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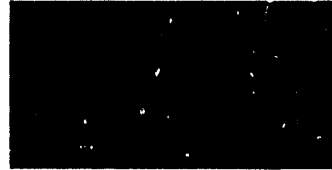
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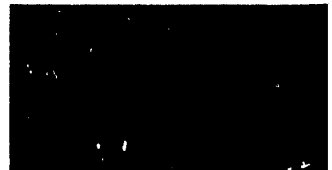
JPRS L/8539

25 June 1979

TRANSLATIONS ON USSR MILITARY AFFAIRS  
(FOUO 16/79)  
TOILERS OF THE SKIES



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ANNOTATION

This book by Colonel General of Aviation G. N. Pakilev, distinguished military pilot of the USSR, candidate of military sciences, gives an account of the separate stages in the history of the Military Transport Aviation and of the courage, heroism and skill of the military fliers who performed military transport missions during the Great Patriotic War. It discusses certain facets of the organization and development of the Air Force Military Transport Aviation and discusses the people--toilers of the skies--and the military transports and those who created them.

The book was written for those who are interested in Soviet aviation, its history and its ordinary work today.

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INTRODUCTION

We are now in the third year of the 10th Five-Year Plan. Under the leadership of the Communist Party the Soviet people are implementing the great program of continued national economic development outlined at the 25th CPSU Congress. The program of continuing struggle for peace and international cooperation, for the freedom and independence of nations, which was adopted at the Party congress and which constitutes an organic continuation and another stage of the Program for Peace, is being steadily realized. The Soviet Union's peace-oriented foreign policy is finding increasingly broad recognition and is serving as a powerful factor restraining the imperialist aggressors from engaging in military adventures.

The danger of war has not been eliminated, however. Despite detente, imperialism still constitutes a threat to peace, because the class nature of the capitalist society has not changed. The world has still not been secured against the imperialist military adventurers and militarization embraces all aspects of life in the capitalist world. Active military preparations are under way in the United States of America and other NATO nations, and the U.S. military-industrial complex is preparing to begin creating a new type of weapon of mass destruction. Militaristic groups in the U.S.A. and the most reactionary forces of other imperialist nations, with actual support from the Beijing leaders, are attempting to topple the structure of detente. All of these developments pose a serious threat to mankind.

Under these circumstances the Soviet people are steadfastly pursuing the Program of the Communist Party of the Soviet Union, in which it is stated: "...Since the danger of war from the imperialist camp remains, and since total and universal disarmament has not yet been achieved, the CPSU considers it essential to maintain the Soviet State's defense capability and the battle readiness of its Armed Forces on a level permitting it to deal a decisive and total defeat to any enemy bold enough to encroach upon the Soviet homeland." <sup>1</sup>

Thanks to the concern demonstrated by the Communist Party and the Soviet Government, by all the people, our nation's Armed Forces are constantly in step with scientific and technological progress.

The Soviet people were highly pleased with a statement made by Comrade L. I. Brezhnev, General Secretary of the CPSU Central Committee and Chairman of the Presidium of the USSR Supreme Soviet, during the celebration of the 60th anniversary of the Great October Socialist Revolution: "Never before has our nation possessed such enormous economic and scientific and technological power. Never before has its defense capability been so strong and reliable."<sup>2</sup> The task of strengthening the Soviet Nation's defense capability is legislatively fixed in our nation's highest state act, the Constitution of the USSR, which states: "The state protects the nation's security and its defense capability and provides the Armed Forces of the USSR with everything necessary."



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The Party and Government's concern for the Soviet Armed Forces is clearly reflected in the increased strength and improvement of our homeland's Air Force.

"Thanks to the constant concern of the Communist Party and the Soviet Government," remarked Marshal of the Soviet Union D. F. Ustinov, member of the Politburo of the CPSU Central Committee and USSR minister of defense, "the Air Force of the Armed Forces of the USSR is presently outfitted with modern combat equipment and weapons and has highly trained regular personnel infinitely devoted to communism and everything necessary to reliably defend the achievements of the Great October Socialist Revolution." <sup>3</sup>

And this is perfectly natural. The Air Force is assigned an important role at the contemporary stage of development of operational military art. World War II and the wars in Vietnam and the Near East, as well as post-war exercises have demonstrated that without supremacy in the air it is practically impossible to expect success in the operations of ground, airborne, naval and air forces.

The role of the Air Force in strategic and front operations was clearly defined during the Great Patriotic War. It revealed the need for three types of air forces--long-range, front and air transport.

The Soviet Military Transport Aviation (VTA), as a branch of the Air Force, has undergone considerable changes in recent decades, changes brought about by the revolution in military affairs which has determined the trend in the development of the Armed Forces.

Our Transport Aviation today has extensive capabilities. Its fleet of aircraft evokes a feeling of patriotic pride in everyone who deals with it in the air or on the ground, pride in the Soviet people who created this powerful combat equipment.

One of the basic and most difficult missions performed by the Military Transport Aviation is that of landing airborne forces. The Military Transport Aviation is equipped with modern heavy and medium aircraft for successfully performing this mission. They permit us to land airborne troops from low altitudes in difficult weather, by day or at night, and to airlift any equipment of any branch of the Armed Forces.

The complexity of landing troops and equipment by air also results from the fact that such operations involve various services of the Armed Forces and branches of troops. As a rule, airborne landing operations take place over a large area and involve extensive airfield maneuvers and a large number of aircraft.

The timely and precise performance of airborne landing operations requires thorough and extensive training on the part of military transport aviation units (chast), good skill and constant combat readiness on the part of all personnel.

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The Military Transport Aviation has been faced with new tasks in recent years, tasks resulting from the fact that the airborne troops have been outfitted with new models of operational equipment and that parachute and supply-dropping equipment and views on the combat operations of airborne troops have changed. This has made it necessary to reconsider established forms of interaction between the Military Transport Aviation and the Airborne Troops (VDV) and to seek new ones.

The Air Force's Military Transport Aviation also performs difficult air transport missions, sometimes as a service to the national economy. Military Transport Aviation pilots also help mop up the serious aftermath of natural disasters.

Military Transport Aviation pilots successfully cope with complex and diversified missions requiring great skill and hard work. Long-range and very long-range flights are performed rapidly and precisely by aircraft flying singly or in groups. In the expanses of the "fifth ocean" the ships of the air fly in various latitudes, over unfamiliar routes, at maximum ranges and over terrain with few landmarks, making landings at unfamiliar and undeveloped airfields. Each such flight is a serious test of the moral and political qualities and the fighting efficiency of the crews operating the ships of the air.

Numerous books have been written about Soviet aviation of the past and present, books which contain extensive coverage of the creation of the Soviet State's Air Force and its development during the war years and in time of peace. Very little, however, has been written about the Military Transport Aviation, a relatively young branch. One of the reasons for this is probably the fact that there is still no precise and well-developed account of the creation of the Military Transport Aviation as a separate branch of the Air Force. Problems pertaining to the development of the Military Transport Aviation have for a large number of reasons been resolved by various military and civilian departments. Due in part to this the history of the Military Transport Aviation has frequently been interwoven with the history of other branches of the Air Force and with that of the Civil Aviation.

During the years of the Great Patriotic War, air transport of troops and cargo was performed by special air groups formed out of the Civil Air Fleet and by units and separate crews of the front and long-range air forces. In most cases special air groups were formed to carry out airborne landing operations, which were charged with landing troops and combat equipment and transport operations, but the Air Force did not officially have a transport aviation as a separate branch. It did not come into being until after the war.

The nature of the tasks involved in transporting and landing troops and military cargo, however, the order issued by the People's Commissar of Defense on 9 July 1941, which read: "...Personnel of the Civil Air Fleet (GVF) listed as members of special air groups of the Civil Air Fleet are considered to be inducted into the Red Army..." and the 26 April 1942

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decree passed by the State Defense Committee (GKO) on subordination of the Main Directorate of the Civil Air Fleet to the commander of the Red Army Air Force<sup>4</sup> provide us with the basis for regarding the operations of air units involved in transporting troops and cargo as separate stages in the organizational development of the Soviet Military Transport Aviation. As the author presents examples from the history of the Great Patriotic War, he therefore does not discuss in each separate case the subordination of the subunits and the units performing air transport missions but describes their operations as separate elements in the development of the combat employment of the aviation for landing troops and cargo, as well as air transport operations, that is, the history of the Air Force's Military Transport Aviation.

Despite certain difficulties the history of the organizational development of the Military Transport Aviation has become more and more clearly defined. The process has been furthered by the work of military historians and by an analysis of documents describing steps taken by the Party and Government to develop the Military Transport Aviation and by the study of data on the Military Transport Aviation's employment for landing troops and equipment and for transporting military cargo.

Military Transport Aviation veterans, participants in and witnesses to its development and growth, as well as those who now serve in the air units, in which the history of past years, especially the combat experience of the Great Patriotic War, is being collected bit by bit, have played an invaluable role in the reconstruction of its history.

Personnel of the Soviet Military Transport Aviation hold sacred the traditions of their branch of troops, all of those achievements, large and small, which in the final analysis comprise its history, and study with a great feeling of gratitude the experience of the older generations, the generations whose lot it was to pioneer the new branch of aviation and blaze new trails--unexplored and difficult but absolutely essential, as reality has demonstrated.

The author of this book has not undertaken the task of describing the entire history of the Military Transport Aviation. The main focus has been on providing an account of the tasks facing the air units performing transport operations in various periods, of the more important phases in the development of the military air transport and of those fighting traditions of courage, heroism and military skill which form the foundation of good combat readiness on the part of military airmen today.

In addition to archival materials, the author makes extensive use of his own personal experiences while serving in the Military Transport Aviation, as well as the memoirs of veteran airmen covering the period of the Great Patriotic War and various stages in the organizational development of the Air Force's Military Transport Aviation.

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The author will be grateful for comments and opinions on the book from those who read it. This will be of invaluable assistance for his continued work on the history and development of the Military Transport Aviation.

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CHAPTER I

THE FIRST DETACHMENTS

The employment of aircraft for military purposes by various nations during World War I demonstrated that in addition to reconnaissance, striking at forces and facilities on enemy territory and combating enemy aircraft, planes could also be used for transporting and landing troops. This was prevented by the imperfect development of aircraft equipment at that time, however, by the limited numbers of heavy aircraft available to the belligerents, and by a lack of experienced pilots. At that time aircraft were only used on a practical level for dropping scouts and saboteurs into the enemy's rear area. But even this could only be done by experienced pilots, since landings in the enemy's rear had to be made at unequipped landing sites. Because of this such flights were only undertaken occasionally and did not become widespread.

Fairly effective use began to be made of aircraft for purposes of sabotage and reconnaissance during the civil war years. On the Eastern Front, for example, special missions were successfully performed in the enemy rear by Red pilots of the air group commanded by I. U. Pavlov, a former pilot in the Czarist army who went over to the side of the Bolsheviks. Pilots in that air group delivered scouts and ammunition into the enemy rear, demonstrating exceptional boldness and courage. I. P. Satunin, flying a Farman aircraft, which served the purpose fairly well, especially distinguished himself with his bravery and skill.

One example of the employment of aircraft for dropping a landing group in the enemy rear is described in the book by D. N. Kratov, "Slavoyu bogataya" [Rich With Glory]. The author describes the outrages perpetrated by the Basmaks near Garm in Central Asia in the 1920's. In the process of eliminating that band of counterrevolutionaries a landing group consisting of only four machine gunners headed by a commander and a cavalry brigade commissar was dropped into its rear. The landing group was flown in by the valorous pilot Levchenko. The appearance of our fighters was so unexpected that the large band took to flight and was totally destroyed.

After the civil war ended our nation turned to peaceful development. It was necessary to heal the wounds inflicted by the war and to overcome the devastation, hunger and illiteracy. The Red Army and the Red Air Fleet had to be outfitted with the latest combat equipment.

Led by the Communist Party, the Soviet people set about the performance of these great tasks.

"Our effort to create an army was only successful because it was made in a spirit of overall Soviet development...." <sup>5</sup> This statement was made by V. I. Lenin back in January 1920, when the principles underlying the

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development of the Soviet Armed Forces were being formulated and the course to be taken in their build-up was being defined, a course inseparably linked with the build-up of the young Soviet Republic's defense capability.

At the end of the 1920's and during the first half of the 1930's reactionary imperialist groups stepped up their aggressive actions, there was a rapid build-up of the bourgeois armies and they were outfitted with improved technical equipment. In this situation the Soviet Union was forced to carry out an all-around strengthening of its own defense capability. As the Party and Government continued their active struggle for peace and collective security, they also demonstrated constant concern for the Armed Forces, a reliable means of restraining the aggressors. A great deal of attention was given to the continued development of military theory, which was based on Leninist doctrine on the nature of a future war.

The principles were defined for the organizational development of the Soviet Armed Forces, for their technical equipment and combat training, and a scientific basis founded on Marxist-Leninist teachings and the experience of past wars was produced for resolving issues pertaining to the operation and battle--all in conformity with the development of Soviet technical military and theoretical views.

The scientific publications and the practical work of M. V. Frunze were highly important to the development of Soviet military theory. Using as guidelines the principles put forth by V. I. Lenin, he provided the basis for resolving the most important problems involved in the organizational development of the Armed Forces and in strengthening the nation's defense capability. Among other things Frunze urged us to achieve a high level of maneuverability of forces, regarding this as one way to compensate for our technical military backwardness.

Development of the theory of the offensive operation in depth, advanced for its time, was an important achievement in military theory of the 1920's and 1930's. Viewing a war of the future as an engagement between well-equipped armies, Soviet military theoreticians gave us a basically new development of the offensive operation and of the forms and methods of warfare, which made it possible rapidly to destroy an enemy's operational groupings for the achievement of strategic success.

Prominent military theoreticians M. N. Tukhachevskiy, V. K. Triandafillov, G. S. Isserson, A. N. Lapchinskiy and others contributed a great deal to the development of principles of the theory of the operation in depth.

Vladimir Kiriakovich Triandafillov's book "Kharakter operatsiy sovremennykh armiy" [The Nature of Operations Conducted by Modern Armies] contained recommendations for studying the material aspect of operations set by M. V. Frunze and for meeting the demands made of their organization in this respect. It would be difficult to overestimate the importance of this work in the development of Soviet strategy and operational art. It was the first to

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correlate various aspects of the combat operations, the maneuvering of troops and rear service operations and to provide a precisely defined concept of the logistical structure of an operation within the framework of the army's possibilities at that time. V. K. Triandafillov revealed how closely the course of operations depended on the state of the rear services, elaborated on the question of the possible scope of operations and was the first to formulate the concept of an operation in depth based on the depth of the area which it covered and the depth to which the troops advanced during the operation, laying special stress on the importance of maneuvering. He wrote that "...the best conditions for maneuvering freely and for the broad application of tactical and operational art can be achieved... by increasing the mobility of modern millions-strong armies by improving their means of transport...." 6

In his notes made with a view to revising the book V. K. Triandafillov assigned priority to combined airborne and ground transport groups for the execution of strategic missions, while designating airborne infantry, parachute and even tank landing forces for the accomplishment of tactical missions, taking into account changes occurring in the manner of attack and the likelihood that points of congestion would develop along the enemy's withdrawal routes. In the outline for a future book Triandafillov expressed concepts laying the foundation for a new stage in the development of the strategic and tactical art of the Armed Forces of the USSR.

Soviet military science, which had dialectically absorbed previous experience in conducting combat operations and the achievements of technical military thought, thoroughly developed the theory of the offensive operation in depth. In its execution the ground forces were provided with the possibility of employing aircraft for a totally new type of combat maneuver--a maneuver by air into the enemy's rear area. Operations by the Air Force became especially important at this point.

The works of Soviet military leaders not only raised questions pertaining to offensive operations, in the resolution of which aircraft were assigned an important role, but also thoroughly substantiated them. The Air Force was faced with the need to master a totally new type of combat operations in the enemy's rear area, that of dropping by parachute or landing airborne forces.

Marshal of the Soviet Union M. N. Tukhachevskiy, commander of the Leningrad Military District at that time, had a special role in the resolution of issues pertaining to the employment of air transport for military purposes. He believed that great changes would inevitably have to be made in the relative strengths of the different branches of troops and recommended that their level of technical equipment be raised and their maneuverability increased.

Fulfillment of the pre-war five-year plans, which made it possible to create a solid material foundation for restructuring the army, had a great deal to

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do with the successful implementation of the theoretical principles advanced by Soviet military science. The level of technical equipment of the Armed Forces also improved as a result of the economic reforms and the growth of industrial production.

A 15 July 1929 decree of the Politburo of the All-Union Communist Party (bolshhevik), "On the State of the USSR's Defense," proposed "stepping up the present rate of improvement of the Red Army's equipment..."<sup>7</sup> In the area of aviation it defined as a priority task that of "bringing it up to the level of the air forces of advanced bourgeois nations as rapidly as possible..."<sup>8</sup>

Because of the increased importance of aircraft in modern warfare the Communist Party and the Soviet Government devoted a great deal of attention to the aircraft industry.

The implementation of Lenin's program for industrializing the nation made it possible within an extremely short time to create a large material base, which served as the foundation for developing the young aircraft industry. The rapid development of this branch of industry, which had practically been created anew, helped us to reach the point in the 1930's at which our Air Force was equipped with various types of aircraft designed for conducting reconnaissance, covering ground forces, combating enemy aircraft and delivering strikes against troops and facilities on enemy territory.

While our aircraft industry produced an average of 860 aircraft per year in 1930 and 1931, production was up to 2600 in 1932 and in 1933. The number of aircraft in the Air Force increased 2.7-fold and the number of heavy bombers almost 7-fold during the 1st Five-Year Plan.

A 23 March 1932 decree of the Revolutionary Military Council of the USSR, "On the Principles for Organizing the Air Force of the Workers and Peasants Red Army," contained new strategic and operational-tactical principles pertaining to the organizational development and the combat employment of the Air Force in case of an armed conflict.

The transition to a brigade structure for the fighter, ground-attack and bomber air forces had already begun at the end of the 1920's for improving the organizational structure of the Air Force. In the 1930's the brigades of heavy bombers were combined into corps capable of performing operational missions independently.

Such were the theoretical, material and organizational preconditions for the formation of air subunits designated for transporting troops and cargo.

Practical work performed by the staff of the Leningrad Military District helped to establish and substantiate the basic principles underlying the theory of the operation in depth. One of the military games conducted in



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1928, for example, dealt with the subject of "operations of an airborne landing group in an offensive operation." During the training it was necessary to resolve such specific practical issues as how to land an airborne force in a large offensive operation and how to deliver the personnel along with the necessary combat equipment and ammunition.

While the landing of troops by air was no longer a new thing at that time, the transporting of heavy weapons and ammunition by air proved to be a problem which was only resolved by the leaders of the nation's Air Force after a great deal of determined work.

First of all, it was necessary to determine what sort of aircraft with what manner of technical adaptations would be capable of landing troops, combat equipment and other cargo by parachute or by unloading them on the ground.

The first experimental landings were performed with the old twin-engine Farman-Goliath, which landed personnel, and the P-1 light bomber which dropped weapons and ammunition in special supply-dropping containers.

The first training classes were begun at the end of July 1930 near Voronezh. The single Farman had to make two sorties to drop 12 soldiers, since it had a load capacity of around 700 kilograms and could only carry six or seven men on one flight. Three P-1's were modified for hauling weapons and ammunition.

The main objective of the experimental landing operation consisted in working out techniques for dropping weapons and men by parachute. And despite the relatively small landing area (800 x 600 meters), the landing was a fairly accurate one. The first group of six paratroopers was dropped from an altitude of 500 meters over a period of 5 seconds. A flight of P-1 planes dropped six cargo parachutes with the weapons and ammunition from an altitude of 150 meters. The second group of paratroopers left the aircraft at an altitude of 300 meters and landed precisely at the designated spot.

The world's first parachute landing operation had been a success and the experimental plan had been totally fulfilled.

An airborne landing was made from ANT-9 aircraft in maneuvers performed by the Moscow Military District in September 1930. The landing operation in those maneuvers had a tactical mission: 11 armed paratroopers were dropped into the "enemy's" rear area.

The first landing operations graphically demonstrated the fact that such air-drops of troops and weapons were highly realistic and promising. A determined effort was initiated to study the capabilities of aircraft and parachuting equipment and to develop airborne landing techniques. In March 1931 the RKKA [Workers and Peasants Red Army] command made the decision to create an experimental airborne landing detachment of 164 men in the Leningrad Military District. A heavy bomber squadron consisting of 12 TB-1 aircraft and a corps air detachment consisting of nine P-5 aircraft were assigned to the detachment.

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The experimental airborne landing detachment, the formation of which was assigned to D. N. Nikishev, was designated for perfecting airborne operations involving aircraft landings. At M. N. Tukhachevskiy's insistence, it also included a parachute detachment which was trained by L. G. Minov, an inspector-pilot for the RKKA Air Force. After its formation Ye. D. Lukin assumed command of the experimental airborne detachment.

It was on 1 June 1931 that the detachment was formed in which the first air transport subunits of the Air Force were created, and personnel of the Military Transport Aviation considered that to be the birthdate of the Soviet Military Transport Aviation

This was the beginning of the development of a new type of Soviet aviation, which in time became an independent branch of the Air Force, performing complicated and important missions.

The military transport detachments encountered many difficulties at first, however, and were forced to resolve a large number of design, technical and production problems.

A design section was set up under the Directorate of the Air Force of the RKKA at the end of 1930. It was headed by military pilot P. I. Grokhovskiy. Numerous technical devices for landing troops and transporting combat equipment were developed under his leadership. The design section, which was soon turned into a special design bureau, developed a suspension system for hauling motor vehicles, light guns and other military cargo beneath the fuselage of the TB-1.

The work performed by that creative team was considered highly important by the Air Force leadership. Chairman of the Revolutionary Military Council of the USSR, K. Ye. Voroshilov, and Air Force Chief Ya. I. Alksnis constantly inquired about the work of Grokhovskiy's special design bureau and provided him with whatever assistance he needed.

Among Grokhovskiy's most interesting and effective inventions, in addition to the widely used suspension system are the aviobus and the aviobus platform designed for dropping men and cargo from low-level flight, a compartment (the "Grokhovskiy cage") suspended beneath the aircraft between the landing gear, tiltable cradles suspended beneath the wings, heavy-duty gliders for towing with bombers and numerous other devices simplifying the transfer of troops and combat equipment by air.

In addition to the development of different types of landing equipment, a large and intensive effort was also under way to develop various types of parachute systems for landing troops, combat equipment and cargo by parachute. A great service was performed in this area by such prominent designers of parachute equipment as P. I. Grokhovskiy, M. A. Savitskiy, N. A. Lobanov, V. K. Andrianov and many other enthusiasts, who spent a great deal of energy and worked with considerable persistence to develop training and landing parachutes and to place them into series production.

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One of the most difficult problems facing the Air Force at that time was that of creating a transport modification of the bomber to be used for landing personnel and cargo. And although, as mentioned above, the Farman-Goliat had been modified for dropping the first landing groups and the lighter P-1 and P-5 aircraft were used for transferring cargo, the Air Force already possessed the TB-1 bomber, one of the best.

The TB-1 design (the passenger model became known as the ANT-4) was utilized with the greatest efficiency during the period of practical mastery of the various landing methods. A design bureau headed by A. N. Tupolev improved the aircraft, from which the TB-3 heavy bomber was then developed. The latter significantly expanded the possibilities for landing troops and combat equipment: its payload was increased to 5 tons, its speed to 230 kilometers per hour and its flight range to more than 2500 kilometers. This airship, an all-metal monoplane, had four engines and fairly powerful rifle and cannon armament. The landing modification of the TB-3 was made lighter by removing some of the armament, mainly the turret units, that space being utilized for carrying the landing forces. The aircraft's bomb racks were modified for hauling various types of equipment, and because of this it could transport a light tank, a truck-mounted 45mm cannon, an armored car or two 76mm guns.

And so the Air Force possessed aircraft and parachute equipment at the beginning of the 1930's, which permitted it to master a totally new operation, that of landing troops and equipment by air, missions being performed by the first air transport units (chast) for this purpose.

By the mid-1930's the technical equipment of the Armed Forces of the USSR had been brought up to the level of our nation's economic development and met its defense requirements. By the end of 1935 the army had considerable forces for that time (the Air Force, for example, had five air corps directorates and 19 air brigades) capable of protecting the state interests of the Soviet Union.

The results of the work carried out by the first special-purpose air detachment, which was a part of an experimental airborne landing detachment, were already in evidence in the fall of 1931. A parachute landing group consisting of 29 soldiers was dropped from three ANT-9 aircraft in maneuvers carried out by the Kiev Military District. Somewhat later, in courses conducted for higher command personnel of the Leningrad Military District, the world's first combined parachute and air-landing operation was performed.

It was planned to use the G-63 and G-64 gliders developed by Gorkhovskiy's design bureau together with military transport planes, for the air-landing of troops. These gliders could deliver from 17 to 50 men and a 1/2 ton of cargo to the landing site.

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The successful performance by the first air transport units and subunits of airborne troops in the exercises of 1931 demonstrated the feasibility of creating special airborne and air transport detachments. Soon thereafter airborne detachments were formed simultaneously in several military districts. Combined airborne and motorized detachments were created in the Moscow, Ukrainian and Belorussian military districts in January 1932, and the 3rd Combined Airborne and Motorized Detachment was created in the Leningrad Military District out of the experimental airborne and parachute-landing detachments. It included a parachute battalion, an air-landed group consisting of an armored and a motorized company and an artillery battery, and a special squadron of TB-1 aircraft attached to the detachment. M. V. Boytsov was named commander of the detachment.

The recommendations contained in the Statute on Operational-Tactical Use of the Combined Airborne and Motorized Landing Detachment were worked out on a practical level in the 3rd Combined Airborne and Motorized Landing Detachment. This statute defined for the first time the concept "airborne landing force" and the specifications for a parachute- and air-landed operation. Paratroopers located in the aircraft fuselage or in special compartments beneath the plane were to be dropped by the aircraft commander from an altitude of 600 to 800 meters, while the navigator dropped cargo in special parachutes from the same altitude.

The concept of a "low-level landing operation" was also defined, whereby special trolleys for paratroopers, weapons and other cargo were suspended beneath the fuselage and dropped by the aircraft commander from a low-altitude in a low-level flight.

In an air-land operation the fightingmen were housed inside the aircraft, while cargo was carried in bomb racks beneath the fuselage and wings.

There was also provision for a combined airborne landing operation, whereby paratroopers--the support detachment, which captured an area for the landing of the airborne landing group from a low-level flight--were dropped first, after which the air-landing of the main forces was accomplished.

The entire landing process and the operations of the airborne group on land were to be covered by fighters and ground-attack aircraft.

The 3rd Combined Airborne and Motorized Detachment accomplished a great deal by way of working out the missions which might be assigned such a formation. K. Ye. Voroshilov, people's commissar for military and naval affairs and chairman of the Revolutionary Military Council of the USSR, praised the combat skill of the fightingmen in the Combined Airborne and Motorized Landing Detachment. An order issued by the Revolutionary Military Council on 17 November 1932 stated: "This totally new area of work entailed great difficulties for the first detachment. Those difficulties were overcome with bolshevik determination and persistence on the part of all detachment personnel and as a result of the constant attention received from Comrade I. P. Belov, commander of the Leningrad Military District." 9

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In January 1933, by a directive of the people's commissar for military and naval affairs, the 3rd Combined Airborne and Motorized Landing Detachment was expanded into a special-purpose air brigade (the 3rd ABON), which included two heavy squadrons carried on TB-3 aircraft and one light squadron transported by P-5's. The squadrons were commanded by veteran military pilots Lebedev and Shimanskiy. M. V. Boytsov was given command of the 3rd Special-Purpose Air Brigade.

Air brigades patterned after the 3rd Special-Purpose Air Brigade were formed in 1934-1936 in the Kiev and Belorussian military districts.

Creation of the special-purpose air brigades permitted the Red Army command to test on a practical level the basic principles underlying the theory of the offensive operation in depth developed by Soviet military science. One of the main requirements of this theory called for simultaneous action by artillery and aviation and tank, rifle and airborne formations and units to the entire depth of the enemy's defense. The operations of large airborne landing forces dropped into the enemy's rear area by air transport units had an important place in such an operation.

The actual dropping of the first such landing force was performed in 1934 in exercises conducted by the Belorussian Military District. During the maneuvers an airborne landing group consisting of 900 armed fighters was dropped from TB-3 heavy bombers modified for landing troops.

Between 12 and 17 September 1935 the Soviet command conducted large maneuvers with forces of the Kiev Military District for purposes of furthering and improving the combat and operational-tactical training of the personnel. The rifle and cavalry formations of a mechanized corps and an airborne landing force interacted in these maneuvers. The exercise was directed by Commander of the Kiev Military District I. E. Yakir. They were attended by K. Ye. Voroshilov, USSR people's commissar of defense; his deputies S. M. Budennyy, Ya. B. Gamarnik and M. N. Tukhachevskiy; chief of the general staff A. I. Yegorov; leaders of the Communist Party and the Government of the Soviet Ukraine, and military delegations from foreign nations invited to attend. The dropping of the airborne landing force made a great impression on those present. Nothing like it had ever occurred in military practice. A total of 2,953 men armed with carbines and manning 29 medium machine-guns, 10 guns, a tank and six motor vehicles. <sup>10</sup>

Almost simultaneously with the Kiev maneuvers field exercises were conducted in the Leningrad Military District, under the command of B. M. Shaposhnikov, and in the Belorussian Military District. Those exercises also included airborne landing operations. In the Belorussian Military District they dropped 1800 paratroopers and air-landed a force consisting of 5700 men, and artillery guns and other combat equipment was also transferred by air, making it possible successfully to develop the offensive operation. <sup>11</sup>

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Even larger air-landed and parachute-dropped landing operations were employed in troop exercises and maneuvers in the ensuing years. An entire rifle division was transferred by air in maneuvers carried out by the Moscow Military District, for example.

