicinity of Podolyan' and Soborovka; 450 airplanes of the VI Mixed Corps and the 2d and 299th ground attack air divisions participated in the attack. This strike insured the success of the counterstrike made by the front's troops. On that day the 16th Air Army performed another two massed strikes. As a result of the counterstrikes of our troops and the massed actions of aviation the enemy suffered serious losses in manpower and equipment. The offensive spirit of the enemy troops declined noticeably. Strikes by the 2d and 17th air armies were no less successful on that day on the Belgorod-Kursk axis.

Concurrently, major adjustments were also made in the organization of the combat activities of fighters. The commanders of fighter air formations traveled to forward control posts, from which they controlled their units directly. Fighter patrol zones were extended into enemy territory. The fighters now began to be guided to enemy airplanes, mainly to bombers, by radio. Competent guidance and increase of force in the air battle, presence of air fighter formation commanders at the control posts, and the pilots' familiarity with the voices of their commanders in the radio network had their influence, dramatically altering the air situation.

German aviation drastically reduced its activity as a result of the large losses. While 4,298 sorties were recorded on 5 July in the Central and Voronezh fronts, only 2,100 were documented on 6 July.<sup>22</sup>

In the Central and Voronezh fronts Soviet pilots flew 2,800 combat sorties, they knocked down 217 enemy craft in air battles, and our losses were 171 airplanes.

On 7 July 1943 the enemy concentrated the main efforts of his aviation against troops of the Central Front. Here the enemy operated in groups of 80-120 airplanes, but once again he was unable to achieve air superiority. Operating together with the 15th Air Army, the 16th Air Army flew 1,370 sorties, while the enemy flew a little more than 1,000. On the Voronezh Front the 2d Air Army, supported by some of the forces of the 17th Air Army, flew 1,100 sorties, while the enemy flew 560. The actions of the I Ground Attack Air Corps (commander, General V. G. Ryazanov)

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were especially effective. With two powerful strikes the corps foiled the attack of major enemy tank forces and infantry in the vicinity of Syrtsevo and Yakovlevo.

On the same day 233 enemy airplanes were knocked down and 12 were destroyed at airfields of the Central and Voronezh fronts. Our losses were 122 airplanes.<sup>23</sup>

Beginning with this day Soviet fighters soundly held the initiative in the air. Most enemy bombers were intercepted and annihilated by our fighters at the approaches to the object they were covering. The activity of the Luftwaffe declined with every day.

On 8 July aviation of the 16th Air Army flew 1,070 sorties, it knocked down 88 enemy airplanes in 48 air battles, and it lost 43 airplanes. At the Voronezh Front German aviation flew only 118 sorties by 1300 hours. Soviet pilots flew 1,210 sorties, knocked down 78 enemy airplanes in air battles, losing 54.<sup>24</sup>

A massed strike made by the 16th Air Army on 9 July was typical of the actions of aviation. Under fighter cover, 150 ground attack airplanes and bombers struck the enemy's 9th Tank Division in the vicinity of Soborovki; the strike was so successful that it halted the enemy's advance, and after it the enemy exhibited no activity whatsoever throughout the entire day.

Thus the giant battle that had taken shape on the ground and in the air began to gradually abate. The activity of enemy aviation declined with every day. By 10 July the offensive capabilities of fascist German troops on the Orel-Kursk axis were exhausted. Suffering tremendous losses, the Germans went over to defense, never again to recapture the initiative.

The battle went on for another few days on the Belgorod-Kursk axis. After the enemy's plan for breaking through to Kursk in the shortest way from the south through Oboyan' failed completely, he began seeking vulnerable places in the defenses in other sectors, and he concentrated his main efforts in the direction of Prokhorovka. Attempting to foil the enemy's plan, with the approval of the Hq SHC the command of the Voronezh Front decided on 12 July to make a powerful counterstrike with forces of the 6th Guards and 1st Tank armies, which were advancing from a line north of Melovoye and Kruglik in the direction of Yakovlevo. General P. A. Rotmistrov's 5th Guards Tank Army and part of the forces of General A. S. Zhadov's 5th Guards Army made the principal thrust from the vicinity of Prokhorovka in the direction of Yakovlevo. Three rifle divisions of the 7th Guards Army went over to the offensive east of Belgorod.

For 2 nights just before the offensive, ADD formations and the night bombers of the air armies constantly bombed enemy troops on the

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battlefield and destroyed railroad sidings. Air preparation began an hour before the counterattack of our troops. The I Bomber Air Corps (commander, Colonel I. S. Polbin), the I Ground Attack Air Corps (commander, General V. G. Ryazanov), and the 291st Ground Attack Air Division took part in it, striking accumulations of enemy tanks and artillery at gun positions. Following 15 minutes of artillery preparation, at 1830 hours on 12 July formations of the 5th Guards and 5th Guards tank armies went over to the offensive. About 1,200 tanks of both sides took part in the engagement at Prokhorovka. Stubborn battles took shape in the air during this time, lasting throughout the entire day. Ground attack airplanes and bombers of the 2d Air Army actively supported the tanks. As a result of the joint actions of ground troops and aviation the German armored wave was halted. The enemy lost more than 350 tanks and over 10,000 enlisted men and officers.<sup>25</sup>

The enemy's last attempt at breaking through to Kursk was foiled by the efforts of our ground troops and aviation. By 23 July troops of the Voronezh Front had recovered the position they had occupied before 5 July. The defensive period of the great battle came to an end.

In the defensive period the Soviet Air Force flew more than 28,000 sorties, providing considerable assistance to ground troops in repelling this powerful enemy offensive. In the air, Soviet aviation fought about 1,000 air battles, in which it knocked down more than 1,400 enemy airplanes, to include 517 on the Orel-Kursk axis and 899 on the Belgorod-Kursk axis. The defeat of the advancing enemy groupings created favorable conditions for the counteroffensive of the Soviet troops. The plan for this counteroffensive was developed and approved by the supreme high commander back in May, after which it was discussed many times at Headquarters and adjusted by the General Staff. Two groups of fronts were to participate in the operation. The enemy's Orel grouping was to be destroyed by troops of the left wing of the Western Front and by the main forces of the Bryansk and Central fronts, while the Belgorod-Khar'kov grouping was to be destroyed by troops of the Voronezh and Steppe fronts. Strong German troop groupings were operating forward of the Soviet fronts. Despite the tremendous losses they suffered during their offensive, the total strength of their armies in this sector was 900,000 men at the beginning of our counteroffensive. The troops possessed about 10,000 guns and mortars, up to 1,800 tanks and assault guns, and 2,100 warplanes. Such concentration of forces was attained by transferring new divisions to this area and replenishing the divisions present on foot. The strength of the Soviet troops was 2,226,500 men, over 33,000 guns and mortars, 4,800 tanks and SPG, and over 4,300 warplanes.<sup>26</sup> The Soviet Air Force was given the following missions: Maintaining air superiority and dependably covering the strike groupings; supporting ground troops in their penetration of enemy defenses; preventing fascist German troops from occupying defensive positions on intermediate lines; foiling the enemy's attempts at maneuvering his reserves; disrupting troop command and control. This was to be an air offensive in the full sense of the term. Strategic

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aviation was called in to participate in air preparation and to strike rail junctions and other objectives in the enemy rear. Fighter air formations of the National Air Defense Forces were called in to cover troops and objectives in the frontal rear.

The counteroffensive of the troops of the Western and Bryansk fronts on the Orel axis began with active air support on 12 July. Troops of the Central Front went over to the offensive on 15 July.

In addition to three frontal air armies, long-range bombers of the I, II, and III Guards air corps (commanders, Generals D. P. Yukhanov, Ye. F. Loginov, N. A. Volkov), the V and VII air corps (commanders, Generals I. V. Georgiyev, V. Ye. Nestertsev), and the 45th Air Division (commander, Colonel V. I. Lebedev) took an active part on the Orel axis.

Fifteen minutes prior to the attack 70 Pe-2 bombers and 48 Il-2 ground attack airplanes of the 1st Air Army made a concentrated strike against enemy artillery and strongpoints in the breakthrough sector within the zone of advance of the 11th Guards Army, Western Front. ADD formations and the 1st Air Army's 213th Night Bomber Air Division also operated in this area during the night. Air preparation was conducted at night in the breakthrough sector of the 61st Army, Bryansk Front by strategic aviation and the 15th Air Army's 313th Night Bomber Air Division. As a result of the air and artillery preparation enemy defenses were significantly weakened in the breakthrough sectors of both fronts. Frontal troops exploited the offensive during the day with the support of aviation. On 12 July our aviation flew 2,174 sorties, and in 72 air battles it knocked down 86 enemy airplanes, losing 59 of its own.<sup>27</sup>

The fascist German troops offered stubborn resistance. In 8 days troops of the Western Front advanced 70 km, while the Bryansk Front troops advanced 20 km. Between 18 and 25 July the XXV Tank Corps, the 11th Army, the 4th Tank Army, and the II Guards Cavalry Corps were committed to the engagement. Their commitment to the engagement and their operations deep in enemy defenses were supported by all forces of the 1st and 15th air armies. The enemy's Bolkhovo grouping was destroyed by 29 July. Concurrently the troops advanced on the Orel and Kromy axes. Some 120 ground attack airplanes, 112 bombers, and 200 fighters of the 15th Air Army supported the 3d Guards Tank Army on the Orel axis, fulfilling their missions of covering and supporting the tank army quite successfully. The fighter pilots of the French Normandy Air Squadron fought valorously together with Soviet pilots on this axis. Arriving at the front on 25 March 1943 and joining the 1st Air Army, the French volunteers displayed their high skill and courage in the very first battles with the enemy. On 2 July 1943 a ukase of the Presidium of the USSR Supreme Soviet awarded Soviet orders to the first five French pilots (Zh. Tyulyan, A. Litol'f, A. Dyuran, M. Lefevr, L. Dyupra) for exemplary completion of their combat assignments and the bravery and valor they displayed. By the end of July 1943 the French pilots were credited with

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knocking down more than 30 enemy airplanes.<sup>28</sup> On 5 July 1943 the French air squadron was reorganized as the Fighting French Normandy 1st Separate Fighter Air Regiment (regiment commander, Major P'yer Puyyad).

During the offensive troops of the Central Front recovered their 5 July positions, and on 6 August they liberated the city of Kromy. The 16th Air Army provided effective support to the troops during the offensive, flying 1,000 and more sorties every day. On 5 August troops of the Bryansk Front liberated the city of Orel with the support of troops of the Western and Central fronts on the flanks. Subsequently taking Bolkhovo and Kromy, troops of these fronts organized the pursuit of enemy troops with the support of aviation, and by 18 August they reached the line Zhizdra, Karachev, Dmitrovsk-Orlovskiy.

Troops of the Voronezh and Steppe fronts went over to the counteroffensive on the Belgorod-Khar'kov axis on 3 August. On the night prior to the offensive, strategic aviation formations and the 2d Air Army's 208th Night Bomber Air Division operated intensively against enemy defensive structures and troops in the breakthrough sector. They flew 370 sorties. Ground attack airplanes and bombers were committed to the battle 2 hours prior to the attack of the troops. Enemy troops and strongpoints within the zones of the Voronezh Front's 6th Guards and 5th Guards armies were suppressed and partially destroyed by powerful artillery fire and air strikes. The troops of these armies captured the main defense zone in the first half of the day. In the second half of 3 August the 1st and 5th Guards tank armies were committed to the engagement within the zone of operations of the 5th Guards Army. They were supported by the main forces of the 2d Air Army. Our aviation flew 2,670 sorties on that day.<sup>29</sup>

By 11 August the tank armies reached the vicinity of Vysokopol'ye and Kovlyagi. By this time troops of the Steppe Front had liberated Belgorod, reached the outer Khar'kov perimeter, and began the fight to penetrate it.

On 5 August 1943 our motherland's capital--Moscow--gave the first salute in honor of a major victory--liberation of the cities of Orel and Belgorod. An order of the supreme high commander dated 5 August 1943 stated: "Today on 5 August, troops of the Bryansk Front took the city of Orel following savage battles in which troops of the Western and Central fronts provided support on the flanks. Today also, troops of the Steppe and Voronezh fronts broke enemy resistance and captured the city of Belgorod. Today, on 5 August, at 1500 hours our motherland's capital, Moscow, will salute our valorous troops who have liberated Orel and Belgorod with 12 artillery salvos by 12 guns...."

In the period from 11 to 17 August 1943 troops of the Voronezh Front repelled a counteroffensive in the vicinity of Bogodukhov with active air support from the 2d Air Army, and between 18 and 20 August they repelled a counteroffensive in the vicinity of Akhtyrka. Suffering

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tremendous losses and failing to achieve his objective, the enemy was forced to withdraw. On 23 August Soviet troops liberated the city of Khar'kov from the fascist German invaders. By 23 August the operation to defeat the Belgorod-Khar'kov grouping was completed.

During the Belgorod-Khar'kov operation Soviet aviation flew 28,265 combat sorties. The enemy lost 800 airplanes in savage air battles and at airfields.<sup>30</sup>

For the Soviet Air Force, the battle of Kursk was a time of further improvement of strategy and tactics.

An air offensive was conducted in its entirety by the air army commanders in the course of the counteroffensive on all fronts of the Kursk axis; the actions were coordinated by Hq SHC air liaison officers Generals G. A. Vorozheykin and S. A. Khudyakov. After air preparation, ground attack and bomber aviation immediately switched to support of the advancing troops throughout the entire depth of the operation.

The efforts of our aviation were concentrated on narrow sectors of the front against the most important objectives, mainly enemy tanks and artillery. Through continuous pressure on enemy troops, frontal aviation reduced their capability for resistance, inflicted large losses on them, and thus promoted the success of penetration of enemy defenses by our troops. General Z. Z. Rogoznyy, commander of the XLVIII Rifle Corps, Steppe Front, wrote in a report dated 3 August that ground units were able to advance successfully only owing to well organized interaction and the massed strikes of ground attack pilots.<sup>31</sup> When tank major formations and formations were committed to the engagement, the air armies directed their efforts at suppressing enemy antitank defenses, at preventing reserves from reaching the battlefield, and at providing air cover to tank and mechanized corps. From 50 to 80 percent of the forces of the air armies were committed to supporting and covering these corps and to fighting antitank resources. For example the 1st and 5th Guards tank armies were supported by the V Ground Attack (commander, General N. P. Kamanin) and the X Fighter Air Corps (commander, General M. M. Golovnya), as well as by the 202d Bomber Air Division (commander, General S. I. Nichiporenko) and the 291st Ground Attack Air Division (commander, Colonel A. N. Vitruk).

Soviet aviation took the most active part in pursuit of the withdrawing enemy troops. During the counteroffensive our aviation successfully completed its mission of interdicting enemy rail and motor shipments. When the fascist command began transferring tank and motorized divisions from the Donets Basin and other sectors to the vicinity of Bogodukhov and Akhtyrka on an emergency basis, the 8th Air Army, Southern Front was committed to action first by order of the Soviet Army Air Force commander. As the reserves moved along the front line, the 17th, 5th, and 2d air armies entered into battle with them, destroying enemy trains at



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the rail stations of Gorlovka, Slavyansk, Barvenkovo, and Pavlograd, and annihilating motor columns on the roads. In this same period aviation of the IV and VI ADD air corps operated against rail junctions and stations at Poltava, Lyubotin, Krasnoarmeyskoye, Krasnograd, and Merefa. Between 4 and 12 August our aviation flew more than 7,100 sorties to interdict the enemy's rail transfers. Just air formations of the 8th and 17th air armies alone burned 16 trains and destroyed 20 tanks and about 30 motor vehicles on the roads.<sup>32</sup> As a result of the combined actions of frontal aviation and strategic aviation, transfer of enemy troops was retarded and entailed great losses. During the counter-offensive at Kursk Soviet aviation flew more than 90,000 sorties. In 1,700 air battles it destroyed 2,100 enemy airplanes; in addition, 145 were destroyed and damaged at airfields, and 780 were knocked down by anti-aircraft artillery.<sup>33</sup>

The great battle of Kursk ended with the brilliant victory of the Soviet Armed Forces over the Fascist German Army. "The giant battle on the Orel-Kursk salient in summer 1943," said L. I. Brezhnev, "broke the backbone of Hitler's Germany and brought its armored troops to ashes. Our army's superiority in combat skills, in armament, and in strategic leadership became clear to all the world."<sup>34</sup> The battle of Kursk had tremendous significance to subsequent development of events on the Soviet-German front. It created favorable conditions for a general offensive by the Soviet Army to liberate the left-bank Ukraine, the Donets Basin, western oblasts of the RSFSR, and eastern regions of Belorussia; the Dniepr was crossed, beachheads were captured on its right bank, and on 6 November the capital of the Ukraine--Kiev--was liberated. This was the period of the fundamental turning point, which was marked by outstanding victories of the Soviet people and their army and which dramatically altered the military-political situation in the international arena.

For the Soviet Air Force the battle of Kursk was an intense struggle for strategic air superiority in the concluding stage. Up to 35 percent of all sorties were flown in behalf of this mission. This fight, which went on for almost a month and a half, culminated with defeat of the main enemy air forces and attainment of strategic air superiority by the Soviet Air Force.

Soviet pilots displayed mass heroism and high combat skill in the battles. On 6 July 1943 pilot Communist A. K. Gorovets performed an immortal act of heroism. He knocked down nine enemy bombers in a single air battle. This was the only time such a thing ever happened in the world. A. K. Gorovets was awarded the Hero of the Soviet Union title posthumously. The citation accompanying his award read: "In this air battle Comrade Gorovets displayed exceptional flying skill, valor, and heroism, he personally knocked down nine enemy airplanes, and he himself died the death of the brave."<sup>35</sup> Pilots S. D. Luganskiy, M. S. Tokarev, V. I. Andrianov, A. P. Mares'yev, A. N. Yefimov, N. D. Gulyayev, A. V. Dobrodetskiy, and many others fought selflessly. Junior Lieutenant

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I. N. Kozhedub, who subsequently went on to earn the Hero of the Soviet Union title three times, experienced his baptism of battle here.

The battle of Kursk demonstrated that the tactics the air arms employed in the actions of our air force had improved. The tactics of ground attack aviation flying in large groups enjoyed further development. Bomber aviation accumulated much experience in dive bombing and in making concentrated attacks in units of up to division strength inclusively. Fighter aviation displayed greater skill in group air battles and air engagements.

On the whole many new premises were added to air force strategy and to the tactics of the air arms at the battle of Kursk, rising yet another notch in their development.

The Soviet Army Air Force Command and the commanders, staff, and political agencies of the frontal air armies broadly utilized the lessons learned by aviation in the battle of Kursk on other axes. Measures were implemented to improve the organization of air units, to generalize and disseminate the combat experience, and to heighten the level of logistical support. In October 1943 new manning tables were spelled out for fighter and ground attack air regiments by decision of the Air Force Military Council. Enlargement of the air regiments satisfied the growing requirements of air force tactics and strategy.

In December 1943 the Air Force Military Council held a meeting of the military district air force commanders, commanders of reserve air brigades, and representatives from the operating air armies devoted to upgrading the quality of pilot training in reserve air regiments. The proceedings of the conference were utilized to develop new combat training courses for fighter, ground attack, and bomber aviation, to be introduced in 1944.

Forms for improving the combat skills of flight crews such as practical flying conferences enjoyed extensive support in many air armies. In December 1943, during preparations of troops of the 3d Ukrainian Front to liberate the right-bank Ukraine, a conference was held in the IX Mixed Air Corps, 17th Air Army. It was attended by the commanders of air divisions, regiments, air squadrons, and flights, by pilots, by chiefs of staff, and by party-political workers. Hq SHC liaison officers Marshal of the Soviet Union A. M. Vasilevskiy and General F. Ya. Falaleyev, the front's troop commander General R. Ya. Malinovskiy, and General V. A. Sudets, commander of the 17th Air Army, took an active part in the conference proceedings. The conference played a positive role in preparing commanders and flight crews for the offensive operations.<sup>36</sup>

Commanders, political agencies, and the party and Komsomol organizations of units and formations in the operating air force utilized the intervals between battles to train the personnel. Recalling this, Chief Marshal of

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Aviation Pavel Stepanovich Kutakhov, an active participant of air battles in the North, wrote the following in the newspaper KRASNAYA ZVEZDA: "The battles were stubborn. It would have appeared that we were too exhausted to train in the short intervals between them. Nevertheless we managed to fight and to train.... A bunker containing a smoky heater made from a spent shell casing served as the classroom, and the auditorium in which we took our examinations was the air, the battle. The bunker in which we underwent theoretical training had a magnetic pull on us. We often studied in it at the expense of sleep and rest."<sup>37</sup>

Air force political agencies reorganized the primary party organizations in June 1943 in accordance with a directive of the RKKA Main Political Directorate dated 4 June 1943, "On the Structure of Red Army Party Organizations."<sup>38</sup> Some 237 new primary organizations were created in the air force. Their number was increased by 13 percent. All flying sub-units had their own party organizations. Enlargement of the number of party organizations, growth of party membership, and encouragement of fresh party forces to lead and participate in party life resulted in greater activeness of party-political work. It became even more efficient and more closely associated with combat missions.

Generals and officers of the Main Directorate of Combat Training for Frontal Aviation headed by General D. F. Kondratyuk did an extremely great amount of fruitful work to improve the combat qualities of the personnel of air force units and formations operating in the fronts.

This directorate was created by decision of the State Defense Committee back in January 1943. In 1 year it held more than 2,000 lectures, military games, group exercises, and various lessons in the units and formations of the air armies. More than 4,500 demonstration and training flights were flown with the purpose of teaching the tactics of single and group air battles and demonstrating the combat formations used by new types of airplanes; different methods of attacking small mobile ground targets and guiding airplanes by radio to enemy air and terrestrial objectives were tested out.<sup>39</sup>

FOOTNOTES

1. "Velikaya Otechestvennaya voyna Sovetskogo Soyuzo 1941-1945 gg. Kratkaya istoriya" (The Great Patriotic War of the Soviet Union 1941-1945. A Short History), Moscow, 1970, p 237.
2. Ibid.
3. "Istoriya Velikoy Otechestvennoy voyny Sovetskogo Soyuzo 1941-1945 gg." (History of the Great Patriotic War of the Soviet Union 1941-1945), Vol 3, Moscow, 1964, p 241.

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4. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg." (The Soviet Air Force in the Great Patriotic War 1941-1945), Moscow, 1968, p 174.
5. "Velikaya Otechestvennaya vojna Sovetskogo Soyuza 1941-1945 gg. Kratkaya istoriya," p 239.
6. Arkhiv MO SSSR [USSR Ministry of Defense Archives], f. 13-A, op. 564, d. 310, ll. 4-160.
7. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 174.
8. At an altitude of 2,000-4,000 meters the La-5fn had a horizontal velocity 40-80 km greater than that of the German FW-190, and it was more maneuverable.
9. Arkhiv MO SSSR, f. 35, op. 11250, d. 47, l. 52.
10. Arkhiv MO SSSR, f. 35, op. 11285, d. 5, l. 33.
- 11-12. Arkhiv MO SSSR, f. 35, op. 11268, d. 5, l. 33.
13. Arkhiv MO SSSR, f. 302, op. 4196, d. 24, ll. 67-70.
14. Arkhiv MO SSSR, f. 35, op. 92815, d. 59, ll. 22-23.
15. Arkhiv MO SSSR, f. 368, op. 11538, d. 3, l. 114; f. 302, op. 20739, d. 16, ll. 39, 117.
16. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 177; "Istoriya Velikoy Otechestvennoy vojny Sovetskogo Soyuza 1941-1945 gg.," Vol 3, p 395.
17. Arkhiv MO SSSR, f. 368, op. 11588, d. 3, l. 214.
18. "Aviatsiya i kosmonavtika SSSR" (USSR Aviation and Cosmonautics), Moscow, 1968, p 155.
19. Ibid., p 157.
20. Mellentin, F., "Tankovyye srazheniya 1939-1945 gg." (The Tank Engagements of 1939-1945), abridged, translated from English, Moscow, 1957, p 192.
21. "Aviatsiya i kosmonavtika SSSR," pp 155, 157.
22. Arkhiv MO SSSR, f. 35, op. 11285, d. 822, l. 36.

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23. Ibid., 1. 47.
24. Ibid., 1. 58.
25. "Istoriya Velikoy Otechestvennoy voyny Sovetskogo Soyuz 1941-1945 gg.," Vol 3, p 274.
26. "Velikaya Otechestvennaya voyna Sovetskogo Soyuz 1941-1945 gg. Kratkaya istoriya," p 250.
27. "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," pp 188-189.
28. "Aviatsiya i kosmonavtika SSSR," p 162.
29. "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 195.
30. Ibid., p 197.
31. Arkhiv MO SSSR, f. 327, op. 48734, d. 1, 1. 110.
32. Arkhiv MO SSSR, f. 35, op. 28344, d. 12, 11. 60-63.
33. "Istoriya Velikoy Otechestvennoy voyny Sovetskogo Soyuz 1941-1945 gg.," Vol 3, p 403.
34. Brezhnev, L. I., "Velikaya pobeda sovetskogo naroda" (The Great Victory of the Soviet People), Moscow, 1965, p 13.
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37. KRASNAYA ZVEZDA, 25 May 1968.
38. "'KPSS o Vooruzhennykh Silakh Sovetskogo Soyuz' Sb. dokumentov (1917-1968)" ("The CPSU on the Armed Forces of the Soviet Union." Collection of Documents (1917-1968)), Moscow, 1969, pp 323-324.
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CHAPTER VI. THE SOVIET ARMY AIR FORCE IN OPERATIONS OF THE CONCLUDING PERIOD OF THE WAR

The Situation at the Fronts at the Beginning of 1944

Measures of the Soviet Army Air Force Command and Staff To Improve Management of Aviation

Two and a half years of hard battles and engagements had passed. The year of the fundamental turning point had gone by. By the beginning of 1944 the situation on the front was leaning in favor of the USSR. The great victories of the Soviet Army in 1942-1943 demonstrated to all the world the greater battle power of the socialist state and its armed forces. It became obvious that the Soviet Union was capable of conducting the war to a victorious conclusion with its own forces. This resulted in further growth of the USSR's authority. The war economy grew even stronger. Soviet industry continued to supply top-class combat equipment to the armed forces in ever-increasing proportions. The Soviet Army's fighting strength was 6,165,000 men, 88,900 guns and mortars, 2,167 rocket launchers, about 4,900 tanks and self-propelled guns, and 8,500 airplanes. Although the German Armed Forces had suffered considerable losses on the Soviet-German front and experienced a certain reduction in strength, nevertheless they were powerful. On the Eastern front the enemy had 4,906,000 men, over 54,000 guns and mortars, 5,400 tanks and assault guns, and 3,000 airplanes.<sup>1</sup>

The strategic initiative was in the hands of the Soviet Command. The Hq SHC made plans for an offensive along the entire front consisting of a number of powerful, successive strategic operations in separate highly important sectors of the Soviet-German front. The main thrust was to occur on the southwestern axis with the objective of destroying the largest enemy groupings and liberating the right-bank Ukraine and the Crimea. The mission on the northwestern axis was to destroy the enemy grouping, relieve blockaded Leningrad, and reach the outskirts of the Soviet Baltic republics. On the western axis, Army Group Center was to be defeated and the enemy was to be cleared from a significant part of Belorussia. As before, the German Command considered the Eastern front to be the main front. It planned to concentrate its troops in those

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sectors where thrusts by the Soviet Army were expected and, maneuvering its reserves and aviation, to halt the advance of Soviet troops. In the West, fascist Germany made preparations to repel the assault landing in Northern France, to seize the initiative, and to achieve victory in the war. The idea of seizing the initiative and achieving victory in war was adventuristic; it did not correspond to the real situation that had evolved on the Soviet-German front as of the beginning of 1944.

The Soviet Air Force began the third and final period of the Great Patriotic War outfitted with the latest equipment and with a tremendous amount of combat experience accumulated. It had mastered new forms of strategic use of large air formations and methods of action for all air arms and services both in independent air operations and in actions jointly with the ground troops. The Soviet Air Force firmly held the strategic initiative and air superiority along the entire Soviet-German front. Our aviation industry produced 35,000 warplanes in 1943. As of 1 January 1944 the demand of Soviet Army Air Force air units and military educational institutions for airplanes was satisfied by more than 100 percent. As of 1 January 1944, 86.7 percent of the airplanes in fighter aviation, 100 percent in ground attack aviation, and 75.3 percent in bomber aviation were new.<sup>2</sup>

Air divisions of the frontal air services were reorganized from a two-regiment to a three- and four-regiment composition, and 50 ground attack and 36 fighter air regiments were reorganized with a strength of 40 airplanes.<sup>3</sup>

The greater power and the superiority of Soviet weapons and Soviet military science were demonstrated most clearly in operations of the final period of the Great Patriotic War, conducted on the central and southern wings of the Soviet-German front. Typical features of the actions of the Soviet Air Force in this period of the war included concentration of large air forces on the main axes of operations of the ground troops, massing of the efforts of aviation within a narrow sector to complete its main missions, extensive maneuvering of SHC reserve air corps and divisions, commitment of significant strategic aviation forces to missions in direct support of frontal troops, coordination of the actions of several air armies in the frontal air services and strategic aviation under the sole leadership of the senior air chief.

New typical characteristics in the actions of Soviet aviation revealed themselves most clearly in major offensive operations such as the Korsun'-Shevchenkivskiy, Belorussian, Vistula-Oder, Eastern Prussian, and Berlin operations. The command and staff of the Soviet Army Air Force took a most active part in these operations. Creation of new aviation equipment, its rapid assimilation by flight crews, and its correct utilization on the fronts of the war were the daily concerns of the commander and all members of the Air Force Military Council. At the beginning of January 1944 the Air Force Military Council reviewed the availability of new

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types of airplanes in frontal aviation and concluded that rearmament of aviation in the Far East, which had been started earlier, had to be continued.

A report addressed to the supreme high commander stated: "...We have accumulated a reserve of fighter airplanes insuring replenishment of losses and full reequipment of units placed into the reserve and newly formed units. Considering these favorable conditions, we believe it possible to continue rearmament of the fighter aviation of the Far Eastern and Transbaykal fronts, the air units of which are armed with the obsolete I-16, I-153, and I-15bis."<sup>4</sup> In response the Supreme High Command ordered rearmament of aviation in the Far East with new types of airplanes.

On 7 February 1944 the Air Force Military Council discussed the progress of designing new aviation equipment and made a decision to submit a plan for experimental construction of airplanes and armament in 1944-1945 to the USSR People's Commissariat of Defense. The problems of upgrading the quality of airplanes and armament produced by industry were discussed many times as well.<sup>5</sup>

In February 1944 the Soviet Army Air Force Headquarters held a conference of the air force executives of military districts and military training institutions. At this conference the Air Force Military Council demanded that its participants take efficient steps to eliminate the preconditions for flying accidents, to strengthen military discipline, and to intensify party-political work, viewing these as the most important prerequisites for high-quality training of cadets in flight schools.<sup>6</sup> In March the Air Force Military Council held a conference of the chiefs of technical schools, advanced training courses, and air mechanic and junior specialist schools; a decision was made at this conference to improve technician training with a consideration for the war experience.<sup>7</sup> The Soviet Army Air Force Headquarters insured continuity of command and control of the air armies, it participated in the writing of plans, it generalized the experience of aviation's combat activities, and it brought it to the awareness of the troops.

In the first half of 1944 the generals and officers of Air Force Headquarters wrote and submitted, to the Soviet Army Air Force command, a number of directives addressed to air army commanders and aimed at improving control of aviation and achieving greater effectiveness in its combat application. On 16 April 1944 the air force commander published a directive concerning the fight against enemy air reconnaissance. It stated that single German air scouts had recently been penetrating deeply into our rear and maintaining surveillance over our movements. All air army commanders were ordered to develop special measures to fight enemy air reconnaissance; to assign particular zones to air fighter corps and divisions for actions against enemy reconnaissance airplanes; to organize fighter ambushes on probable routes of enemy scouts and to make broad

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use of radio guidance; fighters taking to the air were ordered to pursue and annihilate the enemy airplanes.<sup>8</sup>

On 15 May 1944 the air force command published a directive demanding the air army commanders to abandon the practice of assigning combat missions to SHC reserve air corps and divisions as single sorties; instead, they were to assign missions for a particular period of time, for the day of an operation as a minimum. Missions could be assigned as single sorties to air corps and divisions only in exceptional cases.<sup>9</sup> In 1944 specific air force staff officers were appointed to write summaries on the air situation on the Soviet-German front every 10 days, to be reported to the commander and members of the Air Force Military Council. This summary indicated the composition of the air groupings of the belligerents, and their quantitative and qualitative changes; concentration of aviation on strategic axes and use of new tactics; the number of sorties flown and the intensity of combat activities of individual air arms and services; the total number of air battles, and new tactics employed in them. The summaries ended with conclusions and proposals concerning more effective use of the air force.<sup>10</sup>

In addition air force staff workers prepared monthly reports for the General Staff on the actions of the air force. A general large-scale map of the strategic situation was constantly maintained by two highly qualified officers, the senior of whom was Colonel I. M. Kuz'min. Usually by 2200-2300 hours the work of plotting the data on the situation map and writing draft reports to the supreme high commander and the operational summary on the result of air force actions in the previous day was completed. At this time the commander and members of the Air Force Military Council usually came to a large room in one of the directorates where all of the summary data were brought together; there, the directorate chief reported the strategic situation, the changes that had occurred in the balance of power in the air, and the preliminary data on the results of air force actions in the previous day. Decisions were often made here in regard to a number of problems associated with heightening the effectiveness of the actions of different air arms and services, and these decisions were documented on the spot by Air Force Headquarters officers. A new section for staff operational training was created at Air Force Headquarters. General M. D. Smirnov was appointed chief of the section, and his deputy was Colonel N. A. Sokolov. Favorable conditions were created for more purposeful and integrated solution of many problems concerning the strategic use of the air force.