Summing up the results of the combat training for 1936, the people's commissar of defense noted: "the first and most difficult stage in the development of airborne landing operations--large-scale mastery of the techniques--can be considered accomplished to our complete satisfaction." 12

The first airborne landing operations had thus established a new area for the employment of aviation--the landing of troops and materiel by air.

The maneuvers of 1934-1936 involving large-scale landing operations were thoroughly studied not only by our specialists but by representatives of foreign nations as well, the latter having had the opportunity to see for themselves the fact that we had completely mastered the transferring of troops and combat equipment by air.

Well-known German scientist in the field of aviation George Feuchter acknowledged: "The Soviet Union was the first nation to properly assess the importance and to concentrate on the training of parachute-and air-landed units." 13

In 1940, NEW YORK TIMES military reviewer Herbert Rossinski wrote in his article: "Germany's Air Power": "...The combining of paratroop forces for capturing airfields with air-landed assault forces utilizing the airfields is a page out of the history of the Red Army, which was the first to demonstrate such operations on a large scale in the maneuvers of 1935." 14

The 1936 Temporary Field Regulations of the Red Army defined the air transport of troops and military cargo as one of the most important missions of the nation's Air Force. Military theoreticians dealing with the development of air transport believed that the use of aircraft for military hauls would go from theory to practice within the very near future. They stressed the fact that air transport would become especially essential when hauling distances were too great or the amount of time available too limited, when there were no suitable roads, and in other situations of this kind. In his theoretical work "Vozdushnaya armiya" [The Air Army], brigade commander A. N. Lapchinsky discussed, among other subjects, the maneuvering of air and ground forces and their material support by means of air transport. Attaching crucial importance to air transport for supporting airfield maneuvers by combat aircraft, the author wrote: "Air squadrons must make flights accompanied by their air transports so that they can begin their combat operations immediately following a move." 15

Events occurring shortly thereafter confirmed the correctness of these theoretical views.

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Special-purpose air units for hauling troops and cargo underwent their first test in combat in the military events occurring near Lake Khasan and on the Khalkhin-Gol River. The fact that veteran fighter pilots, including Heroes of the Soviet Union Ya. V. Smushkevich, S. I. Gritsevets, I. A. Lakeyev and M. N. Yakushin, who had already made a name for themselves in the skies over Spain, and many others, were delivered by air on schedule from Moscow to the airfields used in the combat operations, was not the least factor contributing to the success of operations conducted in the Far East. Thanks to the operations carried out by the crews of air transport units, Air Force fighting units were able to prepare themselves extremely rapidly to deliver strikes against the enemy's fighter aviation and ground army.

During the entire period of combat operations in 1938 and 1939 transport planes re-deployed fighter units and transferred the required equipment, weapons and ammunition, even the fuel and lubricants required by the fighters. The wounded were hauled from the area of combat operations to hospitals of the Far East.

A separate special-purpose air squadron, created in 1932 out of a separate special-purpose detachment formed in 1929, distinguished itself during those years. This squadron, commanded by chief pilot for the people's commissariat of defense S. A. Shestakov, performed missions involving the dropping of forces in the rear of the Japanese forces to capture airfields and rout the enemy.

The performance of the crews of military transport planes during the fighting near Lake Khasan and on the Khalkhin-Gol River, were praised by command. The separate air squadron received new aircraft adapted for hauling troops and cargo, and the authorized number of crews was increased.

Aircraft were also extensively enlisted for the performance of military transport missions during the Soviet-Finnish Armed Conflict of 1939-40 due to the fact that this campaign was carried out in the late fall and winter and the fact that military operations took place in snow-covered forests, among lakes and in almost inaccessible areas, where roads were almost nonexistent.

The Air Force's air transport units on the Finnish front were formed out of the Civil Air Fleet and contained around 150 aircraft of various types. They were mainly specially equipped ambulance-aircraft.

The air transport groups were designated for delivering food, mail, ammunition and other military cargo, as well as personnel, where they were urgently needed. Evacuating the wounded was one of the main missions of the special air transport groups, however. Suffice it to say that 15 percent of the total number of wounded were hauled out by aircraft of the air transport group, with 40 percent of the seriously wounded

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delivered to hospitals during the first few hours after they were wounded. Transport aircraft crews hauled more than 220 tons of medical equipment and medicines, including 3,000 liters of banked blood, from the interior to the front for field medical-aid posts.

Flight conditions were extraordinarily difficult. Freezing weather and blizzards, flights over the Gulf of Finland and lakes, and the necessity of landing at the very front demanded great flying skill and courage on the part of the crews. It was in this campaign that the great honorary title Hero of the Soviet Union was conferred upon A. N. Yakovlev, the commander of a flight of transport aircraft.

It should be pointed out that at that time pilots had to be truly resourceful in addition to possessing professional skill in order to take even one extra wounded individual on board a light aircraft.

What didn't the pilots do in the performance of their missions! They used special slings for stretchers, detachable compartments and other devices and got out of the most difficult situations any way they could. Once, while A. N. Yakovlev was hauling wounded to the rear area in the special compartments, he witnessed an explosion on the ground. There was no room on his plane, but he landed anyway, and not only did he help the victims but even placed two of them on the bottom section of the wing and delivered them safely to a hospital.

Assessing the work performed by air transport groups of the Northwest Front, the chief of the medical directorate noted that this was the first massive evacuation of wounded by air in the history of military operations.

Air transport of soldiers and weapons assumed considerable scope during the Soviet-Finnish Armed Conflict. Around 1500 tons of combat supplies was also delivered to areas difficult of access for troops operating in the enemy's rear area. At that time our aviation was, of course, not able to meet all of the needs for urgent air deliveries, although both bombers and fighters were used for this purpose. Parachute buckets and tanks were suspended from I-15's for transporting combat equipment and fuel. The first massive drop of cargo in soft containers was performed in the winter of 1940. The practical advantages of this method of providing the troops with ammunition, food, livestock feed and clothing are apparent, and during the war against fascism, especially extensive use was made of this system for delivering supplies to encircled partisans and troops.

The winter of 1939-40 with its extreme cold and heavy snows taught our airmen a great deal. The crews of the Soviet aviation's first air transport subunits passed the severe test with honor, sparing no effort and no amount of work to perform the assigned missions.

Lieutenant Colonel Ivan Grigor'yevich Moskalev, who served in the above-mentioned air squadron during those years, described in some detail the servicing of the military transport planes in the wintertime.



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The Separate Special-Purpose Air Squadron took an active part in the delivery of ammunition, medicines and warm clothing to the fighter units and transported the wounded. The extreme cold complicated the work of the airmen greatly at first, but an effective means of solving the problem was then found. The engines were covered with warm cotton hoods, and a means was found for warming them up--the so-called "spider"--which made it possible to warm up the engines and prepare them for start-up within a matter of 30 to 40 minutes.

The aircraft were placed on skis in order to make it easier for the heavily loaded planes to take off from the undeveloped airfields, but on the skis they could not be moved from the spot immediately. A sort of hill made of fir branches lubricated with used oil was built in the parking area, off which the loaded aircraft slid fairly easily and taxied to the take-off line without stopping.

The hauling of men and cargo by air during the years preceding the war vividly confirmed the need to develop this type of air transport and facilitated the acquisition of experience in employing transport aircraft in combat.

In the summer of 1940 the Red Army carried out a campaign to liberate Bessarabia, in which air subunits flying TB-3's took part.

Theoretical concepts developed by that time on the employment of airborne landing forces were also confirmed by the dropping of airborne landing brigades to capture Bolgrad and Izmail. The possibilities of landing troops and cargo by air were tested again on a practical level in that operation, the combat orders of aircraft involved in air-lifting personnel and weapons were worked out, and questions pertaining to combat support for air transport by reconnaissance and fighter aircraft were resolved.

One of the oldest units in the Military Transport Aviation had an important assignment. A separate special-purpose air transport regiment was formed out of a separate special-purpose air squadron back in 1939. It was commanded by N. A. Murzin. The regiment was to perform transport operations in support of the recently begun restructuring of the bourgeois economy in the Baltic republics during the period of their reunification with the USSR. The fully loaded aircraft made daily flights to Lithuania, Latvia and Estonia, carrying industrial equipment, agricultural implements, raw materials for industrial enterprises, and food--everything essential for the young Soviet republics to get their economies functioning smoothly.

Even while they were still being built up the Air Force's air transport units provided the national economy with speedy and efficient assistance when it was needed. This tradition became a glorious page in the history of the Soviet Military Transport Aviation's development, vividly demonstrating the unity of the army and the people.

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On the eve of the Great Patriotic War, due to exacerbation of the international situation, the Soviet Party and the Soviet Government took steps to increase the output of aircraft. For a number of reasons, however, stress was laid on the construction of combat aircraft, and we were practically unable to enlarge the fleet of transport planes. It was felt that bombers could be enlisted for transporting personnel and cargo by air. This view resulted to some degree in decreased attention being paid to the development of military transports. This was one of the reasons for the gap which formed between the rapid development of the airborne troops and the Air Force's capabilities for transporting and landing them.

The main reason, however, was the fact that the Soviet Air Force had already acquired a certain amount of experience in transporting troops and combat equipment by air, as well as various materiel needed to support the combat operations of the ground forces. This experience, like the theoretical tenets developed by Soviet military science, were also applied and further refined during the Great Patriotic War.

The successes achieved in transporting troops by air by the beginning of the 1940's were reflected in the draft Field Regulations of the Red Army (PU-40), which, on the eve of the war, designated the transport aviation as a separate branch and defined its basic missions: the transport aviation "is used for dropping and landing airborne landing forces, for transporting troops great distances, for hauling military cargo, especially for troops operating in the enemy's rear area, and for evacuation operations." 16

This is how the role and place of the transport aviation within the nation's Air Force were defined on the eve of the war.

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CHAPTER II

A TEST OF COURAGE

The Great Patriotic War began. The years of warfare against fascist Germany provided a rigorous test of the Soviet State's viability and of the combat capability of its army. Smashing Hitler's forces in the Great Patriotic War, the Soviet Armed Forces defended the conquests of the Great October Socialist Revolution, the Soviet social and state structure and the freedom and independence of our homeland.

Air transport units, together with the other branches of troops and aviation, actively contributed to the devastation of the fascist hordes.

A special military transport aviation had still not been created when the war began. Air transport units, which were a part of airborne brigades in the 1930's, were subsequently placed under the Air Force, becoming a part of the Long-Range Bomber Aviation. Air subunits were formed to replace them in the airborne forces, which became a special branch of troops immediately prior to the war. Their manning and equipment, however, advanced extremely slowly and involved great difficulties. Air subunits of airborne troops were mainly used for the combat training of paratroopers and were employed practically not at all in the execution of combat missions.

The need for prompt materiel support for the different branches of troops in the form of air deliveries of cargo and reserves also increased to an extraordinary degree during the Great Patriotic War, which increased the magnitude of tasks performed by air transport units.

One of the main missions of air transport units during that period was that of supporting landing operations by airborne strategic and tactical groups, that is, landing groups employed in support of operations carried out by major field forces of ground troops and airborne landing groups employed with close support by ground troops. The latter were designated for capturing tactically advantageous objectives and positions which will enhance the chances for success in an offensive by the forces of a front.

For a number of reasons landing forces continued to be used only on a limited basis during the Great Patriotic War. Nonetheless, considerable use was made of airborne landing forces for their primary purpose.

Air transport units performed an important role in supplying ground forces with supplies and equipment: ammunition, fuel, combat equipment, food, clothing, and so forth--practically everything which could be delivered by air to meet the needs of the front.

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The timely delivery of supplies was especially important where there were no roads, when roads became impassable in the spring and fall and when it was necessary to help encircled groups of our forces.

Air transport formations also served as a means of liaison with the partisans, those unique "landing" groups which operated in the enemy's rear and had to have ammunition, combat equipment and food delivered and the sick and wounded evacuated.

Deliveries of combat equipment and other cargo by air comprised the bulk of the missions performed by air transport units during the initial period of the war.

Various personnel and equipment were enlisted for the performance of transport missions during the Great Patriotic War, as I have already pointed out. In the beginning the functions of the military transport aviation were performed in part by the High Command's heavy bomber aviation, which was reformed as the Long-Range Aviation (ABD) in 1942. Two formations of heavy aircraft for hauling troops and cargo by air were formed as part of the Long-Range aviation that same year.

The 1st Air Transport Division was created in March 1942 out of 300 crews trained at the training centers of the Civil Air Fleet. They began performing combat missions in July 1942. Very soon thereafter, the 1st Air Transport Division was transformed into a bomber division as a result of the successful employment of Li-2 aircraft as night bombers, and became a part of the long-range aviation. This was still the Air Force's first transport formation, however, and, in the final analysis, no matter what the long-range air regiments and divisions outfitted with Li-2 aircraft were called, their existence increased the transport capabilities of our aviation.

I have already mentioned the fact that many air units and formations were involved in transport operations. The Civil Air Fleet continued to be practically the main reserve of air units for performing transport operations during the war years, however.

Special air groups were formed during the first days of the war, which were subsequently reorganized as separate regiments. Bomber-transport and ambulance squadrons, signal squadrons and special air transport subunits were formed out of these.

The task facing air subunits performing transport missions was an enormous one, strenuous and intense. It was dangerous and far from easy work: in the course of a night--troops and cargo were mainly transported at night--it was necessary to make not one but two or three, and sometimes more, flights to or beyond the forward edge of the battle area. In addition to making a precise drop or an accurate landing in an unfamiliar area, the crews also had to be prepared to overcome the enemy's air defense and to repel attacks

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by fascist fighters--the cover provided the transport aircraft by our combat aviation remained insignificant for a long period of time, and more often than not, there was none at all.

The operations of air formations and units enlisted for a performance of military transport missions were also complicated by the fact that they were subordinate to various offices--from Headquarters, Supreme High Command, to the commands of separate fronts and air armies. This created certain difficulties with respect to planning and arranging troop and cargo hauls by air.

Due to the heterogeneity of the elements comprising the foundation of the air transport units, the training of the flight personnel also varied. The landing of troops and the extreme difficult flight conditions required a high level of professional skill and the ability to fly by instruments, since the commanders of the transport crews could not count on the terrain for their orientation: flights to the forward edge of the battle area and especially flights into the enemy's rear area were usually performed at night or in weather limiting visibility. As the transport pilots acquired combat experience, they developed tactical procedures for escaping pursuit when necessary. One such technique was to fly at low altitude--a so-called low-level flight--which was strictly forbidden in the Civil Air Fleet in peacetime. The war dictated its own laws, however, and the former Civil Air Fleet pilots, like the military airmen, successfully mastered the technique of low-level flying.

Air transport units of the Air Force created during the first days of the war were outfitted mainly with light aircraft, and only individual air transport subunits had the twin-engine Li-2 planes, which proved themselves to be excellent aircraft and constituted the main means of air transport for a long time. The Moscow Special Purpose Air Group and the 1st Air Transport Division of the Air Force were outfitted with these aircraft. A number of units of the Long-Range Aviation were outfitted with Li-2's in 1942. The 5th, 6th and 7th long-range air corps had been re-outfitted with Li-2 planes by the summer of 1943. There were 10 regiments with Li-2's at the beginning of the war and 19 at the end of the war. Most of these regiments were used for air transport missions.

At the end of 1942, the special air force units began to receive C-47 heavy aircraft purchased by the Soviet Government in the USA. This aircraft's aeronautical engineering and performance characteristics and its transport capabilities made it possible to perform considerable hauls of both personnel and combat equipment. During this time our industry was building up production of our own military transport planes. By the end of the war the fleet had tripled as a result. Almost all of the TB-3's were replaced with Li-2's and C-47's.

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In addition to special transport planes and bombers modified for delivering airborne landing groups and for transporting troops and various types of cargo, the A-7, G-11 and BDP-2 assault force and cargo gliders began to be used on a fairly extensive basis.

The preceding provides a general description of the tasks and capabilities of air transport units during the Great Patriotic War.

In the following sections of this chapter we will describe the performance of specific missions by units and subunits of the Soviet Air Force involved in the air transport of the troops and cargo.

**The Landing of Airborne Assault Groups During the War**

The chief and basic mission of the military transport aviation, that of landing airborne assault groups, varied in intensity during the years of the Great Patriotic War.

I have already mentioned the fact that airborne landing operations may be tactical or operational. They are also differentiated according to their composition and to the purpose and depth of the drop.

Tactical airborne landing operations were most frequently employed by the Red Army during the first period of the war and in the concluding phase--in the campaign in the Far East, in which the combat operations were highly dynamic and intense. Special large air units and units of the Long-Range Aviation and the front aviation were enlisted to perform them, the crews of which possessed the training required to air-land troops and to drop them by parachute. In January 1942, for example, 21 Li-2's from the Moscow Special-Purpose Air Group and three TB-3's from the 23rd Bomber Division (subsequently the 53rd Air Division of the Long-Range Aviation) were assigned to land two battalions of the 201st Air Brigade and the 250th Rifle Regiment southeast of Vyaz'ma.

Thorough preparations were made for the landing operation. The attack position had reliable air defense cover, which practically eliminated the possibility of counteraction by enemy fighters. Paratroopers were to be landed first, their mission consisting of capturing a landing area and, together with partisans, of providing security for the landing of the combined parachute and air-landed echelons. The main body of the landing force was to be landed in the second phase of the operation, 2-1/2 hours after the first group had been dropped.

Thorough coordination of the operations of airborne landing units, the front command and the crews of the military transport planes, precise calculation of the time and close interaction with the partisan detachments insured the success of the operation.

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In the evening of 18 January four Li-2's with engines muffled landed in the opaque twilight on a snow-covered field near the southern edge of the village of Znamenka, bringing an initial party of 65 men to prepare for the landing of the airborne assault group. The snow was as much as 1/2 meter thick on the temporary airfield, and the aircraft were not equipped with skis. The good flying skill of the pilots permitted them to land successfully, however. The crews completed the mission. On 19 January the initial party spent the entire day readying the area for the landing of the assault group. The paratroopers were assisted by partisans and local residents. At the end of the day a report went out to the airfield at which the operation was to originate: "Landings can be made on wheels....Send the forces immediately...." Immediately, because the Hitlerites were within 1.5-2 kilometers of the landing site and were not idle.

Throughout the next three nights, despite a snowstorm and the bombing and machine-gunning of the landing site, the Li-2 and TB-3 crews continued to land assault troops, weapons and ammunition.

The following are excerpts from combat reports made during that period on the performance of crews of the 23rd (53rd) Air Division:

"On the night of 20 January 1942 the crews of Captain Filin and Senior Lieutenant Timshin were assigned the urgent mission of air-lifting 45mm cannons along with their crews and ammunition into the enemy's rear area to Comrade Soldatov's assault landing group. Despite inclement weather, the need to land at an unfamiliar site at night and the fact that the ground was covered with a deep layer of snow, the mission was accomplished."

"...On the night of 20 January 1942 two aircraft left Vnukovo Airport to land at the village of Lugi in the enemy's rear....Two antitank cannons, 40 boxes of shells and a combat crew of 18 men for the 45mm cannons, a cargo weighing a total of 4200 kilograms, were delivered. On the return trip the aircraft hauled out four wounded individuals. They were fired upon with antiaircraft machine guns near Znamenka and Voskresensk." 17

The airborne assault force delivered by the air transport group captured highly important lines of communication in the enemy's rear and held them for several days, immobilized the enemy and disrupted the work of the rear services, thereby simplifying operations by troops of the Western Front's left wing.

The skill, experience, bravery and stamina demonstrated by the Li-2 and TB-3 crews contributed to the successful execution of the tactical mission assigned by command for this phase. Another important factor was the fact that aircraft of the Moscow Special-Purpose Air Group were well prepared for landing operations, did not require additional equipment and were armed with machine guns mounted in turrets. The radio operator-gunners on the aircraft had to use their weapons more than once to make it possible for the paratroopers to land.

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The following statement on the performance by pilots of the 23rd Air Division in February 1942 is presented as an example. In the background of the meagerly worded combat document one can see the people who performed with great altruism and the skill the dangerous but noble work of delivering cargo to our troops and partisans operating in the enemy's rear area.

"...On 3 February 1942 a group of six aircraft left for Vnukovo Airport to deliver food and ammunition to units of the Red Army operating in the enemy's rear. A total of 30,000 kilograms of food and 15,510 kilograms of ammunition were dropped to Lieutenant General Yefremov's forces 18 kilometers southeast of Vyaz'ma (in the villages of Zheltovka and Zhulino at an altitude of 211.2 meters) between 3 and 23 February. A combined total of 21 flights were made by the aircraft involved.

A combined total of 16 individual flights were made to the village of Lebedevo, 20 kilometers to the south of Vyaz'ma, which delivered 19,500 kilograms of ammunition and 15,000 kilograms of food to Lieutenant General Belov's forces.

Twelve flights by individual aircraft were made to Onufriyev's forces in the village of Androsovo, 42 kilometers southwest of Vyaz'ma. A total of 11,000 kilograms of food and 1400 kilograms of ammunition was dropped.

A total of seven individual flights were made to Soldatov's forces in the village of Fedulino, 25 kilometers southwest of Vyaz'ma, which dropped 11,500 kilograms of ammunition and 5,000 kilograms of food.

Two flights were made to the village of Zhelan'ye, 25 kilometers southwest of Vyaz'ma, which dropped 2,050 kilograms of food and 1500 kilograms of ammunition to Kirillov's partisan unit.

The mission was carried out by a group consisting of the crews of Major Varfolomeyev, Captain Yezerskiy, Senior Lieutenant Sokolov-Shalayev, Senior Lieutenant Bobin, Captain Kosach, Senior Lieutenant Borodkin, Senior Lieutenant Kalygin and Major Afonin." 18

In February 1942 a group of forces of the 29th Army, encircled near Rzhev on the Kalinin front, found itself in a very difficult situation. The decision was made to land the 4th Battalion of the 204th Airborne Assault Brigade, consisting of 500 paratroopers, in the area of the encircled group. The area held by the encircled group stretched 8 kilometers from east to west and approximately 7 kilometers from north to south. Bonfires forming a triangle and a rectangle were to be lighted to designate the landing sites. The battalion was to be dropped by parachute, and it was therefore very important that the aircraft arrive precisely at the designated landing area and that the drop be concentrated in a small area.

The crews of the transport planes assigned to perform the mission found themselves in a very difficult situation. The designated landing area



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was under artillery fire by the enemy and since battles were underway all around the area, the pilots could see numerous fires of all possible shapes, making it extremely difficult to find the markers. Some of the crews were not able to find the designated site and returned the paratroopers to the airfield from which the flight had originated.

The aircraft with the paratroopers on board proceeded to the landing area at an altitude of 1,000-1200 meters and only dropped to an altitude of 300 meters when they were within several kilometers of the landing site, from where the individual aircraft dropped the paratroopers into the designated area. More than 400 fighters of the 204th Brigade entered the battle without time to find their equipment, providing support for the encircled group exhausted by many days of fighting. After four days of fighting the break-out of encirclement by units of the 29th Army was completed.

Unfortunately, landing operations were not always successful, especially in the first years of the war.

An operation headed by G. M. Lin'kov, subsequently Hero of the Soviet Union, near Lepel' in Belorussia, was not successful. The incident, which took place in September 1941, was later described in G. M. Lin'kov's book "Voyna v tylu vraga" (The War In The Enemy's Rear) (Moscow, 1959) and in A. M. Verkhovzin's memoirs "Samolety letyat k partizanam" (Planes Are Flying to the Partisans) (Moscow, 1966). A. M. Verkhovzin was at that time deputy chief of staff of the First Heavy Bomber Regiment, which was assigned the mission of dropping Lin'kov's group. There were no markers to indicate the landing site--the shore of Lake Domzharitskoye--and there was no radio communication among the TB-3 aircraft performing the drop, and careful preliminary preparation was therefore required. The commander of the airborne group did not accept the intelligent suggestions of Colonel I. V. Filippov, commander of the air regiment, however, and insisted that the entire group be dropped at one time. As was to be expected, the aircraft crews were not able to find the designated site in the dense, low-hanging clouds. Three of the aircraft dropped paratroopers at different sites, and three did not return to the airfield.

G. M. Lin'kov attributed the failure to lack of experience on the part of the pilots and to the fact that they became confused in the difficult situation.

Unfortunately, the flight crews were frequently criticized for this sort of thing. The reasons were different, however. The radio equipment carried on board the aircraft was not the best, there was no reliable communication with ground, information on weather conditions along the routes was not always accurate, there were considerable deviations from the plans for dropping airborne groups and, finally, the subordination of the air subunits performing military transport missions was not clearly defined. All of this unquestionably complicated the performance of the flight crews and the success of important missions frequently did not depend on the personal qualities of the airmen.

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I would like to mention a few more tactical landing operations carried out during the first period of the Great Patriotic War to provide ground forces with direct assistance.

In July 1941, for example, several groups of paratroopers were dropped by decision of the commander of the Southwest Front into the rear of the German fascist troops in order to disrupt the enemy's rear service operations.

A group of 23 paratroopers was dropped into the enemy's rear area on 23 September 1941 during a counterthrust by forces of the Primorskaya Army which was defending Odessa. Senior Lieutenant S. Gavrilov was in command of the TB-3 aircraft which delivered the landing group.

A tactical landing operation was carried out in July 1942, during the heroic defense of Sevastopol', to disrupt the enemy's rear service operations.

An airborne landing operation was undertaken to the west of Novorossiysk in February 1943 by decision of the commander of the Transcaucasus Front. It was carried out in support of a naval landing operation.

The employment of airborne landing operations became increasingly effective toward the end of the war, as the fleet of transport planes grew and the power of the fighter and bomber air forces increased. The results achieved from the operations of airborne landing groups in the war against imperialist Japan in August 1945 illustrated this fact especially well. The employment of airborne landing groups became most expedient in the situation existing at that time, in which enemy resistance had basically been broken and it had become necessary immediately to occupy strategic points and industrial and military installations in the rear of Japanese forces in order to prevent the enemy from destroying valuable property and facilities.

Tactical airborne landing groups dropped into the central cities of Manchuria, on the Liaoning peninsula and in North Korea, ranged in size from 200 to 500 men, while those dropped on Southern Sakhalin and the Kurile Islands were even smaller--from 35 to 130 men. The groups were mainly made up of ground troops, and the training and experience of the crews flying the military transport planes were therefore not the least important factors by far.

By this time the Air Force already had special air transport units. Airborne landing operations in the Far East were carried out by the 21st and 54th air transport divisions with Li-2's which were a part of the 12th Air Army. The forces were air-landed.

Flights in the Far East Theatre of Military Operations presented considerable difficulty: not only did the transport planes cross the front line, they also flew 200-300 kilometers into the enemy's rear area. Furthermore, they had to land at enemy airfields and at sites poorly suited for this. Nonetheless, the flights into the rear area of the Japanese forces were

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successful. The paratroopers coped brilliantly with their mission. Abandoning the aircraft immediately upon landing, they engaged in battle without pause and occupied a reliable defense, thereby ensuring the successful landing of the remaining troop transport planes.

The first airborne landing operation was carried out on 16 August in Harbin. Airborne groups were subsequently landed in Mukden, Jilin, Changchong, Luda, Port Arthur and Pyongyang, as well as on Southern Sakhalin and the Kurile Islands.

When representatives of the Soviet command entered into talks with the Guangdong Army staff on the procedure for its capitulation, the success of those talks resulted to a considerable degree from the surprise operations of the airborne landing groups.

More than 20 airborne landing operations involving a total of up to 17,000 men were carried out during the entire Far East Campaign. Their operations were given a high rating. The airborne landing forces played an important role and successfully performed their assigned missions. This system of rapidly resolving problems arising unexpectedly in the enemy's rear area is still entirely valid. Speed of organization and timeliness in the dropping of the airborne groups are the most important factors. 19

It was more difficult to perform an operational landing mission than a tactical one since the former required considerable air transport personnel and equipment. It was rare for the size of tactical airborne groups to exceed 1,000 men, whereas up to 10,000 or more took part in the operational missions. Furthermore, such operations involved a large number of aircraft from all of the air branches, which presented certain difficulties due to the shortage of various types of combat planes.

Two operational airborne landing missions were carried out during the war: that performed by the 4th Airborne Corps near Vyaz'ma on the western front in January-February 1942 and the dropping of the 3rd and 5th airborne brigades on the Voronezh front in September 1943.

The airborne landing operation conducted in the area of Vyaz'ma had the objective of cutting off enemy lines of communication, which was to simplify the execution of the overall operational mission of our forces on the western sector of the Soviet-German front.

The plan for the airborne landing operation was worked out jointly by the Air Force and airborne troop commands. Overall command of the operation was assigned to the commander of the Red Army Air Force, while the immediate task of preparing the corps for the landing and for combat operations was carried out by the airborne troop command.

A total of 352 aircraft were activated to support the landing and combat operations of the landing force: 65 (40 Li-2 and 25 TB-3) transports,

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102 fighters used as escort planes and to cover the attack position, and 185 bombers and ground attack planes. The air group was commanded by Major General of Aviation L. A. Gorbatshevich, then chief of the directorate of aviation of the High Command of the Red Army Air Force in charge of long-range (heavy) aviation. A joint command post was set up for the commander of the airborne forces and the commander of the air transport group.

The staffs of the air transport group and the airborne forces based their plans for the landing operation on the ideal quantity of air transport means. The real strength of the Western Front's air forces were not taken into account, however, since the operation plan was compiled without direct participation by the staff of the front for which it was being organized. This is why an impossibly short period of two days was set for conducting the landing operation. Simple arithmetic showed that the 65 transport planes assigned to the operation would have to make a total of approximately 600 individual flights in order to deliver the airborne corps. Taking probable losses into account, even under the most favorable conditions, each transport crew would have to make 12 to 15 trips a night for a period of four to five days.

The smallest possible depth—30 to 40 kilometers from the front line—was specified in order to get maximum use from the quantity of air transport means allocated for the mission. The interval between trips averaged 2 hours and 30 minutes for the Li-2's. During that time the crew would have to fly to the drop area (a distance of 180 kilometers by direct route), find the objective, make at least two passes to discharge the landing force, return to the airfield of departure, refuel and inspect the aircraft, take the next landing group on board and take off again. This left no more than 20 minutes to prepare for the next flight. Far from all of the crews could maintain this flight schedule, since many of them did not have adequate experience in the conduct of night landing operations.

The air defense fighter aviation covering Kaluga was included in the air group but was not under the command of General L. A. Gorbatshevich. General Ye. M. Nikolayenko's fighters covered the mobile group of General P. A. Belov's 1st Guards Cavalry Corps and could therefore provide only partial support for the airborne landing operation.

The airborne corps concentrated near Kaluga, like the transport aircraft concentrated at the starting airfields, therefore had practically no cover and was easily detected by enemy air reconnaissance. It should be added that no aerial photography of the landing area had been performed and that the drop sites were designated with extremely primitive markers.

During the second half of 24 January, 46 transports took off carrying the advance landing detachment, which was to prepare the way for the landing of the remaining paratroopers. Due to poor orientation on the part of the crews, however, a large part of the paratroopers and cargo was dropped 15 to 18 kilometers south of the specified area and the advance detachment was not able to perform its assigned mission in time.

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Despite the fact that it lacked information on the advance detachment's situation, the airborne troop command, nonetheless, ordered the landing operation to continue. During the night of 27 January, 62 individual flights were made and around 1100 men were delivered to the designated area.

One of the airfields where the landing aircraft were based was subjected to fierce bombing that same night. Seven of the heavy TB-3's and a fuel depot were burned, and 12 aircraft were damaged by fragments. There were also losses of air transport personnel and paratroopers. Therefore, no landing operation was carried out from that airfield the first night, and on the morning of 28 January the transport aircraft were removed to airfields in the interior because of the danger of another enemy air raid. After that, airfields in the initial area were used for stopovers.

Despite the fact that contact with the landed force was not established until 31 January, the landing of the corps continued the following nights.

By 29 January the air group had only 12 transport planes at its disposal--10 Li-2's and two TB-3's--and almost all of the Li-2's had been damaged by shell fragments and required field repairs.

The landing operation was halted on the night of 31 January due to changes in the operational situation.

A total of 2,157 men, 120 light machine-guns, 72 antitank guns and 20 mortars were air-lifted into the area between 27 January and 1 February.

The remaining units of the 4th Airborne Corps were returned from the area of Kaluga to Moscow Oblast, where preparations were underway for a new landing operation.

Units of the 33rd Army and the 1st Guards Cavalry Corps fighting near Vyaz'ma found themselves in a grave situation in the first half of February 1942. The situation was especially difficult on the Yukhnovskiy salient where the main forces of the Western Front's center were pinned down in battle.

On 10 February, Headquarters transferred the 4th Airborne Corps to the Western Front, which was assigned the mission of landing in an area west of Yukhnov, penetrating the enemy's defense front from the rear and joining up with units of the 50th Army for joint operations against the Yukhnov Hitlerite grouping. The commander of airborne troops was given full command this time. Steps were taken to keep preparations for the operation from being detected. The planning was formed by an operations group of the airborne forces and by the command of the joint air group before the mission was assigned to the corps commander.

The landing site coincided with the area of operations of a partisan detachment and the 250th Rifle Regiment, which had been moved there at

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the beginning of January 1942. The operation was launched from airfields around Moscow within Moscow's air defense zone which were an average of 240 kilometers from the landing areas.

Only slightly more than 70 aircraft could be made available for this operation as well.

On the night of 17 February, 20 Li-2's with paratroopers on board flew to the area of Yurino to reinforce an airborne group dropped there in January. A total of 39 individual flights were made, but only 13 crews completed their missions, delivering around 300 men: the pilots had great difficulty detecting the markers among the numerous bonfires.

A landing operation in a new area which was begun 24 hours later, was not much more successful. Although the plan called for the landing of a support group with three "Sever" homing stations and signal equipment, the homing stations were not delivered to the drop area. The drop sites were indicated with the same primitive combinations of bonfires. Furthermore, the Western Front's staff had ordered identical markers for the area of the landing and at sites for receiving cargo for the 33rd Army and the 1st Guards Cavalry Corps, without informing the air group's command. The first landing was complicated by the identical markers at three adjacent areas, the large number of bonfires and fires in the enemy's rear area, the absence of radio navigation facilities in the drop area, and inclement weather. Another factor was the fact that the crews had received strict instructions not to drop the airborne group if there were the slightest doubt as to the exact location of the landing sites, in which case they were to return with the landing force to the airfield of departure. As a result, the mission was accomplished on only 40 of 101 flights by individual aircraft.

A homing station was sent to the landing area on the morning of 19 February. The aircraft had an accident when landing, however, and the radio set was damaged. The malfunction was soon eliminated, but even then the radio set could not operate at full load and could not be used as a homing station.

Electric lights, which were easily distinguishable from bonfires and rockets, were used as reference points for subsequent flights. This made it far easier for the crews to orient themselves. The landing operation carried out on the night of 19 February was the most successful. The more reliable system of marking the sites and good weather conditions made it possible to carry out 152 individual flights and to complete the mission, landing more than 2,500 men. The weather deteriorated drastically once more the following night, however, and only 27 of 96 individual flights were completed successfully. The landing operation continued three more nights, ending on 24 February.

Colonel K. I. Lysenko had the following to say about the operations carried out by the transport flyers during that period:

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"I was serving as commander of an air squadron of Li-2's and PS-84's at the beginning of 1942. In February our squadron was included in an air group put together to drop an airborne group into the enemy's rear near the city of Vyaz'ma. The landing operation was carried out between 18 and 24 February.

"Weather conditions were very difficult during that time. There was a low cloud cover and frequent snowfalls and fogs closed many of the airfields.

"The airborne landing operation was carried out only at night--from the onset of darkness to dawn. Lieutenant Colonel Kloptsov, our group commander was killed one night on his first flight. An investigation showed that the aircraft had lost its position in the inclement weather and had fallen in our territory without reaching the forward edge of the battle area.

"The crews of many other units and formations were enlisted for dropping troops into the enemy's rear. The staff in charge of the landing operation sent our crew first to reconnoiter sites for the subsequent dropping of forces by the other crews.

"We flew every night, sometimes spending 30 or 40 minutes looking for the drop site. Following us, the other crews dropped more than 1,000 paratroopers and a great deal of cargo--ammunition, weapons and so forth--during the night. Our crew carried out nine flights, during which we dropped 100 men and around four tons of cargo.

"Our plane was hit over the forward edge of the battle area on one of the flights. We returned to our airfield on one engine, boarded a standby plane and took off again. The mission was completed.

"Once, when we were loading a landing group, the armorers suggested that we take two FAB-25 bombs on board. Crossing over the forward edge of the battle area, we selected the target--enemy antiaircraft batteries which had fired upon us as we flew over the forward edge--opened the door of the aircraft and dropped the bombs. After completing the mission, we wanted to see the results of our bomb strike on the way back. As we approached the target, however, we were unexpectedly caught in the beams of three powerful searchlights, and large-calibre machine guns and anti-aircraft guns opened up with a barrage of fire. We had to maneuver skillfully and fly at maximum speed to escape out of firing range. Our bombing of the fascists had apparently been successful, which accounted for our reception, but the enemy did not make a single hole in our aircraft.

"The flights made in February 1942 were also difficult, but all of our crews involved in dropping airborne groups completed their missions."

A summary of the landing of troops and cargo near Moscow in February 1942 is given in a book by Doctor of Historical Sciences A. G. Fedorov:

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"The Hitlerite forces were defending stubbornly near Yukhnov. They were pinning down considerable forces of the Western Front in that area, preventing them from joining forces with troops of the 33rd Army and the 1st Guards Cavalry Corps. In that extremely difficult situation, Army General G. K. Zhukov, commander of the Western Front, made the decision to carry out another airborne landing operation to the west of Yukhnov. Units of the 4th Airborne Corps were to deliver strikes from the rear to assist Front forces with the encirclement and destruction of the enemy's Yukhnov grouping. Overall command of the airborne operation was assigned to Army General V. A. Glazunov, commander of the Red Army airborne troops.

"...By the end of 17 February, 72 aircraft had been concentrated at the airfields, including 20 PS-84 transports at the Vnukovo Airport.

"...PS-84's delivered the remaining subunits of the 8th Airborne Brigade from Vnukovo Airport to the area of Put'kovo and Beli on the night of 17 February...a total of 293 men and 12 bundles of weapons and ammunition were dropped.

"...The landing of units of the 4th Airborne Corps near Velikopol'ye and Lugi was carried out on the night of 18 February, using all of the PS-84 transports and TB-3 heavy bombers...a total of 89 individual flights were made, which landed 538 men and 96 bundles of cargo. The landing operation continued during the night of 19 February, with another 2,551 men landed in the designated area. The landing operation was curtailed the following night due to a deterioration in the weather: there was a fog and the bottom edge of the cloud cover was barely 300-400 meters above ground. Despite the difficult weather conditions, 37 crews completed their missions, dropping 476 men and 73 bundles of weapons. A total of 1,676 men were landed on the night of 21 February, 1,367 on 22 February, and 38 individual flights were made on the night of 23 February, dropping 179 paratroopers. This completed the landing of the corps.

"A total of 612 individual flights were made between 17 and 24 February to drop airborne forces, 443 of which were successful. Three crews did not return from their combat mission. During that time 7,373 men and 1,524 bundles of ammunition, weapons, food and various supplies were landed or dropped from airfields near Moscow." 20

A total of more than 10,000 men were transported by air in the strategic landing operation of January and February 1942.

An analysis of the first large-scale operational landing operation shows that it was unquestionably effective on the whole, since it contributed to the success of our forces on the western front. There were many shortcomings in its organization and conduct, however. The percentage of combat missions successfully accomplished by the transport crews was low, for example: almost one-fourth of the individual flights ended in failure. It should be added that the landing process itself was not satisfactory. A considerable



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portion of the paratroopers landed outside the designated area as a result of deviations from the prescribed route by some of the crews and due to the primitive marking of the drop sites. The inaccurate drops delayed the assembling of units of the landing force. Three days after the landing operation had been completed the 4th Airborne Corps had managed to gather only half of the personnel at the assembly points.

This situation was basically caused by the following. In January and February of 1942 enemy aircraft were actively counteracting our air forces. The Soviet tactical air force was not powerful enough to achieve air supremacy, while Moscow's air defense fighters could not provide the tactical fighters with support due to the considerable remoteness of their bases from the forward edge of the battle area. Furthermore, the enemy's field air defense posed a great threat to the transport planes. The existing situation made it necessary to schedule the landing operations at night, although neither the air group nor the airborne troop command had experience in landing a large force at night.

Control of the airborne landing operation was not centralized in the first phase. The duality of control resulted in exposure of the landing group and in a lack of coordination in the combat support of the landing operation by the tactical aviation.

It was unrealistic planning which caused the landing operation to be drawn out over such a lengthy period. The scope of the operation and the schedule specified in the plan were clearly not within the capabilities of available transport aircraft.

The fact that the air crews detailed for the landing operation were not prepared to perform the assigned mission in a complex situation also had a negative effect. The flight personnel must not bear all of the blame, however. The trouble was that it was necessary to use crews selected on an emergency basis from various units to perform the operation. As a result, the composition, training, and experience of the transport aviation in this case made it a heterogeneous, uncoordinated and hard-to-control formation.

Poor navigational support and the primitive system of marking the drop sites did nothing to help the aircraft find the landing area precisely or to reliably identify the drop sites.

Lieutenant General I. I. Lisov had the following to say on this matter:

"The main cause of error in the dropping of men and cargo was the lack of homing radio stations in the landing area. Without them it was difficult for the flight personnel to find the drop sites for the paratroopers at night, especially in poor weather.

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"The fires and bonfires used as light markers, when fighting was underway in the enemy's rear, could not serve as reliable reference points for the pilots, since these could be seen at many different spots. The fact that many of the transport crews were performing this type of mission in such a difficult situation for the first time was also a significant shortcoming in the landing operation." 21

The fact should be mentioned that enemy aircraft were not conducting strikes against the take-off airfields in February, but Soviet transports and airborne troops were subjected to intensive shelling and bombing along the flight routes and in the drop areas.

During that period the corps troops were being dropped from altitudes of 600 to 800 meters by individual aircraft at intervals of 5 to 10 minutes, and this was controlled by each crew independently so as to reach the objective at the designated time. No checkpoint was established near the forward edge of the battle area and the crews crossed the forward edge at altitudes of 1500 meters or higher, recalling the bitter experience of the first phase of the landing operations, when the transport planes were subjected to violent fire from enemy air defense weapons as they attempted to cross the forward edge at low altitudes.

The first experience in providing air support for dropping large airborne assault groups under actual battle conditions at night was fully analyzed by the Air Force command and by the command of airborne forces, and this was of great importance in the subsequent development of the military transport aviation.

Command concluded that there should be centralized control of all men and equipment participating in and supporting an operation. A chief with all of the necessary men and equipment at his disposal should be in charge of planning air support and executing the landing operation.

It was apparent that we had to have air transport capable of performing the assigned missions and crews specially trained for landing troops.

The landing of the 4th Airborne Corps had shown that the staging area should be at least 100-150 kilometers from the forward edge of the battle zone and should have a reliable air defense.

All of the conclusions drawn and a number of specific recommendations were taken into account for compiling a draft guide on the combat employment of airborne troops.

Despite its deficiencies, the experience gained in landing the 4th Airborne Corps in the area of Vyaz'ma in January and February of 1942 has still not lost its values. This was the first operational airborne landing operation in the history of military art in which a force as large as an airborne

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corps was transported and which was carried out under difficult conditions in the tactical depth, that is, in an area with a considerable build-up of enemy forces.

The airborne landing group, together with the cavalry and partisans operating on the Vyaz'ma sector in the winter of 1941-42, liberated a considerable area from the enemy, inflicted great damage upon the Hitlerites and immobilized a number of units of the Zentrum army group in that sector. The fascist command was forced to remove troops from other sectors to combat the airborne landing force. Despite their limited strength the airborne troops not only held a front stretching 35 kilometers but also engaged in active diversionary operations in the enemy's rear area.

Therefore, as already stated, the landing of the 4th Airborne Corps in January and February of 1942 should be considered a success in general, since, in addition to its unquestionable instructional value for the subsequent improvement of airborne landing operations, it helped to rout the enemy in the battle near Moscow.

Two points must be stressed as we conclude the analysis of one of the largest operations performed by the military transport aviation during the Great Patriotic War.

In the first place, I would like to mention once more the flight skill, courage and altruism demonstrated by the crews of the military transports, which performed extremely difficult missions in a complicated situation. We also know that not a single army in the world had even attempted to carry out such a large landing operation at night and in the winter.

In the second place, our experience in the last war is still valuable under contemporary conditions. V. I. Lenin wrote the following: "We cannot learn to perform our tasks with the new techniques of today if yesterday's experience did not open our eyes to the incorrectness of the old methods." 22

A second large-scale airborne landing operation was conducted under different circumstances in the fall of 1943.

By the middle of September forward units of the Voronezh Front had reached the Dnepr, and the 3rd Guards Tank Army had even succeeded in crossing the river southeast of Kiev near Velikiy Burkin. Units of the 40th and 47th armies began forcing the Dnepr simultaneously. In this situation it was decided to conduct a landing operation to occupy a beachhead on the right bank of the Dnepr in order to mass forces there for the launching of the subsequent offensive.

According to the plan, the operation was to be conducted at night in the tactical depth, despite the fact that the enemy had massed fresh forces consisting of motorized rifle and other units in the area. All of the

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troops being readied for the landing operation were combined into a single corps. The mission of landing the group was assigned to the 5th, 6th and 7th long-range air corps, using Li-2's, the 1st Air Transport Division (MAON) and a glider-borne group of airborne troops.

The air units designated for transporting the landing group, which numbered more than 10,000 men--180 Li-2's, 35 gliders and 10 tow planes--comprised an operational group commanded by Lieutenant General of aviation N. S. Skripko. Overall command was exercised by the commander of the Voronezh Front and his staff, although this time the front's staff did not participate in the actual planning of the operation.

It must be said that the plan for setting up and conducting the operation was worked out fairly carefully and that it covered almost all aspects of the landing of troops and of their operations in the enemy's rear area, including aerial reconnaissance, air support for the landing operations by forces of the 2nd Air Army and the Long-Range Aviation, and broad interaction with front artillery, partisans and a support group dropped in the area in advance. The plan still contained major deficiencies, however.

The first difficulty arose when, during the rapid advance of front troops to the Dnepr, the 2nd Air Army became faced with a severe shortage of fuel and ammunition at forward airfields and could not provide support for the landing operation. The artillery was just approaching the area and was also not in a position to interact with the landing force. In addition, errors had been made in the schedule for massing the transport aviation in the area of departure.

Army General N. F. Vatutin, front commander, gave the order to carry out the landing operation on 24 September, based on reconnaissance information provided by the 40th Army. Lieutenant General of aviation N. S. Skripko did not receive the order to begin dropping the airborne group until the first day of the operation. The commanders of the airborne brigades, in turn, were not able to adopt their decision and inform the troops of it until 2 or 2-1/2 hours before take-off time.

The air transports were massed at Lebedin and Bogodukhov airfields in the staging area. When the procedure was being worked out for loading the airborne troops and the cargo onto the planes it was revealed that the number of air transports available did not conform to the landing operation schedules compiled earlier.<sup>23</sup> In addition, some of the aircraft were not even equipped for airborne landing operations. This resulted in disarray of the landing operation procedure, and it was necessary immediately to revise the schedules and the assignment of paratroopers to aircraft and to redistribute the cargo, which had already been delivered to the flight lines. Furthermore, the fuel transports were late and communications between the long-range aviation's operations group and the airfields could not be relied upon.

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Recalling the landing of troops on the right bank of the Dnepr in September 1943, Lieutenant General of aviation G. S. Schetchikov, then commander of the 62nd Long-Range Air Division, wrote in a letter to the author: "In the division under my command the aircraft commanders and crew members looked for the groups of paratroopers at the specified sites, but they were sometimes not there.."

Flight crews participating for the first time in a night landing operation found themselves in an extremely difficult situation. The support group which had the mission of marking the landing sites was not dropped in the area in advance, according to plan, and the navigators on the military transports had to get their bearings from the Dnepr and from the villages set on fire by the Hitlerites.

A subsequent study of the overall situation and the results of the landing operation revealed poor interaction between the transport aviation and the airborne landing forces. Again, no overall air command had been set up although transport and long-range bomber units, as well as tactical aircraft, were involved in the landing operation and its support. Questions of interaction between long-range air units and aircraft of the 2nd Air Army were resolved on the basis of mutual coordination, on which a considerable amount of time was lost.

No provisions were made for continuous reconnoitering of the landing area or for navigational support for the operation. Another important factor was the fact that personnel of the air units had not undergone special training in the performance of night landing operations, not to speak of joint exercises with the airborne assault forces. Around one-third of the Li-2 crews had absolutely no experience in the landing of troops and cargo.

Supreme High Command representative G. K. Zhukov reported to Headquarters on the results of the landing operation and the difficulties encountered in the offensive from the Bukrino bridgehead. A special order was written up on the basis of these reports which stated, among other things: "The dropping of the massive airborne landing force at night demonstrates incompetence on the part of those setting up the operation, because, as experience has shown, the dropping of a large airborne group at night, even on our own territory, involves great difficulties." 24

Nonetheless, despite the errors made in organizing the drop, the combat operations of the landing force contributed considerably to the creation of a favorable situation for the offensive by Soviet forces taking part in the liberation of Kiev.

In the rear area of Hitler's forces Soviet paratroopers blew up bridges, carried out raids against enemy garrisons, destroyed transport columns and communication facilities, and so forth. This time, as well, the fascists

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were forced to redeploy their troops and to bring up forces to seal off the airborne landing force. Despite their considerable superiority in men and equipment the Hitlerites were still not able to destroy the landing force, which was creating pressure in the immediate rear of their troops.

Reconnaissance information transmitted to the headquarters of the 2nd Ukrainian Front by the airborne troops was also of great importance. The forces of that front were making preparations to force the Dnepr, and information on the enemy's defense and the tactical depth was not the least important factor contributing to the success of the offensive.

This is what PRAVDA wrote about the events taking place at that time:

"In this... operation there were three main forces smoothly combined and closely interacting on the battlefield: Red Army units fully armed with powerful equipment, which delivered the main strike; partisan detachments, which drove a hostile Circassian grouping out of the woods and raided its communication lines; and the airborne units skillfully dropped behind the defending Germans, which helped the offensive and disrupted the German defense from the rear." 25

Command post exercises and war games on maps came into being as a result of that airborne landing operation. Elaborating a plan for airborne operations, the headquarters of the Long-Range Aviation and of the Airborne Troops conducted a joint command post exercise involving the landing of troops in October and December 1943.

During that same period the Long-Range Aviation command approved the Manual on Air-Dropping Troops and Cargo from Long-Range Aircraft. This manual, compiled on the basis of experience in conducting airborne landing operations, precisely defined the duties of crew members and the process of interaction between the crew and the airborne landing group, from preparations for the flight to the dropping of the airborne force. It also set the maximum duration of a paradrop train at 40 seconds. Rigorous demands were made of the crews regarding thorough orientation for a landing operation.

These were the separate phases in the practical development of a system for the combat employment of military transport aviation during the Great Patriotic War in the area of tactical and operational airborne landing missions.

Methods of utilizing aircraft for landing troops varied. Even this incomplete account of certain operations of the Great Patriotic War and of the factors influencing the formation and development of the Military Transport Aviation as a means of conducting airborne landing operations gives an idea of the focus of the search for ways and means and of the successes and failures characterizing one of the most complicated periods in the development of our aviation.

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**The Transportation of Troops, Combat Equipment and Other Cargo By Air**

One of the Transport Aviation's most important jobs during the war was that of transporting personnel, weapons, ammunition, medicine and other materials and supplies as a means of support for the combat operations of Soviet troops. Although air hauls occupied an important place in the overall system of operational flights to meet the needs of the front and to evacuate people and cargo from the combat zone to the rear area, aviation was nonetheless not the main form of transportation. It was only in a special situation, when the terrain or the condition of the supply routes made it impossible to use other forms of transportation or when immediate delivery was required, that aviation became the main means of delivering troops and ammunition.

In addition to landing troops, air transport units of the Air Force also performed transport missions required for the execution of specific strategic and tactical missions. One of the most important areas of their utilization involved providing reserves for an operational maneuver conducted under special combat conditions.

Whenever it was necessary rapidly to redeploy the reserve of Headquarters, Supreme High Command, or to deliver replacements for mobile units engaged in offensive operations in the operational depth, command turned to the aviation for transporting the troops. The Supreme or the front command had the authority to make this decision.

The fact should be underscored that the need for air transportation of troops considerably exceeded air transport capabilities. It was precisely because of the shortage of air transport equipment during the initial period of the war that only once were we able to redeploy an entire unit--the 5th Airborne Corps--by air.

At the beginning of the war the more or less large-scale transport missions were performed by heavy bomber regiments of TB-3's of the Long-Range Bomber Aviation and by the Moscow Special-Purpose Air Group, as well as by special air groups of the Civil Air Fleet. Tactical units and formations of the Civil Air Fleet and special-purpose air divisions of the Air Force (the 2nd and 4th Special-Purpose Air Divisions [ADON]) actually made up the transport aviation of the High Command. Their main mission was one of hauling cargo both for the ground troops and for the Air Force.

With the creation of the Long-Range Aviation (ADD) and the formation of long-range bomber units of Li-2's within it, those units took over part of the air transport missions. In addition, when there was a shortage of special transports, low-powered bomber units flying Po-2 and P-5 planes were enlisted by decision of command to perform such missions.

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The size of the force assigned to a specific mission depended on the volume and the distance of the air hauls and on the deadlines and the number of air transports actually available for the purpose. The latter was ordinarily the deciding factor.

An example of this is the above-mentioned air-lift of the 5th Airborne Corps. This operation was undertaken by command during the period of defensive warfare near Moscow in October 1941.

Units of the German 24th Tank Corps had penetrated into the rear area of the 13th Army on the left flank of the Bryansk Front and were menacing Orel. The 1st Guards Moscow Rifle Corps was to take up a defense on the Zusha River near Mtsensk in order to cover the Orel-Tula sector. There was still a real threat that enemy tank units would break through to Tula, however. At this point Headquarters, Supreme High Command, made the decision to beef up forces on the Orel axis by redeploying the 5th Airborne Corps to that area. 26

It was necessary to transport 6,000 men with a double battle scale of ammunition, 40 motor vehicles, 10 45mm guns, mortars and heavy machine guns around 500 kilometers within a extremely short time. A total of 60 aircraft--20 (mainly Li-2's) from the 1st Squadron of the Moscow Special-Purpose Air Group and 40 TB-3 long-range bombers--were assigned to transport the corps.

The flights performed by the transports in the performance of this important mission were difficult and extraordinarily stress-filled. For 2 and 1/2 days the crews flew practically round-the-clock, and they had to land the forces literally under the enemy's nose and against counteraction by enemy aviation.

The last battalions deplaned at the airfield in Orel just as fascist tanks broke into the city. The airfield was within artillery range, and shells were exploding on the take-off strip, and hangars and fuel depots went in flames. A few planes were damaged by shell fragments and some of them caught fire. Removing the intact equipment from them, the pilots left the airfield on the last planes. The mission had been successfully accomplished.

The airborne landing group delivered by the transport aviation, together with a tank brigade of the 1st Guards Rifle Corps, inflicted considerable damage upon the enemy and secured a position on the Zusha River. Hitlerite General Guderian was subsequently forced to admit that his army suffered unexpectedly large losses near Mtsensk.

This example of the use of transport aircraft and support of the maneuvering of reserves in a rapidly changing situation conforms completely to contemporary views on the role of air transport in a war.



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The use of aircraft for transporting cargo for the field army, particularly when aircraft had become the main form of transportation, can be considered equally successful.

Effective use was made of the planes of air transport units during the spring and fall thaws and when roads became impassable in the winter.

In the spring of 1943 troops of the North Caucasus Front were engaged in an offensive operation in the Kuban'. The 58th Army, operating on the front's left wing, was advancing to the southwest and had penetrated deep into the enemy's rear area over the frozen floodplains of the Azov. The weather suddenly warmed drastically, however, and the ice began to thaw. The rear units of the advance divisions found themselves cut off by the enemy, which had closed routes of communication between divisions of the 58th Army and the rear units by land and by sea. The 9th Special Air Regiment of the Civil Air Fleet, commanded by Lieutenant Colonel I. Ya. Segedin, was enlisted to assist the 58th Army. The regiment was given the mission of supplying advance units of the 58th Army with ammunition and food.

It was a fairly difficult situation. There was no communication with the isolated units or the staff of the 58th Army. Endeavoring to disrupt our air supply drops, the enemy was using fighters actively to blockade the entire area occupied by the advance forces. Adapting their operations to the weather, however, Soviet pilots crossed the sea and the floodplains in low-level flight and pushed resolutely toward their goal. Naturally, there were losses. The 9th Special Air Regiment lost seven aircraft in 15 days. Despite the difficulties the advance units of the 58th Army received 176 tons of ammunition, 12 tons of fuel, 2 tons of medicines and 500 kilograms of banked blood. After receiving the ammunition and regrouping, units of the 58th Army switched to an offensive and harassed the enemy where he least expected it.

The following is another example of a successful operation performed by means of aircraft. In January 1943 troops of the 40th Army began an offensive operation in the direction of Kastornoye. The 4th Tank Corps advanced on the main axis in the first echelon of the 40th Army and had penetrated 16 kilometers inside the enemy's defense by the end of the day. The following day mobile units of the 40th Army overran the Hitlerite units and burst into Gorshechnoye. The route to Kastornoye was clear. By this time, however, the 4th Tank Corps had used up its fuel, and tank trucks were prevented by snowdrifts from reaching it. Po-2 night bombers and P-5 bombers of the 2nd Air Army's 208th Night Bomber Division came to the tankmen's assistance. The aircraft landed right on the road in Gorshechnoye by the light of bonfires and delivered the needed fuel to the tankmen. On 28 January the 4th Tank Corps burst into Kastornoye from the south and a mobile group of the 13th Army and tank units of the 38th Army, from the north, closing the ring of encirclement of the enemy grouping.

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Crews of the 1st Air Transport Division demonstrated good flight skill and courage during their transportation of troops and cargo. The unit was later renamed the 1st Bomber Division of the Long-Range Aviation, although throughout the war it continued to perform air transport missions as well.