The command and staff of the Soviet Army Air Force raised the level of management of major operational air formations at the fronts of the war in 1944, and they acquired a great deal of experience in maneuvering air reserves and concentrating the efforts of aviation on the most important sectors of operations of the ground troops, at providing all-out support to combat operations.

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## The Korsun'-Shevchenkovskiy Operation

In compliance with the overall intent of the supreme high commander troops of the four Ukrainian fronts<sup>11</sup> initiated an offensive on the southern wing of the Soviet-German front at the end of December 1943 and the beginning of January 1944. Headquarters liaison officers coordinated the actions of the fronts--Marshal of the Soviet Union G. K. Zhukov in the 1st and 2d Ukrainian fronts, and Marshal of the Soviet Union A. M. Vasilevskiy in the 3d and 4th Ukrainian fronts. The actions of aviation were coordinated by Marshal of Aviation A. A. Novikov. Troops of the 1st Ukrainian Front were the first to begin combat activities at the end of December 1943, with the active support of aviation of the 2d Air Army (commander, General S. A. Krasovskiy). By 14 January they had almost completely liberated Kiev and Zhitomirskaya oblasts and many rayons of Vinnitskaya and Rovenskaya oblasts. The 2d Ukrainian Front, the troops of which were supported and covered by the 5th Air Army (commander, General S. K. Goryunov), went over to the offensive on 5 January 1944. The front's troops liberated Kirovograd by mid-January. The right flank of the enemy grouping in the vicinity of Korsun'-Shevchenkovskiy was threatened.

The 3d and 4th Ukrainian fronts undertook an offensive on 10-11 January 1944 with the objective of destroying the enemy at the Nikopol' beachhead and in the vicinity of Nikopol'. The fronts were covered and supported from the air by the 17th Air Army (commander, General V. A. Sudets) and the 8th Air Army (commander, General T. T. Khryukin) respectively. The offensive actions of the troops of the 1st and 2d Ukrainian fronts resulted in envelopment of both flanks of the Korsun'-Shevchenkovskiy grouping. The Headquarters ordered the commanders of these fronts, Generals N. F. Vatutin and I. S. Konev, to encircle and annihilate the enemy's Korsun'-Shevchenkovskiy grouping. Troops of the strike grouping of the 2d Ukrainian Front began combat activities at Korsun'-Shevchenkovskiy on 24-25 January, and on 26 January the strike grouping of the 1st Ukrainian Front attacked on a converging axis. The troops of the fronts were supported by the 5th and 2d air armies. The latter possessed 768 warplanes, being inferior in numbers to the enemy, who concentrated about 1,000 airplanes on this axis.<sup>12</sup> The strike groupings of both fronts attacked on converging axis and met in the vicinity of Zvenigorodka. Ten of the enemy's divisions and one of his brigades were encircled. By 3 February Soviet troops had created an inner and outer front of encirclement. The actions of our aviation proceeded in extremely complex meteorological conditions. Moreover a thaw set in at the end of January and in the beginning of February 1944, meaning that dirt landing strips could no longer be used. By this time the air armies had only two or three operable airfields left for practical purposes, with 50-100 of our airplanes based at each of them. But even despite these conditions the ground troops received considerable assistance from the air. Between 29 January and 3 February 1944 our aviation flew 3,800 combat sorties in the vicinity of the Korsun'-Shevchenkovskiy grouping, while enemy aviation flew twice fewer.<sup>13</sup>

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On order of A. A. Novikov, who before leaving Moscow had reported his suggestions to the supreme high commander concerning the use of aviation to destroy the enemy's Korsun'-Shevchenkivskiy grouping, extensive use was made of high-explosive bombs by Il-2 ground attack airplanes, and Po-2 night light bombers were put into broad use. They were especially helpful in repelling enemy counterstrikes on the outer front of encirclement in the vicinity of Tolmach and Lisyanka. On 4 February, when enemy tanks wedged themselves into the defenses of the 53d Army, 2d Ukrainian Front, the enemy's attempt at penetrating into the encircled area was foiled by the efforts of ground attack aircraft and artillery. Ground attack aviation of the 2d Air Army made two powerful strikes against enemy tank groupings attempting to relieve the encircled grouping. German divisions managed to penetrate to the vicinity of Lisyanka at the cost of high losses, while the encircled troops pushed toward the latter, reaching Shenderovka. The two formations were separated by a strip only 12 km wide. But they were unable to cross it.

After the hope for assistance from without was lost, encircled fascist German troops attempted to break out of the encirclement independently. On the night of 17 February 1944 the enemy troops formed into columns and began marching southwest from Shenderovka. Crews of the 312th Light Bomber Air Division headed by Colonel V. P. Chanpalov constantly bombed the German columns; fleeing the air strikes, they fell under intense rocket artillery fire. Most of them were annihilated, and only a small group of tanks and armored transporters was able to break out of the encirclement during the intense fire storm. The air blockade of the encircled enemy grouping was organized and maintained well, and there was much to be learned from it. Following the experience of Stalingrad, jointly with the 2d Air Army commander, General S. A. Krasovskiy, and General L. G. Rybkin, commander of the X Fighter Corps of the National Air Defense Forces, A. A. Novikov created four zones for annihilation of enemy transport aviation attempting to supply encircled troops by air. German aviation was destroyed in the four zones by fire from the 2d Air Army and the X Fighter Air Corps. Beyond the outer front of encirclement, airfields at Uman', Vinnitsa, and Novo-Ukrainka were struck. Enemy airfields and landing strips were struck simultaneously. The 5th Air Army provided support to troops destroying the encircled enemy.

Between 31 January and 15 February our aviation knocked down 257 enemy airplanes, to include 31 transporters, during the air blockade, and in the entire period of the destruction of the encircled grouping 457 fascist German airplanes were annihilated in air battles and at airfields.<sup>14</sup> As a result of the air blockade, the encircled grouping was isolated and deprived of external assistance, which went a long way to facilitate its final destruction.

Forty-nine tons of gasoline, 65 tons of ammunition, and 525 rockets were delivered between 8 and 16 February to forward units of the 2d and 6th Tank armies by the 326th Night Bomber Air Division. This was invaluable

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assistance to the troops in the thaw conditions, when stuck vehicles cluttered the roads and tractors were not always able to travel. The Korsun'-Shevchenkovskiy operation ended. Some 55,000 German enlisted men and officers were killed and wounded, and more than 18,000 were taken prisoner.<sup>15</sup> The Korsun'-Shevchenkovskiy operation entered the history of the Great Patriotic War as a remarkable example of encirclement and annihilation of a large enemy grouping. Once again the Soviet Army demonstrated its ability to conduct an encircling operation, which is one of the most complex forms of combat activities. Soviet aviation demonstrated its total superiority over enemy aviation, isolating the encircled grouping from external assistance by air. In winter and spring 1944 troops of the 1st, 2d, 3d, and 4th Ukrainian fronts inflicted a major defeat upon the enemy with active air support. The right-bank Ukraine was totally liberated. The Soviet Armed Forces entered the territory of Romania. In the first 3 months of 1944 the Soviet Air Force flew more than 70,000 sorties and dropped thousands of tons of bombs on enemy objectives. It annihilated 1,467 enemy airplanes in air battles and at airfields.<sup>16</sup>

On 21 February 1944 a ukase of the Presidium of the USSR Supreme Soviet awarded the highest rank in aviation--chief marshal of aviation--to Aleksandr Aleksandrovich Novikov for his exemplary military service to the Communist Party and our socialist motherland.

## The Belorussian Operation

In winter and spring 1944 the Soviet Armed Forces subjected the enemy to serious defeat and reached the eastern regions of the Baltic, Belorussia, the western oblasts of the Ukraine, and Northeastern Romania. In the second half of April 1944 the Soviet Army halted its offensive on order of the Hq SHC. Troops of the 1st Belorussian and 1st Ukrainian fronts went over to defense on 17 April, troops of the 2d Baltic Front went over to defense on 18 April, and troops of the Leningrad, 3d Baltic, and 3d and 2d Belorussian fronts went over to defense on 19 April. An order was published on 22 April to strengthen defenses within the sector of the 1st Baltic Front, and on 6 May the 2d and 3d Ukrainian fronts went over to defense. Intense preparations began for the summer strategic offensive operations. In winter and spring 1944 the Soviet Union constantly increased its fighting power. In the first half of the year about 14,000 medium and heavy tanks and self-propelled guns, 26,000 guns with calibers of 76 mm and higher, and more than 90,000,000 artillery shells, bombs and mortar shells were produced. In the first half of 1944 aviation industry produced 16,000 airplanes, which replenished the losses and made it possible to form new air force units and formations.<sup>17</sup> In the first 5 months of 1944 the number of airplanes in the operating army increased by 25 percent.<sup>18</sup> Multimillion armies continued to oppose each other on a front 4,450 km long, from the Barents to the Black Sea. The operating Soviet Army had a strength of about 6,500,000 men, 83,200 guns and mortars, about 8,000 tanks and self-propelled guns, and 11,800 warplanes. Troops

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of the fascist bloc on the Eastern front had 4,000,000 men, about 49,000 guns and mortars, over 5,200 tanks and assault guns, and about 2,800 war-planes.<sup>19</sup> Despite the landing of American and English troops in Northern France on 6 June 1944, the Soviet-German front continued to be the decisive front of the war. Fifty-six percent of all of the Wehrmacht's ground forces were operating here, and if we include satellite troops the figure climbs to 63 percent.<sup>20</sup>

In summer 1944 the Communist Party and the Soviet Government posed the following mission to the armed forces--clear the invaders from all Soviet land, and begin the liberation of the peoples of Poland, Czechoslovakia, Bulgaria, and other European countries from fascist enslavement.

The Belorussian operation occupies a special place among the offensive operations of the second half of 1944. Preparations for it began in spring 1944. Its objective was the destruction of the German Army Group Center and liberation of the Belorussian SSR and its capital, Minsk. The plan of the Belorussian offensive operation was written by the General Staff and discussed in the Hq SHC on 22 and 23 May. Participants of the discussion included G. K. Zhukov, A. M. Vasilevskiy, I. Kh. Bagramyan, K. K. Rokossovskiy, A. A. Novikov, N. N. Voronov, N. D. Yakovlev, A. V. Khrulev, M. P. Vorob'yev, I. T. Peresyepkin, and A. I. Antonov.<sup>21</sup> On the 1,100 km front from Lake Nesherdo to Verba, the fascist German grouping in Belorussia was opposed by four Soviet fronts--the 1st Baltic and the 3d, 2d, and 1st Belorussian, as well as the Dniepr Naval Flotilla; Belorussian partisans were active in the enemy rear. The main idea of the operation was to penetrate enemy defenses on six axes by frontal strikes, encircle and annihilate the enemy's flank groupings at Vitebsk and Bobruysk, destroy enemy troops in the vicinities of Orsha and Mogilev and, by a swift maneuver of troops of the 3d and 1st Belorussian fronts in the general direction of Minsk, encircle and annihilate the German 4th Army. Partisan activity was to be coordinated with the powerful strikes of the four fronts from the east.

The Soviet Supreme High Command concentrated the main air force grouping of five air armies in the central sector of the front: the 3d Air Army (commander, General N. F. Papivin), the 1st Air Army (commander, General T. T. Khryukin), the 4th Air Army (commander, General K. A. Vershinin), and the 16th Air Army (commander, General S. I. Rudenko).

The 6th Air Army under the command of General F. P. Polynin operated in the second phase of the operation on the left wing of the 1st Belorussian Front; back in April this army was within the composition of the front (the 3d Guards Ground Attack Air Division, the 242d Night Bomber Air Division, and two separate air regiments). In all, these five air armies possessed about 6,000 airplanes, to include more than 1,100 day and night bombers and 2,000 ground attack airplanes.<sup>22</sup> In addition eight ADD corps were brought in--about 1,000 bombers.

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Fascist German troops of Army Group Center were supported by air formations of the 6th Air Fleet, which possessed 1,342 warplanes.<sup>23</sup> Its air squadrons were based at airfield complexes at Minsk, Baranovichi, and Bobruysk. Bringing aviation closer to the center of the Belorussian salient, the Fascist German Command intended to use it as the most mobile reserve in any sector of the front from Vitebsk to Kovel'.

Thus the air situation evolved favorably for our air force at the beginning of the Belorussian operation. The air force had the possibility for successfully making powerful strikes against the enemy and actively supporting the offensive of the ground troops. The Soviet Army Air Force commander sent a directive to all air armies at the beginning of June 1944 concerning the results of air force activities in winter-spring 1944 and the missions of the summer. The directive made a detailed analysis of shortcomings, it explained their causes, and it provided concrete instructions on how to correct them. Flight crews were ordered to constantly study their targets, and air staffs were encouraged to work more carefully on the planning tables of interaction of aviation with tank and mechanized formations, especially at the time of the latter's commitment to the engagement and in actions at strategic depth. In July 1944 all fighter division commanders, their deputies, the chiefs of staff, and executives of air armies staffs were ordered to acquaint themselves with the work of the command posts of the fighter air corps (divisions) and gain the practical skills of controlling aviation in the air by radio. It was recommended that ground attack aviation be controlled over the battlefield in accordance with the principle of fighter aviation control. Air army commanders were categorically prohibited from controlling the sorties and actions of individual groups of airplanes; instead, it was recommended that they pose concrete missions only to air corps and divisions, leaving them the right of managing the lower levels; the chiefs of staff of the air armies and air corps were obligated to visit their subordinate staffs systematically and provide concrete assistance to them in planning and control.

A fighter air corps or division was to be assigned by special order in each air army to fight enemy aviation, and radio resources were to be provided; the fight was not to be limited to air battles: Strikes against airfields were to be organized mandatorily.<sup>24</sup>

In compliance with a decision of the Hq SHC, Headquarters liaison officers traveled to the front to coordinate the efforts of frontal troops and aviation in the operation: On 5 June, Marshal of the Soviet Union G. K. Zhukov to coordinate the actions of the 1st and 2d Belorussian fronts, and somewhat later, Chief Marshal of Aviation A. A. Novikov. Marshal of the Soviet Union A. M. Vasilevskiy and the Headquarters air liaison officer General F. Ya. Falaleyev reached the 1st Baltic and 3d Belorussian fronts on 4 June. The hard work of preparing for the operation went on for 22 days in all air units and formations. Ten air corps and eight air divisions arrived in the first half of June to reinforce

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the air armies. Their deployment required the construction of 70 airfields. They were built by airfield engineering units of the air force rear services under the command of air army chiefs of rear services--Generals I. M. Giller, V. N. Uspenskiy, P. V. Korotayev, A. S. Kirillov, and I. I. Semenov.

The 1st Air Army, 3d Belorussian Front and the 16th Army, 1st Belorussian Front received the largest numbers of replenishments. For example in May-June the 1st Guards and the 273d Fighter air divisions returned to the composition of the 16th Air Army after being brought back up to strength. New units included the VIII Fighter Air Corps (commander, General A. S. Osipenko), the IV Ground Attack Air Corps (commander, General G. F. Baydukov), the 132d Bomber Air Division (commander, General I. L. Fedorov), the 300th Ground Attack Air Division (commander, Colonel T. Ye. Kovalev), and the 19th Separate Fighter Air Regiment (commander, Colonel P. F. Chupikov); all of them were subordinated directly to the Soviet Army Air Force commander. The air regiment was manned by top-class aces and outfitted with the latest fires.<sup>25</sup> Seventy percent of all airplanes and all day bombers (three air corps and two separate air divisions) were within the composition of the 1st and 16th air armies. Such massing of forces was in keeping with the design of the Belorussian operation.

The political agencies and party organizations of the air armies and air formations and units did a great deal of fruitful work. Prior to the offensive a conference of unit executives and active party and Komsomol members was held. All indoctrination was conducted in the spirit of selfless devotion to the socialist fatherland and hatred of the fascist German invaders. Much attention was devoted to increasing Communist Party membership. Communists had the leading role in preparing the units and formations, and they cemented the ranks of the airmen.

A group of generals and officers from Air Force Headquarters, to include Generals I. L. Turkel', P. P. Ionov, G. K. Gvozdokov, and B. V. Sterligov, was sent to the 16th Air Army by order of the air force commander to render assistance in basing the formations, organizing command and control, and putting logistical support in order. During preparations for the operation, in several days of actual flying the organization of massed strikes by bomber air corps was worked out at airfields in the rear. This work was headed jointly by Army General S. I. Rudenko, commander of the 16th Air Army, and General B. V. Sterligov, Soviet Army Air Force senior navigator. This was the first experience in bringing together and forming entire bomber corps in the air. After detailed analysis of all the positive and negative aspects of this measure, it was decided that it would be more advantageous to make a massed strike against ground objectives by the forces of divisions and air regiments.

Plans were written for a powerful air offensive of considerable proportions during the operation. Enemy fortifications in the breakthrough

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sectors were to be razed on the night prior to the offensive by bomber strikes, and at the beginning of the attack the enemy's gun positions on the battlefield and his artillery and reserves were to be annihilated in interaction with the ground troops in place and in time. Significant forces were assigned to maintain air superiority. During the preparations for the operation aviation had the important mission of conducting air reconnaissance. Dependable data had to be acquired on the composition and grouping of fascist troops, on the nature of their defensive structures, and on the locations of gun positions. Long before the beginning of the operation from 30 to 50 percent of all sorties were flown with this goal. Photography of terrain in the breakthrough sectors permitted combined arms commanders to study all details of the disposition of enemy defenses beforehand.

The air armies provided a great deal of assistance to partisan detachments and formations by delivering armament, ammunition, and food to them and evacuating casualties. Aviation provided fire support to partisans in their battles against punitive detachments in the vicinity of Ushache, Lepel', Borisov, and Begoml'.

By 20 June 1944 the bulk of the work of planning the powerful air offensive and preparing the units and formations for the operation was completed. Frontal aviation and strategic aviation were given the following missions: Soundly maintaining air superiority; supporting frontal troops in their penetration of enemy defenses, encirclement and destruction of the Vitebsk and Bobruysk groupings, and encirclement and annihilation of the main forces of Army Group Center east of Minsk; preventing the approach of enemy reserves to the battlefield and disorganizing westward retreat of enemy troops; constantly conducting air reconnaissance.

Because the 1st Belorussian Front was to make two strikes simultaneously (on the Rogachev-Bobruysk and Parichi axes), the forces of the 16th Air Army were divided into two groups. Thirteen air divisions were placed in the northern group and seven air divisions were placed in the southern.<sup>26</sup> Formations of the 1st Air Army, 3d Belorussian Front were also subdivided into two groups. Six air divisions were to operate on the Bogushevsk axis, and 11 were to operate on the Orsha axis.<sup>27</sup>

In the 3d and 4th air armies, all aviation was to be used on the axes of the main strikes of the 1st Baltic and 2d Belorussian fronts. The time for the 1st Belorussian Front to go over to the offensive was postponed 1 day by decision of the Hq SHC so that the efforts of strategic aviation could be concentrated successively in support of the advance of the four fronts. Thus all ADD forces could be concentrated initially to support the 1st Baltic and the 3d and 2d Belorussian fronts, and then they could be transferred to the zone of operations of troops of the 1st Belorussian Front. We can see from this that the Hq SHC attached great significance to the actions of our aviation.

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"Together with A. A. Novikov, A. Ye. Golovanov, S. I. Rudenko, and K. A. Vershinin," writes Marshal of the Soviet Union G. K. Zhukov in his memoirs, "I thoroughly discussed the situation, the goals, objectives, and plans for using air armies and their interaction with strategic aviation, the strikes of which were aimed at headquarters, the communication centers of major operational formations, reserves, and other highly important targets. In addition we examined the problems of maneuvering frontal aviation in the interests of all."<sup>28</sup>

On A. A. Novikov's suggestion and with the approval of Marshal of the Soviet Union G. K. Zhukov, 10 days before the start of the operation strategic aviation conducted an air operation lasting 4 nights with the objective of annihilating enemy airplanes at the airfields. Between 13 and 18 June seven enemy airfields--Brest, Bialystok, Orsha, Minsk, Baranovich, Bobruysk, and Luninets, at which up to 60 percent of the 6th Air Fleet's airplanes were based, were struck. Heavy bombers flew 1,472 sorties in behalf of this mission.<sup>29</sup>

The problems of utilizing strategic aviation in the Belorussian offensive operation itself were discussed by A. Ye. Golovanov with the commanders and staffs of the fronts.

On 14 and 15 June 1944 the troop commander of the 1st Belorussian Front had the 65th and 28th armies rehearse the forthcoming operation in the presence of G. K. Zhukov. A miniature reproduction of the sector of the front in which the operation was to proceed was prepared in the forest, away from the roads; the front line, boundaries between combined arms armies and divisions, and all objects and pockets and resources of resistance were shown. Army, division, and regiment commanders demonstrated their decisions right there on the terrain and answered G. K. Zhukov's questions. This allowed the command to "play out" the planned operation with commanders of all levels and work out interaction in all of its details in a situation as close to real as possible.

Air preparation for the offensive began on the night of 23 June in the breakthrough sectors of the 1st Baltic and the 3d and 2d Belorussian fronts. Some 147 long-range bombers operated within the breakthrough sectors of the 3d Belorussian Front, and 258 operated within the breakthrough sectors of the 2d Belorussian Front.<sup>30</sup> In addition pilots of the 46th Guards Taman' Night Bomber Regiment, commanded by Major Ye. D. Bershanskaya, operated successfully in the 2d Belorussian Front.

Prior to the infantry attack on the Orsha axis, 162 bombers made a concentrated strike against enemy pockets of resistance.<sup>31</sup>

The bomber strikes were followed by continuous actions by ground attack airplanes, which annihilated gun positions hindering the advance of our infantrymen and tanks and destroyed enemy reserves. In the first day pilots of the three air armies flew more than 4,500 combat sorties,

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fought in 42 air battles, and knocked down 19 enemy airplanes.<sup>32</sup> General F. Ya. Falaleyev, the Hq SHC air liaison officer to the 1st Baltic and 3d Belorussian fronts, coordinated the actions of air formations of the 3d and 1st air armies. During the time that an enemy grouping encircled west of Vitebsk was being mopped up, on his orders the efforts of the 3d Air Army were concentrated on the outer front of encirclement while part of the forces of the 1st Air Army assisted in the fastest possible destruction of the enemy grouping with air strikes. When it became necessary at the beginning of July to intensify air support to troops of the 1st Baltic Front, Hq liaison officers Marshal of the Soviet Union A. M. Vasilevskiy and General F. Ya. Falaleyev decided to transfer a few air formations from the 1st Air Army to the 3d; these formations played a major role in making the offensive of the front's troops successful.<sup>33</sup>

On 24 June, when troops of the 1st Belorussian Front went over to the offensive, the scope of air force actions increased even more. Some 303 long-range bombers participated in the night air preparation,<sup>34</sup> and 250 sorties were flown by two night bomber air divisions of the 16th Air Army. During the day of 24 June, at 1200 and 1700 hours, bomber and ground attack aviation of the 16th Air Army made two massed attacks on defensive strongpoints in the vicinity of Bol'shaya Krushinovka and Tikhinichi. The massed bomber strikes, combined with actions in depth by ground attack airplanes, had a strong impact on fascist German troops, causing significant losses and reducing the stability of enemy defenses. Tactical lines of defense were broken on all fronts on 25 and 26 June, and mobile groups were committed to the breakthrough; supporting and covering these groups became the main mission of our aviation. One bomber, one ground attack, and two fighter air corps interacted with the 5th Guards Tank Army, 3d Belorussian Front. Air corps commander General V. A. Ushakov was present at the forward command post with an operational group of corps staff officers. With air support troops of the 5th Guards Tank Army achieved firm control of the Moscow-Minsk highway and railroad and began a swift pursuit of the enemy on the Borisovo axis. In the 1st Belorussian Front, two air corps--ground attack and fighter--interacted with a mechanized cavalry group, and one ground attack and one fighter division interacted with tank corps.

Bomber corps were utilized as a powerful fire reserve intended for strikes against the most important objectives within the zone of advance of the front's troops. Ground attack air formations struck enemy troops and equipment in groups of 9-12 airplanes at the request of air liaison officers at forward control posts within the combat formations of tank and mechanized corps. General B. S. Bakhirev, commander of the IX Tank Corps, wrote the following in a telegram to the commander of the 16th Air Army on 26 June: "Please extend my gratefulness to Colonel N. S. Vinogradov, commander of the 199th Ground Attack Air Division, and to all personnel of his division for their outstanding support to the IX Tank Corps."<sup>35</sup>

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Beginning on 26 June the fascist German troops began to withdraw along the entire front. Successfully exploiting the offensive at strategic depth, tank and mechanized formations encircled the German troops. By 27 June troops of the 1st Belorussian Front encircled troops of the German XXXV Army Corps in an area southeast of Bobruysk; according to air intelligence the corps had been preparing for a breakthrough, concentrating tanks, artillery, and motor vehicles on the Zhlobin-Titovka road with the hope of quickly ramming through the hastily occupied defenses of the XI Tank Corps. G. K. Zhukov and A. A. Novikov were present at General K. K. Rokossovskiy's forward command post. Discussing the situation, A. A. Novikov suggested making a massed air strike to foil the enemy's plans. G. K. Zhukov agreed with this suggestion and ordered its immediate implementation. Here is how Marshal of Aviation S. I. Rudenko describes this episode: "At 1700 hours Colonel M. N. Kozhevnikov, who was accompanying the air force commander, telephoned the headquarters of the 16th Air Army and reported that G. K. Zhukov, A. A. Novikov and K. K. Kokossovskiy were aware of the critical situation in the vicinity of Titovka, and that they intended to order aviation to destroy the enemy column."<sup>36</sup>

Together with General P. I. Brayko, the army chief of staff, General S. I. Rudenko immediately issued instructions to the commanders of the air corps and divisions. Some 523 airplanes were raised into the air. The massed strike went on for an hour and a half. More than 160 tons of bombs were dropped, and tens of thousands of shells were fired. Our air strike was extremely successful. Some 150 tanks, 6,000 motor vehicles, and much artillery were annihilated and put out of action in the area of the encircled enemy grouping southeast of Bobruysk.<sup>37</sup>

Marshal of the Soviet Union G. K. Zhukov wrote the following in this regard. "I did not have the opportunity of observing the destruction of the enemy at Bobruysk, but I was able to witness the defeat of Germans southeast of the city. Interacting with the 48th Army, hundreds of bombers of S. I. Rudenko's 16th Army made strike after strike against the enemy grouping. Fires arose on the battlefield: dozens of motor vehicles and tanks and POL were burning. The entire battlefield was enwreathed in the sinister flames. Orienting themselves by the light, more and more echelons of our bombers continued to approach, dropping bombs of different calibers on the enemy. German soldiers were scattering in all directions like madmen, and those who refused to be taken prisoner died on the spot. Hundreds and thousands of German soldiers, deceived by Hitler who had promised a lightning victory against the Soviet Union, died."<sup>38</sup>

A. A. Novikov sent the following telegram to the flight crews of the 16th Air Army: "As a result of the offensive southeast of Bobruysk our troops encircled a large enemy grouping.... In order to crush the enemy and force him to surrender, on 27 June 1944 in the period from 1815 to 2100 hours aviation of the 16th Air Army, 523 airplanes strong, made a

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massed bomber and ground strike against the enemy grouping encircled southeast of Bobruysk. As a result of the successful air strike the encircled enemy grouping was fragmented, and what was left of it on the night of 28 June was annihilated and captured by the ground troops. A large quantity of damaged enemy equipment and masses of corpses of German enlisted men and officers remained on the battlefield in the area subjected to the air strike. Thus air units completed their mission in an outstanding manner, for which I extend my gratefulness to all personnel who had taken part in the massed strike--pilots, navigators, and radio operator-gunners. This telegram is to be brought to the awareness of all personnel of air units of the 16th Air Army."<sup>39</sup>

The massed air strike against the encircled grouping was a clear demonstration of the greater combat capabilities of our air force and competent leadership by the air force commander, the commander of the 16th Air Army, and the commanders of the air corps, divisions, and regiments. Troops of the 1st Belorussian Front captured Bobruysk on 29 June with active air support.

Air formations of the 1st and 4th air armies participated together with the front's troops in the destruction of an enemy grouping encircled in a forest southeast of Minsk. Reconnaissance airplanes flew at low altitude, and revealed the dispositions of the enemy faultlessly, and they immediately radioed their intelligence data to air control posts. On the basis of the information provided by the air scouts, groups of ground attack airplanes and bombers took off and struck enemy troops.

Belorussian SSR Communist Party Central Committee Secretary P. K. Ponomarenko reported the following to Marshal of the Soviet Union A. M. Vasilevskiy on 12 September 1944: "Last week we discovered and reconnoitered a huge reinforced German camp southeast of Minsk that had been completely destroyed by our ground attack aviation. The scale of the destruction and the signs of the power of our air fleet that could be seen in this area make a sobering impression. On being informed that Minsk had been taken, one of the German groups built a fortified region, in which more than 11,000 Germans, several hundred tanks, many guns and more than 5,000 armored vehicles dug in. Our 14th Ground Attack Stalingrad Red Banner Division discovered and destroyed this grouping. There were 5,000 corpses of German enlisted men and officers and more than 5,000 burned-out vehicles, and a large quantity of destroyed ammunition in the camp within the area inspected.... We request that the 14th Ground Attack Stalingrad Red Banner Division, its commanders, and its flight crews be decorated appropriately."<sup>40</sup> The Soviet Government awarded orders to many of this division's commanders and pilots.

The actions of our aviation to destroy the encircled enemy grouping in the area southeast of Bobruysk were analyzed, generalized, and subsequently studied in all air armies with the goal of making practical use of this experience.

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By this time the Vitebsk, Orsha, and Mogilev enemy groupings were totally destroyed. Tank formations of the 3d and 1st Belorussian fronts began to advance quickly toward Minsk. The new mission of our aviation was to cover and support the advancing troops and pursue the enemy. In the vicinity of Berezino the withdrawing fascist German troops were subjected to massed strikes by the 4th and 16th air armies. Between 28 and 30 June they flew more than 3,000 sorties.<sup>41</sup> Berezina River crossings were systematically destroyed by our aviation, and our ground attack airplanes made effective strikes against German troops pinned down on the river's east bank. Between 29 June and 3 July the 4th and 16th air armies flew more than 4,000 sorties against withdrawing enemy troops.<sup>42</sup> Preventing rapid withdrawal of fascist German troops beyond the Berezina, our aviation thus promoted their encirclement east of Minsk. On 3 July 1944 Soviet troops liberated Minsk. The Belorussian offensive operation was successful due to the coordinated actions of three main forces--tank formations encircling a large grouping of German troops east of Minsk from the north and south and reaching the grouping's rear; rifle formations operating from the front; frontal aviation and strategic aviation blocking the route of retreat of the German 4th Army to Minsk.

After the liberation of Minsk the offensive of the Soviet troops, which was being supported actively by our aviation, unfolded along a broad front and progressed at a high pace in the directions of Vilna, Bialystok, and Brest. Troops of the 2d Belorussian Front destroyed enemy groupings encircled east of Minsk.

By mid-July 1944 Soviet troops had traveled far west. The Belorussian salient was cut off. Pilots of Polish air units formed with the assistance of the Soviet Union fought with Soviet pilots in the concluding stage of the Belorussian operation and later in battles for the complete liberation of Poland. On 14 August the 1st Warsaw Fighter Air Regiment, flying Yak-1's, and the 2d Cracow Night Bomber Air Regiment, flying Po-2's, joined the front.<sup>43</sup> The Polish 4th Mixed Air Division (commander, Colonel G. P. Turykin) was formed at the end of 1944. It consisted of three air regiments--the 1st Fighter, the 2d Light Bomber, and the 3d Ground Attack. The I Mixed Air Corps (commander, General F. A. Agal'tsov) consisting of the Polish 1st Bomber Air Division, the Polish 2d Ground Attack Air Division, and the Polish 3d Fighter Air Division, was formed in the beginning of 1945. The Polish Air Force flew more than 6,000 sorties on the Soviet-German front between the second half of August 1944 and the end of the war.<sup>44</sup>

The Belorussian operation ended on 29 August. With air support, in the Belorussian operation Soviet troops soundly defeated Army Group Center, moved west 550-600 km, and liberated the Belorussian SSR, a large part of the Lithuanian SSR, part of the Latvian SSR, and eastern Poland. The following cities were liberated: Orsha on 27 June, Bobruysk on 29 June, Borisov on 1 July, Minsk on 3 July, Vil'nyus on 13 July, Lublin on 24 July, Bialystok on 27 July, Brest on 28 July, Kaunas on 1 August, and others.