The following is taken from a document of the war years signed by Lieutenant General of aviation T. T. Khryukin, member of the Military Council of the Southern Front and commander of the 8th Air Army:

"From December 1942 to 31 January 1943 the 1st Long-Range Air Division was operationally subordinate to the Southern Front command.... assigned missions of transporting combat materiel and food for ground forces of the Southern Front and units of the 8th Air Army.

"It performed all of the missions assigned by higher command with excellence and demonstrated broad initiative in its work with respect to delivering on schedule cargo and a large number of command personnel of the Red Army to destinations along its routes....

"During the period of its operational subordination to the Southern Front the 1st Long-Range Air Division performed 1,358 individual flights totaling 2,381 hours of flying time for that front and delivered 1,983 tons of fuel, 718 tons of ammunition, 250 tons of war goods, 199 tons of food, 310 tons of other types of cargo and 4,510 people."

In February 1943 the division's crews performed an air-lift of troops and fuel for the Southwest Front. At the same time the division's 103rd Regiment was making air runs for the Stalingrad Front, helping the forces with the delivery of fuel, personnel and medicines.

Advance units of the 2nd and 6th tank armies received a considerable amount of assistance during the Korsun'-Shevchenko operation. The commander of the 2nd Air Army designated the 326th Night Bomber Division flying Po-2's to deliver supplies to the advance tank units because of bad roads. Between 8 and 16 February 1944, flying day and night in extremely bad weather, the crews performed 822 individual flights and delivered 48 tons of gasoline, 65 tons of ammunition and 525 rocket missiles for guards mortars to the troops.

Air lifts of personnel and cargo to the forward edge of the battle area for the combat aviation occupied an important place in the air transport missions.

Special-purpose units, including the 2nd and 4th air divisions, had the main role in the performance of this important job. Directly subordinate to the chief of staff of the Red Army Air Force, these divisions carried personnel, technical stores, fuel and spare parts from central supply bases and reserve Air Force regiments to airfields of the air armies.

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Another function of the 2nd and 4th special-purpose air divisions was to provide support for the airfield maneuvering of reserve air units of the High Command. Between 1 and 10 July 1944, for example, a transport group of 25 aircraft from the 2nd Special-Purpose Air Division assisted with the operational concentration at the 2nd Air Army airfields of bomber, ground attack and fighter corps from the 5th Air Army and three air divisions from the 17th Air Army. In 1944 alone crews of the 2nd Special-Purpose Air Division transported more than 70,000 men and more than 7200 tons of various types of cargo for the front air armies.

Between 14 and 21 July 1944 a group of 18 Li-2's of the 2nd Special-Purpose Air Division performed a mission involving the operational concentration of aircraft in the 1st Baltic Front zone. In only four days--from 14 to 17 July--the group made 252 trips to redeploy two air corps and one division of the High Command's reserve which were being transferred from the 1st to the 3rd Air Army, and moved a fighter corps to a new base within the 3rd Air Army. A total of 3,113 men and 272 tons of cargo were moved by air.

The use of transport aviation greatly reduced the amount of time involved in the transport operations, but it also created a large gap between the arrival of men and cargo delivered by air and the arrival of ground echelons. It took only three days for military transport units to move the first and second echelons of the 2nd Bomber Corps from the Voronezh to the North Caucasus Front in April 1943, but it took 13 days for the third echelon to arrive by land. The corps had already been engaged in combat operations six days by that time.

K. I. Lysenko, who served in command positions throughout the entire war in the 2nd Special-Purpose Air Division--as detachment, squadron, group and regimental commander--tells in his memoirs about the circumstances under which the crews performed their missions of transporting front aviation personnel:

"During the period of the active offensive by our troops I was twice placed in command of flight groups for redeploying Air Force units to airfields at the front.

"My first group, which consisted of six crews, operated in May 1944. We were transferring the 1st Guards Air Corps to a new base. The second group, consisting of eight crews, was active in August. It transferred leading staff members and engineering and technical personnel of the 2nd, 5th and 17th air armies.

"I recall only the names of the aircraft commanders assigned to those groups: Larionov, Polyakov, Boriskin, Dudkin, Kozin and Tarabarov in the first group, and Korshunov, Sazonov, Slepov, Demidov, Durnov, Makhrov, Fadeyev and Sorokin in the second. The two groups together transferred

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more than 3,000 men to airfields at the front and hauled more than 100 tons of cargo, making 330 flights in the process. All of the crews performed their missions with excellence and with no flight accidents.

"...In August 1944 our group of transports was to deliver flight personnel and technicians to airfields at the front. The group was to be escorted on the flight by fighters. As the leader I was told, prior to take-off, that all matters had been coordinated and was told the airfield where our group was to be met by the escort fighters. Upon arriving at the airfield indicated and not finding any escort planes in the air I radioed the unit commander to ask why there were none. I was told that there was no oil and that the fighters could not take off. In this situation I had the group drop to low-level flight and instructed the crews to operate on their own in accordance with the assignment. All of the crews performed the mission well and returned to base."

Something was learned from the participation by military transports in the material support of the 6th Guards Tank Army in the Khingan-Mukden operation carried out by the Transbaykal Front in August 1945. This experience is still instructive today.

The peculiarities of the theatre of military operations and the enormous scope of the operation made it necessary to use a considerable number of military transports even in the preparatory phase. The 12th Air Army operating on the Transbaykal Front included the 54th and 21st guards air transport divisions and the 23rd Separate Air Squadron, a total of 210 Li-2's and S-47's. From the second or third day until the end of the operation more than half of all the transports hauled cargo solely for the 6th Guards Tank Army.

The army's forward brigades were advancing 110 to 120 kilometers a day and its motor transport fell behind the tanks when the route led through mountainous areas. On the morning of 11 August some tank and mechanized corps were practically without fuel. That day 49 planes of the 54th Air Transport Division carried around 87 tons of fuel from Chita to Yutoto. Crews of the 21st Guards Transport Division delivered almost as much. Thanks to the air bridge linking the bases and forward units of the 6th Guards Tank Army a total of 2,000 tons of fuel, 186 tons of ammunition and many tons of water were delivered within a short period of time.

The length of the routes, the difficult weather conditions (rain, fog and a dense low-hanging cloud cover), the absence of ground support for air navigation (homing stations, radio beacons and so forth) and the lack of landmarks (it was mostly steppe, deserts and mountains) all created great difficulties for the crews of the military transports. The assigned missions were performed successfully, however, due in part to the fact that the tank army did its best to help the airmen.

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The tankmen captured enemy airfields or made landing strips and set up refueling points in the area, not calling upon the transport aviation for fuel and ammunition until they had done so.

During the entire period of combat operations in Manchuria the 12th Air Army's transport aviation completed 3,006 flights and transported 3,749 tons of various types of cargo and 10,452 people.

The front aviation's need for spare parts to restore its air fleet increased sharply in the combat situation.

In the spring of 1942 the special-purpose air regiment (out of which the 2nd Special-Purpose Air Division was formed) received a directive from Air Force headquarters to set up a special air transport group at an airfield near Moscow, directly subordinate to the Air Force chief of rear services. An air freight transfer base was set up at the airfield. Arrangements had to be made for shipping spare parts to airfields at the front. An air transport group consisting of 30 planes handled the delivery of this cargo. Squadron engineer I. G. Moskalev was charged with technical supervision of the operation.

"With our transport planes," recalls Ivan Gregorovich Moskalev, "we hauled everything up to engines, hull parts and propellers for ground attack planes and fighters, in general--everything which could be loaded into a fuselage or carried in bomb racks...."

"The commanders of the fronts and armies gave high marks to the performance of the transport crews, and all of our crew members were awarded combat orders. The awards were frequently presented personally by the commander of a front or an army there at the frontline airfields."

Air transportation of equipment and supplies reached its greatest scale during preparations for offensive operations and during the period of intensive combat operations by the Soviet Air Force. In July and August of 1944 alone, for example, 1,000 tons of technical stores and spare parts was delivered to air units on Li-2's.

Our experience in transporting troops, combat equipment and other cargo by air during the war demonstrated the effectiveness of this method of delivering materiel. The employment of military transports made it possible successfully to conduct combat operations both in an offensive and in a defense and to step up the tempo of an offensive and increase the depth of an operation considerably.

#### Into Partisan Territory

The combat operations conducted by partisans during the Great Patriotic War were highly important. The enemy had no peace in the rear area. When the

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fighting was most intense at the front the Hitlerites were forced to withdraw considerable forces to combat the partisans.

It would be impossible to overestimate the importance of the partisan movement to our victory and it would be equally impossible to exaggerate the contribution made by the transport aviation in support of their combat operations.

Throughout the war frontline units of the Civil Air Fleet, light bomber regiments of the front aviation and long-range units continuously supplied the partisan detachments with weapons, ammunition, radio equipment, medicines, food and other supplies. The delivery of newspapers and bulletins from the mainland was equally important.

Flights to the partisans demanded special skill: the ability to land on undeveloped and, as a rule, small strips, to take off in the dark without proper facilities and a good knowledge of the terrain, the last in order unerringly to find the right area and landing site.

It was apparent by the end of 1942 that air transport units would have to specialize. Groups designated for communicating with the partisans were made up of the most experienced flight personnel. Specific partisan detachments were assigned to each such air group. The 120th Separate Air Regiment of the Civil Air Fleet (of the special Western Air Group of the Civil Air Fleet), for example, served 27 partisan detachments and brigades in the summer of 1942, the number increasing to 37 by the end of the year.

During the war pilots for the special air groups had to fly behind the front line many times, making dangerous landings in the enemy's rear area at night. Hero of the Soviet Union Captain B. A. Lakhtin made 91 landings in Po-2's and R-5's, Hero of the Soviet Union Major G. A. Taran made 61 landings in Li-2's and S-47's, guards pilot Captain N. I. Zhukov made 20, and Guards Senior Lieutenant I. A. Tarasov, 181. 27

The 1st Air Transport Division was especially important in providing the partisan detachments with supplies and keeping them in contact with the mainland.

Although it was renamed a bomber division and its combat work was different, the division continued throughout the war to perform special missions to deliver personnel, ammunition, weapons, food, fuel, medicines and agitation leaflets to the Ukrainian, Belorussian, Crimean and Latvian partisans.

In the performance of special assignments for the staffs of the partisan movement alone, division crews made 380 landings at night deep in the enemy's rear area, delivering 695 men, more than 300 tons of ammunition, around 130 tons of special cargo and dozens of tons of fuel. On the return trips they evacuated 1,328 wounded and hauled out 30 tons of cargo.

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The 101st Air Regiment commanded by Hero of the Soviet Union Colonel V. S. Grizodubova performed with special distinction on those flights. A. M. Verkhovzin served as regimental chief of staff and Lieutenant Colonel N. A. Tyurenkov as deputy regimental commander for political affairs during the war. The names of airmen B. G. Lunets, S. S. Zapylenov, V. M. Fedorenko, G. V. Chernopyatov, N. I. Slepov and I. S. Valukhov, navigators A. D. Kasparov and N. N. Pokachalov, and many others were well known to the partisans of the Ukraine and Belorussia.

At the end of September 1942 the 101st Regiment went from making isolated flights to detachments fighting on temporarily occupied territory to performing combat work for the partisans on a broad scale. Each night dozens of heavy planes carrying ammunition, weapons (including cannons and mortars), food and clothing crossed the front line and dropped their cargo to the partisans deep in the enemy's rear area.

It soon became apparent, however, that the planes would have to land among the partisans. A group of officers was detailed to select suitable sites and to set up a flight line service. They were dropped by parachute at the projected landing sites in immediate proximity to the zone of operations of the partisan detachments. A copy of an account by Captain Kudryukov, one of the officers sent to the location of D. V. Yemlyutin's partisan detachments, was preserved in the archives.

"On the night of 25 September I took off for the area of Bryansk as part of an aircraft crew commanded by Senior Lieutenant Chernopyatov. The aircraft commander and I had made an advance, detailed study of the site where we were to land and which we detected without difficulty as we flew to our destination. Personnel of Comrade Yemlyutin's detachment received me joyously. The next morning they helped me to find a landing site and then to make it safe for take-offs and landings....

"I must say that my flight directly to the partisan detachment, followed by the arrival of a number of comrades, raised morale to a new level for uncompromising struggle with the enemy, and the partisans entered more boldly into combat to perform their important assignments with the knowledge that Russia proper would come promptly to their aid when necessary."

The fact should be mentioned that, despite the enthusiasm of the partisans and the efforts of the airmen in the detachments, the landing strips were not always satisfactory by far, and it was only good flying skill which rescued the crews as they performed their extremely difficult missions. I recall a well-known incident which occurred in June 1943 on a flight by a crew headed by I. A. Grishakov. The partisans could see that something happened to the heavily loaded aircraft during take-off. Deciding that it had crashed, they set out to find it. As it turned out, however, the aircraft commander had managed to save both the crippled plane and its passengers.

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This is what happened. During the take-off from the clearly unsuitable strip the tail section of the aircraft struck a tree, causing considerable damage to the stabilizer, the elevator and the tail wheel, which then fell off in the air. In addition, the plane was soon attacked by enemy fighters. It received several holes and other damage. Despite all this, Major Grishakov honorably extricated himself from the difficult situation and, after a 6-hour flight, landed safely at the home airfield.

That incident demonstrated not only the pilot's great flying skill but also the survival qualities designed into the Li-2, which was still able to fly in a seemingly hopeless situation.

One of the problems facing the division command and the aircraft commanders was that of increasing the capabilities of the aircraft, specifically the range of the Li-2. T. A. Strokach, chief of staff of the Ukrainian partisan movement asked V. S. Grizodubova, commander of the 101st Regiment, to install additional fuel tanks on the aircraft to make it possible for them to fly to partisan forces of the Right-Bank Ukraine. The engineering and technical service did the design work, and extra fuel tanks soon appeared on the first aircraft. They were then installed on 25 more planes, and the crews provided effective assistance to partisans deep in the rear area.

The division's well-organized communications service was highly important to the successful execution of missions. Engineer-Major Panov was in charge of it. In the most difficult situations the crews were able to contact ground facilities and to make proper decisions with their assistance. Once, for example, aircraft commander Vladimirtsev's crew received an assignment to deliver an emergency load of ammunition to the partisans. Approaching the destination, the crew found that the markers below were not those which had been described for identifying the site. Aircraft radio operator Bulakov contacted the mainland, explained the situation and was told that the partisans had been forced to change the markers for a number of reasons but had not been able to report this before the plane had taken off. Ground issued new instructions, and the assignment was carried out precisely. When the same crew found itself in a difficult situation near Velikiye Luki--the aircraft was hit at the front line, the shell damaging the right engine and seriously injuring the navigator--the aircraft picked up signals from a radio beacon. From the bearing and the radio beacon the crew reached their airfield and landed safely without a navigator.

In 1942 alone division signalmen serviced 715 night combat sorties to partisans deep in the enemy's rear area.

The combat work of the 1st Air Division was especially intense during the winter of 1942-43. By day the crews performed operational transport missions and at night they bombed enemy installations and flew on special



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missions to supply the partisans with ammunition. Cherkassy, Gomel', Bobruysk, Baranovichi, Rezekne, Pinsk, Sarny, Mozyr', Begomi'--this is far from a complete list of the areas with which the division pilots maintained contact during that period of time. Many crew members were awarded the medal "Partisan of the Patriotic War" for their active assistance to the partisan movement.

The following are excerpts from a few combat documents characterizing operations of the 1st Air Transport Division and the skill, courage and heroism demonstrated by its flight crews in the performance of combat assignments.

From the combat record of the 101st Regiment, which was signed by the chief of staff of the Belorussian partisan movement on 16 April 1943:

"In the performance of an assignment covering 95 individual flights (during the period 1 August 1942 to 14 April 1943--G.P.) up to 200 men and 80 tons of combat cargo were delivered to partisan detachments.

"In addition, aircraft performing missions requiring them to land in partisan detachments evacuated up to 400 men on the return trips....

"Placing great value on the assistance provided them, the partisan view flight personnel of the 101st Air Regiment as their selfless and devoted friends, admire their skill and express gratitude for their work."

From a resolution of the Oblast Committee of the All-Russian Communist Party (Bolshevik) and the Council of People's Commissars of the Crimean ASSR, "On the Work Performed by Li-2's of the 102nd Long-Range Air Regiment to Drop Food and Ammunition to Partisans in the Crimea":

"1. The Krimskaya Oblast Committee of the All-Russian Communist Party (Bolshevik) and the Council of People's Commissars acknowledges the enormous job performed by the air group of the 102nd Long-Range Air Regiment to drop food and ammunition to partisans in the Crimea, who are struggling heroically against the German fascist invaders, the sworn enemies of the USSR....

"2. We express our gratitude to the technical flight and ground personnel of the group of aircraft serving the Crimea and to the command of the 102nd Long-Range Air Division for its exemplary execution of decisions of the Crimean Council of the North Caucasus Front....

Secretary of the Krimskaya Oblast  
Committee of the All-Russian Communist Party (Bolshevik)

L. Lenisher

Representative of the Council of People's  
Commissars of the Crimean ASSR

I. Seyfulayev

14 June 1943."

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This resolution was promulgated in connection with flights performed by airmen of the 1st Military Transport Division to the Crimean partisans. In April and June the division served the North Caucasus Front, carrying out bombing attacks and performing transport missions. In the first part of June five crews of the 102nd Regiment worked exclusively for partisans in the Crimea. They delivered 49 tons of food, 5 tons of ammunition and 16 paratroopers to the partisans in 78 individual flights.

From an action report on assistance provided the Leningrad partisans:

"3 March 1943... 17 aircraft were placed at the disposal of Comrade Alekseyev, a representative of the Leningrad partisan staff... for dropping partisans and cargo in the enemy's rear area in occupied rayons of Leningrad Oblast....

"The massing of partisan detachments, groups and cargo was accomplished by the group on 5 and 6 March 1943...a total of 18 individual flights were performed, which moved 227 partisans and 11,250 kilograms of cargo.

"On 7 and 8 March 1943 cargo was packed and preparations were made for landing partisan detachment personnel....

"The landing operation was carried out on the night of 9 March 1943....

"On 11 March 1943 we received a report from the enemy's rear area to the effect that all of the men and cargo dropped had been received in good condition.

"The air group... commanded by Comrade Major Orlov has performed an important combat mission....

"The Leningrad staff recognizes the exemplary organization of this landing operation on the part of the airgroup command and its brilliant practical execution by the aircraft crews....

"With their successful accomplishment of this large-scale landing operation group command, the aircraft commanders and personnel have helped the Leningrad partisan staff to begin performing combat and reconnaissance missions in the enemy's rear area without losses and in good time...."

And finally, excerpts from a document dated 17 April 1943 and signed by Lieutenant General P. K. Ponamorenko, chief of the Central Staff of the Partisan Movement:

"The 101st Long-Range Air Regiment served the Central Staff of the Partisan Movement from 1 August 1942 to 12 March 1943 and from 12 March 1943 to the present has worked directly for the republic staffs of the partisan movement, performing a great deal of work to air-lift men and cargo to partisan detachments active in the enemy's rear area.

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"Regimental personnel have performed the following under orders from the Central Staff:

"44 individual flights for the Belorussian staff, 111 for the Ukrainian staff, 26 for the Western Front and 337 for the Bryansk Front.

"Up to 700 men and 1,000 tons of combat cargo have been moved in 518 individual flights to partisan detachments operating in the enemy's rear area.

"In addition, aircraft performing missions involving a landing among partisan detachments have evacuated 1,493 wounded and 1,105 sick persons and the children of command personnel on their return trips from the partisan detachments.

"Thanks to skillful organization of the complex combat work the regiment lost neither personnel nor equipment during their numerous flights to partisan detachments.

"Aware of the difficulties involved in delivering ammunition from beyond the front line but needing it on a daily basis, the partisans speak with special gratitude of the job performed by the airmen to deliver them the cargo.

"The skill demonstrated by the airmen as they performed flights in difficult weather and landed their heavy aircraft on ill-prepared landing strips repeatedly evoked admiration from the partisans observing the superbly executed landings and take-offs...."

Just who were these brave and courageous people who elicited admiration with their skill and boldness?

It would be impossible to write about or even simply to mention all of them, since it would take dozens of pages simply to list the names of those brave and courageous airmen, who performed in the awesome wartime skies. I shall, therefore, tell about only a few of them, those who created our aviation's fame together with the others.

Stepan Semenovitch Zapylenov commanded a crew of the 101st Air Regiment in 1942 and served as commander of that regiment in the rank of lieutenant colonel beginning in May 1944. He has more than 200 combat sorties to his credit, of which 132 were performed at night and 27 were made to partisans deep in the enemy's rear area.

Prior to the war Stepan Semenovitch served as deputy chief of the Moscow Directorate of the Civil Air Fleet. His vast experience and knowledge and his ability to direct people helped S. S. Zapylenov to become not only an outstanding commander but also a recognized and respected indoctrinator and teacher of young pilots. He made a great contribution to the combat and

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general training of airmen. Under his leadership regimental personnel made 1,739 individual combat sorties, most of them deep into the enemy's rear area. His two Orders of the Red Banner, Order of Aleksandr Nevskiy, three Orders of the Red Star, the Order of the Patriotic War, first degree, and medals, including the "Partisan of the Patriotic War," first degree, are fitting awards for this brave and tireless fighter.

Petr Petrovich Abramov began his service in the 101st Air Regiment in October 1942. He performed 205 night combat sorties, 49 of them to deliver ammunition and other cargo to the partisans. The following two incidents attest to the courage and skill of this pilot. On 7 September 1943 P. P. Abramov's crew departed with a load for partisans deep in the rear area. Above enemy-held territory, Abramov's plane was attacked by a Hitlerite fighter. The heavy airship's battle with the fascist vulture lasted almost an hour, but the pilot's great skill permitted him to emerge from the attack with the aircraft intact and to complete an outstanding mission.

In August of that same year Abramov's crew was assigned the mission of delivering an emergency cargo to Yakhontov's partisan detachment. Several enemy fighters attacked his aircraft at the front line. The pilot made four attempts to cross the front line before he managed, and then only by dropping to minimum flight altitude, to escape pursuit and deliver the cargo to the partisans.

The navigators contributed a great deal to the successful performance of combat missions. I shall name only two of them--A. P. Bulanov and O. A. Akimov. The success of combat flights, especially on night missions, in the enemy's rear area and in difficult weather, depended on their knowledge and abilities. Flights by 102nd Air Regiment crews to the Crimean partisans succeeded in great part due to the skill demonstrated by navigator Akimov, who guided the aircraft over the sea and through the anti-aircraft fire of shore batteries and was able to bypass patrolling enemy fighters and to find sites indicated by the partisans in the mountains at night.

The 1st Air Division developed many valorous airmen, eight of which were awarded the title Hero of the Soviet Union. These included B. G. Lunts, T. K. Gavrilov, A. D. Kasparov, I. D. Kozlov and N. N. Pokachalov.

Naturally, the 1st Air Division was not the only one to become famous for its flights to the partisans. Pilots of other air formations also provided the people's avengers with a great deal of assistance.

Supplies were delivered to the 1st Belorussian Partisan Brigade by the 105th Guards Air Regiment commanded by Ye. T. Klusson. Pilot N. I. Zhukov and navigator A. I. Starkov were the first to land among the partisans of that brigade. They laid out the first routes, over which the partisans received ammunition, explosives and weapons until the end of 1943.

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A night light-bomber Komsomol air regiment formed in the middle of 1942 at the initiative of the Komsomol Central Committee provided the Belorussian partisans with considerable assistance. The regiment was commanded by Major M. D. Yerenkov, a member of the Komsomol Central Committee and an experienced combat pilot. During its combat operations the regiment performed more than 5,000 sorties into the enemy's rear area.

The Komsomol regiment's missions included that of maintaining contact between the front command and the partisans. These assignments were performed by a specially selected group headed by Senior Lieutenant D. S. Krichevsk, deputy squadron commander. The valorous airmen delivered weapons, ammunition, medicines and newspapers to the partisans in the most difficult weather and evacuated the seriously wounded and ill on their return trips. They frequently had to land under enemy fire at sites surrounded by fascists.

Krichevsk's group performed 133 flights involving landings in the enemy's rear area and 60 flights to air-drop cargo to the partisans. All of the pilots in this group were awarded orders and medals. The partisans awarded the group commander a pistol with the dedicatory inscription: "To Pilot D. Krichevsk from the Partisans of Belorussia."

I feel compelled to say a great many glowing words about Boris Fedorovich Chirskov, one of our veterans and an active participant in the Great Patriotic War. First, however, I will tell about an operation which became known as the "Air Bridge to Slovakia."

During the war Soviet air transport units provided assistance not only to Soviet partisans but also to partisan detachments of nations in eastern and southeast Europe and to the Resistance movement in those nations.

The assistance given the Slovak National Rebellion and the organization of an air bridge between L'vov airport and the Banska-Bystrica area comprises a glorious page in the history of our aviation.

By the summer of 1944, when the Soviet Armed Forces had approached the border between the USSR and Czechoslovakia, conditions had developed conducive to an anti-Hitlerite rebellion in Slovakia, which had been artificially separated by the fascist regime. Antifascist forces led by party organs of the Communist parties of Slovakia and Czechoslovakia were stepping up their struggle against the Hitlerites and their accomplices and the national committees were becoming real organizers of universal resistance to fascism.

As a result, at the request of Czechoslovak leaders and in accordance with a Soviet-Czechoslovak agreement and a treaty on friendship and mutual assistance, an air-lift of Soviet and Czechoslovak partisan groups from the USSR to Slovakia was organized in the summer of 1944. As early as July 1944 the staff of the Ukrainian Partisan Movement and the command

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of the 1st Ukrainian Front were forming groups which were to step up the armed struggle against German and local fascists in Slovakia, to disrupt rear operations of Hitler's army by every possible means and to engage in political work among the masses.

Between July and the end of 1944, 53 organizational groups totaling around 1200 people were moved into Slovakia by Soviet flyers.<sup>28</sup> These groups were formed into large partisan formations made up mainly of Slovaks.

By the end of August operations of the partisan detachments, the ranks of which were continuously replenished with volunteers, had turned into large-scale partisan warfare in most of Slovakia. This fact could not fail to evoke serious concern on the part of the nation's fascist rulers. On 23 August they appealed to Hitler for military units. Wehrmacht command began immediately to bring its forces into the area of the uprising. Partisan forces responded with vigorous offensive action. During the period between 26 and 30 August the partisans occupied a number of population centers including Banska-Bystrica, which had become the political center of the rebellion.

On 31 August 1944 the Czechoslovak ambassador to the USSR, (S. Firlinger), appealed to the Government of the Soviet Union for military assistance for the uprising taking shape in Slovakia.

The commander of the 1st Ukrainian Front was instructed to prepare for the possibility of assisting the rebels. Marshal of aviation A. Ye. Golovanov, commander of the Long-Range Aviation, was ordered to organize an air-lift of weapons and ammunition for the rebels around Banska-Bystrica.

The new strategic situation at the beginning of September made an air bridge the only possible way of helping the rebels. It was decided to air-lift the 2nd Czechoslovak Airborne Landing Brigade and the 1st Czechoslovak Fighter Regiment to Slovakia, in addition to ammunition and weapons. The 5th Air Corps, commanded by Lieutenant General I. V. Georgiyev, with partial participation by the 4th Guards Long-Range Air Corps, was charged with the practical execution of that operation.

At the beginning of September Colonel B. F. Chirskov, deputy commander of the 53rd Air Division, was assigned the job of putting together an operational group capable of receiving a large number of transport planes at night at an unfamiliar field airstrip in mountainous terrain, unloading them promptly and sending them back to the mainland.

The group had a large job ahead of it. Among other things, it would have to prepare the airstrip for night operations--establish a fixed landing course, the site for unloading the planes, an engine warm-up site and an alternate runway; train people to service the flights (light tenders, unloading and evacuation teams, and so forth); make the proper decision in each specific instance as to the number of aircraft which could be accepted and their

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sequence; systematically monitor the work of all teams on the take-off detail; direct landing approaches, landings and take-offs and maintain the prescribed tempo of operations; see to the repair and reliable operation of the telephone line to the individual in charge of flightline groups and make certain that the radio set was always ready immediately to transmit commands to the aircraft and reports to the mainland; promptly remove cargo arriving from the mainland, and camouflage the airfield.

Boris Fedorovich Chirskov shared with the author his recollections of events occurring in the fall of 1944 at the Tri Duba airfield in Slovakia.

The group included the following: Chirskov himself as group commander; Major Migur, his deputy; Captain Savinov, chief of communications; Lieutenant Ponamarev, aide-de-camp; two radio operators and seven guards, who also served as messengers and general assistants at the airfield. They had a powerful RAF radio set for communicating with the mainland and with the aircraft. Slovak rebels operating in the area of the Tri Duba airfield, where our plane landed, helped the Soviet flyers get their bearings on the terrain and showed them the best spot for concealing the radio set. The spot they suggested met all the camouflage requirements and, what is especially important, was not far from the airfield.

The aircraft on which we arrived at the Tri Duba airfield was unloaded and left the same night on a return trip to the mainland. At dawn the members of the group began inspecting the landing site and outlined the landing course, the wide glide path for the terrain, the landing sequence, the taxiing run, the site for the unloading of the aircraft and for warming up the engines and the take-off sequence. They also had to determine what sort of materials and auxiliary equipment would be required for unloading bulky cargo such as guns, vehicles, heavy mortars and so forth.

The very first night, the night of 18 September 1944, enemy bombers carried out a raid on the airfield readied for receiving the aircraft. Both the operations group and the Slovak comrades had to work hard to fill in and pack the numerous holes in the runway and to prepare the airstrip for the aircraft to land within the limited time available.

More than 100 transports carrying men, equipment and weapons landed at the Tri Duba airfield that same night. There were no flight accidents. The operations group, the flightline team and the evacuation team made up of Slovak rebels performed their duties superbly.

B. F. Chirskov's group worked at the Tri Duba airfield almost six weeks. Each night, after the last aircraft had departed, they had to make the flight line appear abandoned and inactive and to camouflage the airfield, thereby concealing the scope of the entire operation from the enemy's reconnaissance service. Soviet flyers and their Slovak comrades coped successfully with this difficult task. The number of bombing raids dropped

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markedly and reconnaissance aircraft, which appeared in the area almost every morning and evening, found nothing to indicate that the airfield had been used during the night.

The systematic air-lift of the 2nd Czechoslovak Airborne Brigade into Slovakia was begun. It lasted until 24 October. It might be interesting to review information <sup>29</sup>compiled by a representative of Headquarters on air transport operations between 27 September and 24 October:

Date	Transported		No. of planes			Hauled out on return trip	
	Personnel	Cargo (tons)	Total	Completed missions	Returned due to weather	Personnel	Cargo
27 Sep 44	106	13	13	13	--	--	--
7 Oct 44	334	47	47	47	--	111	--
8 Oct 44	268	44.5	45	45	--	153	0.4
9 Oct 44	467	62.7	72	72	--	139	0.2
10 Oct 44	7	1.1	20	2	18	3	--
14 Oct 44	514	55				104	2
15 Oct 44	31	11	30	10	20	--	--
17 Oct 44	156	44.5	71	42	29	43	4.5
24 Oct 44	45	24.8	39	18	21	72	
<b>Total</b>	<b>1928</b>	<b>303.6</b>	<b>337</b>	<b>249</b>	<b>88</b>	<b>625</b>	<b>7.1</b>

By analyzing this information one can get some idea of the enormous amount of work performed by a relatively small force involving flights of considerable range. In the rapidly changing situation of that time such extensive air transport operations was only possible with extremely well organized reception and dispatch of the aircraft.

Chief Marshal of Aviation A. Ye. Golovanov, former long-range aviation commander, gives an evaluation of the work performed by the operations group at the Tri Duba airfield during that period and his summation of the performance of the air bridge to Slovakia:

"...Chirskov's group landed safely and immediately began making preparations for receiving aircraft, large groups of which were to begin arriving very soon: as many as 80 to 100 planes a night. The job would not have been an



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easy one even under ordinary circumstances. In this case, there were enemy fighter bases nearby, and a raid could be expected any day. Maximum camouflage measures had to be taken for the night operations, which meant that the number of lights on the flight field had to be kept to a minimum. Arriving aircraft had to be unloaded with great haste and sent off again immediately, since the airfield could not process a large number of aircraft at once and it was dangerous for them to remain until daytime: the area was regularly visited by enemy reconnaissance planes.

"Despite all the obstacles, however, our operations group managed to do the impossible under the very nose of the enemy. During the very first nights following its arrival the group made the preparations necessary for receiving, unloading and dispatching from 80 to 100 or more aircraft. They arrived at the airfield in waves of 15 to 20 planes. This conveyor line performed like a smoothly adjusted machine, although enemy aircraft bombed the airfield more than once." 30

This is how Boris Fedorovich Chirskov himself, presently a guards major general of aviation (reserve), rates the work of his comrades:

"I would like to give proper credit to the commanders of the air regiments and crews which landed at the Tri Duba airfield or dropped a cargo, thereby assisting the rebelling people of Slovakia; regimental commanders of the 5th Bomber Corps Filin, Ravich, Shamrayev, Stepanov, Yezerskiy and Afonin, and regimental commanders of the 4th Guards Bomber Corps Dragomiretskiy, Balenko, Presnyakov, Dmitriyev and many others. They prepared their crews properly for each night flight to Slovakia and thoroughly considered all of the information which I transmitted to the mainland from the Tri Duba airfield. This included, among other information, specifications for finding the airfield, the procedure and sequence of action to be taken by the pilots in the landing approach, information relating to use of the homing station for plotting a rectilinear approach route, the landing pattern for the night, the glide path following the fourth turn, prevailing winds at the airfield, and so forth. In addition to this, the regimental commanders received detailed critiques of errors committed, which we also sent out every night in the reports on the last aircraft departing for the mainland.

"All of these measures carried out by the operations group and the air regiment commands justified themselves by totally eliminating flight accidents at the Tri Duba airfield and considerably reducing conditions which could give rise to them.

"I must not and do not have the right not to say a few words of praise about our flight personnel--the pilots, navigators, aircraft technicians, radio operators and aerial gunners who flew into Slovakia. I began to appreciate them fully during the period when they were making flights to the Tri Duba airfield--their bravery, heroism, skill and infinite devotion to the assigned work. Each crew was distinguished by these qualities, and

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one could only admire the diligence which they demonstrated at the Tri Duba airfield. Between landing and take-off, a matter of minutes, they managed not only to unload the plane but also to put on board stretchers bearing wounded Slovak soldiers and partisans. It was a joy to observe them during those periods! What a happy combination of military firmness and resourcefulness, of tenderness and concern for their wounded comrades in arms! Any nurse would have envied the way in which they carried and transferred the wounded men without hurting them. These crews included first of all those of our renowned pilots, Heroes of the Soviet Union M. T. Lanovenko, M. F. Kostenko and A. A. Vasil'yev, Comrades A. N. Kotelkov, N. S. Larionov, Ye. A. Timshin, V. V. Zakharov, P. F. Gubin, V. M. Bezbokov, Yu. M. Bezbokov, B. G. Yezerskiy and many of our other fine aircraft commanders--men who developed smoothly coordinated combat crews, who instilled in their men not only bravery and skill but also infinite devotion to the Communist Party and the homeland and developed in them a sense of comradesly duty and assistance.

"I would also like to mention my closest assistants in the operations group--Major Migur and Captain Savinov. They worked day and night, not knowing the word 'tired' at the airfield and at the radio station, with their selfless labor helping the group to accomplish the extremely difficult tasks assigned it by command.

"A lot of water has gone under the bridge since the 'Air Bridge to Slovakia' ended, but the Soviet pilots who took part in those flights have not forgotten the days and nights spent in the joint struggle of the Russian and Slovak peoples for freedom and independence.

"We will never forget the warm treatment received by Soviet fightingmen from the population of Slovakia, or their bravery, honor, fraternal assistance and self-sacrifice for a comrade."

As we discuss in greater detail the air bridge to Slovakia and the work performed by the operations group at the Tri Duba airfield during that period, we also have to tell in greater detail about Boris Fedorovich Chirskov himself, about his combat history. He joined the Red Army in 1927 at the age of 20. Upon graduating from the Borisoglebsk School for Pilots he became a flight commander and then a squadron commissar, taking part in the landing of men and cargo during the Soviet-Finnish war.

The Great Patriotic War found B. F. Chirskov serving as commander of a heavy bomber squadron. At the end of 1941 Chirskov was appointed commander of the 1st Heavy Bomber Regiment. The Guards title was conferred upon the regiment in 1942 for its successful actions against enemy airfields.

Chirskov's plane was shot down by enemy fighters on one of the combat missions to deliver food and ammunition to Lieutenant General P. A. Belov's cavalry corps. The pilot injured his leg when he landed near

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the city of Dorogobuzh. He was removed to a hospital in Klin but soon returned to his unit and resumed command of the 1st Guards Heavy Bomber Regiment.

Chirskov's crew delivered food to besieged Leningrad and hauled many children out to the mainland.

B. F. Chirskov became deputy commander of the 53rd Air Division in 1943.

In 1944, during the fighting near Uman', the airmen helped deliver fuel to the tankmen. Around 40 Li-2's, with which the division had been outfitted by that time, were involved in this mission.

After the war Boris Fedorovich took part in a number of expeditions during his continuing service in the ranks of our glorious aviation.

Also taking part in the air transport and landing operations and specifically in the flights to Slovakia were Nikolay Fedotovitch Zaytsev and Viktor Vasil'yevich Zakharov. N. F. Zaytsev is one of our well-known veterans and was one of the most active commanders contributing to the development and build-up of the Military Transport Aviation even after the war. V. V. Zakharov, presently a major general of aviation, commanded an Li-2 crew in the fall of 1944 and repeatedly delivered ammunition and men to the Tri Duba airfield. Zakharov performed flights and landings strictly according to instructions received from the flight operation officers. Only once did he remain among the Slovaks for a day because of engine trouble, giving a high rating to the skill of the operations group supporting aircraft landings in the clearing nestled high in the mountains.

This is what V. V. Zakharov had to say about the flights to the Tri Duba airfield:

"Over a period of several months the group directing the flights, headed by Colonel Boris Fedorovich Chirskov, deputy division commander, always met the crews landing with men and ammunition at the Tri Duba airfield.

"Our route covered around 1,000 kilometers at that time, but the main difficulty lay in negotiating the Carpathians and making the landing approach. We usually flew at an altitude of 3,000 meters and began breaking through the clouds in a spiral after 2500 kilometers, the only possible maneuver in the area of Banska-Bystrica.

"The first thing we saw was the flare from a rocket with which Chirskov signaled us. It was the 'shaft' around which we circled until the ground became visible, and there was the landing 'T' laid out with lamps. We did not delay at the airfield as a rule, but rapidly unloaded the ammunition, took the wounded on board and departed immediately on the return trip.

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"Aware that the Slovak partisans were expecting us, we flew almost every night, hauling in anti-tank guns, machine guns and ammunition. On one of the flights our plane began to shake—something was wrong with the right engine. The front line was behind us and we had already crossed one mountain ridge. There were other mountains ahead of us. The most important thing, however, was the fact that it would be impossible to repair the engine at the partisan site. At the same time, we knew that they were waiting for us and that the 1 and 1/2 tons of ammunition meant a great deal to the rebels.... I decided to continue on to Tri Duba. We made a difficult landing. Pilots know what it means to land an aircraft on one engine at night.

"The malfunctioning engine forced us to remain at the airfield until our comrades could deliver the necessary parts.

"The next morning we were amazed at the steepness of the mountains which completely surrounded the clearing and reminded one of an enormous cup with our airfield forming a velvety green bottom. I was even somewhat frightened at the thought of what awaited an aircraft which might stray even slightly off course."

The planes landed and took-off safely, however, a demonstration of the excellent skill of Soviet pilots.

The operation "Air Bridge to Slovakia" convincingly demonstrated the vast experience acquired by Soviet aviation in transporting troops and cargo.

That operation was one of the most successful of the Great Patriotic War, and the following formed the basis for its success.

In the first place, the organization and planning of such operations, as well as the ways and methods by which the transport aviation performed its specific and unique missions, had already been worked out sufficiently by that time. Control of all the forces involved in an operation was concentrated in the Long-Range Aviation command which was directly in charge of the assigned mission and which reported the results to the Supreme High Command as the operation progressed.

Secondly, considerable forces with experience in flying under difficult weather conditions were drawn upon to perform a mission. Suffice it to say that when the airborne landing operation began the 5th Air Corps, which was mainly responsible for delivering the troops and cargo to Slovakia, had 127 crews trained to perform night landings without searchlights.

The corps had Li-2's and C-47's which could be used for transporting not only troops and ammunition, but vehicles, field weapons and so forth, as well.

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In the third place, the flights were thoroughly organized and directed, which was an important factor contributing to the success. Operating smoothly at the airfield, in addition to B. F. Chirskov's group, was an operations group headed by Major General Bogdonov, chief of staff of the 5th Air Corps, which directed the loading and dispatching of aircraft.

Reliable radio contact made it possible in difficult weather to direct the aircraft landings in the small area in the mountains, to maintain two-way contact with the corps staff and to transmit weather reports to the landing area every 30 minutes. The crews received reports from reconnaissance aircraft every 10 or 15 minutes on the weather situation along the route. The fact that the flight profiles were worked out for the entire route and that the crews maintained the prescribed conditions precisely also contributed to flight safety even over the front line and over enemy territory.

As I conclude this page in the combat history of the Military Transport Aviation, I refer once again to the above-mentioned article by Chief Marshal of Aviation A. Ye. Golovanov:

"With respect to scale, the support provided for the rebels in Slovakia comprised one of the largest operations carried out by the Long-Range Aviation during the Great Patriotic War. Six regiments of the 5th Air Corps and the combat crews of several regiments of the 4th Guards Long-Range Air Corps took part in it.

"We delivered not only small arms but also regimental mortars, artillery, motor vehicles, anti-tank weapons, heavy machine guns and other military equipment. In addition to flights to the Tri Duba airfield we also flew to other locations in Slovakia, where we dropped weapons and ammunition.

"During the Slovak uprising our aviation delivered to the rebels more than 1,000 tons of cargo, mainly weapons and ammunition. In the fall of 1944 more than 40 percent of the weapons used in many partisan detachments operating in Slovakia was Soviet-produced. This is how we performed our international duty."

We shall never forget the heroic selflessness of the Soviet people, who came to the assistance of their brothers in their hour of difficulty.

It would be impossible to overestimate the importance of air transport units for ensuring the success of operations carried out by the partisans both in the USSR and in the nations of Eastern Europe. These were vital links and real assistance from the mainland to the patriots in occupied territory.

Long-range air transport units, the front aviation and Civil Air Fleet units performed a total of 109,000 individual flights, including 13,000 which involved landing among the partisans. The Long-Range Aviation and

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Civil Air Fleet units alone transported 17,000 tons of ammunition, weapons, food, radio sets, medicines, mail and other cargo. More than 83,000 individuals were hauled out of and returned to the partisan detachments.<sup>31</sup>

This is far from a complete picture, but it is adequate for judging aviation's importance in supporting the partisan movement, and supplying Soviet patriots in areas temporarily held by the enemy and in assisting the rebels of the nations of Eastern Europe.

Pages From the Fighting History

I shall discuss in somewhat greater detail the operations of certain units, which were called upon more frequently than the others to perform air transport missions during the Great Patriotic War.

First of all, I would like to tell about the combat experience of one of our units--the 2nd Special-Purpose Air Division, which I have already mentioned.

The 2nd Special-Purpose Air Division was formed out of a separate special-purpose air regiment of the Air Force, whose history goes back to the 1930's, and the separate special-purpose detachment formed in 1929 and outfitted with TB-1 aircraft, which has already been mentioned. The pilots in that detachment, which became an air squadron, took part in the legendary flights of the 1930's and set up the flights of V. P. Chkalov and M. M. Gromov. Such famous pilots as Chief Marshal of Aviation A. Ye. Golovanov, Chief Marshal of Aviation B. P. Bugayev, minister of civil aviation, and many others also served in the regiment.

The 2nd Special-Purpose Air Division originally included several regiments, which subsequently underwent certain changes. Colonel V. G. Grachev was named commander, Major H. Ye. Mazovko chief of staff, Senior Battalion Commissar S. Z. Koval' chief of the political section, and Regimental Commissar A. I. Kozlov military commissar.

The division was subordinate to the staff of the Red Army Air Force and was designated for transferring air units from rear to forward airfields and from one front to another, for delivering urgently needed cargo and medicines to fronts and armies and ammunition and weapons to the partisans, and so forth. The flight crews were also assigned special missions such as special flights to carry party leaders and members of the government, military leaders, members of foreign missions and others.

Military transports of the 2nd Special-Purpose Air Division were used during the war for maneuvering air units both within a front and between fronts. One of the first important combat missions assigned division command was that of transferring two composite air corps and seven separate divisions, as well as numerous units of the 8th, 16th and 17th air armies

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to airfields near the front in preparation for the counteroffensive near Stalingrad. The Division's 1st Regiment alone performed 621 flights at the end of 1942, transporting 5,648 men and 285 tons of cargo. The 2nd and 3rd air transport regiments transferred 5,356 men and 637 tons of cargo.

In emergency air-lifts of troops and cargo in 1943 the Division delivered 125,628 men and 11,487 tons of ammunition and other cargo to the fronts and to the partisans.

During the first period of existence of the 2nd Special-Purpose Air Division, 1942-1943, from three to five transports were placed at the disposal of fighter, bomber and ground-attack formations for transferring the personnel of their units, and for the Belorussian and other large offensive operations of 1944. Equipment and personnel of the 2nd Special-Purpose Air Division were employed en masse: the Division assigned 15 to 25 aircraft to each, as a result of which the air formations were transferred rapidly and without the enemy's knowledge.

Troops and cargo were air-lifted fairly long distances. Between 1 and 10 July, 25 crews of the 2nd Special-Purpose Air Division transferred the 2nd Bomber, the 1st Ground-Attack and the 1st Guards Composite Corps, the 7th Fighter Corps, the 236th Fighter Division and the 244th Bomber Division just to reinforce the 2nd Air Army taking part in the L'vov-Sandomierz operation. The Li-2 crews performed 296 flights, transporting 4,526 men and 176 tons of cargo.

Even a brief listing of a few missions gives an idea of the difficulty and importance of the missions performed by the Division. Only highly skilled pilots, valorous, brave and determined men, could have coped with them. This exactly describes the airmen comprising the nucleus of the formation. Suffice it to say that by the time the 2nd Special-Purpose Air Division had been brought up to full strength the Division's party organization contained 387 communists and 417 Komsomol members. This fighting avant garde accounted for 69 percent of all the flight personnel.

As I have already mentioned, the Division was formed out of a regiment which contained highly experienced crews. Despite this fact, however, personnel of the 2nd Special-Purpose Air Division had to make a great effort in order to master the use of the aviation equipment and the art of flying in difficult weather and in a combat situation within the brief period available. The pilots learned to fly aircraft day or night by instruments; the navigators--to provide radio support for the flights; the airborne gunner-radio operators--to maintain stable contact with ground radio facilities; and the airborne technicians and mechanics--to employ the aviation equipment competently and to maintain the aircraft in a constant state of combat readiness.

While in the beginning it was mainly the regiment's supervisory personnel who were capable of performing special assignments under difficult conditions,

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all Division personnel subsequently achieved great success through determined training and persistent drills, and by April 1943 missions were being performed in difficult weather by practically all of the crews. Flights in low clouds, above little-known terrain, in fog, rain and snow, became routine in the Division. This was achieved in great part as a result of the efforts put forth by the Division staff. An order issued by the chief of staff stated the following: "More of the responsibility for the combat training of the crews must now be assigned to the aircraft commanders. In addition to setting up group classes and assigning individual missions to the personnel, supervisory personnel of the regiments and squadrons are to devote more of their time to inspecting, monitoring and testing crews arriving at the base on the combat training subjects."

The fact should be underscored that this order was issued by the Division command under combat conditions, when the personnel were performing difficult daily missions as usual. A great deal could be said about the skill, valor and courage demonstrated by Division pilots during the Great Patriotic War. I shall discuss only a few combat episodes at this point, however.

At the end of April 1943 the crew of an Li-2 commanded by Captain G.G. Dudkin delivered some ammunition at night to partisans deep in the rear area. On the return trip the aircraft was illuminated in the darkness by enemy searchlights. The pilot began to maneuver the aircraft in an attempt to break away from the rays of the searchlights and to withdraw from the anti-aircraft fire. At that moment an Me-110 fighter rushed up to the slow-moving, poorly armed transport plane, hoping to destroy it at close range with impunity. Master Sergeant I. V. Vasilenko, aircraft gunner-radio operator, forestalled the enemy, however, and was able to set the fighter on fire with a turret machine gun. The crew of the Li-2 successfully completed the mission and returned safely to their airfield.

Aware of how much the cargo was needed in the combat units, the pilots delivered ammunition and fuel right up to the front line, subjecting themselves to great danger in the process. Despite considerable danger, for example, Captain B. D. Mal'chinov landed his aircraft carrying fuel supplies right at the Rostov Airport, and the tanks refueled at the aircraft and immediately went off to battle.

In March 1944, while coming in for a landing at the airfield in Yampol', B. M. Shchupakovskiy's plane was attacked by three enemy fighters. Shchupakovskiy was killed. The crew did not lose their self-possession in the difficult situation. Communist Senior Lieutenant D. A. Shevtsov, aircraft navigator, assumed command and managed to land the plane. The "Junkers," however, continued their pursuit and began to strafe the airfield. The Li-2 crew unloaded the plane under constant fire, took the passengers on board and made a safe flight back to their airfield.



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Communist Captain N. M. Larionov's crew demonstrated courage and heroism in the performance of a mission. The C-47 was shot at on a flight into the enemy's rear area and one of the engines caught on fire. Despite this, however, the pilot continued toward the target and at the designated site dropped ammunition and food to troops operating in isolation from our bases. Captain Larionov managed with great difficulty to put out the fire on the return trip and made it back to his airfield.

At an airfield near the city of Nevel' enemy fighters attacked and set on fire the Li-2 on which Lieutenant Fedotov was delivering cargo to the front line. Despite the fact that the airfield was subjected to continuous shelling, Lieutenant Fedotov's crew did everything possible to extinguish the fire. The airmen not only saved the aircraft but also completed the combat mission successfully.

In general, I must say, the struggle waged by the crews to save their aircraft and the selfless efforts of the technicians and mechanics who brought their aircraft, riddled with holes from bullets and fragments, back to the formation is a subject which deserves special attention. Very little, after all, has been told about the courage, resourcefulness and great skill of the aircraft technicians, who were able to give new life to the winged machines helping to rout the enemy.

In May 1944 Senior Lieutenant Gal'chenko's crew had delivered a load of combat cargo to the airfield at Berezhnitsa on a Li-2. Enemy aircraft attacked the airfield at that time. An engine caught on fire. Senior Sergeant Tkachenko, aircraft mechanic, who was standing next to the plane, began to extinguish the fire, ignoring the continued shelling by enemy fighters and the exploding bombs. The other crew members followed the brave mechanic's example. Their joint effort saved the aircraft. The crew carried out combat missions on it until the very end of the Great Patriotic War.

Their great awareness and duty and the assistance provided each other, by the crew members permitted Division personnel successfully to perform extremely difficult missions in highly complicated situations.

Troops defending Leningrad and the population of the Hero-City received a great deal of assistance from the Division.

The 2nd Special-Purpose Air Division also took part in air transport operations in the campaign in the Far East. A total of 5,595 men and 538 tons of cargo was air-lifted during the operation to destroy the Guangdong Army.

Division flight personnel also coped excellently with missions assigned them during the war with militarist Japan. Communist Captain M. G. Dudkin's crew especially distinguished itself. On 19 August 1945 his aircraft was

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the first to land at the airfield in Mukden to arrange for the arrival of the other troop transports. Manchu Emperor Kuo P'u-i was there at the time, awaiting an aircraft to take him back to Japan. Our landing force rapidly captured the airfield, the Emperor was taken prisoner and did in fact depart--not on his own aircraft, however, but on Captain Dudkin's Soviet transport, and not to Japan but to the headquarters of the Soviet command.

I shall now discuss in greater detail the operations of one of the subunits of the 2nd Special-Purpose Air Division, the 105th Separate Guards Long-Range Night Reconnaissance Squadron.

Despite its small flight staff this combat squadron, which averaged three to five C-47's, took an active part in transport operations throughout the period 1943-1945, delivering men and cargo to destinations quite frequently located deep in the enemy's rear area.

The long-range night reconnaissance squadron was formed in May 1943. Captain G. G. Dudkin, who died in August 1943, was its first commander. The crews performed special missions, delivering scouts to the enemy's rear area, providing liaison with the partisans, and so forth.

The squadron developed some excellent specialists and first-class pilots: Captains V. I. Krasnov, Ya. A. Belov, and I. V. Rogulin, Senior Lieutenants N. S. Shishkov, M. A. Sarkisov and V. I. Bogdanov, and others. During its year of combat operations, the squadron performed 131 combat sorties deep into the enemy's rear area and 234 flights to mass men and cargo at strategic airfields, and 29 of the members received state awards. 32

On 7 May 1944 the squadron became a part of the 2nd Special-Purpose Air Division. At that time it was commanded by Major V. A. Tsutsayev, veteran pilot and combat commander. The crews' work increased even more in intensity. In May 1944 alone the squadron's pilots performed 59 flights to strategic airfields, transporting 336 men and 41 tons of cargo, and landed 9 men and 21 tons of cargo in the enemy's rear area with night combat flights.

The aircraft crews frequently found themselves in difficult situations as they performed the responsible missions assigned to the squadron. Negotiating the front line and the air defenses of fortified enemy areas, especially near large cities, and night flights in difficult weather and over mountainous terrain--all of this required exceptional professional skill and true courage. And the squadron's pilots emerged from the most difficult situations with honor.

In July 1944, the squadron had only three planes. Nonetheless, 29 flights were carried out that month to move personnel to new bases, and more than 200 men and 20 tons of cargo were transferred. A total of 34 paratroopers

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and 30 tons of guns and ammunition were transported on 23 flights deep into the enemy's rear area. The crews performed 52 flights lasting a total of 215 hours during the month.

The crews of M. A. Sarkisov, V. A. Tsutsayev, S. G. Rymar', I. I. Seleznev and others dealt with numerous difficulties.

A flight performed by the crew of Senior Lieutenant S. G. Rymar' turned out to be a dramatic one. This crew, the best in the squadron, was assigned the important mission of evacuating leaders of the Polish liberation movement, including General Michal Rola-Zhymiersky, commander of Armia Ludowa, from near the Polish city of Lublin deep in the enemy's rear area.

Aircraft commander S. G. Rymar', navigator Lieutenant V. V. Vybornyy, aircraft technician Technician-Lieutenant F. F. Shkurat, aircraft gunner-radio operator Senior Sergeant I. V. Vasilenko and aircraft gunner Sergeant Ye. G. Staburov made thorough preparations for the flight: they would have to fly in an area of dense clouds and to refuel near the front line in order to make the return trip. The difficulty lay in overcoming a screen of fire: the Hitlerites were blockading the area of concentration of Polish partisans.

Despite the intense shelling, the crew safely crossed the front line and then the screen of fire near the partisans, and the commander landed the ship at the site designated by the Polish comrades.

The soft clearing surrounded by woods turned out to be absolutely unsuitable for use by heavy aircraft, however. The attempt to take off almost ended in tragedy. As the plane was gaining altitude the tail section caught on a tree, damaging the elevator. It was only the pilot's excellent flying skill and his perseverance and courage which permitted him to bring the aircraft down again. The passengers and crew did not suffer. It was not possible to repair the plane, however, and it had to be burned. The partisans and the Soviet airmen worked together for several nights to prepare a site in the clearing where another aircraft could land.

On 5 July, Major V. A. Tsutsayev's crew landed safely at the site. It included Captain Ya. A. Belov, navigator; Technician-Lieutenant I. P. Ronkiy, aircraft technician; and Senior Sergeant N. V. Strogan, aircraft gunner-radio operator. Carefully calculating the aircraft's load and taking all of the necessary steps, Tsutsayev took off and made a safe flight to Kiev. All members of the crews of V. A. Tsutsayev and S. G. Rymar' were awarded Polish orders for courage and excellent flying skill.

Flight conditions became even more difficult in August. Airmen flying into east Prussia and Poland had to fly over mountainous terrain and to overcome the enemy's powerful air defense.

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A flight undertaken during that period by M. A. Sarkisov's crew (A. A. Aslanikashvili, co-pilot; Lieutenant L. I. Chervyakov, navigator; Senior Sergeant N. V. Strogan, aircraft gunner-radio operator; Technician-Lieutenant P. A. Bykhanov, apprentice aircraft technician) to the area of Breslau ended in tragedy. Near the city of Kielce the aircraft was subjected to powerful anti-aircraft fire and began to lose altitude. Ordering everyone to abandon the plane, aircraft commander M. A. Sarkisov did everything possible to keep the falling plane aloft. Only the scouts on board the aircraft and Aslanikashvili and Strogan managed to bail out, however. Aircraft commander M. A. Sarkisov and his comrades perished. Polish partisans buried the brave crew in Blizhynski Woods, and after the war the remains of the Soviet airmen were removed and buried with military honors at the municipal cemetery in the city of Kielce.

During its four months of combat work as part of the 2nd Special-Purpose Air Division (from May through September 1944, that is, during the Red Army's intensive offensive) the squadron performed 77 night combat flights deep into the enemy's rear area alone, delivering 213 scouts to their destination and dropping ammunition, weapons, medicines, newspapers and other cargo—a total of more than 90 tons—to the partisans.

The airmen transferred 1,392 men and 142 tons of cargo in 246 flights carried out between January and August 1944 for purposes of concentrating men and cargo at strategic airfields.<sup>33</sup>

It is not difficult to imagine the tension under which the airmen worked, constantly subjected to danger, or the courage and the skill they demonstrated as they departed day after day on difficult and impossible missions, selflessly giving their all to bring victory nearer.

A few years ago I read with great pleasure an article by N. Mar published in the 29 October 1969 issue of PRAVDA. I shall end this account of the 2nd Special-Purpose Air Division's 105th Separate Guards Long-Range Night Reconnaissance Squadron with a few lines from this article:

"Tsutsayev flew into the rear area, to the enemy, 50 times if not more. How many scouts did he land beyond the Bug, the Dnestr and Dunay, on the Spree and Rhein?! It was his men who transported the leaders of the Polish patriotic underground out of the rear area of the Hitlerites. It was their flying skill which helped the partisan brigades of Fedeorov, Lin'kov, Brinskiy and other partisan leaders.

"The airborne guards paid a great price for the victory achieved in fire...."