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The Soviet Air Force pounded encircled enemy groupings with annihilatory air strikes at Vitebsk, Bobruysk, Minsk, Kaunas, Vil'nyus, and other places. With active support from ground attack aviation, troops of the fronts quickly crossed a number of large water obstacles--Vistula, Neman, Narew, and Berezina. Soviet pilots firmly maintained air superiority, preventing enemy aviation from striking the troops and objectives in the rear. During the time of the operation frontal aviation and strategic aviation flew 153,545 sorties, while aviation of the National Air Defense Forces flew 3,166 sorties.<sup>45</sup> Never had the combat activities of the Soviet Air Force achieved such great scope in previous operations. Two thousand fascist German airplanes were destroyed in air battles and at airfields.

Statements made by captured German officers concerning the actions of our aviation in the Belorussian operation are interesting. Officers of the General Staff of the 260th Infantry Division, captured on 11 July 1944, stated the following in their interrogation: "Between 26 June and 4 July 1944 the columns with which we were traveling were subjected to frequent air raids on the entire route to Minsk; traveling troops and transportation suffered a great deal from this. When airplanes appeared, the soldiers scattered off the roads into the forests and fields, the columns ran into one another and became confused, and intense panic arose, which aggravated our situation even more and facilitated the actions of aviation. The perpetual raids recurred every half hour to 1 hour, hindering the actions of the troops...."<sup>46</sup>

The military councils of the fronts and armies gave a high assessment to the actions of our air corps and divisions. Here, for example, is the evaluation given to the actions of the VIII Bobruysk Red Banner Fighter Air Corps by the Military Council of the 65th Army (commander--Colonel General P. I. Batov, Military Council member--General N. A. Radetskiy, chief of staff--Army General M. V. Bobkov): "Fighter aviation of the VIII Fighter Air Corps covered operational concentration of the troops by its active operations during preparations for penetration of enemy defenses. During the Bobruysk operation units of the VIII Fighter Air Corps supported the 65th Army as it penetrated enemy defenses, exploited the offensive in depth, and encircled and annihilated the enemy in the vicinity of Bobruysk...."

"General A. S. Osipenko, commander of the VIII Fighter Air Corps, was personally present at the command post in direct proximity to the command post of the 65th Army, thus insuring that airplanes would be sent to the battlefield efficiently and control of the airplanes would be reliable. The boldness and decisiveness of the action of personnel of the VIII Fighter Air Corps insured the success of the ground troops. The Military Council of the 65th Army expresses gratefulness to all personnel for the bravery and heroism they displayed."<sup>47</sup> The motherland evaluated the military deeds of the Soviet airmen highly: The Hero of the Soviet Union title was awarded to 53 pilots and navigators of the

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1st, 3d, 4th, 6th, and 16th air armies by a ukase of the Presidium of the USSR Supreme Soviet.

The actions of the Soviet Air Force in the Belorussian operation introduced many new concepts into air force strategy and tactics. The experience of concentrating the main air grouping on the central sector of the Soviet-German front was highly instructive. Of special interest are the measures implemented by the command to covertly move air units and formations first to airfields significant distances from the front line and then to airfields in the combat zone just prior to the beginning of combat activity. There were many interesting things in the organization of interaction between air armies as well as between frontal aviation and strategic aviation. This interaction was organized by Hq SHC air liaison officers. It was distinguished by flexibility in the maneuvering of aviation along the front, which was accomplished through the transfer of air formations from one air army to another, and through switching of air force efforts from one axis to another without changing bases. In this case decisions on maneuvering air power were made on the spot by Hq SHC liaison officers.

The problem of providing air support to and covering tank, mechanized, and cavalry formations was solved somewhat differently. Several air corps and separate air divisions operated in behalf of the tank army as it was committed to the breakthrough and as it exploited the breakthrough in depth; control of these major air formations was concentrated within the hands of one of the air corps commanders. Centralized control of aviation made it possible to reassign air formations quickly to newly arising combat missions. Fighter aviation typically employed the independent "hunting" strategy with the mission of not only annihilating enemy airplanes in the air but also destroying motor vehicles, railroad trains, and other small targets. Ground attack aviation was used extensively and continuously in support of penetration of enemy defenses and in other critical phases of the offensive. Continuity was achieved by actions of groups of ground attack airplanes in accordance with a previously written schedule in short intervals of 10-20 minutes, as well as with patrolling airplanes at the airfields. As our swift offensive developed in the central sector, the Soviet Army struck the enemy hard on the southern wing of the Soviet-German front and in the Baltic with the active support of aviation. In the period from July to November 1944 the Soviet Army cleared the invaders from the Moldavian SSR and its capital, Kishinev, and captured the major industrial region of Ploesti and Romania's capital Bucharest, and in September it entered Bulgaria, completed the liberation of Romania, Bulgaria, and almost all of the Baltic republics, reached the Vistula, and captured three beachheads on its left bank.

Pilots in Czechoslovak and Romanian units and formations formed and armed with the assistance of the Soviet Union fought valorously together with Soviet aviation within the composition of the 2d, 8th, and 17th air armies.

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The Czechoslovak 1st Fighter Regiment began its battle history as part of the 2d Air Army in July 1944. In September 1944 Czechoslovak pilots were redeployed to the vicinity of Zvolen. There, in the enemy rear, they remained for more than a month, actively supporting Slovak rebels. Later the Czechoslovak 1st Mixed Air Division was created, armed, and trained in the Soviet Union. Fighting together with Soviet airmen, Czechoslovak pilots flew more than 1,400 sorties and destroyed about 50 fascist airplanes before the end of the war.<sup>48</sup>

Pilots of the Romanian Air Force took part in completing the defeat of enemy troops and liberating Romania. In interaction with troops of the 2d Ukrainian Front, the Romanian I Air Corps flew 2,500 combat sorties and knocked down 100 fascist airplanes in air battles between 24 August and 25 October 1944 at Bucharest and in Transylvania.<sup>49</sup>

To support the People's Liberation Army of Yugoslavia, the Yugoslav 1st Fighter Regiment and the 2d Ground Attack Air Regiment were formed in 1945, after which they left for Yugoslavia. Prior to this, in accordance with an agreement signed 15 November 1944 the Soviet Union placed a Soviet air group commanded by General A. N. Vitruk at the disposal of the command of the People's Liberation Army of Yugoslavia for an indefinite period of time. Its composition included the 10th Guards Ground Attack Air Division and the 236th Fighter Air Division and, to support them, the 9th Air Base Area together with all of its materiel, armament, and technical and administrative support resources. The Soviet air group provided considerable assistance to the People's Liberation Army of Yugoslavia in its fight against fascist German troops.<sup>50</sup>

The Normandy Separate Fighter Air Regiment of the Fighting French took an active part in the battles of Belorussia. In October 1944 the regiment received the honorary Neman title for its successful combat activities while supporting and covering troops crossing the Neman River, and it was renamed the 1st Normandy-Neman Separate French Fighter Air Regiment. On 5 July 1943 the French air squadron was reorganized as the 1st Normandy Separate Fighter Air Regiment of the Fighting French (regiment commander--Major P'er Puyyad and, as of 28 October 1944, Major Luy Del'fino). Representatives of the Soviet Air Force in the regiment included Captain I. V. Shurakhov at the post of chief of staff and Engineer-Captain S. D. Agavelyan at the post of the senior engineer. The reason for these assignments was that French aircraft mechanics had been called to North Africa in August 1943, and so the engineers, technicians, and staff had to be replaced by Soviet servicemen. The French regiment was armed with the newest YaK-9 fighters, which had better technical flight characteristics than the YaK-1 (higher rate of climb, better maneuverability, and a speed of about 600 km per hour). In summer and fall 1944 the air regiment's pilots fought in 78 air battles and knocked down 129 enemy airplanes.<sup>51</sup> The regiment's personnel were awarded many Soviet orders for exemplary fulfillment of the Soviet Command's combat assignments in the fight against the fascist German invaders and for the valor and bravery displayed.



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On 8 September 1944, when troops of the 3d Ukrainian Front entered Bulgaria with the active support of the 17th Air Army, Bulgarian pilots joined the fight against fascist invaders as well. Between September and November 1944 they flew 4,400 combat sorties.<sup>52</sup>

During the operation the Soviet Air Force provided significant support to ground troops in their missions. The Communist Party and Soviet Government gave a high assessment to the activities of the command and staff of the Soviet Army Air Force. On 19 August 1944 a ukase of the Presidium of the USSR Supreme Soviet awarded the rank of marshal of aviation to air force deputy commanders G. A. Vorozheykin, F. Ya. Falaleyev, and S. A. Khudyadov. A. V. Nikitin was promoted to colonel general of aviation, and N. I. Krolenko and N. A. Zhuravlev were awarded the rank of lieutenant general of aviation. This ukase also awarded the top rank of chief marshal of aviation to A. Ye. Golovanov, the ADD commander, and the rank of marshal of aviation to his assistant, N. S. Skripko.

In summer 1944 American aviation conducted "shuttle" air operations from Soviet airfields in accordance with a treaty signed by the governments of the USA and the Soviet Union. As we know, the American 8th and 15th air armies and British strategic aviation were operating in Europe as of the beginning of 1944. American aviation was based at English and Italian airfields, and it operated with fighter escort against objectives in Germany and allied countries, basically during the day. The RAF operated at night. Because of the limited range of the fighter escorts, American aviation could not reach objectives in East Germany and in countries of Eastern Europe. Thus representatives of the American delegation to the conference of ministers of foreign affairs held in fall 1943 in Moscow asked the Soviet Government to provide airfields for American aviation on the territory of the USSR. The Soviet Government responded favorably to this request. The Soviet Army Air Force commander received instructions from the supreme high commander to prepare the bases and provide air engineering and logistical support to the American air group in the USSR. For this purpose, as well as to resolve issues associated with combat activities initiated from Soviet territory by air units of Poland, France, and Czechoslovakia, a special section and later an air force directorate (director chief, General S. D. Levandovich) was created in the Soviet Army Air Force Headquarters and subordinated directly to General A. V. Nikitin, the Soviet Army Air Force deputy commander.

On 4 February 1944 the State Defense Committee published instructions to the air force command providing basic direction on the order for housing and feeding American pilots and supplying fuel and bombs to the air bases.<sup>53</sup> It was assumed that up to 360 B-17 (Flying Fortress) and B-24 (Liberator) bombers would participate in the "shuttle" operations, as well as up to 150-200 escort fighters. The Poltava airfield complex, which consisted of the airfields at Poltava, Mirgorod, and Piryatin, was

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allocated to American aviation. The 169th Special Air Base was formed to maintain them. General A. R. Perminov was appointed its commander, Lieutenant Colonel I. I. Kolesnikov was appointed its deputy commander for political affairs, General S. K. Kovalev was appointed its chief of staff, Major N. F. Shchepankov was appointed chief of the operations section, and Engineer-Major K. A. Stroganov was appointed chief of the airfield complex. The Poltava airfield complex was covered from the air by the 240th Fighter Air Division of the National Air Defense Forces (commander, Colonel A. T. Kostenko) and by an anti-aircraft unit of the VI Corps of the National Air Defense Forces. With the permission of the Soviet Government General F. Anderson, U.S. Air Force deputy commander in the European theater, came to Poltava on 15 May with a group of persons including Captain Elliot Roosevelt, the son of U.S. President F. Roosevelt. General Anderson gave a positive evaluation to the preparations made of the air base.<sup>54</sup>

At the end of May 1944 preparations of the air base for receiving the American pilots were completed. In accordance with the treaty the first "shuttle" air operation by American aviation was scheduled for 2 June 1944; the Americans were to take off from Italian airfields, strike enemy objectives in Southeastern Europe, and then land at the Poltava airfield complex. Early in the morning of 2 June up to 750 airplanes of the American 15th Air Army took off from airfields in Italy and struck their assigned enemy targets. Some of them returned to their own bases, and 128 B-17 bombers escorted by 64 P-51 fighters (Mustangs) landed at the Soviet airfields with Lieutenant General (K. Ekker), commander of the 15th Air Army, in charge. As General A. V. Nikitin recalls, an extremely warm welcome was organized for the American pilots at the airfields. Logistical, special, and medical support to arriving Allied aviation was organized at a high level. Later, "shuttle" air operations were conducted on 6 June in interaction with Soviet aviation against objectives in the vicinity of Galati, after which the airplanes landed at Italian airfields. On 11 July more than 1,000 airplanes struck military objectives in Romania and Yugoslavia, some of them landing at airfields near Poltava after their mission. The American 8th Air Army performed a "shuttle" air operation from English airfields against industrial facilities in Berlin on 21 June 1944. Out of the 2,500 American airplanes participating in the operation, 137 bombers escorted by 62 fighters landed at the Poltava airfield complex.

The Luftwaffe intensified its air reconnaissance whenever American aviation landed at our airfields. On the night of 22 June 1944 it struck the Poltava and Mirgorod airfields and, despite intense anti-aircraft fire and the actions of night fighters covering these airfields, it destroyed and incapacitated 44 American and 15 Soviet airplanes at the airfields. It should be noted that on order of the Soviet Command General A. R. Perminov had suggested on that day to the American command to redeploy the airplanes at other airfields before dark. This suggestion was rejected, however. By evening, on the insistence of the Soviet Command,

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the American airplanes were dispersed along the edges of their airfields, and most of the flight crews were quartered away from the airfields. All antiaircraft resources were made combat ready. Although these measures did decrease the losses of American airplanes resulting from strikes by enemy aviation, they could not halt them completely. In the second half of July small groups and single American airplanes landed at the Poltava airfield complex. On 27 July, after striking enemy objectives, 38 P-38 (Lightning) fighter-bombers and 38 P-51 (Mustang) fighters landed at these airfields.

In September 1944 American aviation performed three "shuttle" air operations (11, 13, and 18 September) from the Poltava airfield complex. Later, because the front line had changed dramatically and bombers and fighters of the American 8th and 15th air armies could now reach all enemy objectives and return to their own bases, "shuttle" air operations were no longer necessary. But the actions of American aviation participating in these "shuttle" operations did not have a direct effect on events on the Soviet-German front.

The year 1944, a year of great victories for the Soviet people and their valorous armed forces, was coming to an end. The years of war strengthened the inviolable moral-political unity of the Soviet people. The power of the Soviet state grew immeasurably. The air force also matured quantitatively, qualitatively, and organizationally. In 1944 aviation industry gave the front 17,872 fighters, 10,719 ground attack airplanes, and 4,039 frontal and long-range bombers. Including cargo and trainer craft, more than 40,000 airplanes were produced. As compared to the previous year, airplane production increased by 15.6 percent in 1944.<sup>55</sup> By the beginning of 1945 there were as many as 14,500 new combat craft in the operating air force.<sup>56</sup> Air force units were armed with new, more sophisticated Yak-3 and La-7 fighters and Il-10 ground attack airplanes. They were superior to enemy airplanes of the same kinds in relation to speed, maneuverability, and armament. Our aviation received new resources and a significant number of radar sets. A decree of the GKO dated 6 December 1944 reorganized strategic aviation into the 18th Air Army, consisting of five bomber air corps (I Guards Smolensk commanded by General G. N. Tupikov, II Guards Bryansk commanded by General Ye. F. Loginov, III Guards Stalingrad commanded by General V. Ye. Nestertsev, IV Gomel' commanded by General G. S. Schetchikov, and XIX Bomber commanded by Colonel M. N. Kalinushkin) and four air divisions (45th Heavy Bomber commanded by Colonel V. I. Lebedev, 56th Fighter commanded by Colonel A. D. Babenko, 73d Auxiliary, and 27th Training), and it was subordinated directly to the Soviet Army Air Force commander. The reasons for this lay in the need for making broader use of strategic bombers in support of ground troops during the Soviet Army's major offensive on all of the Soviet-German front. The mobility and maneuverability of the Soviet Air Force increased as a result. Organization of command and control and the conditions for interaction of strategic aviation with air armies in frontal aviation and of the ground troops were improved.

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The Soviet Army Air Force Headquarters, which attached great significance to generalizing the experience of the combat activities of aviation, held a meeting of the staff officers of the air armies, air corps, and military district air services responsible for studying and utilizing the experience of the Great Patriotic War on 18-20 November 1944. Back on 29 April 1943 the air force command published an order on studying and introducing the experience of the Great Patriotic War into the units of the Red Army Air Force; the order required commanders and staffs at all levels to generalize everything that was best about the combat activities of aviation.<sup>57</sup>

Airmen in air force units and formations deeply studied the combat experience and developed new tactics and methods of combat activity born in battle. Combat experience was publicized by various bulletins and memo sheets published by the air divisions. The Soviet Army Air Force Headquarters systematically published "Information Bulletins" and sent them to the troops. The journal VESTNIK VOZDUSHNOGO FLOTA and air army newspapers played a certain role in disseminating combat experience and heightening the skills of air force fliers and technicians.

During the meeting the air army staff officers suggested many new and interesting ideas pertaining to the combat use of air units and formations in various forms of operations and battle; they suggested new ideas regarding the organization and maintenance of interaction between aviation and the troops, and management of aviation using radio resources and forward command posts.

In his concluding statement, General N. A. Zhuravlev formulated the three main tasks: "The first--work efficiently. The experience of warfare must be extracted daily from the combat activities of the air force, and it must be processed and quickly submitted to subordinate air units; the second--study the actions of aviation within a short interval of time or during one typical operation, and on this basis make conclusions and bring them to the awareness of the units; the third--accumulate and preserve materials for future history." The results of the meeting and the principal tasks were spelled out in a directive of the Soviet Army Air Force Headquarters.<sup>58</sup>

The new regulations on the combat activities of ground attack (NShA-44), bomber (MBA-44), fighter (NIA-45), and reconnaissance aviation (NRA-44), which generalized the highly rich war experience and the experience of flying new aviation equipment, and which were written under the guidance of the Military Council in 1944 by military academies jointly with the Air Force Headquarters, reflected the war experience quite fully. A directive of the Soviet Army Air Force chief of staff dated 19 December 1944 ordered air army, military district air service, and air corps commanders to study the new regulations and utilize them in practical combat activities.<sup>59</sup>

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During this time fascist Germany was undergoing a deep military-political crisis which marked the approach of a catastrophe. During the summer-fall campaign of 1944 the Soviet Army annihilated or captured 96 fascist divisions and 24 brigades. In addition it ruined 219 divisions and 22 brigades, which lost from 50 to 75 percent of their composition. In sum total the losses suffered by Hitler's Germany on the Soviet-German front during this time totaled 1,600,000 men, 6,700 tanks, 2,800 guns and mortars, and more than 12,000 airplanes.<sup>60</sup>

## The Vistula-Oder Operation

The victories of the Soviet Armed Forces in 1944 produced outstanding political and military results. The fascist German invaders were completely expelled from Soviet territory (with the exception of the north-western part of the Latvian SSR), and the state border was restored from the Barents to the Black Sea. Fascist Germany was abandoned by all of its allies in Europe, and it found itself in a situation of total political isolation. The front had moved to its borders, and in Eastern Prussia it had overstepped them. Our air force enjoyed strategic air superiority along the entire Soviet-German front. In 1944 the Hq SHC posed the mission of completing the defeat of the armed forces of fascist Germany and providing help to countries of Central and Southeastern Europe in liberating them from fascist oppression and, jointly with the Allies, forcing fascist Germany to accept unconditional surrender. According to the plan of the Supreme High Command, our troops were to make annihilatory strikes along the entire front and destroy enemy groupings in Eastern Prussia, Poland, Czechoslovakia, Hungary, and Austria. The main efforts were to be focused on the Warsaw-Berlin axis. Next the Soviet Army was to occupy Berlin, liberate Prague, and bring the war to a victorious conclusion.

The design of the Vistula-Oder operation was as follows: Powerful simultaneous strikes were to be made against the enemy on the Poznan and Breslau axes, Army Group A defending on Polish territory was to be destroyed, the Oder was to be reached, and advantageous conditions for a final strike on Berlin were to be insured. The beginning of the offensive was planned for 20 January 1945, but fascist German troops placed Anglo-American troops in the Ardennes in a difficult position. On request of the government of Great Britain the Hq SHC decided to hasten the beginning of the offensive of the Soviet troops. In the January offensive Soviet troops had to destroy the enemy in Poland and complete liberation of the Polish people from Hitler's tyranny. The task of destroying fascist German invaders in Poland was assigned by Headquarters to troops of the 1st Belorussian and 1st Ukrainian fronts. Troops on the left wing of the 2d Belorussian Front were to advance on the right flank, while troops on the right wing of the 4th Ukrainian Front were to advance on the left flank. Troops of the 1st Belorussian Front were covered and supported from the air by the 16th Air Army (commander--General S. I. Rudenko, deputy commander for political affairs--

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General A. S. Vinogradov, chief of staff--General P. I. Brayko), while troops of the 1st Ukrainian Front were supported by the 2d Air Army (commander--General S. A. Krasovskiy, deputy commander for political affairs--General S. N. Romazanov, chief of staff--General A. S. Pronin). There were 4,770 warplanes in the combat composition of the two air armies of frontal aviation. Enemy aviation was significantly inferior to ours in quantitative and qualitative respects: Enemy troops were covered and supported by units of the 6th Air Fleet.<sup>61</sup> Troops of the 1st Belorussian Front were faced by up to 450 airplanes. This was no longer the enemy that we had fought in the first years of the war. Soviet aviation was now superior to him in all respects. Although the Germans did try to use new jet airplanes for the first time in the Vistula area, these jets did not have any significant influence on the situation in the air.<sup>62</sup>

Air units and formations of the air armies made meticulous preparations for the forthcoming operation. Special attention was turned to studying the enemy, working new pilots in, and practicing dive bombing against small targets. Much was done to insure covertness of the preparations and surprise in the use of aviation. The arrival of new air formations, of which there were many, was kept a secret. Traveling to the forward edge to study their objectives on the battlefield, commanders and air group leaders were clothed in jackets without shoulder boards and rank insignias. The Soviet Air Force had to maintain strategic air superiority and support the ground troops and the navy in their missions by concentrated attacks on the enemy. The 16th Air Army was joined by the III Fighter Air Corps (commander, General Ye. Ya. Savitskiy), the IX Ground Attack Air Corps (commander, General I. V. Krupskiy), the 183d Bomber Air Division (commander, Colonel M. A. Sitkin), the 242d Night Bomber Air Division (commander, Colonel P. A. Kalinin), and the 1st Guards Fighter Air Division (commander, Colonel V. V. Sukhoryabov) from the Headquarters reserve.<sup>63</sup> Dummy airfields were built. Model airplanes were set up at these airfields, and movements of airfield and combat equipment were simulated. As an example 818 models of airplanes and specialized vehicles were set up at 55 dummy airfields within the zone of the 16th Air Army. Most of the dummy airfields "operated" around the clock and looked so plausible that the enemy had no doubts as to their authenticity. Prior to the offensive the enemy bombed them five times during the day and 19 times at night, dropping 660 heavy caliber bombs.<sup>64</sup> The real airfields, meanwhile, were meticulously camouflaged, and they were subjected to almost no air strikes during this period. Beyond the Vistula air reconnaissance revealed seven prepared enemy lines of defense disposed to a depth of 500 km and six antitank ditches from 20 to 60 km long, and it discovered the areas of concentration of reserves and enemy artillery groupings. All crossings across the Vistula and the Pilica rivers were photographed, and the airfield net and the aviation based at these airfields were discovered. Air reconnaissance data permitted the Supreme High Command and the frontal command to plan the offensive operation more correctly. In addition to conducting air reconnaissance, during the preparations for the operation Soviet aviation fought enemy

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reconnaissance airplanes, covered friendly troops against air strikes, and prevented the enemy from regrouping his troops by making individual strikes against the troops and equipment. These missions required 3,500 sorties.<sup>65</sup>

The offensive was initiated on 12 January by the strike grouping of the 1st Ukrainian Front and on 14 January by the strike grouping of the 1st Belorussian Front. Immediately after the fronts went over to the offensive, aviation (more than 85 percent of all forces) concentrated its main efforts on supporting the fronts' strike groupings. The 4th and 3d Guards tank armies and two tank corps (XXXI and IV Guards) of the 1st Ukrainian Front, which were committed to action in the second half of the first day, were actively supported from the air by aviation of the 2d Air Army. About 400 ground attack airplanes and bombers of the air army, flying continuously in small groups, struck enemy reserves advancing to the area in which our tank armies were being committed to the engagement. Aviation disrupted the plans of the enemy, who was attempting to make a strong counterstrike. Just on 16 and 17 January the 2d Air Army flew about 4,000 combat sorties in behalf of the advancing tank armies and corps.<sup>66</sup> Closely interacting with the combined arms and tank armies, ground attack and bomber aviation disorganized the withdrawal of enemy columns retreating to intermediate lines of defense, thus helping the frontal troops to destroy the main forces of the German 4th Tank Army and operational reserves opposing our troops and operating from the Sandomierz beachhead. Soviet aviation actively helped the troops to cross the Nysa, Pilica, and Warta rivers on the move, it supported advance of their forward detachments to the line Radomsko, Czestochowa, Tarnow.

Concentrating its efforts on covering and supporting the 1st and 2d Guards tank armies and the tank and cavalry corps, beginning on 16 January the 16th Air Army actively helped them to complete their missions. The VI Ground Attack Air Corps, which flew 272 missions in a single day, interacted with the 2d Guards Tank Army, while the 1st Guards Tank Army was supported by the 2d and 11th Guards Ground Attack Air Divisions. That day they flew 345 sorties.<sup>67</sup> In the vicinity of Opoczno ground attack airplanes destroyed the enemy's 10th Mechanized Division. More than 3,000 motor vehicles and armored transporters and several dozen tanks were destroyed by aviation and abandoned on the roads. Bombers of the III Bomber Air Corps (commander, General A. Z. Karavatskiy) and the 183d and 221st Bomber Air Divisions made several powerful strikes against the enemy's rail facilities during the day. In all during the third day of the offensive the 16th Air Army flew 3,341 sorties.<sup>68</sup> Aviation of the 16th Air Army played a great role, helping the troops to liberate Warsaw. The Polish 1st Army, which went over to the offensive on the night of 17 January and broke into Warsaw on that same day, took part in the liberation of Warsaw together with Soviet troops. Still at the beginning of the operation the 16th Air Army airlifted a significant quantity of mortars, antitank rifles, automatic weapons, ammunition, food, and medicines to patriots of the Warsaw underground organization. During the

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4 days of battle by the front's troops in the liberation of Warsaw, the 16th Air Army flew 6,493 combat sorties. In addition the Polish 4th Mixed Air Division flew about 400 combat sorties.<sup>69</sup>

By the end of 17 January the enemy's main forces had been destroyed through the efforts of the troops of the two fronts and aviation. Poland's capital--Warsaw--was liberated from the German invaders.

During the subsequent advance of the troops of the fronts to the Oder, despite poor weather our aviation continued to support the ground troops in their pursuit of the retreating enemy. However, the conditions under which Soviet aviation had to operate became more complex as the troops moved west. An unexpected warming spell caused a major thaw. Field airfields were put out of action. Aviation lagged behind the ground troops due to the poor basing conditions. At the same time favorable conditions were created for enemy aviation: The weather was good at enemy bases, and well prepared paved airfields were present. The Luftwaffe capitalized upon this, and in the first third of February it flew about 14,000 sorties within the zone of advance of the 1st Belorussian Front, while the 16th Air Army flew only 624.<sup>70</sup> The Soviet Command took emergency steps. Freeways were used to base fighters. The first experiment with this sort of unusual airfield was made by Hero of the Soviet Union Colonel A. I. Pokryshkin, commander of the 9th Guards Fighter Air Division. The entire air division was based on the freeway by evening. The 22d Guards Fighter Air Division (commander, Lieutenant Colonel L. I. Goreglyad) did the same. In addition, each combined arms army built one airfield within its zone out of special metallic planks. This is how the problem of basing our aviation during this operation was solved. By their bold and decisive actions, Soviet fighters broke enemy resistance in the air. While during the second third of February enemy aviation flew more than 3,000 sorties, in the last third they flew only 670. During the same time just the 16th Air Army alone flew more than 10,000 sorties.<sup>71</sup>

Supporting combat missions during the pursuit, between 18 January and 3 February the 16th and 2d air armies flew more than 42,000 sorties. The III, VI, and XIII Fighter Air Corps of the SHC reserve, commanded by Generals Ye. Ya. Savitskiy, I. M. Dzusov, and B. A. Sidnev, distinguished themselves especially. The formations they led dependably covered the ground troops against air strikes and boldly attacked the enemy on the ground. In support of the 1st Ukrainian and 1st Belorussian fronts, the 18th Strategic Aviation Air Army disrupted enemy rail shipments and prevented concentration of reserves through night actions. Between 17 and 26 January it flew more than 600 combat sorties.

Soviet aviation once again demonstrated in the Vistula-Oder operation that it was capable of supporting and covering advancing troops continuously and effectively throughout the entire operation in difficult meteorological conditions. During the offensive operation from the Vistula to the Oder, units of fighter air formations were redeployed seven times, while



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ground attack units were redeployed six times. Pilots of the two air armies flew 54,000 combat missions. Our fighters fought in 1,150 air battles and destroyed 908 enemy airplanes.<sup>72</sup>

## The Eastern Prussian Operation

Concurrently with the strong push from the Vistula to the Oder, the Soviet Armed Forces initiated offensive actions in Eastern Prussia and northern Poland. Planning the Eastern Prussian operation, the Hq SHC assigned the following missions to the Soviet troops--cutting off Army Group Center from other forces of the Fascist German Army, pushing it against the sea, dividing it, and annihilating it in parts.<sup>73</sup> This mission was given to troops of the 3d and 2d Belorussian fronts, which were to cooperate with the air force and the Red Banner Baltic Fleet. The Soviet air grouping consisted of the 1st Air Army of the 3d Belorussian Front (commander--General T. T. Khryukin, deputy commander for political affairs--General I. G. Litvinenko and, as of March, General I. T. Chernyshev, chief of staff--General I. M. Belov) and the 4th Air Army of the 2d Belorussian Front (commander--General K. A. Vershinin, deputy commander for political affairs--General F. F. Verov, chief of staff--General A. N. Alekseyev). In all the two air armies, reinforced by air reserves of the Supreme High Command, possessed more than 3,000 airplanes.<sup>74</sup> In addition some of the forces of the 3d Air Army, 1st Baltic Front and the 18th Air Army were called in. Actions of the air armies in the operation were coordinated by Hq SHC air liaison officer Marshal of Aviation F. Ya. Falaleyev. The German Army Group Center was supported by the 6th Air Army, which possessed 775 airplanes.<sup>75</sup> The Hq SHC and the frontal troop commanders gave aviation a major role in the forthcoming offensive operation.

To achieve surprise in the actions of troops and aviation, false preparations for defense were made on the main axis in the 3d Belorussian Front, on its left wing. Between 1 and 10 January the 1st Air Army covered false concentration of troops in the vicinity of Suwalki. Dummy airfields were created on this axis, and models of 100 ground attack airplanes and 60 fighters were set up at them. Radio stations simulating the work of the headquarters of an air army, a ground attack air corps, and three bomber divisions were operated in the vicinity of the dummy airfields. Camouflage and deception were also employed in other air armies. On the morning of 13 January 1945 troops of the 3d Belorussian Front went over to the offensive, followed by troops of the 2d Belorussian Front on 14 January. During the night prior to the offensive aviation of the 1st Air Army conducted powerful air preparation, flying 740 sorties.

During the day on 14 January aviation helped the troops of the 5th Army repel strong enemy counterattacks. On 15 January 1,320 airplanes of the 1st and 3d air armies struck the enemy's principal centers of resistance in several powerful successive strikes, as a result of which the front's

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troops advanced up to 10 km and penetrated the main line of defense. On the fourth day of the operation 342 bombers of the 1st and 3d air armies made a massed strike against strongpoints on the enemy's second line of defense in the sector within which the II Guards Tank Corps was committed to the engagement. A second strike by 284 bombers occurred 3 hours after the first against objectives on the third line of defense.

Air support to the combat actions of the tank corps was provided by five bomber air divisions, three ground attack divisions, and one fighter air division. In all on 16 January aviation of the two air armies flew more than 2,800 sorties.<sup>76</sup> By the end of 18 January troops of the 3d Belorussian Front broke enemy defenses along a broad front with active air support. The 1st and 3d air armies flew 10,350 sorties in support of the front's troops.<sup>77</sup> In the zone of advance of the 2d Belorussian Front, the 4th Air Army actively supported commitment of two tank corps on 15 January and one mechanized corps on 16 January, and on the following day it supported commitment of the 5th Guards Tank Army to the engagement.