In 1942 and 1943 the 2nd Special-Purpose Air Division was mainly used for transporting troops and materiel from the deep rear to the front and for moving air army personnel to new bases, whereas at the end of 1943 and in 1944 Division forces were used in large groups to support the maneuvering

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and concentration of air forces on the main sectors of the Red Army's offensive. During the war the 2nd Special-Purpose Air Division moved more than 290,000 men and more than 26,000 tons of cargo.

The Division's flight crews were also assigned especially important missions: flying Soviet state delegations to Teheran and San Francisco, providing support for the Yalta and Potsdam Conferences, moving the "Normandy-Neman" air regiment to Paris, and others. Excellent flying skill was demonstrated on these missions by Major General of Aviation V. G. Grachev, Division Commander, Lieutenant Colonel F. V. Asaf'yev, Lieutenant Colonel N. A. Zotov, Major A. S. Gorodilov, Major A. D. Sadovnikov, Captain A. A. Babich and many others.

I have already discussed how the Division and its separate subunits were brought up to strength and the importance attached to training and drills even under combat conditions. I would be remiss, however, if I failed to mention yet another circumstance which helped to maintain combat training in the Division on a high level. I refer to the role of command, first and foremost to that of Hero of the Soviet Union, Major General of Aviation V. G. Grachev.

By the time he was named commander of the 2nd Special-Purpose Air Division, Viktor Georgiyevich Grachev already had a solid background, including experience at command posts and as an instructor. He had also helped transport men and cargo during the fighting against the Japanese invaders on the Khalkhin-Gol River. And it was Major Grachev's crew which delivered Kh. Choibalsan, leader of the Mongolian People's Republic, to the area of combat operations. V. G. Grachev was awarded the Order of the Red Banner for excellent flight skill and courage demonstrated in the fighting on Khalkhin-Gol.

Prior to the Great Patriotic War V. G. Grachev commanded a squadron at the Borisoglebsk Military Pilots School and served as commander of a regiment of flight instructors. While serving at these posts Lieutenant Colonel Grachev developed the ability to train and indoctrinate highly qualified pilots. He was also assisted by excellent techniques in piloting aircraft under any conditions, even the most difficult, in daytime or at night. Viktor Georgiyevich Grachev's flying style was characterized by exceptional self-command and great professional skill. This is why important flights were assigned to him. The supreme high commander, the minister of foreign affairs and other members of the Soviet Government and Party leaders and prominent military leaders flew on aircraft piloted by General Grachev.

The title Hero of the Soviet Union was conferred upon General V. G. Grachev for courage demonstrated in the performance of extremely important assignments.

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Viktor Georgiyevich's merits are not limited to his personal flights, of course. This brave individual and superb pilot was able to organize in an excellent manner the intense combat work of an air division which made a contribution to the achievement of victory over the homeland's enemies.

The Moscow Special-Purpose Air Group, subsequently transformed into the 1st Guards Air Transport Division of the Civil Air Fleet, has already been mentioned. This was also one of the most powerful air transport formations under the High Command.

Major V. M. Korotkov commanded the Moscow Special-Purpose Air Group, and Senior Battalion Commissar I. M. Karpenko served as its commissar.

Group flight personnel possessed good professional skill, a thorough understanding of their duty, perseverance, courage and an amazing capacity for work. Airmen with the Moscow Special-Purpose Air Group coped successfully with the difficult missions and took part in almost all of the large airborne landing operations.

One report sent by Major V. M. Korotkov, commander of the Moscow Special-Purpose Air Group on 5 October 1941 read: "The mission of transporting units of the 5th Airborne Corps was completed by the Air Group. Between 3 and 5 October 5,440 fightingmen and 12,5 tons of cargo (ammunition and communications equipment) were moved."

The commander of the Airborne Forces noted the skillful work performed by the crews and expressed gratitude to all personnel of the 1st Squadron, which took part in the transport operations. An order issued by the commander singled out squadron commander V. N. Gvozdev and commissar I. M. Kuznetsov.

The document presented below gives an idea of the conditions under which the group had to work.

"Member of the Military Council of the North Caucasus Front, Admiral Isakov  
Commander of the 5th Air Army, Major General of Aviation Goryunov;

Operational report on completion of the cargo transport mission on the night of 26 June 1942;

1. The airgroup assigned to me was given the mission of continuing to haul ammunition with a landing at an airfield on the cape at Kherstones.
2. A total of 15 individual flights were made. All of the assignments were completed. A total of 28,380 kilograms of ammunition was delivered to Sevastopol', 336 wounded people were evacuated, and 2,000 kilograms of special cargo was delivered from Sevastopol' to Krasnodar.

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At the moment our planes arrived and during their stay at the airfield they were under intense fire from enemy field artillery. More than a hundred shells were dropped on the airfield during the 1 and 1/2 hours our planes remained there. The airfield was simultaneously subjected to fierce aerial bombing. All of our aircraft returned safely to their bases.

Commander of the MAON, Major Korotkov

Commissar of the MAON, Senior Battalion Commissar Karpenko"

In March 1943, during the spring thaw, troops of the Central Front were in urgent need of ammunition, fuel, and other supplies. The mission of hauling the cargo to troops of the Central Front was assigned to 14 Li-2's of the 1st Air Transport Division of the Civil Air Fleet (formerly the Moscow Special-Purpose Air Group).

With no covering force the crews flew by day at low altitudes, taking advantage of inclement weather--fogs and cloudiness--to escape detection, and flying when the Hitlerite fighters were reluctant to take to the air.

During a period of 19 days the group performed 1,394 individual flights without a single casualty. During that time the airmen transported 1,589.24 tons of various types of cargo, evacuated 12,124 wounded individuals to the rear and transferred 1,592 individuals to airfields near the front.

Air lifts performed to assist the beleaguered cities of Leningrad, Odessa and Sevastopol' occupied an important place in the operations performed by crews of the Moscow Special-Purpose Air Group.

In December 1941 Leningrad's defenders had stopped the enemy on the approaches to the city but had not been able to prevent the enemy from reaching the shore of Lake Ladoga. The city of Lenin was cut off by land.

With the beginning of the blockade air transport operations by the Moscow Special-Purpose Air Group to Leningrad increased sharply. At the end of September, for example, 75 percent of all the cargo hauled by the Moscow Special-Purpose Air Group was flown to Leningrad.

In October, pursuant to a decision adopted by the State Defense Committee, the maximum number of transports was assigned for delivering food to Leningrad and evacuating skilled workers from the blockaded city. From 30 to 34 of the Group's planes flew to Leningrad each day.

The flights took place in extremely difficult weather and in the face of powerful enemy counteraction. By day the planes flew in close combat orders, making it possible to employ the aircraft weapons more effectively and to organize a fighter escort. Single aircraft flew at night. The

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enemy frequently bombed the airfields where the transport planes were based. Fascist fighters literally hunted the transports over Ladoga. There was a shortage of escort fighters and the Li-2 crews had to defend themselves on their own.

The Hitlerites were not able to disrupt the transport flights to the blockaded city, however. The airmen's valor, courage, flying skill, assistance and willingness to come to each other's rescue produced a victory. The large-scale air-lifts of food and combat cargo continued up to December 1941, when the famous frozen "Road of Life" across Ladoga began functioning.

"Due to the heroic efforts of the airmen more than 6,000 tons of cargo, including 4,325 tons of high-calorie foodstuffs and 1,660 tons of ammunition and weapons, was delivered to the blockaded city from September to December 1941." <sup>34</sup>

The Moscow Special-Purpose Air Group contributed considerably to the organized withdrawal of Soviet forces from Odessa and Sevastopol'.

The situation of the defenders of Sevastopol', the main naval base of the Black Sea Fleet, deteriorated significantly in the second half of June 1942. The blockade of the city had lasted almost 250 days, and the defenders had received a great deal of assistance from surface ships and submarines of the Black Sea Fleet. It was becoming more and more difficult for ships to reach the base, however, and the delivery of supplies to besieged Sevastopol' and evacuation of the wounded were becoming more difficult with each passing day.

An air group consisting of 20 Li-2 transports and commanded by Major V. M. Korotkov flew out of Vnukovo Airport on 20 June 1942.

The group was made up of two squadrons. Lieutenant Colonel K. A. Bukharov, one of the senior pilots, was appointed commander of the first squadron, and I. M. Kuznetsov was named commissar. The second squadron was commanded by Captain V. A. Pushchinskiy, with I. S. Bulkin as squadron commissar. The aircraft commanders were the most experienced pilots, those who had made flights deep into the enemy's rear area and to besieged Leningrad.

The loads had to be delivered to the Khersones Airport, the only one operating near Sevastopol'. The cape at Khersones, where the airport was located, was continuously shelled by enemy artillery. Hitlerite aircraft based at Crimean airfields would bomb the airport at the slightest sign of any movement there. Figures cited in the second volume of the "Istoriya Velikoy otechestvennoy voyny 1941-1945" [History of the Great Patriotic War of 1941-1945] (Page 408) give an idea of the intensity of the shelling: "More than 700 aerial bombs were dropped and more than 5,000 artillery shells were fired at the airfield on the cape at Khersones between 23 and 30 June."



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Despite the selfless work performed under continuous fire by the airfield crew to level off the flying field and to care for the runways, take-off and landing conditions remained very difficult. And when you consider the fact that all flights to the airfield on the Kherstones cape were carried out by the Li-2's at night, you get an idea of the flight skill and endurance needed by the airmen to perform the missions successfully.

The difficulty of the flights was increased by the fact that a considerable portion of the route passed over the sea, and neither the navigators nor the pilots with the Moscow Special-Purpose Air Group had experience in flying over water. Navigators with the Black Sea Fleet's naval aviation helped. It was also difficult to get one's bearings on the approach to Kherstones: the direction of flight could only be determined from pre-arranged signals made with three searchlights. Nonetheless, the crews of all 20 aircraft involved in supplying Sevastopol' and evacuating the wounded, flew to the cape at Kherstones regularly, every night. In 10 nights Major Korotkov's air group delivered around 220 tons of ammunition to Sevastopol', evacuated 1,542 wounded and 620 flight personnel and technicians and 12 tons of cargo, making 119 individual flights in the process.

On the night of 30 June, 12 Li-2's left on the last flight for cape Kherstones. That flight involved some dramatic events.

After unloading the fuel and ammunition onto one-and-a-half-tonners sent from the forward edge, which lay 1 to 1 and 1/2 kilometers from the airfield, the aircraft crews began to take on the wounded and others to be evacuated. Captain M. S. Skryl'nikov, commander of one of the aircraft, received an order to remove his Li-2 to the parking area and wait for special flight instructions. The commander and the other members of his crew (A. Kurilov, co-pilot; A. Kudishin, aircraft mechanic; and M. Chikireva, radio operator) spent nearly two hours in worried anticipation, not knowing what sort of mission they would be expected to perform. The brief summer night dictated haste, and all of the aircraft had already taken off. To all of his questions, however, Skryl'nikov received only the answer: "Wait."

The entire cape Kherstones was being raked with fire from enemy machine guns, and the wounded continued to arrive, since this airfield was the only remaining link between the beleaguered Sevastopol' forces and the mainland.

It was well past midnight when Vice Admiral F. S. Oktyabr'skiy, commander of the Black Sea Fleet, member of the Military Council N. M. Kulakov and other representatives of the Black Sea Fleet command and from the Sevastopol' Defense Zone arrived in Kherstones. A large crowd had gathered on the flying field.

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Tension was growing, and panic could break out any minute. There were no planes at the airfield except for Skryl'nikov's aircraft. The loud, calm voice of Senior Battalion Commander B. Ye. Mikhailov, military commissar, was heard:

"Comrades, move back from the plane! I shall remain here with you. They will come for us later...."

The military commissar's voice was heard over the rattling and crackling of the fire, and calm was restored on the flight line.

B. Ye. Mikhailov knew that this was the last plane, but despite the fact that he could and should have departed along with command, he remained. In the situation this was the right decision. Organizing everyone who was able to hold a weapon to resist the enemy, the commissar fought the Hitlerites who had captured cape Kherstones to his last breath....

An account of the combat operations of the Moscow Special-Purpose Air Group would fill a small book about people with a highly developed sense of duty, selfless and with rare courage and proficiency.

The traditions laid down by veterans of the Great Patriotic War are still alive in units and subunits of the Air Force's military transport aviation.

After the war some of the airmen from the 10th Guards Air Transport Division returned to the Civil Air Fleet and many remained in the military aviation, while others took a well-deserved rest or devoted themselves to peacetime work.

People trained and indoctrinated by the celebrated aviators still serve in our units today. They carefully preserve the memory of those courageous people who taught them their difficult occupation.

Colonel Pavel Yakovlevich Yuger, Honored Military Pilot of the USSR and one of the best commanders of the Military Transport Aviation, who trained more than one generation of aviators, exchanged his military uniform for civilian clothes quite recently.

As one of the best pilots he was among those bearing their famous banners to the Victory Parade in Moscow in 1945.

Pavel Yakovlevich entered the Air Force at the beginning of 1940 with special Komsomol authorization. He served in the Soviet aviation 34 years, 29 of them in the Military Transport Aviation.

Many heroes, many valorous people who knew and loved their work also served in the ranks of the Military Transport Aviation during the Great Patriotic War and following the war. A great many interesting and instructive things

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could be written about many of them. I hope that their names will yet be given fame by members of the present generation, by the children and grandchildren of those soldiers who achieved our Victory.

I must say a word about the enormous importance of publicizing the combat traditions of our aviators. A museum has been established in one of the famous military transport units of the Air Force's Military Transport Aviation. It is located in heroic Belorussia, where the Soviet pilots flew especially frequently, delivering essential cargo to the partisans. The unit command and its political section, especially officers N. M. Mikhaylov, A. M. Sidorov and M. G. Sherzhukov, put forth great effort to collect documents and materials telling about the heroism and courage of the aviators who took part in the war against fascism.

Rooms of combat glory have been set up in the units and subunits of the Military Transport Aviation, and veteran councils have been created. Their members include five Heroes of the Soviet Union and more than 150 holders of orders who served at the front. They are making a great effort to collect materials on pilots of the Military Transport Aviation who distinguished themselves during the Great Patriotic War.

The veteran council of the famous Guards Red Banner unit, on the muster roll of which Hero of the Soviet Union N. F. Gastello is entered in perpetuity, is especially active. The council is headed by Hero of the Soviet Union M. T. Lanovenko. The veterans maintain close ties with unit personnel, and their visits, the congenial gatherings, their stories about the fiery war years, their concern for documents and relics of those years, and their correspondence and meetings with relatives of the dead heroes have a great positive influence on the young fighters, contributing to their ideological and political indoctrination and helping to strengthen their morale and to build up their pride in the previous generations. This is a vital link between the past and the tasks and successes of today.

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CHAPTER III

AIRBORNE LANDING OPERATIONS OF FOREIGN ARMIES

Three decades have gone by since the end of World War II but the war is still being studied. Military historians of all nations analyze the events of those years, compare the facts and derive conclusions, which to a considerable degree determine the line of development for the armed forces of various states.

Critical application of the experience of the last war, including that of airborne landing operations, taking the changes which have occurred in the technical equipment of the forces into account, permits us to derive the necessary conclusions relative to the present and future employment of airborne forces.

The comparison of methods used for organizing and conducting similar operations undertaken by the armies of the warring nations is also of definite interest.

This chapter contains certain data concerning the employment of aviation for delivering cargo, as well as the organization of airborne landing operations carried out in the armies of the USA, England and Germany.

The German Luftwaffe conducted a number of airborne landing operations during World War II, making extensive use of the Red Army's experience in conducting such operations in the 1930's.

The following airborne landing and air transport operations carried out by the German command were among the more or less important ones:

The March 1938 landing operation at the Wogram airport during the occupation of Austria;

The April 1940 landing operation carried out in Norway for purposes of capturing the airports at Stavanger and Oslo;

The May 1940 landing of an airborne group in Holland and Belgium for the purpose of capturing airfields, bridges and crossings over the Rhein and Maas rivers and developing subsequent operations against The Hague and Rotterdam;

The April 1941 landing operation carried out to capture a bridge in the area of Corinch, Greece;

The May 1941 airborne landing operation on the island of Crete;

The December 1942 air transport operation performed to bring supplies to Paulus's encircled army near Stalingrad.

None of these operations, with the exception of those carried out in Holland and Belgium, had a crucial effect on the accomplishment of the missions facing the ground forces.

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The airborne landing operations conducted in Belgium and Holland in May 1940, which were accompanied by savage bombing of peaceful cities, contributed to the rapid capitulation of those states.

The largest airborne landing operation was carried out on Crete. The German command employed for its execution the 7th Airborne Division (15,000 men), the 5th Mountain Rifle Division (8500 men), 500 bombers and fighters (800 bombers and fighters according to other sources) for combat support, and 500 U-52 transport planes and 60 transport gliders (600 transport planes and 500 gliders according to other sources) for the landing operation itself.

All of the airborne units involved were formed into four attack groups. The primary mission of the landing groups was to capture the airfields with swift action and to support the landing of the mountain rifle division.

The plan called for strikes by dive bombers for the sudden and simultaneous suppression of antiaircraft artillery in the landing area. In addition, it was planned to land an assault battalion from gliders onto the antiaircraft artillery positions.

There were not enough transports to drop all four attack groups at once. The landing operation would therefore be carried out with two trips. The mountain rifle division was to begin landing immediately after the airfield was captured. By 14 May 1941 all of the flying units taking part in the landing operation had been massed at airfields.

On the eve of the operation the German aviation subjected the island to fierce bombing. The main strike focused on airfields and coastal installations and on British ships located near the island.

On 20 May the Hitlerite air force again bombed the airfields, antiaircraft artillery positions and other targets. According to the plan, this strike was to be carried out immediately prior to the landing of the airborne forces. Take-off of the transports was delayed, however, because clouds of dust formed over the windless airfields when the bombers took off. A gap in time resulted between the bomber strikes and the beginning of the airborne landing operation itself. The British managed rapidly to restore their air defense in the area of the landing operation, and the anti-aircraft artillery greeted the leading air subunits carrying the landing force with considerable counteraction.

Due to the breakdown in the plan, only half of the personnel of all the attack groups (around 7,000 men) could be landed the first day of the operation. Not one of the assigned missions was completed. The landing force was not able to capture a single airfield on the island suitable for transport landings.



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The remaining parachute units were dropped the following day, and an attempt was made to land the mountain riflemen at a captured airfield.

An attempt was made to put a naval landing force ashore on the night of 21 May. It was unsuccessful, however.

The transport continued to fly in and land with units of the mountain rifle division on 21, 22 and 23 May.

Foreign military theoreticians regard this airborne landing operation as decisive in the capture of the island. An analysis of certain factors (the Hitlerites' air supremacy in the eastern Mediterranean and the virtual blockade of the island), for example, places it in a different light. Crete could probably have been taken by sea with fewer casualties. The following are the main errors made by the Hitlerite command in the conduct of this operation, in brief:

- despite the fact that all possible steps were taken to keep the preparations a secret, the British were alerted in advance that the Germans were readying an invasion of Crete;
- the landing operation plan broke down in the very beginning;
- the troops were parachuted onto still active strong points of the British, which resulted in extensive casualties;
- because some of the transport crews lost their orientation, landing forces were dropped at sea and in the mountains and forests.

And now, a few words about the Luftwaffe's air transport operation during the Battle of Stalingrad, when the Wehrmacht command attempted to relieve its forces encircled near that city.

In December 1942 the Germans had approximately 320 U-52's, around 40 U-86's and 190 He-111's for air transport operations.

The U-52's could only be employed from airfields located no more than 300 kilometers from the encircled grouping, because there was no fuel for them in Stalingrad itself, and the U-86's had to be eliminated from transport operations because of their small range and load capacity. The small number of large U-90's and U-290's transports were soon put out of action by technical malfunctions. An attempt was made to use transport gliders towed by planes. This undertaking was unsuccessful, however, since the gliders were subjected to frequent attacks by our fighters during the day and they were not equipped for flying at night or in clouds.

Flight personnel of the hastily formed air transport units lacked practical experience, and the aircraft frequently proved unsuitable for flying in difficult weather. The long flights over the positions of our forces and back again, and vigorous counteraction by Soviet fighters slowed the pace of supply deliveries to the encircled German troops.

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Furthermore, in order to supply Paulus's army by air, considerable effort was required to hold those airfields closest to Stalingrad.

During that period Soviet pilots destroyed more than a thousand German aircraft, in the air and at airfields, most of them transport planes. The Hitlerite aviation was deprived of the best trained pilots, taken from training units. At Field Marshal Kesselring's admission, that loss "was highly detrimental to the training of new cadres of pilots."

In its assessment of the Luftwaffe's Air Bridge operation near Stalingrad the foreign press noted that the Germans' attempt at the end of 1942 to deliver supplies to Paulus's army near Stalingrad was unsuccessful. The Germans failed because the Russians had overwhelming local air supremacy and because the former had the use of only a small number of hastily collected bombers--from the remains of air transport units--for air transport purposes.

This airborne landing operation was undertaken 2 and 1/2 years following the Crete operation, but it too did not have a decisive effect on the operations of the ground forces.

It should be pointed out that in the war in the West the German fascist forces carried out airborne landing operations against a demoralized enemy, which offered little resistance. In 1940 and 1941 the Hitlerite air force was still powerful enough to suppress air defenses and to arrange for considerable air cover for the military transport aviation and for the landing forces. Airborne landing operations during that period were therefore carried out in the daytime and in better weather conditions.

Operation "Air Bridge" near Stalingrad, on the other hand, took place under far less favorable circumstances, and this alone predetermined its failure to a considerable degree.

And now, a few words about the German transport fleet during World War II.

The U-52 was the basic transport plane of the German air force.

With respect to technical and economic features the U-52 which was designed for a range of 500 kilometers, can be compared to our TB-3, although the German plane had little more than 1/3 the load capacity of the Soviet aircraft and had only 1/2 the range carrying the same load.

Nonetheless, the U-52 was highly superior to the TB-3 and the Li-2: it was specially designed for the military transport aviation and was outfitted with the necessary equipment for landing troops and towing gliders. The dimensions of the cargo hatches and compartments made it possible to load light artillery systems, motorcycles, mortars, machine guns and other weapons onto the aircraft. German industry produced the U-52 in large

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series for several years, and this permitted the Wehrmacht command to transport troops and combat equipment by air on an extensive basis in a number of operations, specifically, in the "Air Bridge" operation, with which the reader is familiar.

It is interesting to know that our Air Force received over 1,000 transport planes more than the number of transport modifications of the U-52 received by German forces during that same period.

Gliders, specifically the DFS-230, which could carry nine men and their weapons, were also used in the airborne landing operations conducted by the German air force. U-86 and He-111 bombers, and in some cases the U-90 and U-290 heavy transports, were used less frequently for the performance of air transport missions. The latter were never extensively employed in combat operations, however, due to technical imperfections.

The following were among the most important airborne landing operations conducted during the last war by our allies, England and the U.S.A.:

The July 1943 Sicilian airborne landing operation, in which two airborne divisions took part;

The September 1943 landing of American forces near Avellino, Italy, to secure a beachhead for the landing of troops by sea;

The Normandy airborne landing operation of June 1944, during which one British and two American airborne divisions were landed;

The August 1944 airborne landing of a composite division which was landed east of Toulon, France;

The Arnheim airborne landing operation carried out in September 1944 to land three airborne divisions;

The Rhein airborne landing operation of March 1945, during which two divisions were landed.

I shall now give a brief account of the Normandy airborne landing operation, which facilitated the landing of troops by sea.

When they set up this operation, which was planned as the beginning of an invasion of northern France, the Anglo-American command assigned an important role to the airborne troops, who were to prevent the enemy from bringing up reserves to the naval landing areas.

The landing operation involved three airborne divisions (two American and one British), around 1,384 transports, mainly C-47's, and more than 3,000 gliders of various types. The parachute units of all three airborne divisions could be dropped in the first wave with this quantity of transport aircraft. The remaining units were divided up into a glider-landed wave and an echelon to be brought in by sea for a naval landing.

The operation plan called for one American division to be landed north of Carentan, the second to the west of (Sover-le-Vikonsh) (the Cotentin peninsula);



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the British division was to be landed directly at the area selected for the British naval landing (the Bay of Seine).

The Anglo-American command began preparations for the operation at the end of 1943, performing them very thoroughly. Division exercises involving a practice landing of troops and weapons were set up before the final phase.

The massing at the point of departure of the units and formations taking part in the airborne landing operation was completed by 4 June 1944 in a calm situation, without any sort of enemy opposition.

The landing was first set for the night of 4 June but was then postponed to 5 June.

Support for the operation received a great deal of attention. Despite the fact that they had gained control of the air in the spring of 1944, the Anglo-American command on the eve of the operation bombed all enemy airfields within a radius of 600 kilometers around the coast of Normandy. Strikes were carried out against coastal airfields from 3 to 5 June.

Diversionsary operations were also undertaken. In order to mislead the enemy as to the landing sites the British and Americans set up a feint assault landing with dummies far away from those areas, on the southern Cotentin peninsula and south of Havre. More than 1,000 British bombers delivered bomb strikes against various targets between Cherbourg and Havre for the same purpose. Special installations jammed enemy radar facilities.

A fighter escort was not provided for the airborne landing group, but the landing area was protected by British and American night fighters.

Pathfinders were the first aircraft to take to the air, followed from each airfield by transports carrying airborne forces. The aircraft formed into the flight formation over their airfields of departure and then set out for their destination in groups of 30 to 40 planes.

Special guide teams were dropped to mark the landing sites.

The British groups landed in the designated areas, but the Americans, through the fault of the aircraft crews, strayed off the route and ended up outside the designated areas.

Around 10,000 airborne troops were dropped in 2 and 1/2 hours. A few hours later the landing of the glider-borne wave began in areas captured by the airborne landing forces, and several more parachute and air-landed assault groups were on the ground by the end of 6 June. A total of around 20,000 men were landed in the 24-hour period.

More than 3,000 individual flights were made during that period to cover and support the airborne forces. Only 24 planes and gliders were lost

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en route to the drop area, but casualties were fairly heavy during the landing itself--5 to 8 percent of the personnel and 23 percent of the materiel.

The fighting efficiency of the American subunits was considerably reduced as a result of their extensive dispersion. A total of 6500 parachute troops had been landed over an area 25 kilometers wide and 40 kilometers long. Furthermore, errors had been made in flying to the landing sites, as much as 80 kilometers in many cases. A few subunits were landed in a flooded area.

Some of the gliders landing at captured sites on 6 June broke up on the rough terrain. Approximately 20 percent of the gliders never even reached their destination.

Serious errors were also made in the landing of the British division. In some cases, for example, the British bombers set out to provide support for their troops mistakenly dropped bombs on their own airborne subunits on the ground.

On the first day of the operation 49 of 72 gliders designated for delivering materiel to the landing force came down in the area specified, six made forced landings without even leaving England, three landed at sea and 14 disappeared without a trace.

The airborne landing of Anglo-American troops carried out in June 1944 unquestionably contributed to the initial success of the naval landing operation, but it was not of decisive importance.

While demonstrating the expediency of employing airborne landing forces in support of naval landing operations, the Normandy airborne landing operation also showed that a troop landing operation, especially at night, requires careful preparation, organization, support and precise adherence to the adopted plan.

Mention must be made of the obvious impracticality of the Rhein airborne landing operation carried out by the Anglo-American forces. This operation was undertaken mainly as a demonstration of force or even more, as an attempt to intimidate the nations of Europe, that is, for purely propaganda purposes. After all, Hitlerite Germany was not offering major resistance there, in addition to which, by the time the operation was carried out Allied troops had already forced the Rhein in a number of places and had reached the areas in which the parachute troops were to be dropped.

The Allied command assigned more than 8500 combat aircraft for an airborne landing operation involving two Anglo-American divisions, and the ratio of combat planes to transport in that operation reached 4:2. The use of such a large number of combat aircraft to support a single airborne landing operation can mean only one thing--that there were practically no other

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missions for the air forces of our allies to perform. Lest we forget, the Anglo-American command employed large airborne landing forces under the exceptionally favorable conditions created by the Soviet Army's successful offensive, which drew the most efficient formations of Hitlerite ground and air forces away, to the east.

From 1941 to 1944 more than 20,000 transport aircraft were built in the U.S.A. The main ones were the C-47, the Dakota and the Halifax, as well as the Hamilcar and Horsa troop-transport gliders. The best of these was the C-47, which had a cruising speed of 260 kilometers per hour and a load capacity of 3,000 kilograms or 27 men with heavy arms. By the end of the war, however, this aircraft's capabilities no longer met the air transport demands. For this reason the Soviet Government, which had concluded an agreement with the U.S.A. for the purchase of C-47's, adopted a decision to curtail orders for this plane and commissioned a design bureau headed by S. V. Il'yushin to design a new transport.

The German and Anglo-American commands' employment of airborne landing forces demonstrated the fact that the success of an airborne landing operation depends not only on the availability of sufficient numbers of personnel and equipment, but also on how thoroughly it is planned and prepared.

Despite all of the errors made in their organization and conduct, airborne landing operations carried out during the last war demonstrated the potential of the new airborne branch of forces and settled the development of a new branch of aviation, military transport, the function of which has grown immeasurably within the air forces of modern armies.

After World War II ended foreign armies began devoting an extraordinary degree of attention to the development of airborne forces and the development of special aircraft and other equipment designed for use in airborne landing operations.

"We must take into account the experience of those who have conducted a war and must learn from them when we build our future army,"<sup>35</sup> General William Lee, American military official, wrote two years after the end of World War II in a foreword to a book by one of the creators of the American airborne forces. He referred to the need for a detailed study of experience in the conduct of airborne landing operations.