Aviation played a major role in annihilating an enemy grouping encircled in the fortress city of Torun. On 31 January troops of the 70th Army began an assault on the surrounded fortress. The enemy attempted a strong counterattack, as a result of which 5,000 of his troops broke out of the encirclement. Ground attack aviation was given the mission of annihilating them. By its strike it blocked the movement of the columns and in its subsequent actions it inflicted heavy losses on them. Later, capitalizing upon a temporary improvement in the weather, Soviet pilots struck troops and pockets of resistance in the Heilsberg fortified area and fought the Luftwaffe. Between 19 January and 9 February the 4th Air Army flew 8,130 sorties, while the 1st Air Army flew 9,740 sorties.<sup>78</sup> Troops of the fronts captured a significant part of the Zemland Peninsula, bypassed Konigsberg on three sides, and reached the Heilsberg fortified area. The Eastern Prussian grouping suffered heavy losses and was divided into three parts. The second stage of the combat activities of troops in Eastern Prussia--annihilation of the isolated enemy groupings--began on 10 February. This mission was assigned to troops of the 3d Belorussian and 1st Baltic fronts. On 18 February 1945 Army General I. D. Chernyakhovskiy, commander of the 3d Belorussian Front, was mortally wounded in the vicinity of Mel'zak. Marshal of the Soviet Union A. M. Vasilevskiy was appointed troop commander of the 3d Belorussian Front by order of the Hq SHC on 18 February 1945. Vasilevskiy arrived at the front's headquarters on 20 February. On 23 February the Hq SHC ordered the Soviet Army Air Force commander, Chief Marshal of Aviation A. A. Novikov to travel to the 3d Belorussian Front in Eastern Prussia to coordinate the actions of the participating air forces. On 24 February A. A. Novikov and an operational group from the Soviet Army Air Force Headquarters took off for the 3d Belorussian Front aboard a military transporter. The airplane was piloted by General V. G. Grachev, commander of an air transport air division. On 21 February the Hq SHC decided to transfer troops operating in Eastern Prussia to the 3d

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Belorussian Front, making the latter responsible for the annihilation of all of the isolated army groupings. In compliance with this decision the 1st Baltic Front was disbanded as of 2400 hours on 24 February 1945, and its troops, which were renamed the Zemland Group, were placed within the 3d Belorussian Front. The 3d Air Army was also placed within the composition of the combined 3d Belorussian Front, meaning that the front now had two air armies. Operating during the spring thaw and in the presence of dense fog, in the second half of March the front's troops divided and defeated Germans occupying the Heilsberg fortified area. The defeat of the enemy's Konigsberg grouping was placed on the agenda. The plan for defeating the Konigsberg grouping consisted of the following: The garrison's forces were to be divided by powerful converging strikes from the north and south with active air support, and then the city was to be captured by an assault. An auxiliary strike was to be made from the vicinity of Konigsberg in a westerly direction toward Pillau (Baltiysk) to contain the enemy's Zemland grouping. Actions by artillery and aviation, which were to accompany the troops and totally demoralize the defending enemy, were given a special role in the assault on the city. Two combined arms armies--the 43d and 50th--were to strike from the north, and the 11th Guards Army was to strike from the south, while the 39th Army was to cut the fortress off from the enemy's Zemland grouping.

For the first time in the Great Patriotic War three of the air force's air armies (1st, 3d, and 18th), the air service of the Red Banner Baltic Fleet (commander, General M. I. Samokhin), and two bomber air corps--the V Bomber Air Corps (commander, General M. Kh. Borisenko) from the 4th Air Army and the V Guards Air Corps (commander, General V. A. Ushakov) from the 15th Air Army--were called in to support a single front. In all by the beginning of the Konigsberg operation this grouping possessed 2,444 warplanes, to include 1,124 bombers (500 heavy long-range, 432 close-range, and 192 light night bombers), 470 ground attack airplanes, 830 fighters, and 20 torpedo carriers.<sup>80</sup> All airplanes with the exception of 150 in the fleet's air service, which were given the mission of interdicting the enemy's marine shipments, were intended for actions on the land front. During the war the Soviet Command accumulated a great deal of experience in controlling large masses of aviation in strategic operations conducted by groups of fronts and in independent air operations. Before, however, the actions of aviation were always dispersed on a broad front. In this case more than 2,000 warplanes of five major operational air formations had to be committed to the engagement within a very narrow sector of the front, since the main goal of the operation was to destroy the Konigsberg grouping and capture the city and fortress of Konigsberg.

The enemy attached not only military but also political significance to Konigsberg. One of the most important areas of Germany's war industry and the center of Eastern Prussia, it was also the center of Prussian military power. To defend the city, the enemy called in about 130,000 men, up to 4,000 guns and mortars, and more than 100 tanks and assault

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guns. Some 170 warplanes were based at airfields on the Zemland Peninsula ((Gros-Dirshkaym), (Gros-Khubniken), and (Noytif)).<sup>81</sup> The Germans created four zones of defense within and around Konigsberg. The first (outer perimeter) consisted of a system of trenches, antitank ditches, lines of dragon's teeth, personnel obstacles, and minefields. The second (the inner perimeter) included earth-and-wood pillboxes, concrete pillboxes, and 15 strong ancient forts containing sizable garrisons; the third was on the outskirts of the city, and it consisted of a complex of reinforced concrete gun emplacements and structures prepared for defense; the fourth encircled the central part of the city, and it consisted of bastions, turrets, and strong buildings. Konigsberg was covered against air strikes by 56 anti-aircraft batteries (about 450 barrels). There were large underground fuel and food dumps in the city.

Clearly the defeat of such a grouping and the capture of Konigsberg demanded considerable, meticulous preparations. Jointly with the front's heavy artillery, aviation was to play the main role here. This was understood quite well by A. M. Vasilevskiy and A. A. Novikov. The headquarters were ordered to coordinate carefully and develop detailed plans for interaction among all arms and services. The plans for aviation were written at the headquarters of the 1st Air Army with the direct participation of an operational group representing the Soviet Army Air Force commander. Receiving instructions from A. M. Vasilevskiy, A. A. Novikov spelled out the missions to the commanders of the 18th Air Army and aviation of the Red Banner Baltic Fleet, and to the commanders of the two bomber air corps of the 4th and 15th air armies. Some refinements were made in the plans for the combat activities of the 1st and 3d air armies.

After this, Section One of the headquarters of the 1st Air Army, headed by Colonel N. P. Zhil'tsov, worked out the final plan under the guidance of Chief of Staff General I. M. Belov with the participation of officers in the operational group of the Soviet Army Air Force commander; then this plan was coordinated with the plans of the front and the combined arms armies. The battle plan of frontal aviation in the 1 April operation was approved by the front's Military Council.

The plan foresaw preliminary air preparation for 2 days with the goal of razing the forts at key strongpoints within the zones of advance of the 43d and 11th Guards armies, annihilating enemy airplanes, and putting landing strips out of action. Destruction of fascist aviation was to be completed by powerful strikes by air formations. There were plans to fly 5,316 sorties and drop 2,620 tons of bombs in the first 2 days.

On the first day of the operation the front's troops were to make a massed strike against objectives on the battlefield with the support of a total of 539 airplanes (406 Tu-2's and Pe-2's and 133 fighters armed with bombs). After this attack, enemy ground attack airplanes were to escort infantry and tanks. A second bomber attack was planned for 4-5 hours after the first. The 129th, 240th, and 330th fighter air divisions and some forces

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of the XI Fighter Air Corps were intended to cover the bombers and ground attack airplanes, while the remaining fighter formations were given the mission of fighting enemy aviation in the air. In all during the first day of the operation more than 4,100 sorties were to be flown. In subsequent days of the operation frontal aviation was to act in accordance with instructions from the commanders of the 1st and 3d air armies--Generals T. T. Khryukin and N. F. Papivin. During the planning, special attention was turned to actions by ground attack air divisions and the troops. In addition to a powerful bomber air strike group, a strong ground attack group was created. It contained six ground attack divisions--Colonel S. D. Prutkov's 1st Guards, General V. I. Shevchenko's 182d, Colonel F. S. Khatminskiy's 277th, Colonel P. M. Kuchma's 211th, Lieutenant Colonel K. P. Zaklepa's 311th, and General S. S. Aleksandrov's 335th.<sup>82</sup>

Fighter aviation was also given ground attack missions. Two hundred airplanes of the XI Fighter Air Corps under the command of General G. A. Ivanov were prepared specifically for bomb strikes against point targets requiring dive bomber tactics. Colonel F. I. Shinkarenko's entire 130th Fighter Air Division, which was armed with new YaK-9 airplanes having special internal compartments that could hold up to 400 kg of bombs, operated as a ground attack formation. The schedules indicating the times ground attack airplanes took off for combat missions and returned to the airfields were written in the air armies. Flying zones were delimited for every air formation. All air divisions had their own corridors and specific altitudes at which they flew to their targets and back. In order that the pilots could orient themselves more precisely in night operations, our troops were to light signal fires along the forward edge, and the center of Konigsberg was to be marked by intersecting searchlight beams. Three days before the beginning of the operation the commanders of the air corps and air divisions received photo-mosaics of the city of Konigsberg, and large scale maps and diagrams with the targets numbered and marked in relation to the actions to be taken by aviation.

On the eve of the operation air officers were sent with portable radio sets to ground troop formations to guide our airplanes to enemy targets within the zone of visibility. Operational groups and air liaison officers were sent to the command posts of the combined arms armies to interact with and control ground attack airplanes interacting directly with the advancing troops.

The extent of the role given to aviation in the capture of the city and fortress of Konigsberg can be seen from the fact that A. M. Vasilevskiy postponed the beginning of the assault from 5 April to the 6th due to the poor weather predicted. A. A. Novikov ordered General V. I. Al'tovskiy, chief of the meteorological service of the Soviet Army Air Force, to convene meteorological experts in Moscow and report, by 1600 hours on 4 April, an updated weather forecast for the vicinity of

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Konigsberg for 5 and 6 April. According to the prediction of the air force's meteorological service in Moscow, the weather was to be satisfactory for air activity on 6 April; in fact, however, it did not become suitable for flying until the morning of 7 April. Air Force Military Council members Generals N. S. Shimancv and A. V. Nikitin joined A. A. Novikov at the front during the preparations for the operation, carrying reports on a number of air force problems. These generals were put to work in the air force operational group, and they provided practical assistance in preparing air formations for the operation.

At dawn on 6 April A. A. Novikov was accompanied by A. V. Nikitin and M. N. Kozhevnikov to the command post of General A. P. Beloborodov's 43d Army. The command post was in the vicinity of (Fukhsberg) on the slope of a gentle hill about 1.5-2 km from the forward slope; bunkers outfitted with stereoscopic viewers and two towers had been built. The forward command post of the 1st Air Army, headed by Colonel N. P. Zhil'tsov, was deployed in one of the towers in the trees. Personnel trenches were dug next to the towers, and the air army's radio stations and motor vehicles were concealed in previously dug shelters. The tower commanded a good view of the battlefield and the city of Konigsberg. At about 0900 hours guns of the 11th Guards Army began to thunder south of Konigsberg, and about an hour later the guns of all the other armies went into action. Artillery action against enemy defenses lasted more than 2 hours. The salvos of the high-powered guns literally shook the ground.

On that day the weather prevented full implementation of the battle plan of the air force. By 1400 hours only 300 sorties were flown. In all on 6 April 1,052 of the planned 4,000 sorties were flown. The weather improved dramatically on 7 April. A. A. Novikov assigned new missions to almost all bomber aviation, which was to operate against the main centers of resistance immediately ahead of the advancing troops. On this day 246 Tu-2's and Pe-2's made three powerful successive strikes against enemy troops west of Konigsberg. Troops continuously escorted by ground attack airplanes broke through the enemy's third defensive zone and penetrated directly to the city in the second half of the day. This was the moment when the enemy had to be struck hard from the air; heavy bombers of the 18th Air Army were to make a massed strike against defensive structures within Konigsberg itself. It was not a simple matter to commit the main strike forces of aviation to the engagement, since this was the first time the 18th Air Army was used in daytime. Prior to this it had been utilized primarily at night. General A. I. Antonov of the General Staff gave permission for its combat application. The beginning of the massed strike of the 18th Air Army was planned for 1310 hours on 7 April.

Frontal aviation contributed 124 fighters to provide direct cover to the heavy bombers, while 108 fighters patrolled constantly above the city for the entire time that the bombers were passing over Konigsberg.

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In addition, 20 minutes before the approach of the 18th Air Army's airplanes to the city, 118 Il-2 ground attack airplanes and Pe-2 bombers struck the enemy's fighter airfields. The approach of the 18th Air Army's airplanes could be seen well from the command post in the tower. A powerful massed strike was made by 514 heavy bombers against strongpoints and forts in Konigsberg. The troops had never before witnessed such a powerful strike by our aviation in daytime, in good sunny weather. The thunder of heavy caliber bombs continued in Konigsberg for about an hour. A total of 3,743 bombs weighing 550 tons were dropped on the enemy.<sup>83</sup> The entire city was engulfed in smoke. The strongpoints and forts were destroyed. Following such a strike, enemy resistance decreased drastically, and our troops began to advance quickly toward the center of the city. Not a single enemy fighter was able to penetrate to our bombers, and ground attack airplanes put antiaircraft artillery out of action. Heavy bombers of the 18th Air Army returned to their own bases unharmed after the strike. Great credit for preparing the air formations for the strike and conducting the massed strike itself belongs to the command of the 18th Air Army, led by Chief Marshal of Aviation A. Ye. Golovanov. This strike was followed by successful actions on the part of frontal bombers and ground attack airplanes commanded by Generals V. A. Ushakov and M. Kh. Borisenko. During 7 April Soviet aviation flew about 5,000 sorties; on the night of 8 April it flew 2,000 combat sorties. Our air force had never flown such a large number of sorties in a single day in support of the offensive troops of a single front.

The assault on the fortress from the air continued on 8 April. Up to 2,000 airplanes made two massed strikes on that day against a German tank grouping west of Konigsberg. By the end of the third day the activities of aviation and artillery resulted in the destruction of a large number of fortifications and serious losses to enemy troops. On 9 April the heroic troops of the 3d Belorussian Front captured the city and fortress of Konigsberg with active air support. The remnants of the enemy garrison surrendered.

In 4 days Soviet aviation flew more than 14,000 sorties and dropped 4,440 tons of bombs on the enemy.

Prisoners of war confirmed the great effectiveness of the strikes made by our aviation. Thus one of the senior officers present in the fortress as air liaison officer from the German Supreme High Command testified that "aviation was one of the causes which forced General (Lyash) to conclude that any further resistance was senseless." The Konigsberg operation was very short. But in terms of its nature, the quantity of air power committed, its massed application, and the results of the actions, it was in a sense a dress rehearsal of the assault on Berlin, the last stronghold of fascist Germany in its aggressive war.

The actions of aviation in the Konigsberg operation were generalized, and a report containing the results and analysis was published in an information collection of the Soviet Army Air Force.

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The Communist Party and Soviet Government gave a high assessment to the deeds of Soviet pilots. After the operation the ranks of our airmen were enlarged by another four twice-awarded Heroes of the Soviet Union--General T. T. Khryukin and pilot-commanders Ye. M. Kungurtsev, G. M. Myl'nikov, and G. M. Parshin. Chief Marshal of Aviation A. A. Novikov and pilots V. A. Alekseyenko, A. I. Kazim, A. N. Prokhorov, and N. I. Semeyko were awarded the Hero of the Soviet Union title.<sup>84</sup> Pilots of the French Normandy-Neman Fighter Air Regiment participated in the operation together with Soviet pilots. Just in January 1945 alone the regiment flew more than 500 combat sorties and annihilated about 60 enemy airplanes in the air and at airfields. Twenty-four of the air regiment's officers were awarded orders of the Soviet Union. In the period from 23 March 1943 to 2 May 1945 the French Normandy-Neman Regiment traveled a battle road from Kaluga to Konigsberg. The pilots flew 5,062 combat sorties, fought in 869 air battles, and knocked down 266 German airplanes. Eighty pilots were awarded orders of the Soviet Union, and four of them--M. Al'ber, R. de la Puap, M. Lefevr, and Zh. Andre--were awarded the Hero of the Soviet Union title. The air regiment was noted seven times in orders of the Soviet Supreme High Command, and it was awarded the Soviet orders of the Red Banner and Aleksandr Nevskiy, the French Order of the Legion of Honor, the "Liberation" military cross, and a war medal.<sup>85</sup>

The defeat of fascist German troops in Eastern Prussia had great military-political significance. Soviet troops occupied all of Eastern Prussia together with its capital, Konigsberg, and liberated some of the northern regions of Poland. The Eastern Prussian operation was a clear example of successful interaction among several air armies of frontal aviation, strategic aviation, and the fleet under the guidance of the senior air chief. The air force was one of the decisive factors in the operation leading to swift defeat of a large enemy grouping occupying a highly reinforced area of Eastern Prussia.

#### The Berlin Operation

Having defeated large enemy groupings in Eastern Prussia, Poland, Eastern Pomerania, and Silesia in January-April 1945, the Soviet Armed Forces reached the Oder and Niesse on a broad front and made preparations for the decisive battle of Berlin. Soviet troops on the south wing of the Soviet-German front completed the destruction of the enemy's Budapest grouping and liberated Hungary, part of Czechoslovakia, and the eastern regions of Austria. Germany found itself under the immediate threat of strikes by Soviet troops from the east and south.

By the beginning of the Berlin operation the German command still had significant ground and air forces. Troops intended to cover the approaches to Berlin and the city itself had a strength of 1 million men, 10,400 guns and mortars, 1,500 tanks and assault guns, and 3,300 warplanes. A garrison of more than 270,000 persons was concentrated in



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Berlin. The reserve of the main command of the ground forces contained eight divisions.<sup>86</sup> Preparing for repulsion of the Soviet offensive, the Fascist German Command created powerful defenses in the country's east, utilizing the masonry structures of cities and villages, rivers, canals, and lakes for this purpose. The forward edge of defense was along the Oder and the Niesse. Berlin's defenses were deep, and the troop concentration was high. Strong centers of resistance were created in Stettin (Szczecin), (Gartts), Schwedt, Frankfurt-on-Oder, Gubin, Forst, Cottbus, and Spremberg. The defenses were strongest opposite the Kostrezyń beach-head occupied by Soviet troops. There were 400 permanent reinforced concrete structures just in Berlin alone. The Luftwaffe, the forces of which were up to 70 percent fighters, including up to 120 Me-263 jets and cruise missiles, prepared itself for stubborn resistance.<sup>87</sup>

The Soviet Supreme High Command concentrated a strong grouping of troops and aviation on the Berlin axis. Soviet troops were superior to the enemy in manpower by a factor of 2.5, in artillery by a factor of 4, in tanks and self-propelled guns by a factor of 4.1, and in aviation by a factor of 2.3.<sup>88</sup> The strategic design of the operation was to make powerful strikes by troops of the 2d and 1st Belorussian and 1st Ukrainian fronts with the support of the air force in a zone from Stettin to (Pentsikh), destroy enemy defenses on a number of axes, divide the Berlin grouping into several isolated parts by swift strikes made by strong groupings, and subsequently encircle and destroy this grouping. After capturing Berlin, on the 12th-15th days of the operation the advancing troops were to reach the Elbe on a broad front, where they were to join up with Anglo-American troops, force Germany to surrender, and end the war in Europe.<sup>89</sup>

On 9 April 1945 the Soviet Army Air Force commander, who was still with the 3d Belorussian Front, received an order from the Headquarters of the Supreme High Command to leave for the 1st Belorussian Front to participate in the preparation for and coordination of the combat activities of all air power called in for the Berlin operation. The operational group of the air force commander consisted of General N. F. Andrianov, Colonel M. N. Kozhevnikov, Majors L. M. Smirnov and P. A. Kolesnikov, and, from the Section for Analysis of the War Experience of the Air Force Headquarters Operational Directorate, Colonel F. S. Luchkin. The Soviet Army Air Force Headquarters concentrated air reserves on the Berlin axis, and jointly with the command and staff of strategic aviation it worked out the problems of using the 18th Air Army in combat. On order of the Hq SHC, air formations of the SHC reserve were transferred to the Berlin axis. Thus the VI Bomber Air Corps (commander, General I. P. Skok), the I Guards Fighter Air Corps (commander, General Ye. M. Beletskiy), the 113th and 138th bomber divisions, and the 240th Fighter Air Division (commanders, Colonel M. S. Finogenov, Hero of the Soviet Union Colonel A. I. Pushkin, and General G. V. Zimin). The Soviet air grouping consisted of three air armies of frontal aviation (4th, 16th, and 2d) commanded by Generals K. A. Vershinin, S. I. Rudenko, and S. A.

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Krasovskiy, and the 18th Strategic Aviation Air Army commanded by Chief Marshal of Aviation A. Ye. Golovanov. The 2d and 16th air armies contained 50 air formations, 32 of them from the SHC reserve. The 4th Air Army contained 15 air formations, to include six from the SHC reserve. By the beginning of the operation the 1st Belorussian Front's 16th Air Army contained 28 air divisions and seven separate air regiments. The armies possessed 3,033 serviceable warplanes (533 day and 151 night bombers, 687 ground attack airplanes, 1,548 fighters, and 114 reconnaissance airplanes and spotter airplanes). By the beginning of the Berlin operation the 16th Air Army was the largest in our air force in terms of composition.<sup>90</sup>

The Polish I Mixed Air Corps and Polish 4th Mixed Air Division participated in the operation together with troops of the Polish 1st and 2d armies. The total strength of our and Polish aviation was 7,500 warplanes, including 297 Polish airplanes.<sup>91</sup>

The average density of aviation per kilometer of front line was extremely high considering the total width of the zone of advance--up to 30 airplanes. It was more than 100 airplanes on the axis of the main strikes, and within the zone of advance of the 5th Strike Army and 8th Guards Army of the 1st Belorussian Front the density attained 170 airplanes. In order to support such a quantity of aviation, engineering units of the air armies restored and built 290 airfields with the active help of the ground troops, and a dependable reserve of fuel, ammunition, and other forms of logistical support to aviation was created in 10-12 days.

No offensive operation conducted by ground troops in the Great Patriotic War had ever involved such a large number of air formations and airplanes in three fronts. In order that all air power could be used purposefully and effectively in the operation, the efforts of the air forces had to be coordinated, the time and sequence of massed strikes had to be agreed upon, the zones of operation had to be defined, and the airfields to be used by air units following combat missions in the zones of adjacent fronts had to be specified. All of these problems were solved by the air force commander, acting as air liaison officer of the Hq SHC, jointly with the troop commanders of the fronts and air army commanders right within the area of combat activities. Frontal aviation was assigned the following missions: Firmly maintaining strategic air superiority; dependably covering troops and rear objectives of the front from enemy air strikes; conducting air preparation and supporting ground troops during penetration of the tactical zone of enemy defenses; supporting troops of the 2d Belorussian and 1st Ukrainian fronts crossing the Oder, Niesse, and Spree rivers; supporting commitment of tank armies to the engagement; annihilating enemy reserves; conducting air reconnaissance and maintaining surveillance over the battlefield.

The plans for combat use of the air armies in the operation were written with extreme carefulness. Special attention was turned to organizing

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interaction between aviation and the troops, to supporting commitment of tank armies and separate tank and mechanized corps to the engagement, and toward their air escort throughout the entire depth of the operation.

The 1st Belorussian Front's 1st and 2d Guards tank armies (commanders, Generals M. Ye. Katukov and S. I. Bogdanov) were to advance on Berlin from the north and northeast, while the 1st Ukrainian Front's 3d and 4th Guards tank armies (commanders, Generals P. S. Rybalko and D. D. Lelyushenko) were to turn toward Berlin as well, in the event that they were able to advance beyond (Lyubben). The armored waves of the two interacting fronts were to break through to Berlin with active air support, encircle the city, and cut off the westward route of withdrawal of the Berlin grouping's main forces. The plans foresaw commitment of 75 percent of the aviation of the 16th and 2d air armies to support of the tank armies. The main forces of the air army, totaling 2,453 airplanes, were to support two combined arms and two tank armies on the axis of the main strike of troops of the 1st Belorussian Front, who were to attack from a beachhead on the Oder River west of Kostrzyn; meanwhile the northern and southern auxiliary groupings were to be supported from the air by only one air division each.

The plan for combat use of the 2d Air Army foresaw four massed attacks against the enemy on 16 April, the first day of the operation, by 800, 570, 420, and 370 airplanes, and small groups of airplanes representing all aviation arms were to operate in the intervals between these strikes.<sup>92</sup>

There were also unique features to the organization of the combat activities of the 4th Air Army. Because the 2d Belorussian Front's artillery was located on the east bank of the Oder, aviation was given the mission of suppressing and destroying objectives deep in the enemy defenses; this mission was to be conducted mainly by ground attack airplanes, since the 4th Air Army's bomber group was not strong enough. The plan called for more than 4,000 sorties during the first day of the offensive.

The 18th Air Army also prepared carefully for the operation; just prior to the offensive, at night, it was to make the first massed strike against the principal strongpoints in the second line of defense on the axis of the main strike by troops of the 1st Belorussian Front, and then it was to make another series of powerful air strikes in the course of the offensive.

Jointly with the frontal command, the Soviet Army Air Force commander devoted a great deal of attention to organizing interaction between aviation and the troops. The commanders and staffs of the air armies were ordered to thoroughly work out the plans of interaction with each tank and combined arms army. During the preparations the air army and the air formation commanders gave reports several times, and corrections and amendments were made. The attention of the commanders was turned to the

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possibility of strong opposition by the enemy in the air. It was known that the enemy air grouping supporting Army Group Vistula and, in part, Army Group Center included formations of the 6th Air Fleet and the Reich Air Fleet, the latter consisting mainly of air defense aviation in the Berlin zone. At Berlin's airfields the Germans also had Me-262 jet airplanes and (Mistel') cruise missiles.<sup>93</sup>

Enemy troops were covered by about 200 antiaircraft batteries, and 600 antiaircraft guns were concentrated specifically for defense of Berlin.<sup>94</sup>

The imminent end of the war, which all flight crews sensed, and our overall considerable air superiority might have engendered laxity and self-assurance. This is why all personnel had to attend briefings mobilizing them for outstanding completion of their missions. Political workers of the air armies and the party and Komsomol organizations completed this task with great success. They made every pilot, navigator, radio operator, technician, engineer, and rear and staff officer aware of the great tasks that were to be completed in the forthcoming battle with an enemy that was still strong, resisting in a frenzy of desperation, an enemy who had brought so many tears and so much pain to the Soviet people and peoples of oppressed countries.

On the night of 16 April A. A. Novikov went to the observation post of the 8th Guards Army, the location of the frontal command, which was headed by Marshal of the Soviet Union G. K. Zhukov and Military Council member General K. F. Telegin, and of the command of this army, headed by General V. I. Chuykov.

On 16 April at 1300 hours (Berlin time) powerful artillery preparation of unprecedented force began. Thousands of explosions from gun and mortar shells shook the air. The light from the firing guns produced the appearance of daytime. More than 150 night bombers of the 16th and 4th air armies began to bomb headquarters and communication centers on the enemy's first and second lines of defense almost simultaneously. Before the attack by infantry and tank was started, 140 antiaircraft searchlights were turned on in response to a single signal in the sector of the main strike grouping of the 1st Belorussian Front, blinding the enemy with the light. Artillery moved its fire to the second line of defense. The troops rushed into the attack. Before this, 754 heavy night bombers of the 18th Air Army made a powerful massed strike against the principal strongpoints at the second line of defense. This was an unforgettable picture. A sea of fire raged above the Oder Valley and the (Zeyelov) Hills. The artillery cannonade, the roar of the airplanes, the explosions of heavy caliber bombs, the grinding of the tracks of advancing tanks, and automatic weapon fire rolled along the entire Oder. At dawn the 16th Air Army was committed to the engagement. A low morning fog necessitated corrections in its battle plan. Between dawn and 0800 hours only ground attack airplanes operated in groups of six to nine airplanes; Pe-2 dive bombers began their strikes against enemy objectives after

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0800 hours. But the main forces of the 16th Air Army were used only in the second half of the day, after Marshal of the Soviet Union G. K. Zhukov decided to commit the 1st and 2d Guards tank armies to the engagement. At 1500 hours there were 647 warplanes in the air. This was a strong air screen for the tank armies, dependably covering them from the air and effectively suppressing enemy artillery fire. At the same time enemy aviation became extremely active. The enemy tried to penetrate to the combat formations of our advancing tank armies in groups of 20-40 craft. Savage air battles began, lasting until the end of the day. Fighters of the 16th Air Army operated decisively along the entire front, both above the battlefield and at the approaches to it. In most cases the air battles were fought at the approaches to our troops. This was possible due to an excellently operating net of radar stations, which promptly detected enemy aviation and provided the data permitting the maneuver of fighter aviation and augmentation of its efforts on the most threatened axes.

On this day our aviation concentrated its efforts on suppressing enemy defenses on the Zeyelov Hills and on supporting the tank armies; two-thirds of all sorties were flown with this mission.

In the first day of the operation the 16th Air Army flew 5,300 combat sorties, including 3,200 against enemy artillery batteries, tank groupings, and pockets of resistance. Concentration of the main forces within the zones of advance of the 5th Strike, 2d Guards Tank, 8th Guards, and 1st Guards Tank armies, operating on the main axis, was typical of its actions. In all, eight air corps and seven separate air divisions were operating within the zones of advance of these armies. During the day General S. I. Rudenko's pilots fought 151 air battles and knocked down 131 enemy airplanes. Our losses were also high--87 airplanes.<sup>95</sup>

The offensive developed successfully on the 1st Ukrainian Front. By the end of 16 April Marshal of the Soviet Union I. S. Konev's troops had penetrated the first line of defense rather quickly with air support and began fighting the second. The water obstacle afforded by the Niesse did not help the Germans either. By 1000 hours the river was crossed along the entire front of advance.

Under the command of General S. A. Krasovskiy, on the first day the 2d Air Army supported the main grouping of the 1st Ukrainian Front as it penetrated the defenses and crossed the Niesse River. In the interests of the advancing troops and with the support of 250 fighters, 418 bombers and ground attack aircraft annihilated the principal strongpoints and fire positions on the first line of defense for more than 2 hours in a row, making a very effective concentrated strike against objectives in the vicinity of Forst. Later, groups of 6-12 ground attack airplanes continually struck enemy artillery, troops, and strongpoints right before the front of the combined arms formations of the ground troops, escorting them in the course of the offensive. Concurrently troops and defensive

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structures in the vicinity of Cottbus and Spremberg were destroyed by several concentrated bomber strikes. Supporting frontal troops, during the day the 2d Air Army flew 3,546 combat sorties, to include 2,380 on the axis of the main strike. On that day 33 air battles were fought and 40 fascist German airplanes were knocked down. A. A. Novikov gave a high assessment to the actions of the 2d Air Army. Units of the I and II Guards Ground Attack Air Corps (commanders, Generals V. G. Ryazanov and S. V. Slyusarev) fought especially well. With their powerful strikes they forced the enemy guns to remain silent before the advancing troops, and thus they helped the troops capture enemy defenses on the first line.

In all during the first day the Soviet Air Force flew more than 10,500 combat sorties in behalf of troops of the 1st Belorussian and 1st Ukrainian fronts. On the night of 17 April the main forces of the 18th Air Army continued to bomb enemy objectives on the Zeyelov Hills. It flew 759 sorties and dropped 931 tons of bombs.<sup>96</sup> Later during the operation the 18th Air Army made several massed night attacks closely coordinated with actions of the tank armies of the 1st Belorussian and 1st Ukrainian fronts. It made its third attack on the night of 18 April with 214 airplanes against reserves and strongpoints northeast and east of Berlin; the fourth attack was made on the night of 21 April with 529 bombers against troops and objectives in Berlin; the fifth attack was made on the night of 25 April against Berlin's strongpoints by 111 airplanes, and the sixth attack was made on the night of 26 April with 563 airplanes.<sup>97</sup> On 17 April the supreme high commander ordered I. S. Konev, commander of the 1st Ukrainian Front, to turn the 3d and 4th Guards tank armies northwest so that they could strike Berlin from the south. These directives were implemented.

The Headquarters ordered the 2d Belorussian Front to go over to the offensive on 20 April and to make a thrust toward Schonebeck with its main forces not later than 22 April, bypassing Berlin on the north.<sup>98</sup>

After brief artillery preparation, on the morning of 18 April troops of the 1st Belorussian Front resumed their offensive, and by 19 April they finally broke through the third zone of the Oder line of defense; then by the end of 21 April they penetrated enemy defenses throughout their entire depth, to Berlin inclusively.

The frontal air armies actively supported the advancing troops in all days of the operation through powerful strikes by day bombers and constant actions by ground attack airplanes. Because interaction of air corps and separate air divisions with tank and combined arms armies was clearly organized beforehand and because operational groups from the air armies and air liaison officers from air formations were constantly present in the tank and combined arms armies together with their own communication resources, bombers and ground attack airplanes could be launched promptly against enemy objectives, precisely at the times specified by the combined arms commanders. As an example on 18 April

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dive bombers of the 16th Air Army dispensed with approaching German reserves quite effectively in the vicinity of (Bidsdorf) and Muncheberg. The 1st Belorussian Front's 16th Air Army provided air support to troops penetrating through the Oder line of defense between 16 and 19 April, and it firmly maintained air superiority. In 4 days of the operation it flew 16,880 combat sorties.

The 1st Ukrainian Front's 2d Air Army flew 7,517 sorties between 16 and 18 April in support of troops penetrating the line of defense along the Niesse River. Just on 17 April alone this army's pilots knocked down 48 enemy airplanes in air battles. Pilots of the VI Guards Fighter Corps (commander, General A. V. Utin), who provided cover to General D. D. Lelyushenko's 4th Guards Tank Army, fought especially well in air battles. On 17 and 18 April they fought in 50 air battles and destroyed 56 fascist German airplanes. In the next period of the offensive of the two fronts' troops, the 16th Air Army flew 15,357 sorties between 20 and 25 April, the 2d Air Army flew 10,285 combat sorties between 19 and 25 April, and between 20 and 25 April the 4th Air Army flew more than 15,000 sorties in support of the front's troops, covering them from the air and conducting air reconnaissance.<sup>99</sup> Pilots of the Polish Air Force fought closely with Soviet pilots. During the operation they successfully completed 865 combat sorties and knocked down 17 fascist German airplanes in air battles.<sup>100</sup>

At the beginning of the assault on the central districts of Berlin, aviation switched to actions disposed in depth, flying as small groups of airplanes. Soviet fighters blockaded encircled Berlin from the air and dependably covered friendly troops. Tank formations of the 1st Belorussian Front captured several enemy airfields, to which fighters of the 16th Air Army immediately redeployed. On 28 April the 347th Fighter Air Regiment, 193d Fighter Air Division redeployed to the Tempelhof Airport. Fighting was still going on around the airport. Lieutenant Colonel P. B. Dankevich, the regiment commander, was the first to arrive at the airport with his subordinates. Descending to ground-level flight, the command pair of airplanes landed at the airport. Soviet gunners suppressed the enemy's antiaircraft artillery and mortar fire, permitting the rest of the airplanes to land. On the same day the 515th and 518th fighter air regiments of the same division began combat operations from Berlin's Schonefeld Airport. On 24 April troops of the 1st Belorussian and 1st Ukrainian fronts completed encirclement of the enemy's Frankfurt-Guben grouping southeast of Berlin, and on 25 April in interaction with troops of the 2d Belorussian Front they encircled the enemy's Berlin grouping. Aviation assisted in this highly important mission, and its actions against enemy columns and crossings created bottlenecks on the roads, hindering the westward movement of the encircled Frankfurt-Guben grouping. On 25 April troops of the 5th Guards Army met forward units of the American 1st Army in the vicinity of Torgau on the Elbe River. As a result the front of the fascist German troops west of Berlin was cut into northern and southern parts.

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Between 26 April and 1 May the efforts of the air force were aimed at helping the troops to annihilate the Frankfurt-Guben and Berlin groupings. The encircled Frankfurt-Guben grouping had a strength of up to 200,000 men. Three combined arms armies (3d, 69th, and 33d) of the 1st Belorussian Front and two combined arms armies (2d and 3d Guards) of the 1st Ukrainian Front, and about 1,000 airplanes of the 16th and 2d air armies participated in its liquidation.

Forces of the 2d and 16th air armies flew 7,244 sorties to annihilate this grouping in the interests of the fronts. Constant observation of the surrounded enemy from the air permitted the frontal command to reinforce weak points on the inner front of encirclement in time, and to perform concentrated attacks with our bombers and ground attack aircraft. Fighters were called in to destroy the encircled grouping. Aviation played a great role in support of troops operating on the outer front of encirclement. Ground attack aviation actively opposed the advance of the German 12th Army, which was attempting to join the Frankfurt-Guben grouping from the west. The enemy's attempts at penetrating out of the encirclement suffered failure. The last group of Germans was liquidated on 1 May in the vicinity of (Belitsa).

The encircled Berlin grouping consisted of the remnants of six divisions of the German 9th Army and a large number of special formations with an overall strength of 200,000 men.<sup>101</sup> The assault on Berlin began with massed strikes by bomber aviation of the 16th, 2d, and 18th air armies, after which, on 26 April, the frontal troops began their offensive from all directions toward the center of the city. Some 13,000 sorties were flown through the combined efforts of the air armies. Fighter aviation, which not only provided cover to the ground troops against the airborne enemy but also successfully blockaded the city from the air, played an important role in the annihilation of the Berlin grouping. In the battles for the city, aviation suppressed and annihilated gun positions concealed in masonry buildings.

During the Berlin operation the air armies of the three fronts and the 18th Air Army flew more than 91,000 combat sorties, to include 39,559 in support of the 1st Belorussian Front, 25,490 in support of the 1st Ukrainian Front, and 26,335 in support of the 2d Belorussian Front. The 16th Air Army flew 59 percent of all combat sorties in the operation with the specific purpose of striking enemy troops and equipment on the battlefield and at strategic depth. The second most important mission, which required concentration of the efforts of the air force in the concluding stage of the war, was maintenance of air superiority and dependable protection of the troops against air strikes. During the time of the Berlin operation our aviation fought 1,317 air battles, knocked down 1,132 enemy airplanes, and destroyed 100 at airfields.<sup>102</sup> Our aviation's victory was not an easy one. It lost 527 airplanes in air battles and due to anti-aircraft artillery fire.<sup>103</sup> It is obvious from this that the actions of aviation were quite intense. Soviet aviation had the total initiative

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27 FEBRUARY 1979

SOVIET ARMY AIR FORCE COMMAND AND STAFF  
IN THE GREAT PATRIOTIC WAR 1941-1945

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in the air, and it dependably covered the troops and rear objectives of the three fronts. Interacting closely with the ground troops, the air force helped them to conclusively destroy the armed forces of fascist Germany in the battle of Berlin.

"The war culminated with the great Berlin engagement," said L. I. Brezhnev at a solemn meeting dedicated to the 20th anniversary of the Soviet people's victory in the Great Patriotic War. "A ring of fire literally strangled what remained of the once powerful army of the Third Reich. The Germans resisted with the desperation of madmen. But the enemy was crushed and annihilated.... The Soviet flag, the red banner of victory, was planted above the lair of fascism."<sup>104</sup>

Early in the morning on 1 May the Banner of Victory was unfurled above the Reichstag. On 1 May pilots of the 2d Air Army made an unusual flight over Berlin. On order of the command the Guards fighter pilots prepared two red cloths. One of them bore the inscription "Victory" on one side and "Glory to Soviet Soldiers Who Had Hoisted the Banner of Victory Above Berlin," and the other read "Long Live 1 May." During the day, escorted by 16 fighters commanded by twice-awarded Hero of the Soviet Union Colonel A. V. Vorozheykin and flown by Herces of the Soviet Union V. N. Buyanov, I. P. Laveykin, P. I. Peskov, and other famous pilots, the valorous pilots Guards Captain V. K. Novoselov and Major N. A. Malinovskiy appeared over the Reichstag and dropped the red cloths by parachute. These cloths, which could be seen at a great distance from the ground, in a sense heralded the total victory of the Soviet Armed Forces on the ground, at sea, and in the air. By the end of 2 May Berlin was completely occupied by Soviet troops. The troops of the 2d Belorussian Front struck Rostok, destroyed the German 3d Tank Army, reached the coast of the Baltic Sea, and came into contact with the English 2d Army on the line Wismar, Schwerin, Elbe River. On 8 May 1945 the document of unconditional surrender of fascist Germany was signed in the Berlin suburb of Karlshorst. The fall of Berlin and the subsequent unconditional surrender of fascist Germany were the most important results of the Berlin operation.

Soviet aviation once again demonstrated its invincibility in the Berlin operation. The flight crews passed their examination of combat maturity brilliantly, and the Soviet Army Air Force Command, the commanders of the air armies, and the commanders of the formations and units demonstrated their ability for organizing and controlling aviation in complex conditions.

The Communist Party and Soviet Government gave a high assessment to the combat activities of personnel in the air armies. The honorary Berlin and Brandenburg titles were awarded to 45 air units and formations. Thousands of pilots, navigators, aerial gunners, technicians, political workers, staff officers, and rear workers received orders and medals. Those who distinguished themselves in battle the most were awarded the lofty Hero of the Soviet Union title. Major I. N. Kozhedub, a participant

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of the Berlin operation, was awarded his third Gold Star of the Hero of the Soviet Union.

Order No 359 of the Supreme High Commander dated 2 May 1945 concerning the final destruction of the Berlin grouping and capture of Germany's capital, Berlin, by troops of the 1st Belorussian and 1st Ukrainian fronts made mention of "...pilots Chief Marshal of Aviation A. A. Novikov, Chief Marshal of Aviation A. Ye. Golovanov, Generals S. I. Rudenko, S. A. Krasovskiy, Ye. Ya. Savitskiy, Ye. M. Beletskiy, G. N. Tupikov, Ye. F. Loginov, G. S. Schetchikov, V. Ye. Nestertsev, V. G. Ryuzanov, A. V. Utin, B. K. Tokarev, I. V. Krupskiy, A. Z. Karavatskiy, I. P. Skok, B. A. Sidnev, I. M. Dzusov, S. V. Slyusarev, V. M. Zabaluyev, P. P. Arkhangel'skiy, and G. I. Komarov, and Colonels V. I. Stalin, D. T. Nikishin, A. I. Pokryshkin, and V. I. Aleksandrovich."<sup>105</sup>

In the concluding stage of the war against fascist Germany the Soviet Air Force provided invaluable assistance to the ground troops in the destruction and capture of major enemy groupings during the liberation of Poland, Czechoslovakia, Hungary, the eastern part of Germany, and a significant part of Austria. In the concluding operations of 1944-1945 the Soviet Air Force flew 1,470,000 combat sorties, dropped 18,332,000 bombs on the enemy, and inflicted significant losses in manpower and equipment. In the air and at airfields, Soviet aviation and antiaircraft artillery annihilated more than 21,000 enemy airplanes.<sup>106</sup> The Supreme High Command attached extremely important significance to the actions of Soviet aviation, concentrating its major groupings on the axes of the main strikes of the ground troops. This was achieved by calling air reserves of the Supreme High Command in and combining the efforts of aviation in several neighboring fronts under the sole leadership of the senior air chief. The fascist German army groups North, Center, Northern Ukraine, and Southern Ukraine were destroyed in 1944 with the most active support from Soviet pilots. The enemy's strategic groupings operating on the Soviet-German front in the offensive operations of 1945 were subjected to even harder air strikes. During the operations the Soviet Air Force firmly held the strategic initiative in the air, possessed great striking power and tremendous reserves, and surpassed the enemy in its ability to maneuver major formations and formations and to control them, and in the skill and moral qualities of the personnel. The victories on the fronts of the war raised the sense of pride of the soldiers in their great fatherland, strengthened their faith in the power of our combat equipment, and inspired them to new acts of heroism. Steadfastness, bravery, and love for the motherland were nurtured in battles and engagements. The command, political agencies, and party and Komsomol organizations continually heightened the level of their party-political work, tempered the fighting spirit of the airmen, infused them with a deep faith in a victorious outcome to the war, and inspired devotion to the socialist motherland and intolerance of the enemy. In the third period of the Great Patriotic War against fascist Germany the Soviet Air Force successfully completed all of its assigned missions in close interaction with other branches of the armed forces.

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The war in Europe came to an end. 9 May became Victory Day. The peoples of Europe were given the opportunity for peaceful democratic development. The victorious conclusion of the war in Europe created the necessary conditions for quick defeat of imperialist Japan and for the end of World War II.

FOOTNOTES

1. "Velikaya Otechestvennaya vojna Sovetskogo Soyuza 1941-1945 gg. Kratkaya istoriya" (The Great Patriotic War of the Soviet Union 1941-1945. A Short History), Moscow, 1970, p 318.
2. Arkhiv MO SSSR [USSR Ministry of Defense Archives], f. 35, op. 11282, d. 262, l. 35; d. 502, ll. 165-167.
3. Ibid., op. 11321, d. 93, l. 39.
4. Arkhiv MO SSSR, f. 35, op. 11250, d. 101, l. 1; op. 73889, d. 1, l. 1.
5. Ibid., d. 91, ll. 7-186; f. 92, op. 78122, d. 7, ll. 4-66.
6. Arkhiv MO SSSR, f. 35, op. 11284, d. 1169, ll. 57-102.
7. Ibid., op. 11250, d. 100, ll. 128, 182; d. 91, l. 195.
8. Ibid., op. 11285, d. 954, ll. 30-31.
9. Arkhiv MO SSSR, f. 35, op. 11285, d. 954, ll. 33-37.
10. Ibid., op. 11275, d. 1221, ll. 1-8.
11. By decision of the GKO, on 20 October 1943 the names of the fronts were changed as follows: Central changed to Belorussian, Kalinin changed to 1st Baltic, Baltic changed to 2d Baltic, Voronezh changed to 1st Ukrainian, Steppe changed to 2d Ukrainian, Southwestern changed to 3d Ukrainian, and Southern changed to 4th Ukrainian. The numbers of the air armies within the composition of these fronts remained as before.
12. "Aviatsiya i kosmonavtika SSSR" (USSR Aviation and Cosmonautics), Moscow, 1968, p 177.
13. Arkhiv MO SSSR, f. 302, op. 4196, d. 63, l. 58.
14. "Istoriya Velikoy Otechestvennoy voyny Sovetskogo Soyuza 1941-1945 gg." (History of the Great Patriotic War of the Soviet Union 1941-1945), Vol 4, p 66.

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15. "Velikaya Otechestvennaya voyna Sovetskogo Soyuz 1941-1945 gg. Kratkaya istoriya," p 330.
16. "Aviatsiya i kosmonavtika SSSR," p 180.
17. "Velikaya Otechestvennaya voyna Sovetskogo Soyuz 1941-1945 gg. Kratkaya istoriya," p 341.
18. "Aviatsiya i kosmonavtika SSSR," pp 185, 186.
19. "Velikaya Otechestvennaya voyna Sovetskogo Soyuz 1941-1945 gg.," p 343.
20. "Istoriya Velikoy Otechestvennoy voyny Sovetskogo Soyuz 1941-1945 gg.," Vol 4, p 125.
21. Shtemenko, S. M., "General'nyy shtab v gody voyny" (The General Staff in the War Years), Moscow, 1968, p 239.
22. "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg." (The Soviet Air Force in the Great Patriotic War 1941-1945), Moscow, 1968, p 291.
23. Ibid.
24. Arkhiv MO SSSR, f. 35, op. 11285, d. 954, ll. 55-64.
25. "16-ya vozdushnaya armiya" (The 16th Air Army), pp 141, 142.
26. Arkhiv MO SSSR, f. 368, op. 142206, d. 49, l. 9; op. 20551, d. 213, l. 11.
27. Ibid., f. 290, op. 142208, d. 55, ll. 13-17.
28. Zhukov, G. K., "Vospominaniya i razmyshleniya" (Recollections and Reflections), Vol 2, Moscow, 1974, p 252.
29. Arkhiv MO SSSR, f. 39, op. 11519, d. 1080, l. 7.
30. Arkhiv MO SSSR, f. 290, op. 12943, d. 17, l. 503; f. 319, op. 14296, d. 22, l. 46.
31. Ibid., f. 290, op. 142208, d. 46, l. 33.
32. Ibid.
33. Arkhiv MO SSSR, f. 290, op. 12943, d. 8, ll. 226, 251, 283.
34. Ibid., f. 35, op. 283348, d. 6, l. 58.

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35. Arkhiv MO SSSR, f. 368, op. 15054, d. 11, 1. 581.
36. VOYENNO-ISTORICHESKIY ZHURNAL, No 2, 1971, p 26.
37. Arkhiv MO SSSR, f. 368, op. 142296, d. 49, 1. 41.
38. Zhukov, G. K., "Vospominaniya i razmyshleniya," Vol 2, p 256.
39. Arkhiv MO SSSR, f. 368, op. 142206, d. 29, 11. 1-49.
40. Arkhiv MO SSSR, f. 35, op. 11250, d. 124, 11. 60-61.
41. Arkhiv MO SSSR, f. 368, op. 142206, d. 49, 11. 44-50; f. 319, op. 142196, d. 31, 11. 85-100.
42. Arkhiv MO SSSR, f. 319, op. 142196, d. 22, 1. 140; f. 368, op. 142206, d. 49, 1. 44.
43. Arkhiv MO SSSR, f. 363, op. 16708, d. 6, 1. 258.
44. "Aviatsiya i kosmonavtika SSSR," p 192.
45. Arkhiv MO SSSR, f. 216, op. 392279, d. 4, 11. 244, 294.
46. Arkhiv MO SSSR, f. 35, op. 11250, d. 124, 1. 34.
47. Ibid., 1. 6.
48. "Aviatsiya i kosmonavtika SSSR," p 200.
49. Ibid., p 203.
50. Arkhiv MO SSSR, f. 35, op. 11275, d. 93, 1. 22.
51. "Aviatsiya i kosmonavtika SSSR," p 163.
52. Ibid., p 204.
53. VOYENNO-ISTORICHESKIY ZHURNAL, No 11, 1975, p 42.
54. VOYENNO-ISTORICHESKIY ZHURNAL, No 11, 1975, p 43.
55. VOYENNO-ISTORICHESKIY ZHURNAL, No 7, 1975, p 74.
56. "Velikaya Otechestvennaya voyna Sovetskogo Soyuzo 1941-1945 gg. Kratkaya istoriya," p 579.
57. Arkhiv MO SSSR, f. 35, op. 11250, d. 68, 11. 3-6.

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58. Arkhiv MO SSSR, f. 35, op. 11285, d. 754, ll. 1-2.
59. Ibid., l. 117.
60. "Velikaya Otechestvennaya voyna Sovetskogo Soyuzo 1941-1945 gg. Kratkaya istoriya," p 459.
61. The 6th Air Fleet possessed 1,050 warplanes, of which about 45 percent were flying missions in Eastern Prussia.
62. Arkhiv MO SSSR, f. 368, op. 6476, d. 557, l. 249.
63. "16-ya vozdušnaya armiya," pp 245-246.
64. Arkhiv MO SSSR, f. 368, op. 6476, d. 557, l. 265.
65. "Sovetskiye Voyenno-Vozdušnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 367.
66. Ibid., p 370.
67. "16-ya vozdušnaya armiya," p 269.
68. Ibid., p 270.
69. "16-ya vozdušnaya armiya," p 276.
70. "Aviatsiya i kosmonavtika SSSR," p 209.
71. "Aviatsiya i kosmonavtika SSSR," pp 209, 210.
72. "Sovetskiye Voyenno-Vozdušnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," pp 386-387.
73. "Velikaya Otechestvennaya voyna Sovetskogo Soyuzo 1941-1945 gg. Kratkaya istoriya," p 471.
74. "Sovetskiye Voyenno-Vozdušnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 350.
75. Ibid., p 350.
76. "Sovetskiye Voyenno-Vozdušnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 353.
77. Ibid.
78. Ibid., pp 355, 356.

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79. Vasilevkiy, A. M., "Delo vsej zhizni" (The Business of All Our Lives), Moscow, 1973, p 487.
80. "9 maya 1945 goda" (9 May 1945), Moscow, 1970, p 276.
81. Arkhiv MO SSSR, f. 241, op. 2593, d. 988, ll. 202-207.
82. VOYENNO-ISTORICHESKIY ZHURNAL, No 9, 1968, p 73; "9 maya 1945 goda," p 277.
83. "9 maya 1945 goda," p 288.
84. "9 maya 1945 goda," p 292.
85. "Aviatsiya i kosmonavtika SSSR," p 163; "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 364.
86. "Velikaya Otechestvennaya voyna Sovetskogo Soyuzo 1941-1945 gg. Kratkaya istoriya," p 491.
87. "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 388.
88. "Osvoboditel'naya missiya Sovetskikh Vooruzhennykh Sil vo vtoroy mirovoy voyne" (The Mission of Liberation of the Soviet Armed Forces in World War II), Moscow, 1974, p 368.
89. Ibid., pp 366-367.
90. "16-ya vozdušnaya armiya," p 322.
91. "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 389.
92. "9 maya 1945 goda," p 297.
93. "9 maya 1945 goda," p 299.
94. Arkhiv MO SSSR, f. 368, op. 21863, d. 13, l. 2.
95. "9 maya 1945 goda," p 311.
96. "9 maya 1945 goda," p 311.
97. "Aviatsiya i kosmonavtika SSSR," p 217.
98. "Osvoboditel'naya missiya Sovetskikh Vooruzhennykh Sil vo vtoroy mirovoy voyne," p 373.



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99. ISTORIYA SSSR, No 3, 1975, p 43.
100. "16-ya vozдушnaya armiya," p 381.
101. "Osvoboditel'naya missiya Sovetskikh Vooruzhennykh Sil vo vtoroy mirpvoy voyne," p 380.
102. "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 412.
103. "Istoriya Velikoy Otechestvennoy voyny Sovetskogo Soyuzha 1941-1945 gg.," Vol 5, p 290.
104. Brezhnev, L. I., "Leninskim kursom. Rechi i stat'y" (Following Lenin's Course. Speeches and Articles), Vol 1, Moscow, 1970, p 127.
105. "Prikazy Verkhovnogo Glavnokomanduyushchego v period Velikoy Otechestvennoy voyny Sovetskogo Soyuzha" (Orders of the Supreme High Commander in the Great Patriotic War of the Soviet Union), Moscow, 1975, pp 494-496.
106. "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 415.

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## CHAPTER VII. IN THE FAR EAST

### The Situation in Summer 1945

Peace set in following surrender of fascist Germany in Europe. But in the Far East World War II was still going on. Rejecting the surrender ultimatum of the USA, England, and China on 29 July 1945, imperialist Japan continued its military actions, counting on evading a total defeat and achieving an advantageous compromise peace. The Soviet Union could not remain indifferent to military events occurring near its Far Eastern borders. For many decades Japanese imperialism was a constant source of aggression in Asia, it was an ally of Hitler's Germany, and it was the arch enemy of our motherland. In 1940 the government of Japan signed the Tripartite Pact with Germany and Italy; this pact was aimed directly against the USSR. Japanese imperialists concentrated their large Kwangtung Army in Manchuria, and for 3 years they waited for the moment for attack. And it was only the heroic struggle of the Soviet people and their armed forces against the fascist invaders and their major victories in the battles of Moscow, Stalingrad, and Kursk that cooled the military fervor of the Japanese militarists and kept them from attacking our motherland. Nevertheless during these times of difficulties for the USSR the Kwangtung Army contained more than 40 Soviet ground divisions and major air and naval forces in the Far East, forces so much needed by the Soviet Armed Forces, in the war against fascist Germany.

Faithful to its duty to the Allies, in compliance with decisions made in February 1945 at the Yalta Conference, on 5 April the Soviet Union denounced its treaty of neutrality with Japan. This was a serious warning to Japan, but it did not heed it. Its rulers, who possessed a ground army almost 5 million strong and major air forces and naval forces, counted on protracting the war, splitting the antifascist alliance by diplomatic tricks, avoiding total defeat, and achieving an advantageous compromise treaty.

"We had nothing left to do," writes Army General S. M. Shtemenko in his memoirs, "but to activate our preparations for satisfaction of obligations to the Allies."<sup>1</sup>

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The armed forces in the Far East, including the air force, began major preparations. A plan for regrouping air formations from the west to the Far East was written in April by the command and staff of the air force in response to a directive of the General Staff. The following formations were airlifted: The VI Bomber Air Corps (commander, General I. P. Skok) consisting of the 326th and 334th bomber air divisions; the VII Bomber Air Corps (commander, General V. A. Ushakov) consisting of the 113th and 179th bomber air divisions; the 190th Separate Fighter Air Division, without its airplanes (commander, Colonel V. V. Fokin); the 54th Transport and 21st Guards Transport air divisions (commanders, Generals V. A. Shchelkin and I. M. Gorskiy). The Soviet Army Air Force commander published his directives ordering the regrouping of air formations from the west to the Far East on 24 June 1945. Groups of specialized officers were appointed from the Air Force Headquarters and air force directorates to monitor the airlift operations and provide assistance to the air formations. The Soviet Army Air Force Headquarters managed the transfer of the air formations. Twice a day the headquarters' First Directorate reported to the Air Force Military Council and submitted reports to the General Staff. In the period between 25 June and 10 July 1945 the command and staff of the air force implemented measures to man new air units and formations for air armies in the Far East and to provide new airplanes to them. At the end of June 1945 the Headquarters of the Supreme High Command sent its liaison officer, Marshal of the Soviet Union A. M. Vasilevskiy, and Soviet Army Air Force Commander Chief Marshal of Aviation A. A. Novikov to the Far East. On 30 July 1945 the Hq SHC decided to create a special supreme organ of command and control in the Far East--the main command of Soviet troops in the Far East.<sup>2</sup> Marshal of the Soviet Union A. M. Vasilevskiy was appointed commander in chief, General I. V. Shikin was appointed Military Council member, and General S. P. Ivanov was appointed chief of staff. Coordination of the actions of the Pacific Fleet and the Red Banner Amur Naval Flotilla with troops of the fronts was assigned to Fleet Admiral N. G. Kuznetsov, while coordination of the actions of all air power called in and interaction with ground troops and the navy were assigned to Chief Marshal of Aviation A. A. Novikov. The field headquarters of the Soviet Army Air Force commander was staffed by the following generals and officers from the command and staff of the air force--N. P. Dagayev, B. V. Sterligov, V. N. Uspenskiy, N. F. Andrianov, M. N. Kozhevnikov, P. F. Korotkov, I. I. Zhdanov, P. A. Kolesnikov, L. I. Smirnov, and others. On 5 August 1945 the Hq SHC changed the name of the Maritime Group of Forces to the 1st Far Eastern Front, and the name of the Far Eastern Front to the 2d Far Eastern Front.<sup>3</sup>

The Japanese Command maintained significant ground and air forces against the Soviet Union on the territory of Manchuria and Korea, on Southern Sakhalin, and on the Kuril Islands. The Kwangtung Army, which consisted of the 1st (Eastern Manchurian) Front, the 3d (Western Manchurian) Front, the 4th Separate Army, the 2d Air Army, and the Sungari River Naval Flotilla, was located in Manchuria.<sup>4</sup> As soon as military operations

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began, the 34th Army of the 17th (Korean) Front and the 5th Air Army were added to the composition of the Kwangtung Army. In all, the Kwangtung Army possessed 24 infantry divisions, 8 infantry brigades, and 1 special-purpose (kamikaze) brigade, for a total of 443,000 enlisted men and officers, 1,155 tanks, 5,360 guns, 25 warships, and 1,800 airplanes.<sup>5</sup> In addition, the army of (Man'chzhou-Go), the forces of Inner Mongolia, and the (Suyyuan') Army Group (13 infantry and cavalry divisions, 14 infantry and cavalry brigades, and 4 separate cavalry regiments, with a strength of 280,000 men) were subordinated to the commander in chief of the Kwangtung Army. Three infantry divisions, an infantry brigade, a separate infantry regiment, and a separate tank regiment with a total strength of 100,000 men were deployed on Southern Sakhalin and the Kuril Islands. These troops were within the composition of the 5th Front, which was subordinated directly to the Japanese Imperial Headquarters. In all, the Soviet Armed Forces were opposed in the area of forthcoming combat activities by troops of four fronts, one separate army of the Japanese ground forces, one naval flotilla, and two air armies. Taking account of the Man'chzhou-Go Army, the forces of Inner Mongolia, and the Suyyan' Army Group, the enemy troops had a strength of 871,000 men, 1,215 tanks, 6,700 guns and mortars, 25 ships, and 1,907 airplanes. Strategic reserves (more than two field armies--six to eight divisions) were deployed in the vicinity of Peking.<sup>6</sup> Along the Soviet border the Japanese militarists created a system of permanent fortifications 100 km long, to include 17 fortified areas (8,000 pillboxes and other reinforced concrete structures). The Maritime-Manchurian operational axis, which contained seven fortified areas, was covered the most strongly. There were 20 air bases, 133 airfields, and over 200 landing strips in Manchuria and Korea capable of supporting up to 6,000 airplanes.<sup>7</sup>

The main forces of the Kwangtung Army were concentrated on the Manchurian Plain. About one-third of the army troops were in fortified areas within the frontier zone. The Japanese Command intended to halt Soviet troops through counterstrikes by its main forces and force them to go over to defense, after which it planned to conduct an extensive counteroffensive with the objective of invading the Soviet Far East. Planning military activities in the Far East, the Headquarters of the Soviet Supreme High Command committed the forces of the Transbaykal, 1st Far Eastern and 2d Far Eastern fronts, the Pacific Naval Fleet, and the Amur River Naval Flotilla to achieve the goals of the campaign. In order to reinforce troops of the Far East, two frontal directorates and the 5th, 39th and 53d combined arms and the 6th Guards Tank armies were transferred by rail from the west between 6 May and the start of July; this was a total of 27 divisions, 12 brigades, a number of separate formations and special units, and a great deal of combat equipment.<sup>8</sup> By the beginning of military activities the three fronts possessed 11 combined arms, one tank, and three air armies; this includes the troop groupings contributed by the Mongolian People's Revolutionary Army. Their total strength was 80 divisions (including six cavalry, two tank, and two motorized rifle), four tank and mechanized corps, six rifle brigades, and 40 tank and

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mechanized brigades. The grouping had a strength of 1,578,000 men and more than 26,000 guns and mortars. The Pacific Naval Fleet possessed 427 warships. The Amur River Naval Flotilla possessed 83 ships. Three air defense armies provided air cover to the troop concentrations. Soviet-Mongolian troops were superior to enemy troops in personnel by a factor of 2, in guns by a factor of 4, in tanks and self-propelled guns by a factor of 4, and in airplanes by a factor of 2.5.<sup>9-10</sup> The Soviet Air Force grouping in the Far East included the 12th Air Army of the Transbaykal Front (commander--Marshal of Aviation S. A. Khudyakov, deputy commander for political affairs--General S. A. Pal'yanov, chief of staff--General N. G. Seleznev), the 9th Air Army of the 1st Far Eastern Front (commander--General I. M. Sokolov, deputy commander for political affairs--General F. N. Khorobrykh, chief of staff--General A. V. Stepanov), the 10th Air Army of the 2d Far Eastern Front (commander--General P. F. Zhigarev, deputy commander for political affairs--Colonel S. K. Fedorov, chief of staff--General S. A. Lavrik), the XIX Bomber Air Corps of the 18th Air Army (commander, General N. A. Volkov), and the air service of the Pacific Naval Fleet (commander, General P. M. Lemeshko).

Table 6. Composition of the Soviet Air Force in the Far East at the Beginning of Combat Activities\*

Air army	Air corps	Air divisions					Total	Sepa- rate regi- ments	War- planes
		Bomber air divi- sions	Ground attack divi- sions	Fighter air divi- sions	Mixed air divi- sions	Trans- port divi- sions			
9th	1 Bomber air corps**	3	2	3	-	-	8	4	1,137
10th	1 Mixed air corps	1	2	3	2	-	8	2	1,260
12th	2 Bomber air corps	6	2	3	-	2	13	2	1,324
	Total	10	6	9	2	2	29	8	3,721

\*VOYENNO-ISTORICHESKIY ZHURNAL, No 8, 1975, p 66.

\*\*The 19th ADD Bomber Air Corps was operationally subordinated to the 9th Air Army. Aviation of the Pacific Fleet had a strength of more than 1,500 airplanes. "Velikaya Otechestvennaya voyna Sovetskogo Soyuzha 1941-1945 gg. Kratkaya istoriya" (The Great Patriotic War of the Soviet Union 1941-1945. A Short History), p 544.

#### Preparations for Combat Activity in the Far East

Planning the Far Eastern campaign, the Hq SEC assigned the following missions to armed forces in the Far East: Destroy the Kwangtung Army, which was the main strike force of imperialist Japan, force the Japanese

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Government to surrender, and thus eliminate the center of aggression in the Far East. The design of the Soviet Command was as follows: The forces of three fronts were to break through the enemy's system of fortified areas in several sectors; then, exploiting the offensive on axes converging toward Harbin, Changchun, and Mukden, encircle the enemy's main forces, separate them, and destroy them in parts. In accordance with this design the Transbaykal Front was given the mission of making the main strike with the forces of the 17th, 39th, and 53d combined arms armies and the 6th Guards Tank Army in the general direction of Changchun, defeating the opposing enemy, crossing the Great Khingan Range and, joining forces with the 1st Far Eastern Front, cutting off the route of withdrawal of Japanese troops out of Manchuria. The 36th Army made a subsidiary attack toward Hailar, and a cavalry-mechanized group of the Soviet-Mongolian forces made a subsidiary attack toward Kalgan-Dolonnor. The mission of the 1st Far Eastern Front was to advance on Kirin, Chungchun, and Harbin with forces of the 1st Red Banner, 5th, and 25th armies and the X Mechanized Corps, defeat opposing enemy troops, joining forces with the Transbaykal Front, and encircle the Kwangtung Army. Subsidiary attacks were made by the 35th Army toward Poli and by the 25th Army toward Wahnsien. The mission of the 2d Far Eastern Front was to advance on Harbin with the forces of the 15th Army and the V Rifle Corps, attack Tsitsihar with part of its forces, and maintain defensive positions along the Amur River, on Sakhalin, and on the coast of Tatar Strait.

The Pacific Fleet was to interdict the enemy's marine lines of communication, land assault landing parties, capture parts of North Korea in interaction with troops of the 1st Far Eastern Front, and support friendly marine lines of communication in the Sea of Japan and Tatar Strait.