Skipping over the development of the military transport aviation in foreign nations during the decades following the war (this is a large subject requiring separate treatment), I shall briefly discuss certain plans and projects undertaken by NATO and the Pentagon in this area in the 1970's.

As it perfects new plans of aggression the NATO command assigns an important place to airborne landing operations for the implementation of its predatory designs. Furthermore, airborne landing groups of various compositions and with various purposes are regarded primarily as a strategic means. This

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purely offensive means can be employed within very broad limits--from a combine-arms battle to operations on an intercontinental scale. The development of intercontinental operations is being stepped up markedly in the armies of imperialist nations, which stems from the development of global weapons systems. They are planned by the NATO command for purposes of invading foreign territory following massive strikes by strategic nuclear forces, in order rapidly to disincite the enemy from offering further resistance or to achieve substantial results at the very beginning of an armed conflict and to capture a large base of operations from which to launch a broad offensive.

Military air transport capabilities are very important for the execution of such operations. Because of this there is continuing improvement of the forces and means used by airborne forces and for transporting them, since the composition of an airborne landing group is determined by the quantity and quality of available airborne landing means--aircraft and airborne landing equipment.

The 1971 "Freedom Volt" exercise is an example of the focus laid on perfecting methods of conducting intercontinental airborne landing operations. As reported in the American press, the 82nd Airborne Division was flown from the U.S.A. to South Korea (to an area immediately adjacent to the Demilitarized Zone), landed and immediately engaged in "combat" missions. The dropping of an entire, completely outfitted division at once is considered to be the optimal plan for such an operation. Because of a shortage of heavy aircraft, however, only one brigade at a time was dropped in this case. The western press pointed out the great difficulties involved in organizing air support for an airborne landing operation performed at such a depth.

In long operations it is assumed that the build-up of airborne forces and their entry into the battle will be carried out in stages. The rate of the build-up is regarded as one of the crucial factors determining the success of the entire operation. All the more, since it may take a long time to deliver the next wave of a strategic airborne landing force, because, as American military experts point out, at least 10 days would be required to transport an armored division a distance of 12,000 kilometers with the present quantity of heavy military transports in the U.S. Air Force.

The war in Viet Nam and especially, the movement of weapons, ammunition and various other cargo to Israel in October and November of 1973 showed that the rapid maneuvering of personnel and equipment by air can influence the course of combat operations considerably.

It is the opinion of American military experts that the mobility of the armed forces depends greatly on the condition and combat capabilities of the military transport aviation. The Pentagon considers it (the military

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transport aviation) to be one of the main means of delivering personnel and equipment from the U.S.A. to various areas of the planet in good time. That is, great importance is attached to the strategic transport aviation. Because of this the capabilities of air transport means are being expanded. The fact that its capacity for transporting the heavy and bulky weapons and combat equipment of the ground forces--tanks, heavy self-propelled artillery weapons and helicopters--is still limited is considered to be a weakness of the transport aviation.

One official of the U.S. Defense Department has stated that if the Pentagon possessed the capability of moving around 10,000 tons of cargo as far as 7,000 kilometers daily on heavy transports, and did not have to use intermediate bases in the process, it could meet any demands made of the strategic transport aviation. In other words, if the U.S. Military Air Transport Service were in a position to transport an entire division with all its armament every week from the U.S.A. to Europe, let us say, the Pentagon would have practically no obstacles to the implementation of all its designs.

Based on its experience with local wars and a number of exercises, organization and control of the transport aviation of the U.S. Air Force are being perfected; its C-130 Hercules, C-141 Starlifter and C-5A Galaxy military transports are being modernized; the flight training of the crews is being improved; and plans are under development for employing civilian transports (especially the Boeing-747, the DC-10, the Boeing-707 and other heavy, wide-fuselage planes). The U.S. Defense Department intends to modify a large number of these aircraft operated by airlines, as well as cargo planes, capable of transporting heavy combat equipment and other cargo.

The U.S.A. is also engaging in research and experimental design work on future military transports.

The Boeing Company, for example, has designed a jet cargo plane with 12 engines. This aircraft is three times the size of the Boeing-747 and is designed mainly for hauling cargo containers in the wing, which will have a span of 157 meters. The aircraft will be able to carry a payload of 1,100 tons.

The American Lockheed Aircraft Company is working on the design for a new heavy transport, the Spanloader. This "flying wing" aircraft is being designed to haul up to 250 tons of cargo a distance of up to 9300 kilometers or 300 tons nearly 6,000 kilometers. Its maximum take-off weight will be 550 tons and it will have a cruising speed of 800 kilometers per hour. According to reports in the foreign press, the Lockheed Company plans to make several models of the Spanloader: a strategic military transport for hauling loads of 250-300 tons up to 9,000 kilometers without refueling; a tactical military transport capable of landing on ordinary ground and on

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water, which will make it possible to deliver cargo directly to the troop positions; and a tanker aircraft which can carry up to 200 tons of fuel, with a radius of operation of around 7,000 kilometers.

Because of the energy crisis in the U.S.A. and other capitalist nations, research work is being performed to find new types of aviation fuel. The possibility of using liquid hydrogen as fuel is under study, despite the fact that its low density would make it necessary to install larger fuel tanks on aircraft. American experts believe that the Spanloader's design will make it possible to install such tanks on it, which would give it a flight range of around 19,000 kilometers carrying a cargo of 220 tons and a supply of 102 tons of liquid hydrogen.

The building of heavy transport planes like the Spanloader involves the resolution of a number of complex problems. The technology for manufacturing the thick wings has to be mastered, their performance under various flight conditions must be studied, systems must be developed for controlling and maintaining flight stability for such aircraft, the effects of shifting loads on the structure must be studied, and so forth. In the opinion of aviation experts all of this will require a great deal of time, a large effort and a great deal of funds.

The U.S.A. is also working on the development of a military transport with a short take-off and landing, capable of taking off from undeveloped runways 620 meters long and carrying a payload of up to 12 tons. Such an aircraft, the YC-15, is undergoing flight tests. This aircraft will mainly be used for performing tactical transport operations. It is also being considered for strategic transport operations, however, since it is proposed that an improved model of the YC-15 would be able to fly a distance of approximately 4800 kilometers without refueling and carrying a payload of 17 to 28 tons.

These have been a few facts from the history of World War II and from modern times pertaining to the use of military transport aviation. They were presented together intentionally: the experience of the last world war formed a basis for the attempt to increase the mobility of the troops, the foundation from which the procedure for conducting combat operations in a number of local wars was developed and, finally, the basis for continued efforts in this area.

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CHAPTER IV

DEVELOPMENT

The first postwar decade was a period of development, a period in which an effort was made to find the optimal organization for the Air Force's transport aviation, which took shape to a considerable degree during the Great Patriotic War. The aircraft and airborne landing equipment necessary for hauling and landing troops and cargo by air were improved.

The development of the Military Transport Aviation during the postwar period was affected by the experience accumulated during the war and by the subsequent development of Soviet military art, based on successes achieved in the economy, in science and technology.

This stage can be broken down into three periods.

The first period (1946-1954) was characterized by substantial qualitative changes linked to the build-up of the aviation's combat capabilities. A transport and landing air force was created within the Airborne Troops, using piston-engine planes and with the extensive employment of landing gliders. The transport fleet included Il-12's and Yak-14 gliders which could carry up to 3.5 tons, a large capacity for that time.

Theoretical developments pertaining to the application and employment of the transport aviation were based mainly on World War II experience.

During the second period (1955-1958) nuclear weapons appeared, and the Air Force was outfitted with supersonic jet aircraft, new radio electronic equipment and heavy jet aircraft.

The final stage in the formation of the Military Transport Aviation as a service of the Air Force occurred during those years.

The third period, which began in 1959, saw the continued improvement of aviation equipment and an enlargement of the role of air transport. The Military Transport Aviation entered a qualitatively new period in its development, based on the conversion from turboprop to jet transports and on the improvement of airborne landing systems capable of dropping troops and cargo in any weather, at any time of day, from low altitudes and in short time.

The new means of warfare made it necessary considerably to increase the mobility of all branches of troops. Modern concepts of combat operations, involving rapid changes in the situation and the possibility of vast zones of devastation and radioactive contamination being created by the enemy, made it clear that means of delivery and evacuation would have to be further developed and improved. And air transport was accepted as one of the most important such means.

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I have given a general outline of the development of the Military Transport Aviation following the war.

I shall now deal in somewhat greater detail with certain problems which had to be resolved during the first postwar years.

The Airborne Transport Aviation was created during that period within the Airborne Troops, which had been made a special branch of troops by that time. At that time the Air Force had a considerable quantity of transport planes, which provided the foundation for creating the airborne transport units. Like the Airborne Troops, the Airborne Transport Aviation was an agency of the High Command. Its administration was centralized under the deputy air commander of the Airborne Troops.

The situation was fundamentally altered by the creation of the special Airborne Transport Aviation: the combat training of the Airborne Troops became the main mission of this aviation instead of a subsidiary one as it was prior to and during the war.

If necessary it could be used to perform military transport missions for all services of the Armed Forces.

In the summer of 1948 the forces began receiving new landing planes and gliders (the Il-12, the Il-14, Yak-14 and the Ts-25), which expanded the capability of the Airborne Transport Aviation.

The Airborne Transport Aviation was later renamed the Transport Aviation for Airborne Landings; it was enlarged through the transfer of a number of air transport units from the Air Force. The aircraft fleet of the Transport Aviation for Airborne Landings was expanded considerably by the reorganization.

These steps were necessitated by an enlargement of the missions assigned the Transport Aviation for Airborne Landings.

Many difficult problems had to be resolved during that period. This accounts for the fact that a great deal of attention was devoted to combat training and that exercises involving airborne landings were regularly conducted, with approximately 1/3 of the exercises scheduled at night.

The nucleus of the group of specialists staffing the Transport Aviation for Airborne Landings was formed of veterans of the Great Patriotic War, who had vast experience in the performance of their work under field conditions. The veterans improved their own proficiency and trained the young aviators. Hero of the Soviet Union V. F. Anisov, B. F. Chirskov, P. Ya. Yuger, S. D. Bud'ko, N. I. Kuznetsov and many others devoted an enormous amount of time to the training of new cadres and indoctrination of the personnel.



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The personnel worked persistently on night flights, various combat orders, flights in the clouds and the landing of troops and cargo out of clouds. The flight training of the air units improved considerably, and by 1953 the absolute majority of crews in the Transport Aviation for Airborne Landings were skilled in flying under difficult conditions, both in the daytime and at night.

Members of the Air Force Engineer Service worked with enormous enthusiasm and energy during that period. Many specialists, even though they lacked a higher education, served as senior unit engineers and possessed a brilliant understanding of the design and performance features of the aircraft. Possessing good organizing abilities and infinitely devoted to their work, such specialists as Sbrodov, Svistun, Tsurapa, Mosekov and others were able to unite the personnel and to motivate them to work selflessly under the most difficult of conditions. They were matched by engineers Tolstikov, Kolbasov, Pochivalin and Kolonitskiy.

Young engineers with higher training—Fokeyev, Reznik, Martem'yanov—were also placed in charge of unit services during that time. The engineer service of the formations was also joined by specialists with a higher education, of which I should like to mention Nechayev, Tsimbalenko, Mironenko, Belyayev, Kalinichenko, Samoylov, Tarapanov and Shulakov.

A great deal of credit for the organization and formation of the Military Transport Aviation as a branch of the Air Force, as well as for the training and indoctrination of airmen for the Transport Aviation for Airborne Landings, goes to Lieutenant General of Aviation K. N. Smirnov, who commanded the airborne landing aviation during the first postwar years.

At the beginning of the 1950's work was started to develop a new transport for airborne landings, the tactical and technical specifications for which provided for a large number of basically new capabilities for the airborne landing of troops and cargo.

Considerable progress had been made by that time in the technical equipment of the Soviet Armed Forces. The ground troops were being motorized at a rapid pace. New means of warfare made it possible to conduct offensive operations at a more rapid pace, which required greater maneuverability of all branches of troops on the scale of a battle or an operation.

Ground troop exercises and maneuvers conducted in 1953 and 1954 demonstrated the need for extensive involvement of air transport for maneuvering troops and delivering ammunition, fuel and other supplies over great distances. All of the air transport missions involved in the exercises were regarded as missions of the Transport Aviation for Airborne Landings. The situation required that the capabilities of the Transport Aviation for Airborne Landings be increased immediately, with respect both to the airborne landing of troops and the transporting of various types of cargo for all services of the Armed Forces.

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It became urgent for the existing Military Transport Aviation forces to be combined under a single command. This led to the creation of the Military Transport Aviation within the Soviet Army Air Force.

Marshal of aviation Nikolay Semenovich Skripko, an important air force leader, commanded the Military Transport Aviation during this period. One of the oldest military pilots, he occupies an important place among outstanding aviators of the Soviet Air Force.

The son of a peasant and a Red Army volunteer, N. S. Skripko received his first order--Order of the Red Banner--for courage and valor demonstrated in the storming of Spassk. The young Red commander was in command of an artillery battery at that time. N. S. Skripko's future military career, however, was determined by his interest in aviation. In 1924 he entered the Air Force School of Military Theory of the Workers' and Peasants' Red Army. After two years of diligent and successful training and a year of service in an air squadron, Skripko, an officer demonstrating initiative and determination, was assigned to a flying school as a flight instructor. As he trained and indoctrinated the young airmen, Skripko also continued to study. He learned to fly various types of aircraft, developed superb techniques for flying in the clouds, flying blind and at night, and trained his men to fly under difficult weather conditions.

In 1922 Skripko, then commander of a separate air detachment, took part in the maneuvers in Belorussia. The people's commissar of defense praised the performance of the air detachment and its commander. Nikolay Semenovich became commander of a training air brigade in 1936. He went back to school in 1937. At the Higher Tactical Flight School the officer worked to improve his theoretical and his operational-tactical knowledge, studied navigation, continued to improve his flying skill and learned to fly the new bombers.

Between 1938 and 1941 Colonel Skripko commanded a light bomber regiment, a composite air division and a long-range air corps.

The commander attached great importance to the flight training of his airmen, while at the same time working to coordinate material and technical support and striving to achieve precision and efficiency in the work of all services.

The corps commanded by N. S. Skripko met the enemy fully armed at the beginning of the war. The bombers destroyed enemy columns and concentrations of equipment with accuracy. Nikolay Castello, who performed the immortal feat in Belorussia, received his training in one of the units of the 3rd Long-Range Bomber Corps, commanded at that time by Skripko.

From March 1942 to the end of the war Major General of aviation N. S. Skripko served as first deputy commander of the long-range aviation. He directed the organization and conduct of more than one large air operation.

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Together with officials from Headquarters he helped coordinate the operations of the long-range aviation on the Karch' peninsula and in huge battles from Stalingrad to Berlin.

N. S. Skripko was one of the first to be awarded the rank Marshal of Aviation.

A higher academic course of study at the General Staff Academy was another step in Skripko's training before switching to the Transport Aviation for Airborne Landings and then the Military Transport Aviation.

Marshal Skripko gave 19 years of his life to the organizational development of the Military Transport Aviation and put a great deal of effort and energy into the work of reoutfitting its units with new turboprop and turbojet planes. His knowledge and pedagogical experience furthered the indoctrination of more than one generation of airmen. Marshal Skripko's students, including the author of this book, have retained a feeling of great gratitude and deep respect for him.

For his participation in the combat training of the Air Force and his successful direction of combat operations N. S. Skripko has been awarded two Orders of Lenin, the Order of the October Revolution, four Orders of the Red Banner, the Order of Suvorov, first and second degrees, the Order of Kutuzov, first and second degrees, and many medals.

The Air Force Engineer Service of the Military Transport Aviation bore a heavy load during the years when the new An-8 and An-12 turboprop planes were being assimilated. From 1954 to 1957 the units were continuously joined by graduates of military air engineering academies and of the VATU [Military Aviation Engineering School]. The office of the commander of the Military Transport Aviation devoted a great deal of attention to training the young engineers and to their development as specialists and as good organizers and commanders.

B. N. Mitin, I. I. Burmistrov, Yu. Kh. Rashragovich and I. V. Ermanson, who monitored the young specialists' adjustment in the formation on a practical level, were very active in this area. During that period units of the Military Transport Aviation were joined by VUZ graduates Mishcherin, Lapshin, Il'yashev, Khrenov, Shevchenko, Rodnishchev, Kichigin, Sleptsov, Yakovlev and others, who were in charge of unit air force engineer services and other services in their specialties by the time the conversion to the new aviation equipment was made.

As it trained cadres in the units the air force engineering service of the Military Transport Aviation, beginning in 1954, maintained close contact with the Antonov Special Design Bureau and participated in the development of the An-12 and An-8 aircraft during the stage when the models were being built. Engineers of the Military Transport Aviation contributed a great deal to the technical aspect of the aircraft.

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The unit commanded by Hero of the Soviet Union Colonel G. I. Bogomazov (with S. N. Troitskiy as senior engineer) was the first to begin training to fly the An-12's. He piloted the aircraft on its first flight, from the plant airfield.

Difficulties were encountered in the first stage in the adoption of the An-12, since complications arose in learning to operate the new aircraft equipment.

Technical classes were set up in the units. Technical documents, diagrams and posters were prepared from plant drawings. Pilots and navigators began studying the new equipment, along with the engineering and technical personnel. In addition to acquiring a thorough understanding of the aircraft design, its power units and various types of special equipment, they also had to understand its aerodynamics, to grasp the physical nature of certain phenomena new to the flight and technical personnel, and to familiarize themselves with the principles underlying the automatic control equipment and radar. The principles presented in the theoretical course did not come easy to those who lacked a secondary or secondary technical education. To eliminate this gap the engineers set up permanent consultation services and gave private lessons in the units.

Practical training on the An-12 and An-8 aircraft was set up in the field. Despite various difficulties Air Force Engineering Service personnel maintained the aircraft in good repair and supported the flight training.

Leading specialists from the Special Design Bureau and plants did a great deal to facilitate the adoption of the new equipment and to maintain it in a state of good repair. Deputy chief designer A. V. Bolbot, deputy chief designer for the series Ye. K. Senchuk and the directors and representatives of the plants manufacturing the An-8 and An-12 frequently visited the units.

Pilots and navigators, engineers and technicians worked persistently to become experts on the new planes and to improve their operation and structural reliability. This period was not without its complications, however, situations in which only the crews' disregard for themselves averted flight accidents.

During one flight on an An-12, for example, the crew was unable to lower the nosewheel strut. The airmen made an intelligent decision to prevent the aircraft from breaking up in landing with the landing gear retracted. Senior aircraft technician Bayramgalin tied a rope to himself, crawled into the landing gear recess, corrected the malfunction and adjusted the strut on the landing gear safety latch. Their excellent knowledge of the aircraft equipment helped the crew out of what appeared to be a hopeless situation. The crew was commended by command for courage and efficiency in an emergency situation, and Bayramgalin was awarded the Order of the Red Banner.

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To prevent such incidents the inspection window was improved and a cable was installed for emergency lowering of the nosewheel strut.

Once, during a flight, the fluid leaked from the hydraulic system on an An-8 piloted by A. P. Yerofeyevskiy (S. I. Pakov was co-pilot, and A. M. Rusinov senior aircraft technician). After appraising the situation the pilots used fuel in place of the hydraulic fluid. They were able to lower the landing gear and made a safe landing.

It was a difficult and painstaking matter to locate the defects in the systems and to determine why they had occurred, a matter requiring considerable time and effort. The specialists could not immediately determine why the wheels on an An-8 were locking, for example, despite the fact that representatives of the Special Design Bureau and the plant were helping. The defect was found and eliminated only through a persistent effort by all personnel of the subunit (with Major A. M. Karpushin as commander and Captain N. F. Nefedov as engineer).

Despite the difficulties encountered during the first period of learning to maintain and operate the aircraft, subunits equipped with An-8's and An-12's were already participating in military exercises in 1958-59.

The work of modernizing the aircraft in order to expand their combat capabilities was stepped up considerably at that time. Yu. Kh. Rashragovich, Yu. K. Nerzhavin, I. I. Burmistrov and N. G. Shcherbakov were among the leaders.

Vasiliy Vasil'yevich Filippov, who joined the Military Transport Aviation as chief engineer, did an enormous amount of work to create and develop the Military Transport Aviation and to improve the engineer service. A lieutenant recently graduated from the Academy imeni Zhukovskiy, he began serving as a squadron engineer in a regiment of the 2nd Special-Purpose Air Division in 1943. Aware of the need for practical knowledge and desiring to gain a more thorough understanding of his work, the young lieutenant requested an assignment as an aircraft technician. The career of this worker with the Military Transport Aviation, to which he devoted the greater part of his life, was launched from that position. Engineer-Colonel General Vasiliy Vasil'yevich Filippov is now chief of the Orders of Lenin and of the October Revolution, Red Banner Air Force Engineering Academy imeni N. Ye. Zhukovskiy, a scientist and indoctrinator of air force cadres.

Our discussion of the intense practical, theoretical and organizational work performed by all personnel during the years of development of the Military Transport Aviation must include something about party-political work. It was the party organizations and political organs which mobilized the forces and found ways to accomplish the difficult tasks. A great deal of credit goes to Lieutenant General Georgiy Frolovich Bezborodov, a political worker

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with a great deal of experience. Georgiy Frolovich is well known both in the military and civil aviation. He began his army career as a Red Army man before the war, later becoming a deputy political instructor. He served as chief of a political section for many years. He headed the political directorate of the Ministry of Civil Aviation. He was elected deputy to the Supreme Soviet of the RSFSR. His vast experience with party and state work helped G. F. Bezborodov successfully to cope with the difficult tasks involved in organizing political work in the Air Force Military Transport Aviation.

I should also mention the role of the young postwar generation in the development of the Military Transport Aviation. During the difficult and intense period of technical rearmament the youth initiated socialist competition to master the aircraft equipment as rapidly as possible and to advance their technical military knowledge. The appeal by the Red Banner Komsomol air unit for a fitting tribute to the 40th anniversary of the Armed Forces of the USSR and the 40th anniversary of the Komsomol met with broad response among the nation's airmen at that time. That unit produced many rated specialists and many excellent crews and sections, whose deeds have served as a vivid example of the courage and industry which have always distinguished personnel of the Soviet Armed Forces.

In summary, it can be concluded that the Military Transport Aviation's transformation from a special branch of the aviation, a part of the Airborne Troops, into an independent branch of the Air Force was the most important occurrence in its postwar development.

Turboprop planes opened up new possibilities for the employment of air transport, including its use to support maneuvers of personnel and equipment for all branches of troops. The improved technical equipment of the Military Transport Aviation and the changes occurring in its combat operations and capabilities during the period of development of the Air Force Military Transport Aviation broadened the range of employment of air transport and of the missions performed by the Military Transport Aviation.

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CHAPTER V

SHIPS OF THE AIR

Each branch of aviation has its own specific technical equipment, depending on its purpose and the nature of the missions it performs.

Several stages can be discerned in the development of the technical equipment of the Soviet Military Transport Aviation, stages marked by the development of transport and airborne landing means based on the experience of World War II, by the reequipment of the Military Transport Aviation with turboprop planes and, finally, by an increase in air transport's role in modern warfare based on the development of combat equipment.

As the reader knows, special military transport planes did not come into being immediately: they appeared no more than 20 or 25 years ago. Prior to this various types of bombers and passenger planes were used for air transport needs at various times. Such aircraft as the R-5, TB-1, TB-3, ANT-9, K-5, Po-2, PS-84, Li-2, Tu-4, Il-12 and Il-14 were most frequently adapted for the performance of airborne transport missions, and they are therefore regarded as modifications of military transport planes. Our units were equipped with some of them for a long time--up to the 1950's, until special military transports meeting modern demands began to be built.

As a branch of aviation the Military Transport Aviation is intended for the performance of its own unique and specific missions: landing and dropping by parachute personnel, combat equipment and other cargo; transferring troops and combat equipment from the nation's interior to various theaters of military operations; delivering various supplies and equipment for the forces, and so forth. It therefore requires specially designed aircraft with special piloting and sighting equipment, conveyors and loading equipment, airborne landing and navigational equipment.

The range and load capacity of military transports are extremely important. It is also important that they have a large range of speeds, in order to deliver troops and cargo to their destination rapidly, at maximum speed. The troop- or cargo-drop, however, should be carried out at slow speed, in order to drop the parachutists or equipment safely and to avoid scattering them. The aircraft must have good stability and controllability, however, while flying at low speeds, even with the failure of one or two engines.

Extensive requirements are made of the take-off and landing capabilities of modern military transports. After all, they may be expected to take off and land on small dirt airfields. This fact is also taken into account for designing the aircraft wing structure: a high position for the wing is the most practical, since it makes both the wing and the power units less vulnerable to damage during landings on undeveloped dirt strips.



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Special attention is given to the fuselage design and to the special airborne equipment. As a rule, the modern military transport has a low, reinforced floor, tie-down devices, conveyors and mechanisms, roller tracks, seats, cables upon which to attach the parachute ripcords, a signaling system and other equipment, including special medical equipment.

Radio compasses, radar units, astro compasses, periscopic sextants, automatic pilots, extremely precise navigational instruments, electronic computers--this is far from a complete list of the modern instruments which help the crew to operate one of the large aircraft and to make long-range flights at various latitudes.

The great possibilities for using transport planes for military purposes, the significant increase in the volume of air shipments and the specific requirements made of the performance and the design of these aircraft have placed them into a class all their own.

As we have already pointed out, the prototype of the special transports were bombers and passenger planes with only the fuselage modified for performing transport work. Large cargo doors were made in them, the floors were reinforced and transport and landing equipment was installed. Cargo hatches were made at the bottom of the fuselage in some of the planes for dropping cargo by parachute. A major deficiency of these converted aircraft was the fact that the cargo doors were high above the floor, and this made it necessary to use cumbersome and heavy loading and unloading equipment.

Military transports were also created for hauling containerized cargo, which is loaded and unloaded with machines.

Specialized transport planes with turboprop engines--the An-12 and An-22--constituted yet another trend in the improvement of transport equipment.

Present-day military transports are equipped with the more economical turbofan jet engines.

Our discussion of the improvement of the technical equipment of the Military Transport Aviation would not be complete without mentioning the work performed by a number of aircraft designers and by their design bureaus, which contributed a great deal to the development of the Military Transport Aviation.

Renowned Soviet aircraft designer A. N. Tupolev was one of the first to respond to the challenge of the time and to begin working on the development of aircraft for transporting troops and cargo. We have already mentioned the role played by the TB-1 and TB-3 aircraft designed by Tupolev during the years when the first detachments of the Military Transport Aviation were created. These heavy planes, designed primarily as bombers, had a number

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of significant advantages for the Military Transport Aviation: a large load capacity, extensive range and flying altitudes for that time, and the capability of utilizing dirt airfields. In addition, the planes designed by A. N. Tupolev could be modified for parachute-dropping or landing troops, combat equipment and other cargo. The TB-3 was one of the best bombers of its time, and its employment in the Military Transport Aviation was very important to the mastery of means and methods of landing troops and cargo.

In the 1930's the special-purpose air squadron was also equipped with an aircraft developed in Tupolev's design bureau--the ANT-9, which was even faster, had better maneuverability and was better adapted for military transport work. It was on a modification of this plane, called the "Kryl'ya Sovetov," that Hero of the Soviet Union M. M. Gromov made his famous flight to the European capitals.

In the 1950's the special design bureau headed by Hero of Socialist Labor A. N. Tupolev, chief designer and holder of state prizes, renewed its work on the development of military transports. This time as well the work concentrated on modernizing heavy bombers for dropping troops and combat equipment by parachute.

The Tu-4 strategic bomber was modified for this purpose. Its bomb hatches were modified for handling parachute troops, and fixtures were installed on the bottom for attaching the specially designed P-90 compartment, designed for carrying combat equipment--motor vehicles, gun mountings, and so forth, to be dropped by parachute. The navigational, sighting and other equipment on this aircraft approached the level required to perform military air transport missions. Tactical flight exercises graphically demonstrated the broad capabilities of the Tu-4 and established the trend for subsequent improvement of the military transport design.

The successful use of the Tu-4 to meet the needs of the Military Transport Aviation made it possible to develop and to substantiate, theoretically and on a practical level, new methods of landing troops and cargo in tight combat order, different aspects of interaction with other branches of aviation, and so forth.

The Tu-4 was thus the predecessor of that military transport plane created a decade later.

Chief designer O. K. Antonov made an outstanding contribution to the creation of special transport and landing planes. The team of his Special Design Bureau developed the An-8 and the An-12, which were outfitted with the latest equipment and were capable of landing with airborne troops or dropping them by parachute, and of transporting various types of combat equipment and materiel in any kind of weather, in the daytime or at night. The development of these planes represented an

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important advance with respect to improving the combat capabilities of the Military Transport Aviation and in the accomplishment of its missions.

The first military transport plane with turbine engines in the Soviet Union, the An-8, was built in 1955. This ship of the air, which was given the name "flying whale" because of its extraordinarily large fuselage, had a rectangular cargo compartment with a large hatch in the tail section, a reinforced floor and a set of transport and airborne landing equipment making it possible to land with troops, combat equipment and other cargo or to drop them by parachute.

The methods employed for loading and landing equipment led to the development of an aircraft of a fundamentally new, high-wing design, whose high wing and power units permitted it to be used for a number of specific missions typical for the Military Transport Aviation. The aerodynamic arrangement of the wing and its lift augmentation devices were the object of especially thorough research and study.