The air force in the Far East was given the following missions: Achieving air superiority and dependably covering the main troops groupings of the fronts against air strikes; preventing the enemy from maneuvering his reserves by striking rail facilities, trains, and motor vehicle columns; assisting ground troops in their penetration of the system of fortified areas, and in their exploitation of the offensive in depth; disturbing troop command and control by actions against headquarters and communication centers; conducting air reconnaissance systematically.

The combat activities of the air armies were planned as an air offensive, with a consideration for the specific conditions in which the ground troops were to execute their combat missions. Ninety-five percent of all forces of the 12th Air Army were intended for support and cover of troops of the Transbaykal Front advancing on the main axis. Two ground attack air divisions--the 248th and the 316th (commanders, Colonels I. B. Savel'yev and A. A. Yerokhin)--and the 245th Fighter Air Division (commander, Colonel G. P. Pleshchenko) were given the sole mission of supporting the 6th Guards Tank Army, which was in the first operational

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echelon of the front's troops and which was to advance swiftly in the direction of Changchun. The missions of formations of bombers in the 12th Air Army were to demoralize the enemy rear in the first days of the operation, disrupt the lines of communication, and isolate the area of the engagement from reserves.<sup>11</sup> Two bomber, two ground attack, and one fighter divisions were assigned to actions against airfields in the first day of the operation.<sup>12</sup>

In the 9th Air Army bomber and ground attack aviation directed their main efforts at razing defensive structures and suppressing troops on the battlefield. The plan called for powerful air preparation taking the form of massed bomber strikes, and for continuous support and cover of advancing troops penetrating the Mishan, Pogranisheskiy, Dunnin and Dunsinchzhenskiy fortified areas.<sup>13</sup>

The efforts of the 10th Air Army were concentrated on supporting frontal troops crossing the Amur River and advancing in the direction of the Sungari.

The Soviet Army Air Force commander and the generals and officers accompanying him made a great deal of preparations in the air armies, air formations, and units, and at the airfields. They were not only interested in the progress of preparations for battle, but they also took an interest in the lives and personal affairs of the personnel and shared, in talks with commanders and flight crews, the combat experience of our aviation in the fight against the fascist German invaders.

Air formations permanently deployed in the Far East made their preparations for 3 months, while those arriving from the European territory had from 15 to 30 days. In this time the air armies were replenished with new airplanes, flight crews, and technicians, and they took steps to camouflage the airfields and control posts; this played an important role in successful destruction of the Kwangtung Army.

Jointly with the headquarters of the fronts and the combined arms and tank armies and with the participation of the field headquarters of the Soviet Army Air Force, the air army staff prepared detailed interaction plans and uniform encoded maps, radio signals, procedure tables, and troop and aviation interaction signals. Operational groups consisting of air army staff officers and intended for assignment of targets to aviation and its control on the battlefield, for coordination with the combined arms command on problems concerning interaction during the operation, and for provision of information to the air army commander and staff concerning the situation on the ground and in the air above the army's disposition were assigned to tank and combined arms armies that were to advance on the main axes. Air support controllers were sent from air formations to rifle and tank divisions.

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Personnel arriving from the west intensively studied the theater of war with maps and from the air; this theater was distinguished by highly complex terrain and climate, and difficult orientation from the air. In order to facilitate navigation at the fronts, with the help of the ground troops the air armies created a network of checkpoint and identification signs along the state border and on large roads; use was also made of numerous ground aids to navigation (radio direction finders, light beacons, homing radio stations, and so on), which were moved to forward airfields at the eve of combat activities.

The Soviet Army Air Force commander reinforced the air armies with air engineering formations and units arriving from the west. Frontal troop commanders provided a great deal of assistance to aviation by supplying troop subunits and engineering equipment for construction of new airfields in the course of combat activities. To permit maneuvering of airfields, the air army commanders kept air engineering battalions in reserve to provide airfield services behind the advancing troops; these battalions were concentrated at the state border at the beginning of August. As a result of the hard work, units of the air force rear were well prepared for this strategic operation. They created a 15-20 day reserve of combat resources and materiel, and they prepared the required airfield network. A. A. Novikov and his assistants visited most of the airfields and personally checked the readiness of our air units and formations. A. M. Vasilevskiy and S. P. Ivanov always displayed concern for the preparedness of the air armies.

At the eve of the operation the air armies underwent regrouping. Their formations and units were redeployed to forward airfields, from which they began their combat activities. To conceal the redeployment, the airplanes were flown to their new airfields in small groups at low altitude, with radio communication strictly limited. All airplanes were dispersed and camouflaged at the new airfields. In addition to the operating airfields, an extensive network of dummy airfields was created; models of aviation equipment were set up at these airfields, and combat preparations of an air regiment were simulated. Air engineering formations and units and four motor transport battalions were allocated from reserves to the 9th and 12th air armies.

Party-political work was active in the preparatory period. The command, the political agencies, and the party and Komsomol organizations nurtured a hatred of the Japanese invaders in the airmen, studied the combat experiences of the Soviet Army at Lake Khasan and the Khalkhin-Gol River, and they mobilized the personnel of the air units to make better preparations for combat activities.

#### Combat Activities of the Soviet Air Force

The ground troops went over to the offensive on the night of 8-9 August 1945. To achieve surprise, artillery and air preparation were not

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conducted before the attack. The forward detachments of frontal troops covertly penetrated enemy territory at night, bypassed and blockaded the most important defensive fortifications, and began battling the Japanese garrisons. Many of the enemy's border fortifications were captured by dawn on 9 August.

On that same night 76 crews of the XIX Heavy Bomber Corps struck the rail stations of Harbin and Changchun aboard Il-4's. During the day of 9 August frontal aviation initiated combat activities against enemy troops and equipment on the battlefield and in the enemy's areas of concentration, as well as against the rail stations and strongpoints of Hailar, Solun, (Khayshuytan), (Uchagou), and (Khutou), shipping on the Sungari River, and enemy airfields at Hailar and Solun.

Intense air reconnaissance was conducted with the very first day of the operation. It was conducted not only by reconnaissance units and sub-units but also by up to 30 percent of the bomber and ground attack forces. Air reconnaissance was conducted on the axes and in areas (zones) by visual observation and photography. The intelligence data were immediately transmitted from the airplane by radio, permitting the Soviet Command to react quickly to all changes in the situation. Air reconnaissance was intense because many objectives for which the Soviet Command had no data in peacetime had to be revealed. Pilots of the 253d Ground Attack Air Division (commander, Lieutenant Colonel K. T. Tsedrik) operated especially successfully on the first day. They attacked and sunk a steamship, a barge, three sailboats, and three armored launches. Pilots of the 254th Fighter Air Division (commander, Colonel N. A. Silayev), who employed the "independent hunting" tactic, burned a ship in the vicinity of (Sinchunzhin') and annihilated several boats carrying Japanese soldiers.

Despite unfavorable meteorological conditions, the three air armies flew about 2,000 combat sorties in the first day of combat activities.

When the main forces of the ground troops were committed to the engagement, in addition to striking military objectives at industrial centers at strategic depth, the air armies continued to operate at tactical depth--over the battlefield and against fortified regions, centers of resistance, and Japanese troops and equipment, supporting our advancing troops.

In these days bomber aviation made a number of strikes against enemy rail junctions--Hailar, Harbin, Changchun, and Mutankiang, against the Hailar and Khutou fortified areas, and against shipping on the Sungari River.

Flying as pairs of "hunters" and as groups of 4-12 Il-2's, ground attack aircraft hit enemy troops and equipment on the battlefield with echeloned strikes, mainly in the breakthrough sectors on the Sungari, Solun, Hailar, and Mutankiang axes--that is, on the principal axes of the ground troops.

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Fighter aviation provided direct cover to advancing troops on the battlefield and in their areas of concentration. Moreover fighters were also used for ground attack and reconnaissance missions. They operated in small groups and in pairs against enemy troops on highways and dirt roads and against trains at stations and sidings, mainly on the axes of active troop operations near Hailar, Solun, (Sunu), Mutankiang, Khutou, (Tszyamusy), and (Mulin), and they performed tactical reconnaissance.

As a rule 60-70 bombers were assigned to strikes against rail junctions, fortified areas, and accumulations of troops; these bombers made concentrated attacks against these objectives. As an example on 11 August air reconnaissance discovered a large accumulation of enemy troops in the vicinity of Mulin. More than 60 Pe-2's were given the mission of making a concentrated strike against these troops. Despite the poor weather they reached the target and attacked it successfully, dropping their bomb loads precisely on target. As a result the enemy suffered significant losses.

The day before, Pe-2's of the 34th Bomber Air Division flying as small groups (commanded by General M. N. Kalinushkin) flew 120 sorties against the Khutou fortified area, making concentrated strikes. Enjoying air support, troops of the 35th Army broke Japanese resistance and broke into the city of Khutou on that same day.<sup>14</sup> Ground attack aviation operated effectively. On 12 August our troops advancing on the Tsitsihar axis were halted in the vicinity of (Sun'u) by intense artillery fire and counterattacks by enemy troops. Pilots of the 96th Ground Attack Air Division (commander, Lieutenant Colonel I. A. Kochergin) came to their rescue. They made several dives at the target, and the Japanese hoisted white flags, expressing their readiness to surrender. Performing their assignments, the flight crew displayed valor, bravery, and heroism. Major S. A. Chernykh, commander of the 75th Ground Attack Air Regiment, discovered an enemy armored train while flying an "independent hunting" mission with Lieutenant Yurchenko at his wing. The lead airplane was hit by antiaircraft fire while attacking the target, and the pilot made a forced landing on enemy territory. Landing next to him, Yurchenko took his commander aboard his own airplane and returned to the airfield.<sup>15</sup>

Providing direct support to ground troops in difficult meteorological conditions, in the first 3 days of the operation aviation inflicted serious losses on the enemy in manpower and equipment. By its actions it helped our advancing troops to successfully penetrate enemy defenses and surmount and capture fortified areas, particularly the Manchouli-Chalainor, Hailar, Khutou, and Dunnin fortified areas, and it supported troops from the air as they advanced deep into enemy territory. As a result of coordinated strikes from the ground and from the air, in the first day of the offensive Soviet troops advanced from 50 to 140 km on the Transbaykal Front, and from 5 to 20 km on the 1st and 2d Far Eastern fronts. In subsequent days the pace of the advance of ground troops was even higher. Stunned by these strikes, the Japanese began to withdraw

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their troops deep into Manchuria, offering resistance mainly in fortified areas and in individual pockets of resistance. The Soviet Army Air Force commander was at the forward control posts of the 12th and 9th air armies together with a small operational group from field headquarters, and he directly influenced the combat activities of aviation. In the second phase of the operation, because enemy defenses had been penetrated successfully and fortifications had been surmounted throughout the entire tactical depth, the ground troops continued their fight with the goal of conclusively crushing the enemy's pockets of resistance and pursuing him. In this period aviation continued to make bomber and ground attack strikes against individual pockets of resistance, strongpoints, and rail junctions, preventing the enemy from occupying intermediate lines of defense.

The 6th Guards Tank Army advanced swiftly. Its activities were continuously supported by aviation of the 248th and 316th ground attack air divisions (commanders, Colonels I. B. Savel'yev and A. A. Yerokhin) and the 245th Fighter Air Division (commander, Colonel G. P. Pleshchenko).

Air liaison officers and forward units of the air rear services moved within the tank combat formations, swiftly preparing airfields at which to base aviation intended for cover and support. Such organization of strategic and tactical interaction permitted aviation to render fast and timely assistance to the tank formations by striking the enemy wherever the situation required.

As the 6th Guards Tank Army was crossing the Great Khingan Range, to clear the way for the tanks aviation made a number of concentrated strikes against centers of resistance in the foothills of this range and bombed large strongpoints and rail stations at (Vanemyao). The tank crews competently exploited the results of these strikes and, sweeping enemy troops from their way, they continued to advance quickly to join mobile units of the 1st Far Eastern Front. On the fourth day of the operation the 6th Guards Tank Army crossed the Great Khingan Range and entered the Central Manchurian Plain, having traveled 450 km in battle. By 14 August troops of the 39th Army captured Vanemyao and Solun, and the 17th Army and a mechanized cavalry group crushed opposing enemy troops and reached the approaches of Kalgan. Aviation also helped the tank crews by delivering fuel to them across the Great Khingan Range, since the tank divisions were traveling significantly ahead of their supply bases in the swift offensive. Transport aviation came to the rescue, delivering about 2,000 tons of fuel and 186 tons of ammunition to them by air. On the average 90-100 Li-2 transporters were used to deliver cargo to units and formations of the 6th Guards Tank Army.<sup>16</sup>

Our infantry also enjoyed active air support. Within the sector of the 1st Far Eastern Front the enemy concentrated significant forces in the vicinity of Mutankiang in his attempt to prevent our troops from cutting the route of withdrawal of his troops from (Baotsin) and (Tszyamusy);

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these forces offered stubborn resistance, counterattacking several times. Aviation of all arms of the 9th Air Army was launched to crush this resistance. During the day large groups of bombers and ground attack airplanes made concentrated strikes against enemy troops in this area and in the city. The flight crews displayed exceptional bravery and an ability to operate in complex conditions. As an example a group of Pe-2 bombers (group commander--Lieutenant Colonel Plotnikov, commander of the 59th Bomber Air Regiment) took off on a bomb run against enemy troops at the station and in the city of Mutankiang. On the way to their targets the airplanes flew into bad weather. The cloud ceiling was not more than 100 meters. The group commander decided to detour the bad weather front on the north and complete the combat mission at all costs. Descending to 50 meters, the group traveled about 100 km in complex meteorological conditions and reached an area of good weather. Successfully completing its assignment and inflicting significant losses on the enemy, the group returned safely to its airfield. The battle of Mutankiang lasted 5 days. The 16th of August was the hardest day for our troops of the 1st Red Banner and 5th armies. Concentrating significant infantry and tank forces, the enemy made strong counterattacks. The 252d Ground Attack Air Division (commander, Lieutenant Colonel V. Kh. Makarov) was ordered to repel the counterattack; by continuous echeloned actions against enemy artillery, tanks, and infantry, it provided decisive assistance to the troops in repelling the counterattack. The enemy's attempts at concentrating troops near Mutankiang, Hallun, and (Ningut) for a counterattack were also foiled by concentrated strikes by ground attack airplanes and bombers from the 9th Air Army. The enemy was totally defeated in the vicinity of Mutankiang through the joint efforts of ground troops and aviation. A massed strike made by 108 bombers of the XIX Heavy Bomber Air Corps against centers of resistance in the Dunnin fortified area was highly effective. An inspection of the terrain following its occupation by our troops established that four concrete pillboxes, two wood-and-earth pillboxes, an ammunition dump, two trenches, and two underground passageways had been destroyed by direct bomb hits. After this strike the fortified area was taken by our troops, and the Japanese garrison surrendered. Soviet pilots displayed resourcefulness and heroism in the performance of their mission.

On 14 August a pair of Il-2's (with Lieutenant Garanin in the lead airplane) was flying a sortie with the mission of seeking and attacking small scattered enemy groups remaining in our rear and making systematic raids on the Dunnin airfield, hindering the work of the airfield engineering battalion, which was preparing the airfield for reception of air units. Unable to find the enemy, Lieutenant Garanin decided to land at this airfield and clarify the situation. He ordered his wingman to patrol the air against possible attempts by the Japanese to capture his airplane while it was on the ground, and he landed under enemy fire. Without shutting down his engine Garanin got in touch with the battalion commander, who clarified the situation; on learning the whereabouts of the targets, he took off. Spotting three houses from which the Japanese were

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shelling the airfield with the greatest intensity, together with his wingman he attacked them with bombs and machinegun fire. As a result the three houses were partially destroyed and burned. Some of the Japanese were killed, and the rest scattered. Owing to the initiative, boldness, and decisive actions of Lieutenant Garanin the combat mission was completed.

As a result of the joint actions of ground troops and aviation, enemy resistance was broken both in the vicinity of Mutankiang and at other points, particularly at Kalgan, Sunu, and (Boli). Suffering high losses, the Japanese were forced to abandon all of these points.

In the second phase of the operation aviation had to surmount extremely unfavorable meteorological conditions which dramatically restricted its combat activities. Despite this, aviation continued to support the ground troops as they moved forward.

Successfully completing the first and second phases of the offensive, Soviet troops continued to pursue the enemy relentlessly deep into Manchuria and on the islands. On 18 August the Japanese began abandoning organized resistance and surrendering. Only in individual sectors did they continue to offer resistance in small isolated groups.

Because of the swift advance of the ground troops, the long lines of communication, and the lack and poor passability of highways and dirt roads, the problem of supplying ammunition, fuel, and food to the troops, including air units, became very acute. At the same time our troops had to capture the most important administrative-political and industrial centers of the enemy as quickly as possible, which required extensive assault landing operations. All of this imposed new missions on the Soviet Air Force in the third phase of the offensive. A large quantity of ammunition, food, and fuel had to be airlifted in support of the activities of ground troops deep in the enemy rear; small airborne assault parties had to be landed, and their actions had to receive combat and logistical support.

Broad use was made primarily of aviation of the 54th Transport and 21st Guards Transport Air divisions on order of the Soviet Army Air Force commander to complete these missions. While combat aviation continued to support frontal troops by annihilating individual enemy pockets of resistance, under fighter cover transport aviation did a great deal of work to transfer cargo and land airborne assault parties. Airborne assault groups were landed at airfields and in the vicinities of Harbin, Kirin, (Yantszy), (Vonsan) ((Genzan)), (Khamkhyn) ((Kanko)), (Pkhen'yan) ((Kheydzio)), Changchun, Shenyang (Mukden), Talien (Dairen), and Lushun (Port Arthur). Additional airborne assault groups were landed several times to reinforce the main assault landing forces at these places. The airborne assault parties were accompanied by specially assigned air liaison officers who maintained interaction between aviation and the

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assault landing parties. The landing of the airborne assault groups was supported by actions of combat aviation of the 12th and 9th air armies, and by special air reconnaissance of the landing areas. Our fighters and bombers patrolled above the airfields at which they landed, ready to render support to the assault landing parties from the air at any moment. Capture of important administrative-political and industrial centers in Manchuria by airborne assault parties totally disorganized command and control of enemy troops and reserves. Becoming persuaded of the uselessness of further resistance, the Japanese halted combat activities almost everywhere.

As a result of the defeat of the Kwangtung Army imperialist Japan had no more realistic forces and possibilities for continuing the war, and on 2 September 1945 Japan signed the pact of unconditional surrender. As soon as Japan's surrender became known--and the troops usually learn of such unforgettable moments before the orders announcing them are cut--countless words of joy and congratulations were expressed and salutes were fired from guns, machineguns, rifles, and pistols. That should amaze no one, since not only the Great Patriotic War but also World War II had come to a victorious conclusion. It was with a feeling of sincere gratefulness to the Soviet Union and its armed forces that the peoples of all the world were witness to peace on earth, which they longed for with all their souls for 6 long years.

Despite the high uniqueness of the theater of war and the complexity of the missions, capitalizing on the rich experience of the war against fascist Germany the air force in the Far East managed to provide effective assistance to ground troops in the destruction of the Kwangtung Army. It flew more than 22,000 sorties. In the hands of the Soviet Command, our air force was a powerful and highly maneuverable resource of armed conflict. By its strikes against pillboxes and accumulations of equipment and troops, it helped the ground troops to quickly penetrate fortified zones, disrupted the work of the lines of communication, paralyzed maneuver of enemy reserves, and played a major role in repelling enemy counterattacks and counterstrikes. The Soviet Air Force was the main agent of reconnaissance and an important resource for landing and transporting troops and cargo. During the operation 16,500 enlisted men and officers, about 2,780 tons of fuel, 563 tons of ammunition, and 1,496 tons of various cargo were transported by air.<sup>17</sup>

A ukase of the Presidium of the USSR Supreme Soviet dated 8 September 1945 awarded a second "Gold Star" medal to A. A. Novikov. Many of his assistants from the air force field headquarters, air army commanders, air formation, unit and subunit commanders, flight crews and technicians, and workers of headquarters, political agencies, and services were also awarded battle orders of the Soviet Union.

The most important result of the campaign conducted by the Soviet Armed Forces in the Far East was the destruction of the almost million-strong

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Kwangtung Army, unconditional surrender of Japan, and elimination of a center of aggression in the East. Our victory in the Far East upset the hopes of the Japanese imperialists for an advantageous end to the war in the Pacific and foiled the plans of aggressive circles in the USA trying to gain a foothold on the Asian continent. The victory of the Soviet Armed Forces provided a powerful impetus to the national liberation movements in the countries of Asia and created the groundwork for the victory of the people's revolution in China, North Korea, and Vietnam. The forces of democracy and progress grew strong on the entire Asian continent, and the positions of imperialism and reaction weakened. All springboards and military bases created by the Japanese imperialists for an attack on the USSR were eliminated, and the security of our Far Eastern borders was insured. The Soviet Army honorably completed its mission of liberation in the Far East. In the campaign to defeat the Kwangtung Army the Soviet Air Force obtained valuable experience in organizing and maintaining strategic and tactical interaction with ground troops in the difficult conditions of a theater of war.

The considerable separation of the axes on which the troops of the three fronts operated, the unstable weather, and the absence of good reference points (taiga, desert, mountains) made navigation difficult and necessitated extremely careful preparation by the personnel and implementation of many ground support measures; the latter were implemented promptly, and they insured accurate hits on the targets assigned to aviation. Unification of the efforts of all three frontal air armies and a separate ADD bomber air corps under the sole leadership of the senior air chief--the commander of the Soviet Army Air Force--was a typical feature of the actions of Soviet aviation; the commander was present at the command post together with the commander in chief of troops in the Far East, and at the forward control posts of the air armies; he promptly solved specific problems in the combat application of aviation, and through the air army commanders he assigned air missions as required by the ground troops. The combat activities of Soviet aviation began with massed, concentrated strikes against airfields, administrative-political centers, ports, and other highly important enemy facilities in the rear. In the first days considerable bomber and ground attack forces were assigned the mission of disorganizing rail and motor shipments, which resulted in isolation of the area of the engagement from enemy reserves. Another unique feature in the actions of aviation was the use of a significant quantity of forces for air reconnaissance (33 percent of all sorties in the 12th Army, 27 percent in the 10th, and 21 percent in the 9th Air Army).

On the whole the experiences of the Soviet Air Force in the Far East had their influence on subsequent development of air force strategy and tactics. They are still significant today in relation to a number of problems concerning the combat use of different aviation arms and services.

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FOOTNOTES

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12. Ibid., 1. 23.
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## AIR FORCE PERSONNEL OF THE GREAT PATRIOTIC WAR

During the Great Patriotic War the Communist Party constantly devoted attention to training, correctly placing, and indoctrinating command, political, engineering, flying, and technical personnel. The Communist Party, the Supreme High Command, the General Staff, and the Air Force Military Council understood that the battleworthiness of all air arms and services depends on presence of a sufficient number of mature, well trained executives devoted to the ideals of communism. The party Central Committee constantly kept an eye on the selection and placement of air force personnel in the top and senior ranks. All appointments of commanders at the levels of air division and above made by the command and Military Council of the Soviet Army Air Force were approved by the CC VKP(b). Military skill, organizational capabilities, selfless devotion to the socialist motherland and the Communist Party, and high moral-combat qualities were the principal criteria with which the individual was evaluated in the difficult war years. Members and candidates of the VKP(b) held almost all executive posts in the Soviet Air Force by the end of the war. The Air Force Military Council played an important role in selecting and placing middle-grade personnel. In its meetings it often examined the problems of training airmen, and it planned concrete, efficient measures.

During the Great Patriotic War the Communist Party raised and educated a remarkable detachment of air commanders who competently managed the combat activities of aviation at the fronts, constantly improved the organization of the units, formations, and major formations, applied new, more effective forms and methods of air activities, and did a great deal to develop the air force further. Among them were Air Force Commander Chief Marshal of Aviation A. A. Novikov, Long Range Aviation Commander Chief Marshal of Aviation A. Ye. Golovanov, Soviet Army Air Force and long-range aviation deputy commanders Marshals of Aviation G. A. Vorozheykin, F. Ya. Falaleyev, S. A. Khudyakov, and N. S. Skripko and Colonel General of Aviation A. V. Nikitin; air army commanders Chief Marshal of Aviation K. A. Vershinin, Marshals of Aviation S. A. Krasovskiy, S. I. Rudenko, and V. A. Sudets, and Generals S. K. Goryunov, M. M. Gromov, V. N. Zhdanov, I. P. Zhuravlev, N. F. Naumenko, F. P. Polynin, N. F. Papiyin, S. D. Rybal'chenko, I. M. Sokolov, and T. T. Khryukin.1-2

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The biographies of the air army commanders were all different, and they attained executive posts in the air force's major operational formations during the Great Patriotic War following different roads. Many of them had even participated in the Civil War and fought the interventionists, and they had served in the ground troops previously. But they were all attracted by aviation, in which they envisioned much that was new, interesting, and promising, and they understood its ever-increasing role in the defense of the socialist fatherland quite well. One general trait was typical of all of them--limitless love for the motherland and devotion to the Communist Party, which raised and educated them, and to the Soviet people.

Konstantin Andreyevich Vershinin assumed the post of air force commander of the Southern Front as a colonel in September 1941, and in May 1942 he took charge of the 4th Air Army. During the war the 4th Air Army flew 340,000 combat sorties, destroying and crippling 5,000 enemy airplanes in air battles and at airfields. The air army's combat activities were assessed highly by the Communist Party and the Soviet Government. The supreme high commander declared his gratefulness to its formations for their successful combat activities 42 times; 227 soldiers were awarded the Hero of the Soviet Union title, 17 air units and formations were reorganized as Guards units, 46 were awarded honorary titles, and 76 earned orders.<sup>3</sup>

In the postwar years Hero of the Soviet Union K. A. Vershinin held responsible posts in the National Air Defense Forces and in the air force. For many years, until 1968, K. A. Vershinin headed the Soviet Air Force. K. A. Vershinin was awarded the rank of chief marshal of aviation in May 1959.

Stepan Akimovich Krasovskiy began the war with the rank of major general of aviation at the post of air force commander of the 56th Army. In January 1942 he became air force commander of the Bryansk Front, and 4 months later he became commander of the 2d Air Army. Between October 1942 and March 1943 S. A. Krasovskiy headed the 17th Air Army, after which he assumed command of the 2d Air Army until the end of the war. Pilots of the 2d Air Army flew about 348,000 combat sorties, fought in 6,000 air battles and destroyed 7,000 fascist German airplanes during the war, and the army's military deeds were mentioned 37 times in orders of the supreme high commander. Sixty-five air regiments, divisions, and corps of the army were reorganized as Guards units, 125 units and formations received honorary titles in honor of liberated cities, and more than 200 of the army's fliers were awarded the Hero of the Soviet Union title; 13 persons were awarded this lofty title twice.<sup>4</sup> In the postwar years Hero of the Soviet Union S. A. Krasovskiy served for a long time as chief of the Air Force Academy imeni Yu. A. Gagarin, and he trained hundreds of officers and generals with a higher military education for the Soviet Air Force.

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Sergey Ignat'yevich Rudenko began the war on 15 July 1941 as commander of the 31st Mixed Air Division. On 28 September 1942 General S. I. Rudenko became commander of the 16th Air Army. During the war the 16th Air Army flew 280,000 combat sorties. This army's pilots destroyed about 6,000 fascist German airplanes in air battles and at airfields. Two hundred pilots and navigators were awarded the Hero of the Soviet Union title for exemplary completion of command assignments at the front in the struggle against the fascist German invaders, and for the valor and heroism displayed. Distinguished formations and units of the 16th Air Army were mentioned 47 times in orders of the supreme high commander. More than 27,000 airmen were awarded orders and medals for combat distinction, many formations and units were reorganized into Guards units, and 64 were awarded honorary titles.<sup>5</sup> In the postwar years Hero of the Soviet Union S. I. Rudenko was chief of general staff of the Soviet Air Force, first deputy commander in chief of the air force, and chief of the Air Force Academy imeni Yu. A. Gagarin.

Vladimir Aleksandrovich Sudets began the war at the post of commander of the Main Command's IV Long-Range Bomber Air Corps, and later he commanded the air service of the Volga Military District and the I Bomber Air Corps; from March 1943 until the end of the war he commanded the 17th Air Army. During the war the 17th Air Army flew more than 200,000 combat sorties and produced famous aces such as twice-awarded Heroes of the Soviet Union V. A. Zaytsev, M. V. Kuznetsov, A. I. Koldunov, N. M. Skomorokhov, G. F. Sivkov, and others. The army was mentioned 34 times in orders of the supreme high commander.<sup>6</sup> In the postwar years Hero of the Soviet Union V. A. Sudets occupied important posts in the air force and in the National Air Defense Forces, and he served as air force chief of general staff and commander in chief of the National Air Defense Forces.<sup>7</sup>

General P. F. Zhigarev commanded the 10th Air Army during the war against imperialist Japan. In April 1946 Pavel Fedorovich Zhigarev was appointed to the post of first deputy commander in chief of the air force; later he assumed command of strategic aviation, and from September 1949 to January 1957 he headed the Soviet Air Force.<sup>8</sup>

The commanders were given invaluable assistance in managing the troops by the staffs of the air armies under the supervision of Generals N. P. Abramov, A. N. Alekseyev, I. M. Belov, P. I. Brayko, N. P. Dagayev, N. M. Korsakov, F. I. Kachev, N. V. Perminov, A. S. Pronin, A. A. Sakovnin, B. F. Sveshinkov, N. G. Seleznev, S. P. Sinyakov, V. V. Storozhenko, K. I. Tel'nov, A. Z. Ustinov, A. V. Stepanov, S. A. Lavrik, V. I. Izotov, and N. L. Stepanov.<sup>9</sup>

After the war Nikolay Pavlovich Dagayev, Petr Ignat'yevich Brayko, Sergey Pavlovich Sinyakov, and Aleksandr Zakharovich Ustinov occupied executive posts in the Main Headquarters of the Soviet Army Air Force and did a great deal to develop the strategy of the Soviet Air Force.

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Victory against enemy troops and aviation depended in many ways on the morale of air force personnel and on purposeful party-political work. It was confidently organized by the unit deputy commanders for political affairs and by the chiefs of the political sections of the air armies and party and Komsomol organizations. The following individuals served as chiefs of the political sections of air armies--A. I. Asulenko, M. A. Butkovskiy, V. I. Vikhrov, Ya. I. Draychuk, P. I. Dukhnovskiy, F. I. Zhmulev, M. M. Moskalev, T. I. Muratkin, N. M. Protsenko, V. G. Tochilov, G. A. Khüdyakov, S. I. Chernausov, D. G. Shanshashvili, N. M. Shcherbina, and others.

The following air army deputy commanders for political affairs did an extremely great deal of work to indoctrinate personnel of air force units, formations, and major formations under the guidance of Soviet Army Air Force Military Council members Generals P. S. Stepanov, L. G. Rudenko, and N. S. Shimanov: V. I. Alekseyev, N. P. Babak, F. F. Verov, A. I. Vikhorev, A. S. Vinogradov, A. F. Vyvolokin, A. P. Grubich, G. G. Gur'yanov, A. A. Ivanov, I. G. Litvinenko, S. N. Romazanov, A. G. Rytov, V. I. Smirnov, I. I. Sergeev, M. I. Sulimov, M. N. Sukhachev, V. N. Tolmachev, F. N. Khorobrykh, S. K. Fedorov, S. A. Pal'yanov, and M. I. Shapovalov.

In cooperation with commanders and staffs at all levels, the broadly branched party-political machinery of the air force worked every day to indoctrinate the personnel in the spirit of Soviet patriotism and proletarian internationalism, and to nurture high moral-combat qualities and selfless devotion to the Communist Party. The historically unprecedented heroism of the Soviet people in the war is a manifestation of these qualities. The highest form of heroism and the highest expression of high moral qualities was the ram tactic. During the war 404 Soviet fighter pilots, 18 ground attack airplane crews, and 6 bomber crews rammed airborne enemy targets.<sup>10</sup> Soviet pilots destroyed about 500 enemy airplanes in air battles with the ram tactic. Seventeen airmen used the ram tactic twice, A. Khlobystov and N. Terekhin used it three times, and B. Kovzan used it four times. Among those who rammed enemy craft was the world's only female pilot--Komsomol member Ye. Zelenko.<sup>11</sup> Among the winged warriors who rammed enemy airplanes, 95 percent were communists and Komsomol members.

During the war the commanders of SHC reserve air corps included F. A. Agal'tsov, V. I. Aladinskiy, P. P. Arkhangel'skiy, Ye. M. Beletskiy, A. S. Blagoveshchenskiy, G. F. Baydukov, M. Kh. Borisenko, M. I. Gorlachenko, M. M. Golovnya, S. P. Danilov, F. F. Zherebchenko, G. A. Ivanov, A. Z. Karavatskiy, N. P. Kamanin, I. D. Klimov, I. V. Krupskiy, Ye. F. Loginov, M. G. Machin, V. V. Naneyshvili, I. S. Polbin, V. Ye. Nestertsev, O. V. Tolstikov, B. K. Tokarev, I. L. Turkel', I. D. Podgornyy, Ye. Ya. Savitskiy, V. G. Ryazanov, I. P. Skok, B. A. Sidnev, S. V. Slyusarev, V. V. Stepichev, A. V. Utin, V. A. Ushakov, A. B. Yumashev, and others.

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Among these, Ye. Ya. Savitskiy, V. G. Ryazanov, and I. S. Polbin were awarded the Hero of the Soviet Union title twice. Yevgeniy Yakovlevich Savitskiy came to the front from the Far East in winter 1941 as a lieutenant colonel. He commanded an air regiment, and later a division. At the end of 1943 he was awarded the rank of major general of aviation and appointed commander of the III Fighter Air Corps. During the war he personally flew 216 combat sorties and knocked down 22 German airplanes, and under his command pilots of the corps flew 28,860 combat sorties and annihilated 1,653 enemy airplanes.<sup>12</sup>

The motherland gave a high assessment to the bravery and heroism of this valorous air commander and to his competent management of the corps. On 11 May 1944 he was awarded the lofty title of Hero of the Soviet Union, and on 2 June 1945 he was awarded this title a second time. In 2 years of the war (from April 1943 to May 1945) 32 airmen in the corps earned the Hero of the Soviet Union title.<sup>13</sup> Presently Ye. Ya. Savitskiy is a marshal of aviation.

During the Great Patriotic War Vasily Georgiyevich Ryazanov commanded the I Guards Ground Attack Air Corps. The corps became famous during the war for its accurate, powerful bombing and ground strikes against the enemy. The corps' pilots flew 58,270 combat sorties during the war. V. G. Ryazanov was one of the first to organize control of the combat activities of ground attack aviation from the forward command posts of a combined arms and a tank army--that is, he employed a new method of control of ground attack aviation above the battlefield. Ninety-four airmen in the corps were awarded the Hero of the Soviet Union title, and seven of them were awarded the title twice. For outstanding battle service to the motherland General F. G. Ryazanov was awarded the Hero of the Soviet Union title on 22 February 1944, and on 18 June 1945 he was awarded the second "Gold Star" medal.<sup>14</sup>

Ivan Semenovich Polbin, commander of the VI Guards Bomber Air Corps (the II Guards until 1944), was a talented leader, an innovator, and a fearless pilot. In March 1943 Colonel I. S. Polbin, who was promoted to major general of aviation on 20 October, was appointed commander of an air corps. Various innovations in the use of the Pe-2 dive bomber are associated with his activities at the front. I. S. Polbin was the first in bomber aviation to employ sniper dive bomb strikes against small targets, and he taught this method to his subordinated regiments and divisions. On 23 November 1942 this valorous pilot and famous commander was awarded the lofty Hero of the Soviet Union title. On 6 April 1945 he was awarded his second "Gold Star" posthumously.<sup>15</sup>

Among division commanders who had begun their war career as flight, squadron, and regiment commanders we can name V. I. Davidkov, M. P. Noga, S. I. Nichiporenko, V. A. Sandalov, P. I. Kryukov, F. P. Kotlyar, A. I. Pokryshkin, and many others. Air division commanders K. A. Katichey,

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V. V. Smirnov, V. V. Zelentsov, I. D. Antoshkin, F. I. Dobysh, and many others proved themselves to be mature managers of combat activities.

The air regiment commanders were the leading figures in the air force. The success of all combat missions depended on their organizational capabilities, flying skills, bravery, high exactingness, and fatherly concern for subordinates.

P. S. Kutakhov, I. I. Pstygo, P. F. Chupikov, L. L. Shestakov, I. I. Kleshchev, P. A. Pokryshev, M. S. Tokarev, I. P. Motornyy, A. P. Morozov, B. N. Yeregin, S. D. Luganskiy, Ye. D. Bershanskaya, and many others proved themselves to be remarkable air regiment commanders.

In the postwar years many of them continued to serve in the Soviet Army, through their experience and knowledge promoting development and growth in the power of armed forces.

During the Great Patriotic War of 1941-1945 Hero of the Soviet Union Pavel Stepanovich Kutakhov commanded an air squadron and a fighter regiment. In the difficult weather and terrain of the North he personally flew 367 combat sorties, fought in 79 air battles, and knocked down 14 enemy airplanes; he knocked down 28 in group battles. Under his command the 20th Fighter Air Regiment effectively completed many combat missions while covering troops and objectives in the frontal rear, flew many thousands of combat sorties, and knocked down many enemy airplanes. After the war P. S. Kutakhov graduated from the Academy of the General Staff and continuously held command assignments. In March 1969 he took charge of the Soviet Air Force, and in November 1972 he was awarded a high rank--chief marshal of aviation.

During the war Ivan Ivanovich Pstygo commanded a flight and an air squadron, and between December 1943 and the end of the war he commanded the 893d Ground Attack Air Regiment. He flew 95 combat sorties. In April 1975 he was awarded a high rank--marshal of aviation, and he is presently deputy commander in chief of the Soviet Army Air Force.

Hero of the Soviet Union Pavel Fedorovich Chupikov commanded the 19th Fighter Air Regiment during the war, which participated in almost all of the largest operations of the third period of the war; it was reorganized as the 167th Guards Regiment and awarded the Order of Aleksandr Nevskiy. During the war the regiment's pilots flew about 9,000 combat sorties, fought in 750 air battles, and annihilated 445 enemy airplanes. P. F. Chupikov himself flew about 400 combat sorties, and he knocked down 40 enemy airplanes in 77 aerial duels and 6 airplanes in group air battles. Presently P. F. Chupikov is a colonel general of aviation.

Hero of the Soviet Union I. I. Kleshchev commanded the 434th Fighter Regiment, which distinguished itself in the battle of Stalingrad. In

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the period from June to August 1942 the regiment destroyed 90 airplanes in air battles, and from 14 September to 2 October 1942 the regiment's pilots flew 611 combat sorties, participated in 48 air battles, and knocked down 82 enemy airplanes. In late fall 1942 Major I. I. Kleshchev died tragical'y while flying in complex meteorological conditions.

Air squadron and flight commanders were the most numerous detachment of command personnel in the air force. They were the direct educators of the pilots, technicians, and mechanics, and they always led their subordinates into battle.

Hero of the Soviet Union Ivan Mikhaylovich Moroz served as deputy commander for political affairs of an air squadron and an air regiment, and in the war he served as chief of the political section of an air division; he is presently a colonel general of aviation, a member of the Military Council, and chief of the Political Directorate of the Soviet Army Air Force.

Hero of the Soviet Union Aleksandr Petrovich Silant'yev, who was a flight commander and a deputy commander in a fighter air squadron during the first year of the Great Patriotic War, fought heroically against the enemy, proved himself in many battles, and flew 359 combat sorties. In February 1976 he was awarded the high rank of marshal of aviation, and today he is at the head of the Air Force General Staff.

Hero of the Soviet Union Vasily Vasil'yevich Reshetnikov commanded an air squadron of the 19th ADD Guards Air Regiment in 1943. During the war he flew 307 combat sorties in the Il-4. Presently V. V. Reshetnikov is a colonel general of aviation, and he is in charge of a powerful air arm--strategic missile-carrying aviation.<sup>16</sup>

Among squadron commanders who had earned fame in the war we can include thrice-awarded Hero of the Soviet Union I. N. Kozhedub and twice-awarded Hero of the Soviet Union N. M. Skomorokhov, A. N. Yefimov, A. Ya. Brandis, and I. F. Pavlov. During the war fighter pilot Ivan Nikitovich Kozhedub flew 326 combat sorties, participated in 120 air battles, and personally knocked down 62 enemy airplanes.<sup>17</sup> Presently I. N. Kozhedub is a colonel general of aviation. N. M. Skomorokhov flew 605 combat sorties, fought in 130 air battles, and knocked down 46 fascist airplanes.<sup>18</sup> Today he is a colonel general of aviation.

Ground attack pilot Aleksandr Nikolayevich Yefimov joined a ground attack air regiment of the Western Front in August 1942 after graduating from a military pilots school. A. N. Yefimov took off for his first combat sortie from one of Moscow's suburban airfields, and in 1943 he became famous at the Kursk salient as a fearless ground attack pilot and an outstanding master of ground attack tactics against enemy troops. He flew his last combat sortie, the 222d, on 8 May 1945.<sup>19</sup> In 1975 he was awarded the high rank of marshal of aviation, and he is presently first deputy commander in chief of the Soviet Army Air Force.

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Prompt and successful completion of combat assignments depends on the selfless labor of the air force's engineers and technicians. This titanic work was done under the guidance of Air Force Senior Engineer A. K. Repin and air army engineers A. V. Ageyev, I. I. Bondarenko, A. V. Vinokurov, Z. A. Ioffe, V. N. Koblikov, K. P. Moiseyev, I. V. Markov, P. A. Nevinnyy, N. I. Plotnikov, I. P. Osipenko, P. V. Rodimov, A. G. Rudenko, V. I. Rebrov, A. V. Shepeleva, and others.<sup>20</sup>

An enormous amount of work was done during the war by personnel of air force rear units and services commanded by Generals N. A. Sokolov-Sokolenok, M. P. Konstantinov, F. I. Zharov, L. G. Rudenko, N. G. Lovtsov, V. N. Uspenskiy, P. V. Korotayev, I. Kh. Lyubimov, P. P. Voronov, V. N. Vlasov, A. S. Kirillov, P. G. Kazakov, A. I. Mezintsev, F. P. Mal'tsev, N. M. Stepanov, P. M. Stupin, P. M. Taranenko, S. N. Gnipenko, V. I. Ryabtsev, and others.<sup>21</sup> Under the guidance of Generals L. G. Ratgauz and A. P. Popov, and the chiefs of the air army medical services, medical personnel of the Soviet Air Force saved the lives of thousands of pilots, navigators, radio operators, and technicians. The motherland gave a high assessment to the military services of its airborne sons and daughters. More than 200,000 of them were awarded orders and medals. The Hero of the Soviet Union title was awarded to 2,420. Sixty-five pilots were awarded this lofty title twice; this included six famous pilots in strategic aviation-- I. Molodchiy, V. N. Osipov, P. A. Taran, Ye. P. Fedorov, V. V. Sen'ko, and S. I. Kretov. Air warriors A. I. Pokryshkin and I. N. Kozhedub, known throughout the world, earned the title three times. This high award--the Hero of the Soviet Union title--was awarded to 29 Soviet female military pilots, to include A. L. Zubkova, Ye. A. Nikulina, Ye. I. Nosal', Ye. M. Rudneva, O. A. Sanfirova, N. N. Fedutenko, and M. P. Chechneva.

During the war 288 air formations, units, and subunits in frontal aviation and strategic aviation were reorganized as Guards units, 897 were awarded combat orders, and 708 were given honorary titles. Those air force formations and units which had distinguished themselves in battle the most were mentioned 319 times in orders of the supreme high commander.<sup>22</sup>

## FOOTNOTES

- 1-2. ISTORIYA SSSR, No 3, 1975, p 44.
3. "4-ya vozdushnaya armiya v Velikoy Otechestvennoy voyne" (The 4th Air Army in the Great Patriotic War), Moscow, 1968, p 9.
4. "2-ya vozdushnaya armiya v boyakh za Rodiny" (The 2d Air Army in Battles for the Motherland), Moscow, 1965, p 29; S. A. Krasovskiy was promoted to marshal of aviation in 1959.

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5. "16-ya vozdushnaya" (The 16th Air Army), Moscow, 1973, pp 5, 391; S. I. Rudenko was promoted to marshal of aviation in 1955.
6. VOYENNO-ISTORICHESKIY ZHURNAL, No 9, 1972, p 71.
7. V. A. Sudets was promoted to marshal of aviation in 1955.
8. VOYENNO-ISTORICHESKIY ZHURNAL, No 12, 1970, p 44; P. F. Zhigarev was promoted to marshal of aviation in 1953, and to chief marshal of aviation in 1955.
9. ISTORIYA SSSR, No 3, p 44.
10. PRAVDA, 29 October 1974.
11. KRASNAYA ZVEZDA, 20 January 1976.
12. "Dvazhdy Geroi Sovetskogo Soyuza" (Twice Heroes of the Soviet Union), Moscow, 1973, p 184.
13. "Lyudi bessmertnogo podviga" (Immortal Heroes), Book 2, Moscow, 1965, p 254.
14. "Dvazhdy Geroi Sovetskogo Soyuza," p 182.
15. Ibid., p 164.
16. KRASNAYA SVEZDA, 20 March 1976.
17. VOYENNO-ISTORICHESKIY ZHURNAL, No 5, 1975, p 116.
18. "Dvazhdy Geroi Sovetskogo Soyuza," p 194.
19. "Dvazhdy Geroi Sovetskogo Soyuza," p 78.
20. "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg." (The Soviet Air Force in the Great Patriotic War of 1941-1945), Moscow, 1968, p 421.
21. VOYENNO-ISTORICHESKIY ZHURNAL, No 5, 1973, p 35.
22. "Sovetskiye Voyenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," pp 447-448; "Aviatsiya i kosmonavtika SSSR" (USSR Aviation and Cosmonautics), Moscow, 1968, pp 229-230.

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CONCLUSION

The Great Patriotic War ended with the Soviet Union's historic victory. It was achieved by the Soviet people and their armed forces under the guidance of the Communist Party. "Our glorious Communist Party was the great leader, organizer, and military commander of the Soviet people in this war. Our party directed all of its organizational genius, the entire power of the strong alliance of the peoples of the USSR, all of the public energy accumulated over the years, persistence, endurance, and powerful will at a single goal--the defeat of fascism."<sup>1</sup>

The war demonstrated the advantages of the economic and political organization of socialist society, and of its ideology.

The Soviet Union was able to withstand an attack by superior enemy forces, switch its economy to a war footing in very difficult conditions, and create a material base insuring a subsequent victory. During the war our army was supplied the latest equipment, superior to the enemy's equipment in relation to many indices. Evidence of this can be found in the armament production indices for the USSR and Germany pertaining to all types of armament. In regard to aviation equipment, in the period from 1 July 1941 to 30 June 1945 Soviet war industry produced 108,028 warplanes, while in 1941-1944 Germany produced 78,900.<sup>2</sup>

New types of airplanes--the MIG-2, YaK-3, YaK-9, La-5, and La-7 fighters, the Il-2 and Il-10 ground attack airplanes, and the Tu-2, Pe-2, and Pe-8 bombers--were created by labor collectives headed by outstanding Soviet aircraft designers--A. N. Tupolev, N. N. Polikarpov, S. V. Il'yushin, A. S. Yakovlev, S. A. Lavochkin, V. M. Petlyakov, A. I. Mikoyan, P. O. Sukhoy, A. A. Mikulin, A. D. Shvetsov, V. Ya. Klimov, and others. Most of these airplanes were not just not inferior in combat qualities to the best airplanes of German aviation; they even surpassed them in relation to some indices. Beginning in 1942 and until the end of the war the power of the Soviet Air Force grew continuously. While there were 1,540 airplanes of the new types in the composition of the operating army at the beginning of war, there were 2,495 of them in December 1941, 3,160 in May 1942, 3,088 in November 1942, 8,220 in July 1943, 8,500 in January 1944, 11,800 in June 1944, and 14,500 warplanes in January 1945.<sup>3</sup> At

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the same time the forces of the Luftwaffe decreased continuously following the battle of Stalingrad. In November 1942 the Germans had 3,500 warplanes on the Soviet-German front, in July 1943 they had 2,980, in June 1944 they had 2,800, and in January 1945 they had 1,960 airplanes.<sup>4</sup>

Concurrently with quantitative growth in the Soviet Air Force, the ratio between old and new types of airplanes changed. By as early as 1 November 1942 only one-third of the airplanes in the air force were of the old types. They were mainly in strategic aviation, night bomber aviation, nonoperating fronts, and training units. In 1943 the Soviet Air Force received the modernized La-5 fighters equipped with the more powerful ASh-82 FN engines; in relation to speed and rate of climb they were superior to all the German fighters, even the latest FW-190. In that same year, 1943, series production of new YaK-9 fighters with a range of 1,500 km was started. Il-2 ground attack airplanes began to be produced by aviation industry with two cockpits--one for the pilot and one for the gunner, which improved this craft's capability for defending itself against attacks by enemy fighters. All Il-2 airplanes were armed with 23-mm and 37-mm guns. New, more powerful M-105 PF engines and additional fuel tanks were installed on the Pe-2 frontal bomber, and the 7.62-mm machineguns were replaced by 12.7-mm high caliber machineguns. In 1944 air units and formations of our operating army were armed with new YaK-3 and La-7 fighters and an improved YaK-9, Il-10 ground attack airplanes, and the modernized Yer-2 long-range bomber. All of the new airplanes were outfitted with on-board RSI-4 and RSI-6 radio stations in fighter and ground attack aviation, with RSB-3 bis radio stations in bomber aviation, and with RSR-2 bis radio stations in reconnaissance aviation.

Bombs underwent improvement. New PTAB-2.5-1.5 hollow-charge antitank bombs were put into production in spring 1943 and used for the first time in the battle of Kursk. High explosive bombs weighing 1,000, 2,000, and 5,000 kg were designed, put into series production, and used successfully to destroy fortified objectives.

Redut and Pegmatit radar devices were produced for the air force in increasing quantities. From year to year the quality of RAF, RAT, and RSB ground radio stations improved and their production increased.

By January 1944 the Soviet Air Force had accumulated a reserve of fighters capable of replenishing losses and fully supplying new air units and formations and those taken out of the reserves. In this connection a possibility arose for rearming fighter aviation of the Far Eastern and Transbaykal fronts, the air units of which continued to possess obsolete airplanes.<sup>5</sup> The availability of new equipment in the air force in the Far East increased dramatically in 1944-1945.

During the war the horizontal flight speed of Soviet airplanes increased by 35-40 percent, the maneuvering qualities of fighters improved significantly, machinegun and gun armament was made more powerful, and the bomb

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load, flying altitude, and range of bombers increased. Owing to introduction of heavy caliber machineguns and aircraft guns, the weight of a 1-second salvo from a Soviet fighter increased by 2.1 times, while that from a ground attack airplane increased by 3.1 times. Quantitative and qualitative growth of aviation equipment and the combat experience acquired permitted the Soviet Command to fundamentally alter the organizational structure of frontal aviation and strategic aviation. In May-November 1942, 13 frontal air armies were created on the Soviet-German front to replace the air services of the fronts and combined arms armies. In 1942 another four air armies were formed in the Far East. Creation of air armies--major operational air formations--was a new direction in development of the Soviet Air Force. The frontal command now had the possibility for massing the efforts of all aviation on the main axes of operations of the ground troops, and the Hq SHC and the command of the Soviet Army Air Force could use the forces of several air armies in adjacent fronts to support major operational missions on a single strategic axis, and to place them under the control of a single senior air chief.

Swift development of aircraft construction solved the problem of creating major air reserves--air corps and separate air divisions of the SHC reserves. By the end of 1943 there were 18 air corps operating at the fronts, and the Hq SHC reserve contained two air corps. In all during the war 30 homogeneous air corps and 27 separate air divisions were formed in the SHC reserves.<sup>6</sup> SHC reserve air corps and divisions were a powerful resource in the hands of the Headquarters with which to reinforce frontal air armies. The number of warplanes available changed dramatically whenever air corps were called in for reinforcement. During major operations the airplanes contributed by SHC reserve air corps and divisions made up from 50 to 55 percent of all frontal aviation. In March 1942 long-range bomber aviation was reorganized as strategic aviation and subordinated to the Hq SHC. In May-July 1943 the corps level of strategic aviation was reinstated. Eight air corps of two divisions each were created out of separate air divisions. In December 1944 strategic aviation was reorganized as the single 18th Air Army directly subordinated to the commander of the Soviet Army Air Force. The evolved organizational structure of frontal aviation and strategic aviation justified itself completely during the war, demonstrated its viability, and afforded the possibilities for increasing the maneuverability of formations and units, massing forces on the most important axes, and maintaining efficient interaction with the troops and stable centralized control over aviation in all of the most important operations.

Management of the air force improved during the war. At the strategic level the air force was directed by the Hq SHC through the General Staff and the command of the Soviet Army Air Force. The actions of air armies and strategic aviation in the strategic operations of groups of fronts were coordinated by Hq SHC air liaison officers. They insured the necessary centralization of control, concentration of aviation's efforts on

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the most important missions, prompt maneuver of air formations, and their high effectiveness in the course of operations. The command, the Military Council, and the staff of the Soviet Army Air Force did an extremely great amount of work in the Great Patriotic War to manage the combat activities of the air force, to improve the organizational structure of operational major air formations, formations, and units, to maintain interaction with ground troops and the navy, to train air reserves, to insure prompt supply of aviation equipment, to manage construction of airfields, to train and retrain flight crews and technicians, and to generalize the combat experience of all air arms and services and introduce it into practice.

During the Great Patriotic War the Soviet Air Force flew about 4 million sorties. The supreme high commander gave a high assessment to the actions of the air force in Order No 51 dated 19 August 1945: "Our aviation honorably completed its duty to the motherland in the Great Patriotic War of the Soviet people against fascist Germany. The glorious falcons of our fatherland destroyed the lauded Luftwaffe in savage air engagements, thus permitting the Red Army freedom of action and sparing the people of our country from enemy bombing. Together with all of the Red Army they inflicted annihilatory blows on the enemy, destroying his manpower and equipment. The competent actions of our valorous air force constantly promoted the success of ground troops and helped us to achieve final destruction of the enemy."<sup>7</sup>

What instructive lessons that have not lost their significance today does the experience of the Soviet Air Force in operations of the Great Patriotic War give?

Chief Marshal of Aviation P. S. Kutakhov, the air force commander in chief, said the following in this regard at a scientific conference dedicated to the 25th anniversary of the victory over fascist Germany: "It is with natural pride that we survey the path we have taken and the great achievements of the Soviet Air Force. The rich experience of strategic use of the air force in the Great Patriotic War has not lost its value today, especially the experience of achieving air superiority to support strategic operations in the theaters of war and in the war as a whole. Extensive maneuvering of air groupings and the massing of aviation efforts on the most important axes of the ground troops, as well as in independent missions continues to be the most important principle of the operational and strategic use of all air arms and services."<sup>8</sup>

First, the Great Patriotic War subjected our theoretical viewpoints on strategic use of the air force in different forms of operations of the ground troops and the navy and in independent air operations to a hard, merciless test. And Soviet military science and Soviet art of war passed this test with honor. True, not all premises were faultless at the beginning of the war, especially those pertaining to the organizational structure of the frontal aviation, to creation of large air reserves, and to

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organization of the control of combined air forces on the main axes of the ground troops. Nevertheless for the most part the predictions and fundamental premises of the Soviet art of war regarding the use of the air force were confirmed in the war. Evidence of this can be found in the remarkable victories of the Soviet Air Force in the air over fascist German aviation in the battles of Moscow and Stalingrad, at the Kuban', and at the Kursk salient, and in the strategic air superiority the air force achieved along the entire Soviet-German front in summer 1943.

And no matter how bourgeois falsifiers of history try to belittle the role of the Soviet Air Force in the defeat of German aviation, they will never be able to deny the fact that out of all airplanes lost by the Luftwaffe and Germany's satellites in the entire war, three-fourths were destroyed on the Soviet-German front, and 57,000 of them were knocked out of the air and burned on the ground by Soviet pilots.<sup>9</sup>

Attainment of strategic air superiority by the Soviet Air Force created favorable conditions for major strategic offensive operations by groups of fronts simultaneously on several axes, and it meant that the air force could now mass its forces more decisively and engage in continuous offensive actions. On the other hand enemy aviation went over to defensive actions, no longer able to have a serious influence on the operations of German ground troops until the end of the war. The Luftwaffe's loss of strategic air superiority and its switch to defensive actions also had a direct influence, changing the ratio of its air arms, increasing the airplane losses, and reducing the number of sorties flown in 1944-1945. While at the beginning of the war bombers made up 57.8 percent of the Luftwaffe and fighters made up 31.2 percent, at the end of 1944 the proportion of German bombers decreased by a factor of 4 while that of fighters more than doubled, reaching 68 percent.<sup>10</sup> The losses suffered by enemy aviation increased, while those of Soviet aviation decreased. On the average for every airplane we lost, 32 sorties were flown in 1941, 72 were flown in 1943, and 165 sorties were flown in 1945. For every airplane lost, the enemy flew 25.5 sorties in 1942, 22.5 in 1943, and only 11 sorties in 1945. From year to year the Soviet Air Force increased its monthly average of sorties, while that of the Luftwaffe decreased. While in 1942 Hitler's aviation flew about 41,000 sorties on the Soviet-German front on a monthly average, in 1943 it flew 39,300, and in 1945 it flew a little more than 15,500--that is, 2.6 times fewer sorties.<sup>11</sup> The war also fully confirmed the fundamental premise of prewar Soviet art of war that there were two forms of struggle for air superiority--the daily fight against fascist German aviation in frontal defensive and offensive operations of the ground troops, and air force air operations intended to destroy enemy air groupings. In this case the air force conducted air operations in support of the entire armed conflict (at the Kuban' in April 1943 and in the central sector of the Soviet-German front between 6 and 8 May and from 8 to 10 June 1943), and the air services of one to three adjacent fronts flew in support of just one front (strategic axis) as was the case, for example, in June 1941 in

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actions against airfields in Finland and northern Norway, in October and November 1941 on the Moscow axis, and in October 1942 on the Stalingrad axis. On the whole the air operations of the air force were an effective way to achieve strategic air superiority. On the average three to five sorties were flown in an operation for every enemy airplane destroyed. In this case the greatest success was enjoyed in the first massed surprise strikes simultaneously against many airfields on a broad front. Subsequent strikes were less effective: Enemy losses decreased, while the losses of our air force grew. During the war a close relationship and mutual dependence was revealed between strategic and operational air superiority. Phase-by-phase attainment of operational air superiority on the most important axes of the ground troops led to victory on a strategic scale along the entire Soviet-German front. In turn, presence of strategic air superiority made it easier to achieve and maintain operational air superiority. At the same time strategic air superiority was no guarantee that the enemy would not achieve operational air superiority for a short interval of time, as was the case for example in the Belorussian and L'vov-Sandomierz operations. Thus after strategic air superiority is attained, the air force faces the mission of maintaining this superiority and, on individual axes, fighting a savage battle for operational air superiority. Thus the fight for air superiority in the Great Patriotic War of 1941-1945 was one of the most important missions of the Soviet Air Force, and its attainment was the most important factor promoting success of the entire armed conflict. It was an objective necessity from the moment that military activities began to the last days of the war.

Second, many premises of our prewar manuals, regulations, and theoretical viewpoints on joint actions of the Soviet Air Force and the ground troops found their practical reflection in the Great Patriotic War, and concurrently new improved forms and methods of action arose in different air arms and services. The Soviet Air Force flew 46.5 percent of its combat sorties in support of ground troops in offensive and defensive operations.<sup>12</sup> Aviation cleared the way for infantry and tanks and assisted them in quickly penetrating defenses, swiftly pursuing the enemy, encircling and annihilating his groupings, crossing rivers, and seizing and holding important beachheads. During the war Soviet Air Force strategy was enriched by a new form of combat application of frontal aviation in cooperation with ground troops; this came to be called the "air offensive." It was born in 1942 in connection with the need for providing a continuous air escort to advancing troops. In the first air offensive aviation limited itself to supporting penetration of the main defense zone by the frontal troops. Beginning with summer 1943--that is after the Soviet Air Force attained strategic air superiority, the air offensive began to be waged throughout the entire depth of the frontal offensive operation, and in terms of its scale and the size of the forces called in it acquired an operational nature. In terms of the missions, the air offensive broke down into air preparation for the attack and air support (escort) of frontal troops.

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The air offensive enjoyed further development in the third period of the war, and it was reflected in the Instructions on Penetration of Static Defenses and the Instructions on Penetrating Fortified Areas published in 1944. In this case the extent to which the efforts of aviation were massed in relation to its most important missions increased. While in the offensive operations of the second period of the war 70-75 percent of all of the forces of the air armies were concentrated on the axes of the main strikes, in the third period of the war the figure climbed to 90-95 percent--that is, 1,500-2,500 Soviet airplanes on each axis (L'vov-Sandomierz, Vistula-Oder, and Berlin operations).<sup>13</sup>

This success was promoted in many ways by the brilliant decision of the Soviet Command to create a large air reserve taking the form of air corps and separate air divisions. Maneuvering them, the Hq SHC and the air force command created a superiority of forces, which altered the situation in the air to our favor within a short time. Some 1,200 of our airplanes participated in the counteroffensive at Moscow, 1,400 fought at Stalingrad, 5,300 participated in the counteroffensive at Kursk, more than 6,000 participated in the Belorussian operation, and 7,500 warplanes fought in the Berlin operation.

During the war methods were found for using frontal aviation in support of commitment of mechanized cavalry groups and tank armies to an engagement (a breakthrough), and of their actions at strategic depth. Commitment of mechanized cavalry groups and tank armies to the engagement was supported by the main forces of frontal aviation (the air army), while one or two ground attack air divisions and sometimes a ground attack air corps were given the mission of providing direct support to these formations during their actions in depth. In a number of cases commitment of a tank army to an engagement was preceded by short but powerful air preparation having the goal of suppressing and annihilating pockets of resistance, strongpoints, and antitank defenses (the Orel, Belorussian, and L'vov-Sandomierz operations). Ground attack aviation began escorting the tank army from the moment it was committed to the engagement, and it stayed with it until the army completed its mission. When the tank army reached operational depth, the air army concentrated its efforts against approaching enemy reserves and, when the enemy was withdrawing, against retreating troops.

The tank army was covered from the air during the time of its commitment to the engagement in accordance with the overall plan for covering the frontal troops; when the tank army was operating apart from the combined arms armies, specially assigned fighter air divisions provided air cover. On the average up to two fighter air divisions were used to cover a tank army. Cover was provided by groups of fighters patrolling above the area of actions of the tank army and at the immediate approaches to this area.

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Special attention should be turned to the actions of aviation in encirclement operations of the ground troops. In the counteroffensive at Stalin-grad and in the Korsun'-Shevchenkovskiy, Yassi-Kishinev, Belorussian, Berlin, and other operations the Soviet Air Force acquired experience in organizing and conducting multizonal ring air blockades, in flexibly maneuvering the forces of major air formations and formations to repel enemy counterattacks on the outer and inner fronts of encirclement, and in massed use of aviation to destroy surrounded groupings. Isolation of large encircled enemy groupings from the air was a new form of operational application of the air force. The war experience persuasively demonstrated that the encirclement operation cannot be thought of as completed if the enemy is able to supply his troops by air with everything necessary and thus promote maintenance of a sound ring defense and support penetration of the ring of encirclement. The air blockade, meanwhile, deprived the enemy of this possibility and created favorable conditions for our ground troops, who could swiftly destroy the surrounded grouping.

Successful performance of an air blockade depended on the following basic conditions: Presence of operational air superiority in the given sector of the front; assignment of the necessary quantity of forces from different air arms and services and from air defense resources to fight transport aviation; organization of efficient, continuous interaction between the major formations, formations, and units of different air arms and services on one hand and different branches of the armed forces on the other (ground troops, air force, National Air Defense Forces); creation of a single aircraft warning service; centralization of command and control of all forces involved in the air blockade.

The air force also successfully completed its mission of air reconnaissance, using special air reconnaissance regiments and all air arms. By revealing enemy troop groupings, ships, and aviation, his system of defenses, the movement of reserves, and the locations of headquarters and control posts, air reconnaissance provided invaluable assistance to the Soviet Command in determining the enemy's intent and achieving more-purposeful use of troops and aviation to defeat him. Frontal aviation flew more than 11 percent of its total sorties in the performance of this mission. During the war an area equal to 6.5 million square kilometers was photographed; this was 1 million square kilometers more than the area of the European USSR.<sup>14</sup>

Third, relying on acquired experience, Soviet art of war flexibly and purposefully solved the problem of using strategic aviation in the war. In the first period of the war long-range bomber (strategic aviation) formations and naval aviation made only isolated strikes against the centers of Romania's petroleum industry and against military objectives in Berlin, Konigsberg, Danzig, Tilsit, and other German cities. But after strategic aviation was improved quantitatively and qualitatively, independent air operations began to be conducted (for example against

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military objectives in Budapest in September 1944, or against the enemy's strategic shipping in 1943 and 1944). These operations were conducted under the guidance of the Hq SHC and they were characterized by relatively large scope. Strategic bombers made massed and concentrated strikes at night, while the air operation itself lasted several days (3 or 4). Strategic aviation directed its main efforts, meanwhile, at destroying groupings of fascist German troops in the offensive and defensive operations of the ground troops; this satisfied the requirements of the situation and the nature of the armed conflict. During the war strategic air formations flew 40.4 percent of their sorties with the goal of annihilating troops and combat equipment on the battlefield, 9.6 percent against airfields, and 30.6 percent against railroad facilities and reserves in the frontal rear.<sup>15</sup> Strategic aviation was also used successfully to support partisans in the enemy rear. During the war frontal strategic aviation and units of the Civil Air Fleet flew more than 109,000 sorties in the enemy rear. Strategic aviation and units of the Civil Air Fleet carried 17,000 tons of ammunition, armament, food, and medicines. They furnished round trips to more than 83,000 persons fighting in partisan detachments.<sup>16</sup>

Fourth, the problems of interaction had a special place in the offensive and defensive operations of one front and a group of fronts. In terms of its scale and nature, it can be broken down into strategic, operational, and tactical. Strategic interaction meant coordination of the efforts of the air force and the ground troops in the interests of achieving success in the strategic operations of groups of fronts and campaigns. Strategic offensive operations conducted by groups of fronts were the principal and decisive form of actions of our armed forces on strategic axes. Strategic interaction was organized during the war by the Headquarters of the Supreme High Command. The latter defined and posed the missions to the fronts and the air force on different axes in such a way as to achieve maximum strategic results.

Operational interaction of major air force formations with major ground troop formations and the navy entailed coordination of their efforts in place, time, and missions with the goal of achieving the highest results in jointly conducted operations. Interaction of aviation with troops of the combined arms (tank) armies was organized by the frontal troop commander. He set the general missions for aviation, determined the forces required, spelled out the order for supporting and covering troops in different phases of the operation, set missions for combined arms (tank) armies to capture (hold, restore, and repair) enemy airfields and indicated the basic directions and objectives of air reconnaissance to the air army. Tactical interaction of aviation with units and formations of the fronts (army) was expressed as coordination of actions in place, goals, and time. It was attained through meticulous planning, deployment of the control posts of air commanders and the control posts of combined arms commanders close together, organization of the work of aircraft guidance radio stations located near the front line, and prompt

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and legible demarcation of the front line. Solution of the problems of tactical interaction of aviation with units and formations of the ground troops was the great achievement of Soviet art of war.

Fifth, the problem of controlling aviation was solved successfully in the Great Patriotic War of 1941-1945. Air armies--major operational formations including within their composition several dozen air formations and separate units--were created in the fronts and were found to be viable. They permitted the commander to control all aviation at his disposal centrally, and they fully satisfied the requirements of close interaction with operational major formations and formations of the ground troops.

The air army had a branched control system consisting of command, forward, and auxiliary control posts, operational groups, and air liaison officers in the major formations and formations of the ground troops.

In strategic operations conducted by groups of fronts, interaction between frontal air armies and strategic air formations was successfully achieved by the Soviet Army Air Force commander or his deputies, who traveled to the operating army as Hq SHC liaison officers together with small operational air force staff groups. This method for managing the air force's operational major formations and formations during military activities justified itself completely. It had to be developed and improved with a consideration for the significance of the time factor in control in regard to posing missions, monitoring their execution, and collecting information, all of which required extensive automation and mechanization of the main elements of control. "The most typical features of the strategic use of the air force in the concluding period of the war," said Chief Marshal of Aviation P. S. Kutakhov, "were rigid centralization of control of major air formations, close interaction with advancing troops, naval forces, and air defense troops, and concentration of aviation's efforts on the most important axes."<sup>17</sup>

The combat experience gained by the Soviet Air Force in the Great Patriotic War has not been fully studied yet. It must be studied further, and it must be accounted for in modern conditions, especially in regard to organizing and conducting the battle for strategic air superiority, massing the efforts of aviation on the main axes of the ground troops, organizing interaction of the air force with the ground troops and the navy, and controlling several major operational formations of the air force with the senior air chief in charge.

Marshal of the Soviet Union A. A. Grechko pointed out the following in his concluding remarks at a scientific conference dedicated to the 30th anniversary of the victory of the Soviet people and their armed forces in the Great Patriotic War of 1941-1945: "To the Soviet Armed Forces, the war was the greatest school of combat experience, experience that has become our priceless possession, and a national wealth. This experience was gained with the blood of Soviet soldiers and through the

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efforts of all the people, and we do not have the right to lose it or forget it. It remains significant even today in many ways; it is a dependable foundation for developing military theory and improving troop combat and political training. Creative assimilation of the experience of the Great Patriotic War with a consideration for the present material-technical base of the Soviet Armed Forces and their qualitative growth makes it possible to develop military affairs better and more quickly, to predict the nature of future wars, and to heighten the battle power of the army and navy."<sup>18</sup>

The hard years of the Great Patriotic War fully confirmed V. I. Lenin's brilliant conclusions concerning the decisive role of the Communist Party's leadership in achieving victory both in the rear and at the front. The Central Committee was the party's battle headquarters. At the fronts and in the rear, and on territory temporarily occupied by the enemy the Communist Party played the role of a single fighting, mobilizing, and guiding force. Through personal example and with words of inspiration, communists strengthened the morale of all Soviet people and led them to acts of heroism in battle and in labor. In the postwar era, the Communist Party of the Soviet Union is persistently following Lenin's course.

"All of these years," said CPSU Central Committee General Secretary L. I. Brezhnev at the 25th CPSU Congress, "the party has devoted proper attention to strengthening our country's defense capabilities and improving the armed forces. We can now report to the congress that we have done a great deal in this area. The armed forces have more modern weapons and combat equipment, and the quality of combat training and the ideological maturity of the personnel have risen. In general, comrades, the Soviet people can be assured that the fruits of their creative labor are being protected reliably. Nor should anyone doubt that our party will not do everything to see that the glorious Armed Forces of the Soviet Union will continue to have all of the resources they need for their important mission--guarding the peaceful labor of the Soviet people and serving as the bulwark of universal peace."<sup>19</sup>

CPSU Central Committee Politburo member, USSR Minister of Defense Marshal of the Soviet Union D. F. Ustinov gave the following assessment to Soviet airmen and modern military aviation in Order No 172 dated 15 August 1976, dedicated to celebration of USSR Air Force Day: "...The USSR Air Force has traveled a great heroic path. In the several years of military trials, courageous airmen displayed unshakable steadfastness and high skill, bravery, and valor in battles for the liberty and independence of the socialist fatherland. Owing to constant concern of the Communist Party and the Soviet Government, aviation of the armed forces is presently outfitted with sophisticated combat equipment and weapons, and it is manned by well trained personnel educated in the spirit of selfless devotion to communism. As with all soldiers of the armed forces, military airmen are persistently working on the tasks posed to them by

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the 25th CPSU Congress, they unanimously approve and wholly and completely support the Communist Party's Leninist foreign and domestic policy, and they alertly and dependably protect the great achievements of socialism...."20

FOOTNOTES

1. Brezhnev, L. I., "Leninskim kursom. Rechi i stat'i" (Following Lenin's Course. Speeches and Articles), Vol 1, Moscow, 1970, p 129.
2. "Velikaya Otechestvennaya voyna Sovetskogo Soyuz 1941-1945 gg. Kratkaya istoriya" (The Great Patriotic War of the Soviet Union 1941-1945. A Short History), p 571.
3. "Velikaya Otechestvennaya voyna Sovetskogo Soyuz 1941-1945 gg. Kratkaya istoriya," p 579.
4. Ibid., p 579.
5. Arkhiv MO SSSR [USSR Ministry of Defense Archives], f. 35, op. 11250, d. 101, l. 1.
6. VOYENNO-ISTORICHESKIY ZHURNAL, No 10, 1976, p 32.
7. Stalin, I. V., "O Velikoy Otechestvennoy voyne Sovetskogo Soyuz" (The Great Patriotic War of the Soviet Union), Moscow, 1953, p 202.
8. "Vsemirno-istoricheskaya pobeda sovetskogo naroda 1941-1945 gg." (The World-Historic Victory of the Soviet People in 1941-1945), Moscow, 1971, p 49.
9. "Vsemirno-istoricheskaya pobeda sovetskogo naroda 1941-1945 gg.," Moscow, 1971, p 45.
10. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg." (The Soviet Air Force in the Great Patriotic War 1941-1945), Moscow, 1968, pp 26, 440.
11. Ibid., p 440.
12. VOYENNO-ISTORICHESKIY ZHURNAL, No 11, 1969, p 20.
13. VOYENNO-ISTORICHESKIY ZHURNAL, No 11, 1971, pp 17-18.
14. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 443.
15. VOYENNO-ISTORICHESKIY ZHURNAL, No 11, 1971, p 20.

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16. "Sovetskiye Voenno-Vozdushnyye Sily v Velikoy Otechestvennoy voyne 1941-1945 gg.," p 444.
17. "Velikaya pobeda sovetskogo naroda 1941-1945 gg." (The Great Victory of the Soviet People in 1941-1945), Moscow, 1976, 244 pp.
18. KRASNAYA ZVEZDA, 19 April 1975.
19. Brezhnev, L. I., "Otchet Tsentral'nogo Komiteta KPSS i ocherednyye zadachi partii v oblasti vnutrenney i vneshney politiki. Doklad XXV s'yezdu KPSS 24 fevralya 1976 g." (Report of the CPSU Central Committee and the Party's Current Tasks in Domestic and Foreign Policy. Report to the 25th CPSU Congress, 24 February 1976), Moscow, 1976, p 100.
20. KRASNAYA ZVEZDA, 15 August 1976.

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## APPENDIX

SOVIET ARMY AIR FORCE EXECUTIVES IN THE  
GREAT PATRIOTIC WAR, 1941-1945

<u>Post</u>	<u>Rank, last name, initials</u>	<u>Time at post</u>
AIR FORCE COMMAND		
Chief, Air Force Main Directorate, as of 29 June 1941 Air Force	Lieutenant General of Aviation Zhigarev, P. F.	22 June 1941- 11 April 1942
Commander, USSR Deputy People's Commissar of Defense	Colonel General of Aviation, as of 17 March 1943 Marshal of Aviation, as of 21 February 1944 Chief Marshal of Aviation Novikov, A. A.	11 April 1942- end of war
Deputy Chief, Air Force Main Directorate for Political Affairs, as of 29 June 1941 Member of the Air Force Military Council	Corps Commissar, as of October 1941 Army Commissar 2d Rank, Stepanov, P. S.	29 June 1941- 8 August 1942
	Lieutenant General of Aviation, as of 4 February 1944 Colonel General of Aviation, Shimanov, N. S.	17 March 1943-end of war
Air Force Chief of Staff	Major General of Aviation Volodin, P. S.	22 June 1941- 29 June 1941
Air Force Chief of Staff	Major General of Aviation Vorozheykin, G. A.	August 1941- April 1942

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Air Force Chief of Staff	Major General of Aviation Khudyakov, S. A.	April 1942-July 1942
	Colonel General of Aviation Falaleyev, F. Ya.	July 1942-May 1943
	Colonel General of Aviation, as of 19 August 1944 Marshal of Aviation Khudyakov, S. A.	May 1943-end of war
Strategic Aviation Commander	Major General of Aviation, as of 1942 Lieutenant General of Aviation, as of 1943 Colonel General of Aviation, then Marshal of Aviation, as of 19 August 1944 Chief Marshal of Aviation Golovanov, A. Ye.	5 March 1942-6 December 1944
Deputy Commander for Political Affairs	Divisional Commissar, as of 6 December 1942 Major General of Aviation, as of 18 September 1943 Lieutenant General of Aviation, as of 19 August 1944 Colonel General of Aviation Gur'yanov, G. G.	21 March 1942-6 December 1944
Chief of Staff	Lieutenant General of Aviation Shevelev, M. I.	5 March 1942-June 1944
	Lieutenant General of Aviation Perminov, N. V.	July 1944-6 December 1944
AIR ARMY COMMAND		
1st Air Army		
Commander	Lieutenant General of Aviation Kutsevalov, T. F.	5 May 1942-17 July 1942
	Major General of Aviation, as of 17 March 1943 Lieutenant General of Aviation Khudyakov, S. A.	17 July 1942-26 May 1943
	Lieutenant General of Aviation Gromov, M. M.	26 May 1943-2 July 1944

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Commander	Colonel General of Aviation Khryukin, T. T.	2 July 1944-end of war
Military Commissar, as of 9 October 1942 Deputy Commander for Political Affairs	Brigade Commissar, as of 20 December 1942 Colonel, as of 9 April 1943 Major General of Aviation Litvinenko, I. G.	5 May 1942- 23 March 1945
	Major General of Aviation Chernyshev, I. T.	23 March 1945- end of war
Chief of Staff	Colonel, as of March 1943 Major General of Aviation Pronin, A. S.	5 May 1942- 9 August 1944
	Major General of Aviation Belov, I. M.	12 February 1945- end of war
2d Air Army		
Commander	Major General of Aviation Krasovskiy, S. A.	5 May 1942- 4 July 1942
	Colonel, as of 17 October 1942 Major General of Aviation Smirnov, K. N.	4 July 1942- 26 March 1943
	Lieutenant General of Aviation, as of 4 February 1944 Colonel General of Aviation Krasovskiy, S. A.	26 March 1943- end of war
Deputy Commander for Political Affairs	Brigade Commissar, as of 20 December 1942 Major General of Aviation Romazanov, S. N.	5 May 1942-end of war
Chief of Staff	Colonel Stepanov, N. L.	7 May 1942- 9 August 1942
	Colonel Brayko, P. I.	9 August 1942- 9 October 1942
	Colonel Stepanov, N. L.	9 October 1942- 9 April 1943
	Major General of Aviation Kachev, F. I.	9 April 1943- 9 August 1943

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Chief of Staff	Major General of Aviation Tel'nov, K. I.	10 August 1943- 9 August 1944
	Major General of Aviation Pronin, A. S.	9 August 1944- end of war
3d Air Army		
Commander	Major General of Aviation Gromov, M. M.	5 May 1942- 26 May 1943
	Major General of Aviation, as of 28 September 1943 Lieutenant General of Aviation, as of 19 August 1944 Colonel General of Aviation Papivin, N. F.	26 May 1943-end of war
Deputy Commander for Political Affairs	Regimental Commissar, as of 20 December 1942 Colonel, as of 23 November 1943 Major General of Aviation Babak, N. P.	5 May 1942-end of war
Chief of Staff	Major General of Aviation, as of August 1944 Lieu- tenant General of Aviation Dagayev, N. P.	5 May 1942-end of war
4th Air Army		
Commander	Major General of Aviation Vershinin, K. A.	7 May 1942- 8 September 1942
	Major General of Aviation Naumenko, N. F.	8 September 1942- 1 May 1943
	Lieutenant General of Aviation, as of 24 October 1943 Colonel General of Aviation Vershinin, K. A.	1 May 1943-end of war
Deputy Commander for Political Affairs	Divisional Commissar, as of 20 December 1942 Major General of Aviation Alekseyev, V. I.	7 May 1942- 14 April 1943
	Major General of Aviation, as of 19 August 1944 Lieu- tenant General of Aviation Verov, F. F.	14 April 1943- end of war

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Chief of Staff	Major General of Aviation Ustinov, A. Z.	7 May 1942- 11 July 1944
	Major General of Aviation Alekseyev, A. N.	11 July 1944- end of war
5th Air Army		
Commander	Lieutenant General of Aviation, as of 25 March 1944 Colonel General of Aviation Goryunov, S. K.	3 June 1942- end of war
Deputy Commander for Political Affairs	Brigade Commissar, as of 5 December 1942 Colonel Grubich, A. P.	3 June 1942- 14 April 1943
	Major General of Aviation Alekseyev, V. I.	14 April 1943- 18 January 1944
	Colonel, as of 20 April 1944 Major General of Aviation Smirnov, V. I.	18 January 1944- end of war
Chief of Staff	Major General of Aviation Sinyakov, S. P.	3 June 1942- 1 July 1943
	Major General of Aviation, as of 13 September 1944 Lieutenant General of Aviation Seleznev, N. G.	1 July 1943- end of war
6th Air Army		
Commander	Major General of Aviation Kondratyuk, D. F.	5 June 1942- 8 January 1943
	Major General of Aviation, as of 28 May 1943 Lieu- tenant General of Aviation Polynin, F. P.	8 January 1943- 27 September 1944
Deputy Commander for Political Affairs	Brigade Commissar, as of 5 December 1942 Colonel Mashnin, I. V.	6 June 1942- 12 October 1942
	Brigade Commissar, as of 12 May 1942, Colonel, as of 29 May 1944 Major General of Aviation Vyvolokin, A. F.	19 October 1942- 7 September 1944

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Chief of Staff	Colonel, as of 30 April 1943 Major General of Aviation Storozhenko, V. V.	5 June 1942- 2 July 1944
	Major General of Aviation Kotel'nikov, P. L.	2 July 1944- 27 September 1944
7th Air Army		
Commander	Lieutenant General of Aviation, as of November 1944 Colonel General of Aviation Sokolov, I. M.	10 November 1942- 28 June 1945
Deputy Commander for Political Affairs	Brigade Commissar, as of 20 December 1942 Major General of Aviation Khorobrykh, F. N.	25 November 1942- 3 July 1943
	Colonel, as of 2 November 1944 Major General of Aviation Sergeev, I. I.	3 July 1943- 14 November 1944
Chief of Staff	Colonel Belov, I. M.	10 November 1942- 2 February 1943
	Colonel Sveshnikov, B. F.	2 February 1943- 22 June 1944
	Major General of Aviation Belov, I. M.	22 June 1944- 12 February 1945
	Major General of Aviation Stepanov, A. V.	12 February 1945- 28 June 1945
8th Air Army		
Commander	Major General of Aviation, as of March 1943 Lieu- tenant General of Aviation Khryukin, T. T.	15 May 1942- 2 July 1944
	Lieutenant General of Aviation Zhdanov, V. N.	2 August 1944- end of war
Deputy Commander for Political Affairs	Brigade Commissar, as of 20 December 1942 Major General of Aviation Vikhorev, A. I.	9 June 1942- 3 March 1944

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Deputy Commander for Political Affairs	Colonel, as of 16 May 1944 Major General of Aviation Rytov, A. G.	3 March 1944- end of war
Chief of Staff	Major General of Aviation Shkurin, Ya. S.	7 June 1942- 17 August 1942
	Colonel Seleznev, N. G.	18 August 1942- 3 February 1943
	Colonel Belov, I. M.	3 February 1943- 6 June 1944
	Major General of Aviation Izotov, V. I.	6 June 1944- end of war
9th Air Army		
Commander	Major General of Aviation Senatorov, A. S.	27 July 1942- 18 September 1944
	Major General of Aviation Vinogradov, V. A.	18 September 1944- 28 June 1945
	Colonel General of Avia- tion Sokolov, I. M.	28 June 1944- end of war
Deputy Commander for Political Affairs	Senior Battalion Commissar, as of 20 December 1942 Colonel Kolotil'shchikov, N. M.	27 July 1942- 26 April 1945
	Major General of Aviation Khorobrykh, F. N.	26 April 1945- 3 September 1945
Chief of Staff	Colonel, as of March 1943 Major General of Aviation Isayev, S. N.	27 July 1942- 28 June 1945
	Major General of Aviation Stepanov, A. V.	28 June 1945- end of war
10th Air Army		
Commander	Colonel, as of 17 October 1942 Major General of Aviation Vinogradov, V. A.	27 July 1942- 16 September 1944

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Commander	Colonel, as of 8 September 1945 Major General of Aviation Slobozhan, D. Ya.	16 September 1944- 19 May 1945
	Colonel General of Aviation Zhigarev, P. F.	19 May 1945- end of war
Deputy Commander for Political Affairs	Regimental Commissar, as of 20 December 1942 Colonel Mel'nik, M. V.	27 July 1942- 16 December 1944
	Colonel Fedorov, S. K.	16 December 1944- end of war
Chief of Staff	Major General of Aviation Petrov, N. A.	5 August 1942- 13 January 1943
	Colonel Pyneyev, N. K.	13 January 1943- 21 March 1945
	Colonel, as of 3 February 1943 Major General of Aviation Lavrik, S. A.	21 March 1945- end of war
11th Air Army		
Commander	Colonel, as of 17 October 1942 Major General of Aviation Bibikov, V. N.	27 July 1942- 22 January 1945
Deputy Commander for Political Affairs	Senior Battalion Commissar, as of 20 December 1942 Colonel Fedorov, S. K.	27 July 1942- 16 December 1944
Chief of Staff	Colonel Volgin, A. Ya.	25 July 1942- 31 July 1944
	Colonel Kozyrev, S. M.	31 July 1944- 22 January 1945
12th Air Army		
Commander	Lieutenant General of Aviation Kutsevalov, T. F.	27 July 1942- 25 June 1945
	Marshal of Aviation Khudyakov, S. A.	25 June 1945- end of war

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Deputy Commander for Political Affairs	Brigade Commissar, as of 20 December 1942 Colonel, as of 11 July 1945 Major General of Aviation Pal'yanov, S. A.	25 July 1942- end of war
Chief of Staff	Major General of Aviation Chmurak, I. I.	27 July 1942- 19 April 1943
	Major General of Aviation Terent'yev, I. I.	19 April 1943- 6 September 1943
	Major General of Aviation Kozlov, D. S.	6 September 1943- 25 June 1945
	Lieutenant General of Aviation Seleznev, N. G.	25 June 1945- end of war
13th Air Army		
Commander	Lieutenant General of Avia- tion, as of 11 November 1944 Colonel General of Aviation Rybal'chenko, S. D.	20 November 1942- end of war
Deputy Commander for Political Affairs	Brigade Commissar, as of 6 December 1942 Major General of Aviation Ivanov, A. A.	20 November 1942- 1 March 1943
	Colonel Sulimov, M. I.	16 March 1943- end of war
Chief of Staff	Colonel, as of 4 February 1944 Major General of Aviation Alekseyev, A. N.	13 November 1942- 10 July 1944
	Major General of Aviation Lavrik, S. A.	10 July 1944- 21 March 1945
14th Air Army		
Commander	Major General of Aviation, as of April 1943 Lieu- tenant General of Aviation Zhuravlev, I. P.	27 July 1942- end of war

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Deputy Commander for Political Affairs	Brigade Commissar, as of 5 December 1942 Colonel Gorskiy, I. M.	27 July 1942- 8 December 1942
	Colonel Shapovalov, M. I.	8 December 1942- 26 November 1944
Chief of Staff	Colonel Marunov, I. S.	27 July 1942- January 1943
	Colonel Abramov, N. P.	January 1943- end of war
15th Air Army		
Commander	Major General of Aviation Pyatykhin, I. G.	22 July 1942- May 1943
	Lieutenant General of Aviation Naumenko, N. F.	May 1943- end of war
Deputy Commander for Political Affairs	Regimental Commissar, as of 5 December 1942 Colonel, as of 19 January 1944 Major General of Aviation Sukhachev, M. N.	17 July 1942- end of war
	Chief of Staff	Colonel Semenov, I. S.
Major General of Aviation Sakovnin, A. A.		24 August 1942- end of war
16th Air Army		
Commander	Lieutenant General of Aviation Stepanov, P. S.	8 August 1942- 28 September 1942
	Lieutenant General of Aviation, as of May 1944 Colonel General of Aviation Rudenko, S. I.	28 September 1942- end of war
Deputy Commander for Political Affairs	Regimental Commissar, as of 5 December 1942 Colonel, as of 1 January 1943 Major General of Aviation Vinogradov, A. S.	17 September 1942- end of war



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Chief of Staff	Colonel, as of 7 August 1943 Major General of Aviation Belov, N. G.	5 August 1942- 30 October 1942
	Major General of Aviation Kosykh, M. M.	30 October 1942- 15 April 1943
	Major General of Aviation, as of August 1944 Lieutenant General of Aviation Brayko, P. I.	15 April 1943- end of war
17th Air Army		
Commander	Major General of Aviation, as of 20 December 1942 Lieutenant General of Aviation Krasovskiy, S. A.	15 November 1942- 26 March 1943
	Lieutenant General of Aviation, as of March 1944 Colonel General of Aviation Sudets, V. A.	26 March 1943- end of war
Deputy Commander for Political Affairs	Brigade Commissar, as of 5 December 1942 Colonel, as of 1 May 1943 Major General of Aviation Tolmachev, V. N.	25 November 1942- end of war
Chief of Staff	Colonel Tel'nov, K. I.	November 1942- February 1943
	Colonel, as of 17 March 1943 Major General of Aviation Seleznev, N. G.	February 1943- July 1943
	Major General of Aviation, as of 19 April 1945 Lieutenant General of Aviation Korsakov, N. M.	July 1943- end of war
18th Air Army		
Commander	Chief Marshal of Aviation Golovanov, A. Ye.	6 December 1944- end of war
Deputy Commander for Political Affairs	Colonel General of Aviation Gur'yanov, G. G.	6 December 1944- end of war

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Chief of Staff	Lieutenant General of Aviation Perminov, N. V.	6 December 1944-end of war
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SHC RESERVE AIR CORPS COMMANDERS

Fighter Air Corps

III Fighter Air Corps, Reorganized as of 18 February 1943 as I Guards Fighter Corps	Major General of Aviation, as of 17 March 1943 Lieutenant General of Aviation Beletskiy, Ye. M.	10 September 1942-end of war
II Fighter Air Corps	Major General of Aviation, as of 30 April 1943 Lieutenant General of Aviation Blagoveshchenskiy, A. S.	10 October 1942-10 February 1945
	Major General of Aviation Zabaluyev, V. M.	11 February 1945-end of war
III Fighter Air Corps	Major General of Aviation, as of 11 May 1944 Lieutenant General of Aviation Savitskiy, Ye. Ya.	10 December 1942-end of war
IV Fighter Air Corps, Reorganized 2 July 1944 as III Guards Fighter Corps	Major General of Aviation, as of 13 September 1944 Lieutenant General of Aviation Podgornyy, I. D.	6 December 1942-end of war
V Fighter Air Corps	Major General of Aviation Klimov, I. D.	15 February 1943-26 June 1943
	Major General of Aviation Galunov, D. P.	27 June 1943-27 August 1944
	Colonel, as of 20 April 1945 Major General of Aviation Machin, M. G.	28 August 1944-end of war
VI Fighter Air Corps	Major General of Aviation Yumashev, A. B.	19 February 1943-29 June 1943
	Major General of Aviation Yerlykin, Ye. Ye.	10 July 1943-28 May 1944
	Major General of Aviation Dzusov, I. M.	29 May 1944-end of war

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VII Fighter Air Corps, Reorganized 27 October 1944 as VI Guards Fighter Corps	Major General of Aviation Utin, A. V.	23 June 1943- end of war
VIII Fighter Air Corps	Major General of Aviation Zherebchenko, F. F.	24 June 1943- 13 June 1944
	Lieutenant General of Aviation Osipenko, A. S.	16 June 1944- end of war
X Fighter Air Corps	Colonel, as of 7 August 1943 Major General of Aviation Golovnya, M. M.	13 July 1943- end of war
XI Fighter Air Corps	Major General of Aviation Ivanov, G. A.	1 February 1944- end of war
XIII Fighter Air Corps	Major General of Aviation Sidnev, B. A.	29 December 1943- end of war
XIV Fighter Air Corps	Major General of Aviation Danilov, S. P.	28 September 1944- end of war
	Mixed Air Corps	
I Mixed Air Corps, Reorganized 28 September 1944 as IX Ground Attack Corps	Major General of Aviation Shevchenko, V. I.	23 October 1942- 12 May 1944
	Major General of Aviation Zlatotsvetov, A. Ye.	13 May 1944- 12 June 1944
	Major General of Aviation Rubanov, S. U.	13 June 1944- 4 July 1944
	Colonel Ivolgin, V. I.	5 July 1944- 22 July 1944
	Major General of Aviation Vinogradov, V. A.	23 July 1944- 11 August 1944
	Major General of Aviation Krupskiy, I. V.	12 August 1944- 28 September 1944
II Mixed Air Corps, Reorganized 13 July 1943 as X Fighter Corps	Major General of Aviation Yeremenko, I. T.	1 November 1942- 13 July 1943

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III Mixed Air Corps, Reorganized 24 August 1943 as I Guards Mixed, and 28 Sep- tember 1943 as II Guards Ground Attack Corps	Colonel, as of 10 November 1942 Major General of Aviation, as of 4 February 1944 Lieutenant General of Aviation Aladinskiy, V. I.	10 October 1942- 29 June 1944
	Lieutenant General of Avia- tion Zlatotsvetov, A. Ye.	30 June 1944- 26 August 1944
	Major General of Aviation Slyusarev, S. V.	27 August 1944- 12 October 1944
	Major General of Aviation Ivanov, A. A.	13 October 1944- 22 October 1944
	Major General of Aviation Slyusarev, S. V.	4 November 1944- end of war
IV Mixed Air Corps, Reorganized 22 June 1943 as VIII Fighter Corps	Major General of Aviation Zherebchenko, F. F.	19 February 1943- 22 June 1943
V Mixed Air Corps, Reorganized 23 June 1943 as VII Fighter Corps	Major General of Aviation Slyusarev, S. V.	8 March 1943- 23 June 1943
VI Mixed Air Corps, Reorganized 28 September 1944 as V Bomber Corps	Major General of Aviation Antoshkin, I. D.	5 March 1943- 2 May 1944
	Colonel, as of 19 August 1944 Major General of Aviation Borisenko, M. Kh.	3 May 1944- 28 September 1944
VII Mixed Air Corps, Reorganized 31 December 1943 as IV Bomber Corps	Colonel, as of 17 March 1943 Major General of Aviation Arkhangel'skiy, P. P.	15 February 1943- 31 December 1943
VIII Mixed Air Corps, Reorganized 21 July 1943 as V Ground Attack Corps	Major General of Aviation Kamanin, N. P.	15 February 1943- 21 July 1943
IX Mixed Air Corps, Reorganized 29 September 1944 as X Ground Attack Corps	Major General of Aviation, as of 2 August 1944 Lieu- tenant General of Aviation Tolstikov, O. V.	15 February 1943- 29 September 1944

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X Mixed Air Corps, Reorganized 21 July 1943 as VII Ground Attack Corps	Major General of Aviation Filin, V. N.	9 March 1943- 21 July 1943
XI Mixed Air Corps, Reorganized 28 September 1944 as XIV Fighter Corps	Major General of Aviation Danilov, S. P.	24 July 1942- 28 September 1944
XVIII Mixed Air Corps	Colonel Nyukhtilin, V. F.	18 December 1944- end of war
Ground Attack Air Corps		
I Ground Attack Air Corps, Reorganized 5 February 1944 as I Guards Ground Attack Corps	Major General of Aviation, as of 17 March 1943 Lieu- tenant General of Aviation Ryazanov, V. G.	10 September 1942- end of war
II Ground Attack Air Corps, Reorganized 27 October 1944 as III Guards Ground Attack Corps	Colonel, as of 17 March 1943 Major General of Aviation, as of 11 May 1944 Lieutenant General of Avia- tion Stepichev, V. V.	10 October 1942- end of war
III Ground Attack Air Corps	Colonel, as of 17 March 1943 Major General of Aviation Gorlachenko, M. I.	6 December 1942- end of war
IV Ground Attack Air Corps	Major General of Aviation, as of 19 August 1944 Lieu- tenant General of Aviation Baydukov, G. F.	1 January 1944- end of war
V Ground Attack Air Corps	Major General of Aviation, as of 20 April 1945 Lieu- tenant General of Aviation Kamanin, N. P.	21 July 1943- end of war
VI Ground Attack Air Corps	Major General of Aviation Tokarev, B. K.	30 December 1943- end of war
VII Ground Attack Air Corps	Major General of Aviation, as of 16 May 1944 Lieu- tenant General of Aviation Filin, V. M.	21 July 1943- end of war

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VIII Ground Attack Air Corps	Major General of Aviation, as of 11 May 1944 Lieutenant General of Aviation Naneysvili, V. V.	15 April 1944-6 January 1945
	Major General of Aviation Kotel'nikov, M. V.	7 January 1945-3 April 1945
	Major General of Aviation Rubanov, S. U.	4 April 1945-29 April 1945
	Lieutenant General of Aviation Naneysvili, V. V.	30 April 1945-end of war
IX Ground Attack Air Corps	Major General of Aviation Krupskiy, I. V.	28 September 1944-end of war
X Ground Attack Air Corps	Lieutenant General of Aviation Tolstikov, O. V.	29 September 1944-end of war
	Bomber Air Corps	
I Bomber Air Corps, Reorganized 5 February 1944 as II Guards and 26 December 1944 as VI Guards Bomber Corps	Lieutenant General of Aviation Sudets, V. A.	10 September 1942-13 March 1943
	Colonel, as of 20 October 1943 Major General of Aviation Polbin, I. S.	1 April 1943-11 February 1945
	Major General of Aviation Kachev, F. I.	12 February 1945-13 March 1945
	Colonel Nikishin, D. T.	14 March 1945-end of war
II Bomber Air Corps, Reorganized 3 September 1943 as I Guards Bomber and 26 December 1944 as V Guards Bomber Corps	Major General of Aviation Turkel', I. L.	10 October 1942-6 February 1943
	Major General of Aviation, as of 28 September 1943 Lieutenant General of Aviation Ushakov, V. A.	7 February 1943-16 April 1945
III Bomber Air Corps	Major General of Aviation Karavatskiy, A. Z.	9 November 1942-end of war
IV Bomber Air Corps	Major General of Aviation Arkhangel'skiy, P. P.	13 December 1943-end of war

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V Bomber Air Corps	Major General of Aviation Borisenko, M. Kh.	28 September 1944- end of war
VI Bomber Air Corps	Major General of Aviation, as of 13 March 1944 Lieu- tenant General of Aviation Tupikov, G. N.	1 May 1943- 15 March 1945
	Colonel, as of 20 April 1945 Major General of Aviation Skok, I. P.	15 March 1945- end of war
VII Bomber Air Corps	Lieutenant General of Aviation Ushakov, V. A.	16 April 1945- end of war

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