The plane's high-wing design made it necessary to install the main landing gear supports on the fuselage. Problems arose with respect to giving the plane stability while moving on the ground with lateral forces affecting it and to insuring that it could be controlled in case engine thrust became unbalanced.

A large group of experimental studies were carried out through the creative effort and the joint work of aircraft designers, pilots, engineers and technicians of the Military Transport Aviation, which resulted in the achievement of good take-off and landing characteristics for the new plane and made it possible to resolve a number of scientific and design problems. For example, an efficient design was found for a tail section with a large cargo hatch--the dropping of cargo through the tail section of the fuselage was a fundamentally new concept.

Safe methods for dropping cargo were first developed using An-8's, and a system was then developed for calculating the behavior of the aircraft and cargo during an airborne landing operation. Air-drop methods, including a method of dropping cargo by means of pilot parachutes, was developed through persistent, painstaking experimentation and an enormous amount of work. The resolution of this specific but important problem in the practical work of the Military Transport Aviation demonstrated the enormous amount of work underlying every advance made in the overall improvement of methods of transporting troops and cargo by air.

The An-12, a landing and transport modification of the general-purpose, medium turboprop transport, was a new model of the transport plane.

The An-12 has good flight characteristics, excellent controllability and good dependability. The plane's take-off and landing qualities and its versatile landing gear allow for it to be used at airfields with dirt,

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gravel, sand, snow and ice surfaces. The fact that the engines are located high up on the wing contributes to the aircraft's dependable operation at such airfields and reduces the likelihood that dust, sand and other foreign objects will find their way into the engine.

The problem of maintaining stability and controllability when the center of gravity shifts during the process of dropping heavy equipment was resolved in the An-12. The experience with the operation of the An-8's made it possible to achieve an expedient arrangement of the main landing gear supports in the An-12.

The excellent quality and the capabilities of the An-12 were attested in the best possible way by the awarding of the Lenin Prize to chief designer O. K. Antonov and to the group of leading specialists who created this plane.

The next accomplishment of Antonov's Special Design Bureau was the development of the giant An-22 "Antey," a heavy strategic military transport, the largest turboprop plane in operation in the world.

The An-22 is designed for landing troops and large pieces of combat equipment or dropping them by parachute. The airtight cargo compartment makes it possible to haul practically any kind of combat equipment in use in the Soviet Armed Forces--from armored personnel carriers to supersonic planes.

A cargo ramp with hydraulic drive augments the useful area of the cargo hatch and, together with a conveyor, roller tracks and two overhead traveling cranes, reduces the amount of time spent on loading and unloading operations.

The unusually large dimensions of the cargo compartment created a problem with respect to the structure's strength and weight, a problem which was resolved with a double-keel tail section and a number of other original design features. Despite all this the giant aircraft, as well as the An-8 and the An-12, has good mobility on soft soil and good take-off and landing capabilities.

Because of its self-sufficiency the An-22 is used extensively in the Civil Aviation for delivering cargo to regions difficult of access for the national economy--all types of motor transport, bridge girders up to 35 meters long, railway cars and shunting locomotives, vessels with a displacement of up to 100 tons, and all types of combat equipment. The An-22's economy of operation cuts transportation costs almost in half.

I remember vividly when the development of the An-22 was initiated. Oleg Konstantinovich Antonov came to us from Kiev, where his Special Design Bureau was located, with a new model of the future aircraft, in order to continue its development in close contact with military specialists representing the Military Transport Aviation. Before the tactical and

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technical specifications were established for the new plane, we worked together a long time to find the best version and held long discussions, going into the smallest details. Specialists with the Military Transport Aviation made many valuable recommendations for improving the cockpit, the control vane, the fan adjustment system, the arrangement of the shaft through which the crew abandons the aircraft, and so forth.

While I am on the subject of the joint work performed by military specialists and O. K. Antonov's design bureau, I would like to mention the extraordinary consideration received from the workers of that bureau—their patient endeavor to take our orders and wishes into account. We worked together a great deal during those years, but I do not remember a single instance in which Oleg Konstantinovich or his assistants did not agree to our demands as they attempted to find an efficient solution to the current problem.

This close cooperation is probably what insured our success in the search for ways to accomplish the increasingly complicated tasks facing the aviation.

I recall working on the problem of increasing the An-12's flight range, improving the inter-aircraft navigational system for flying in close combat formations, and modifying the piloting and navigational and sighting systems to make it possible to reach the landing area with greater accuracy. After completing the modification of a model of the An-12 the aircraft engineers, technicians, pilots and navigators worked to improve all of the aircraft of this series in service with the aviation. A new galaxy of planes appeared in the nation's Air Force as a result of continuous, all-around cooperation between the Special Design Bureau collective and specialists with the Military Transport Aviation. They completely transformed the Military Transport Aviation, a fact which was especially graphically confirmed by large troop maneuvers and exercises conducted in the years following.

During the "Dvina" exercise An-12's dropped around 8,000 fully armed airborne troops within a period of 22 minutes. An-22 military transports delivered various types of heavy equipment to the exercise area. The landing of troops and powerful combat equipment was performed in the specified area within a limited number of hours and in strict accordance with the plan worked out in advance.

The results achieved were not the limit for the equipment or the possibilities of the people learning to use it. Chief designer O. K. Antonov defined the purpose of the creative cooperation engaged in by those attempting to perfect military transports in the following manner: "A characteristic new feature of today's equipment is maximum optimization, that is, the achievement of maximum result with minimal outlay."

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With this goal in mind O. K. Antonov's design bureau has persistently striven to make the heavy aircraft simple to operate and to make the technology employed for manufacturing the assemblies and units as simple as possible.

Nor are the airmen with the Military Transport Aviation idle in this respect. I have already mentioned the joint work performed by the designers and technical flight personnel of the Military Transport Aviation in the refinement and modification of the An-8's and An-12's. They worked equally hard to perfect the design of the An-22. A special engineering and technical group was created consisting of specialists with the Military Transport Aviation. It included A. A. Fedoskin, V. T. Tereshchenko, F. F. Ordynskiy and V. A. Andrianov, as well as A. S. Kostrikov, Yu. K. Zakharov and others. The group was headed by Vladimir Nikiforovich Zasenko, one of the most experienced engineers with the Military Transport aviation, who worked with the An-8's and An-12's.

A number of defects were eliminated in the acceptance process because of this group's work, which reduced the amount of finishing work required.

Military Transport Aviation engineers not only resolved on their own many questions pertaining to the technical operation of the An-22's but, as a rule, also made many design recommendations aimed at improving its dependability. Changes were made in the design based on these suggestions, which improved the reliability and efficiency of such important aircraft systems as the fuel, hydraulic and de-icing systems and the control system.

The work performed by our engineering and technical group was given a high rating: the Military Transport Aviation specialists received state awards and V. N. Zasenko was awarded the Order of the Labor Red Banner for their work on the An-22.

The unique technical characteristics of the "Antey" could not fail to have an effect on the improvement of tactical procedures employed by the Military Transport Aviation. Research in this direction was accompanied by an intense search for new operational formations for combat groups of aircraft, which would make it possible to perform combat missions in any kind of weather, day or night.

Applying their experience in the use of the existing instruments, pilots and engineers of the Military Transport Aviation, together with designers in the aircraft industry, went to work to develop new equipment which would make it possible to achieve maximum effectiveness in the use of the An-22's and An-12's, as well as maximum safety while operating them.

At last, our joint efforts met with success. The new interaircraft navigational system was given high marks by the commander in chief of the Air Force.

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After it was demonstrated to Air Force leaders, Colonel I. N. Novikov, Honored Military Pilot of the USSR and commander of the unit in which it was tested, and his navigator, Lieutenant Colonel M. K. Belikov, were presented with valuable gifts.

Soon after that the operational capabilities of the An-22 were expanded for hauling large groups considerable distances.

For this purpose specialists with the Military Transport Aviation, together with specialists in the field of materials strength, aerodynamics and others, performed additional calculations which showed that it would be possible to fly with a cargo exceeding the maximum permissible load, but only within a specific range of temperatures, wind speeds and altitudes.

On the eve of the 30th anniversary of the Soviet people's Victory in the Great Patriotic War an An-22 commanded by myself performed a record 5,000-kilometer flight carrying a cargo of 50 tons to commemorate that important date.

I remember that day as though it were only yesterday. The aircraft slowly picked up speed, and one could distinctly feel the difficulty with which it built up the lifting force required to raise the mass of many tons into the air. The most important thing during take-off was not to raise the nosewheels prematurely, to permit the plane to gain the necessary speed. How important it was at that moment for the pilot to remain calm, to have confidence in himself and in the aircraft. One would have to feel this power, responsive to man's will and intellect, in order to appreciate the aircraft's inexhaustible capabilities. We had now reached the final meters of the runway. The aircraft had built up the necessary speed. The nosewheels could be raised. This was a matter of 30 seconds or so, but it seemed like an eternity....

After that--a climb at maximum engine power and then what should be the least difficult part of the flight, if only the weather forecast were accurate. It was not, however.

There were dense clouds along practically the entire route, the temperature was higher than predicted, and the headwind had grown stronger. For most of the flight the aircraft was controlled manually. The crew was forced to perform extremely complicated calculations in order to determine the best flight conditions.

Despite all the difficulties, however, the flight was successful--we not only completed it within the schedule but actually bettered all of the calculated data.

The new record was recorded by representatives of the FAI [International Aeronautical Federation].

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All members of the crew, especially Honored Military Navigator of the USSR Colonel A. Ye. Zamota, senior flight engineer Engineer-Lieutenant Colonel V. I. Yasinavichus and Honored Military Pilot of the USSR Colonel N. P. Shibayev, aircraft commander, demonstrated extremely great stamina and courage, vast professional knowledge and good flying skill.

The flight on the heavily loaded An-22 confirmed the theoretical estimates and built up confidence in the reliability of the aircraft equipment.

The chief designer's gratitude meant a great deal to the airmen. When the record-setting flight was completed Oleg Konstantinovich sent the crew of the An-22 a telegram with the message: "Thank you for proving the aircraft's capabilities."

The design bureau headed by chief designer Academician S. V. Il'yushin, Hero of Socialist Labor, occupies a special place in the history of the development of air transport equipment. He contributed a great deal to the development of new types of military transports.

The first was the Il-12. The main feature of its design was simplicity and reliability. Reliable both on the ground and in the air, this aircraft could operate within a range of 50 degrees below to 60 degrees above zero, that is, it was suitable for use in practically all of the nation's climates.

The next aircraft, the Il-14, had improved aerodynamics and better flight safety, and its more powerful engines gave it greater cruising speed.

The Il-12 and the Il-14 occupied a special place in the development of the Military Transport Aviation, since they carried special navigational equipment for flying in clouds and had an improved de-icing system and other devices making it possible to refine the technique for landing troops under difficult conditions. They also had an important deficiency, however. While equipped for dropping people by parachute, they were not outfitted for dropping cargo.

The next stage of collaboration between personnel of the Military Transport Aviation and S. V. Il'yushin's Special Design Bureau took place in the mid-1960's. It was during this period that tactical and technical data were developed for the creation of a basically new military transport design.

Hundreds of aviation specialists—designers, pilots, navigators and engineers in various fields—took part in the development of these tactical and technical data. And finally, a specially created commission, together with S. V. Il'yushin and his co-workers, met to discuss the model of the future Il-76.

The commission heard a report by the chief designer on the data for the new aircraft and on its prospects. All were highly impressed with the



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possibilities created by it. Members of the commission, which was headed by the author of this book, then set out for the shop. The life-size mock-up consisted of the left side of the plane, including an engine, the entire fuselage and wing center section and part of the tail assembly. I was disappointed when I saw it. As a pilot who had flown thousands of hours on various types of aircraft--from the U-2 to a high-speed jet bomber and heavy military transports--I was not impressed with the gray hulk of the mock-up which appeared awkward and cumbersome and gave the impression of being unwieldy.

I circled the mock-up, inspected the nose and then walked back to the tail, stopping by Il'yushin in a state of perplexity which I could not conceal. Sergey Vladimirovich was already in poor health at this time and was sitting in a chair.

"It's hard to believe, Sergey Vladimirovich, that this model could embody all of the merits of which you have spoken."

"You airmen will see the aircraft's merits later," Il'yushin answered.

In recalling this incident, I would like to stress the designer's genius, his ability to see or, more precisely, to be firmly cognizant of the merits of his creations long before they were produced in their actual, final form.

Sergey Vladimirovich left. I was left with his assistant, Genrikh Vasil'yevich Novozhilov, who actually bore the bulk of the responsibility for completing the design. The most impressive thing about the work of S. V. Il'yushin's successor, now chief designer Hero of Socialist Labor G. V. Novozhilov--was and remains his ability to grasp what is most important in the proposals of the military specialists, the requirements of our specific branch of aviation. It was perhaps this ability which made it possible to achieve in the Il-76 that about which we had only dreamed until quite recently.

In the work performed to perfect the aircraft a great deal of attention was devoted to the development of the cockpit and the navigator's station. We also had to create basically new equipment which would make it possible to land personnel and cargo accurately under all conditions. The sighting and navigational equipment on the new aircraft incorporated various radio-technical support equipment making it possible to fly at high or low altitudes in practically any kind of weather.

A great deal of work was performed to perfect the Il-76 not only by the designers and the creators of the special instruments, but also by navigators, engineers and representatives of various services of the Military Transport Aviation, particularly General Valentin Konstantinovich Udal'tsov, a member of one of the subcommissions in charge of accepting the new aircraft. Distinguished Military Navigator V. K. Udal'tsov did a great deal of work to demonstrate the practicality of certain changes and

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refinements in the equipment design. His profound practical knowledge of the needs of the Military Transport Aviation and his extensive experience in flying transport planes under the most diverse climatic conditions provided him with the background for insisting on the adoption of precisely that equipment which would be of greatest value in the performance of air transport missions.

Engineer-Colonel General V. V. Filippov also did a great deal toward improving the Il-76 design. He devoted a great deal of attention to problems of retaining maximum engine thrust, problems pertaining to temperature variations, to convenience of engine replacement and engine start-ups under various climatic conditions and to many other specific practical problems.

Unfortunately, it would be impossible to name all of those who applied their knowledge, skills and energy to the development of the new transport. It was the work of a large team of people, and it was crowned with well-deserved success.

The Air Force received a basically new aircraft with exceptionally good transport capabilities and economy. The overall arrangement, the aerodynamic configurations, the de-icing system for the wings, the tail surfaces and the engine air intake system were all new.

The use of high-strength steels and titanium alloys for assemblies bearing the greatest loads was also new.

One of the new features especially impressed the pilots: the aircraft is easily controlled, pressure on the control wheel is slight and the large plane responds well to the controls throughout the entire range of speeds and at all altitudes. This is because the aircraft is controlled by means of irreversible hydraulic control boosters.

While I am on the subject of the operating convenience of the Il-76, I must mention the start-up of the engines, which takes only a limited number of minutes, and maneuverability: the plane can make a 180-degree turn on a taxiway 40 meters wide.

The aircraft lifts off the ground easily and gains speed rapidly....

In short, the more one flies this plane the more there is to tell about it, and each flight on it makes one want to fly it more and more.

Designs become obsolete very rapidly in this age of scientific and technological revolution, of rapid advances in equipment. For this reason that which seems like the most perfect embodiment of scientific and technical achievements today is essentially already antiquated.

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Foreign experts believe that the needs of today call for the Military Transport Aviation to have super-long-range, super-powerful, highly maneuverable, all-weather planes capable of carrying a load of more than 100 tons and with a range of more than 10,000 kilometers.

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CHAPTER VI

THE PEACETIME ROUTINE

With the passage of 3 decades, that which our people and the rest of mankind lived through during World War II has receded into history. The Soviet people are engaged in peaceful labor, as are the Soviet fighting men guarding our homeland's security. "Everything created by the people must be reliably protected,"<sup>36</sup>--these words uttered by General Secretary of the CPSU Central Committee L. I. Brezhnev at the 24th CPSU Congress express the basic principle underlying the purpose of the Soviet Armed Forces.

The daily life of military personnel in the Army and Navy, strict, cadenced and filled with military and creative labor and touched with a spirit of the romantic, gives the individual ideological stability, develops his character and a sense of responsibility, duty, collectivism and infinite loyalty to his patriotic and international duty, and educates him politically, militarily and technically. Fighting men devoted to the homeland are produced in the course of the combat and political training and in the practical work, in an atmosphere of great military demandingness, fighting men prepared at all times to come to the defense of the homeland, to implement the will of their people.

In order to give some idea of what the day-to-day existence of the Soviet Military Transport Aviation is like, an idea of the conditions under which our modern airmen grow strong and mature, I shall describe a few small events taken from our normal workdays.

The concrete parking apron appeared to sag from the heavy hulls of the turbo-prop giants. Self-propelled artillery mountings and pallets of combat equipment were loaded in the cargo compartments within a limited number of minutes, and the subunits of airborne troops took their places.

A green rocket shot into the sky, and after a short take-off run the large planes rose into the sky, one after another.

A new generation of Soviet airmen were at the controls of the combat aircraft. They were fitting replacements for the veterans, winged youth with a profound awareness of their duty to the homeland and with thorough technical and special training received at higher aviation schools and in units of the Military Transport Aviation.

An exercise was under way.

Weather forecasts indicated the possibility of dense fog, but the crews were prepared to drop the airborne forces in any kind of weather.

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That morning the fog did in fact become so dense that the tents of the command post in the area of the landing and the trees in the woods were submerged in a blanket of haze. The landing site was also invisible, although it was only a few dozen meters away.

The time for the drop arrived. A few minutes passed, and, although, as before, nothing was visible, one could hear the PRS's, the braking devices on the heavy cargo ramp, begin operating.

The report was received 20 minutes later that the landing operation has been completed. At almost the same moment the airborne troops burst forth from the fog with a loud "hurrah" and rushed the "enemy."

The transports returned to the airfield, which was also in an area of dense low clouds with limited visibility. Nonetheless, all of the aircraft landed safely. The aircraft commanders and crew members had performed the mission superbly, demonstrating good combat skill, a good knowledge of the equipment, the ability to fly in difficult weather, and good coordination.

Aircrews and technical personnel continuously improve their skill under the same or approximately the same conditions, performing important missions, landing or dropping by parachute troops and combat equipment and supporting the exercises of various branches of troops.

A subunit of the Military Transport Aviation was assigned the mission of delivering cargo to the Far North.

The temperature was 50 degrees below zero, with gale winds up to 20 meters per second. Fingers froze to any metal they touched.

For six days the crews performed three or four flights daily in unusual and difficult conditions. They were unusual not only because of the weather but also because of the fact that the fully loaded aircraft were forced to land on a frozen lake. The lake was located at the base of a mountain, surrounded by hills on all sides, with only a narrow canyon through which to enter for a landing.

Naturally, there were no radio landing aids on this flying field, if one could call it that, and the airmen had to work out the landing approach patterns on their own.

Finding their way among the peaks of the hills, they followed the course which they had worked out. Every crew member was under tension: the navigators issued the necessary information--altitude, location, course, distance, distinctive reference points and outside temperature; the radio operators maintained contact with the nearest radio facility; and senior airborne technicians kept a close eye on the performance of the power units. Not a single word was wasted and not a single superfluous movement was made.

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Landings were made by visual contact. Minutes seemed like an eternity. The large aircraft made their way carefully through the narrow corridor created by nature. The altimeters measured off the final meters. A light touch-down, a landing run over the ice--and the engines were shut off. The cargo had been delivered.

The morning dawned clear that summer Sunday. In the early hours, personnel of one of the Military Transport Aviation units were placed on alert. A tragedy, a powerful earthquake, had occurred in Tashkent, located thousands of kilometers from them. People were in distress.

The sun had not risen above the horizon when the first aircraft lifted off from the runway and set out on a course for the designated area.

Military Transport Aviation planes were the first to arrive in the area of the earthquake, carrying most of the medicines, food and equipment for setting up tent camps.

We were at airfield X. Beautiful, silvery planes with swept-back wings were lined up on the flying field, their engines, suspended beneath them on graceful pylons, appeared weightless against the background of the huge fuselages. These were new Il-76's.

Cleared for take-off, the aircraft mounted easily into the air, carrying subunits of airborne troops along with their weapons and combat equipment.

The faces of the airborne troops were calm: for them the flight was a sort of respite before the "battle" and each of them was inwardly preparing himself to perform the forthcoming mission and thinking his own thoughts.

The crews of the landing aircraft were engaged in tense work, however. The command was received from ground to form up in combat formation. Each of the airmen accurately performed his job as specified in the flight mission.

As they crossed over the "front line" they had to alter their route to avoid coming within range of radar facilities.

The crews performed calmly and the pilots monitored the instruments, which would bring the aircraft to the designated area.

A green light came on in the cargo compartment, and the parachutists prepared to jump. The hatch doors opened slowly, a green light flared up and in a matter of seconds the subunits had left the aircraft.

The airborne landing force was delivered precisely to the designated area on time....

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Today, we can speak with pride of the fact that our Military Transport Aviation has achieved great precision in dropping airborne troops and cargo at designated sites. And this is the result of persistent, daily efforts to improve the combat training and technical skill of all Military Transport Aviation personnel.

Our routine days of intense work are not yet a matter of history, and I hope that after reading about personnel of the Military Transport Aviation, about the training of the young aviators and the improvement of combat readiness in the Air Force Military Transport Aviation the reader will have a better concept of our existence today.

A School of Proficiency

The successful performance of the Military Transport Aviation's work depends to a considerable degree on well-organized training, precise planning, thorough support for the operations of our air units and subunits and the skillful employment of various tactical techniques, and on the landing of airborne forces day or night, in any kind of weather, within the time specified and within limited areas.

The combat training of fighting men in the Military Transport Aviation is broad in scope and diverse. The airmen learn whatever may be required in an actual combat situation and their peacetime workdays are continuously filled with soldierly activity, the objective of which is the model performance of their military duty and the achievement of a state of readiness to perform any mission for the homeland.

The professional training of airmen for the Military Transport Aviation has its own specific aspects. Long-range flights, unfamiliar routes, extraordinarily diverse missions and prolonged flights--this is far from a complete list of the difficulties encountered by the crew of a military transport. Airmen of the Military Transport Aviation must be able to fly faultlessly at minimum altitudes, over deserts, mountains and seas and without visual reference points.

Powerful military transports traverse the air over our homeland, from the Baltic to the island of Sakhalin, from Novaya Zemlya to Kushka. Flights in the North are especially difficult. Freezing weather, blizzards, landings under difficult conditions, all make it essential to perform painstaking preparations for each flight and demand courage, mutual assistance and valor.

The crew of a military transport and its commander must first of all have a thorough knowledge of the equipment, aerodynamics and navigational techniques and procedures and good piloting skill; they must be bold and resolute and must have firm confidence in the aircraft's capabilities.

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Good individual training for the specialists is necessitated not only by the need for smoothly coordinated teamwork but also by the degree of responsibility borne by airmen of the Military Transport Aviation. On long flights there is no one to rely on but themselves, and the crews must count on their own abilities, be able to appraise the air and ground situations by themselves and to make the necessary decision and be able to implement it in various circumstances, which are sometimes not covered by any sort of instructions.

A number of problems are encountered in the process of improving the professional skill of the personnel, one of which might appear paradoxical: in this age of scientific and technological revolution, extremely complex equipment, electronic computers and all sorts of computing devices, man's role, his knowledge and skills, are becoming more and more important. It is essential for these specialists to have thorough technical training, great competence and a good knowledge of the theoretical and practical aspects of flying. He must master machine language in order rapidly to arrive at the optimal plan for performing the assigned mission and feed the data into a computer.

Learning to operate the extremely complex modern equipment with which the Military Transport Aviation is equipped and acquiring the ability to perform even the most difficult mission in any air or ground situation-- these tasks are accomplished in peacetime with the system of indoctrination and professional training at air schools and in the combat units in the daily process of improving the airmen's practical skills and constantly expanding their knowledge. The entire system of theoretical and practical training, which never stops even for an hour, comprises the school of proficiency, a school which develops competent and mature personnel, people of unwavering convictions and knowledge, first-class specialists of which the Military Transport Aviation is proud.

A number of higher military aviation schools train cadres specially for the Military Transport Aviation. One of them has engaged extensively in the training and indoctrination of future air force officers for more than 30 years now. Thousands of young people have received training at this school, acquired substantial knowledge there and become good military airmen.

The school has everything which is required for the cadets to gain a thorough knowledge of modern aviation equipment. They master the fine points in the employment of its capabilities in classes on combat aircraft design and learn about aircraft design and strength and about the theory and design of jet engines in electronic and automatic aviation equipment laboratories. The cadets have at their disposal a superbly equipped training room with a trainer cockpit, aviation and radioelectronic equipment classrooms and other auxiliary facilities.



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Training in preflight procedures receives special attention. Flight exercises in the classroom, at the methods facility in the aircraft cockpit and on training equipment or a functional mock-up contribute to a thorough mastery of the laws of aerodynamics and navigation. Radio electronic and automatic equipment make it possible to work out the action to be taken by the crew in an emergency situation, which cannot be reproduced on a flight: failure of one of the power units, part of the electronic equipment, the fuel supply or hydraulic system, and so forth.

Solid practical skills are thoroughly mastered during subsequent flights-- with an instructor at first, and then solo. The good flight training acquired at the school helps the young pilot-engineers successfully to perform missions on modern aircraft in the line units.

Constant, close contact between the instructors and the air units and sub-units in which the cadets receive their practical training, makes it possible to monitor the quality of the theoretical preparation and flight training of the school's graduates and when necessary, to make changes in the training program, which contributes to the achievement of maximum effectiveness in the training of flight personnel.

Approximately the same system is used for training specialists at the higher military school for navigators.

Representatives of all services of the Military Transport Aviation maintain constant contact with the schools. They are visited especially frequently by Major General of Aviation M. P. Zayka, distinguished military pilot, and Major General of Aviation V. K. Udal'tsov, distinguished military navigator. Command's representatives speak to the cadets on the tasks facing our aviation, on its future development, on the mastery of the new equipment and the requirements made of cadres of the Military Transport Aviation.

Those in charge of the schools do everything necessary to see that their graduates settle rapidly into the combat rhythm of life in the air units. This is insured by seeing that they thoroughly master the basics of their occupation at the schools. A feeling of great responsibility on the part of the instructors plays a prime role. As a rule, graduates of the higher aviation schools successfully master the new equipment received in the combat units and demonstrate excellent knowledge and good flight skills.

In addition, most of the young officers are active in public affairs. All of them are also in good physical condition, a fact of no small importance, and this helps them more easily to bear the difficulties of long-distance flights.

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All of this helps the officers joining the Military Transport Aviation to serve as a fitting replacement for our older generations of aviators.

I would like to mention the productive work performed by one other military air engineering school, which trains engineers to serve on the ground. The successful performance of missions by military transports depends to a great degree on the training of these specialists, and this is why it is so important for the graduates of this school to possess extensive knowledge and solid practical skills.

Nor could I fail to mention those inestimable advantages produced by the conversion of aviation schools to the category of higher schools, which means that the cadets receive broader training in physics and mathematics and become qualified engineers. Only a good engineering background permits the young specialists successfully to master the complex aviation systems with which our air forces are equipped.

Personnel greatly needed by the air units are trained by special schools for warrant officers (praporshchiki) and junior aviation specialists. The institution of warrant officer, recently introduced in the forces, is already playing an important role. In the future this category of servicemen will be assigned the important work of training junior specialists and fighting men in the lower ranks.

During their training at special schools the warrant officers acquire basic military knowledge and skills essential for the performance of their service duties. Their development as commanders and indoctrinators is achieved in the process of their practical work in the units. This qualitatively new category of commanders is closest to the soldiers and sergeants and is directly involved in the combat training and the political and military indoctrination of the personnel, in the servicing of the equipment and in the work of maintaining it in a state of combat readiness.

The great importance attached to the selection of candidates for warrant officers' schools is therefore understandable. These schools accept the best of those who are on active duty or in the reserve, who love their work and choose a military career.

At a practical and scientific conference of leading political workers of the Army and Navy Marshal of the Soviet Union D. F. Ustinov, USSR Minister of Defense, pointed out the responsibility involved and the difficulty of indoctrinating the young fighting men and the fact that youth joining the Armed Forces now are ahead of their predecessors with respect to their development, literacy and range of interests. A considerable portion of the youth are inducted into the army immediately upon graduation, and it is not an easy matter for them to overcome the burdens of military service. In addition, military service is now far more complicated than before. The military indoctrination of these youth naturally requires greater skill on the part of commanders and political workers, who have the job of making

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every fighting man clearly aware of the fact that he is performing an important job to protect the socialist achievements of the Soviet people.

The training and indoctrination of junior aviation specialists also receive a great deal of attention in the Military Transport Aviation. After all, the young recruits must become not only competent patriot-soldiers of the Air Force, but also true experts in their military specialty within the brief period of three to five months. Great importance is therefore attached to the training subunits in which the junior aviation specialists are training, and their training is reinforced by experienced officers and skilled methods experts.

The sergeants and sailors--aircraft mechanics, radio and instrument operators, maintenance men, engine specialists, and specialists in many other fields--perform all of the work involved in preparing for and conducting flights. And preparation of the aircraft equipment today requires considerable knowledge on the part of each individual coming into contact with it. A fuel truck, for example, or an oxygen tanker is not just a special vehicle but a real laboratory. The driver must therefore be not only a rated motor vehicle specialist but also a laboratory technician with a good understanding of his equipment and its capabilities. Naturally, the quality of the preliminary work determines to a considerable degree the plane's state of readiness to fly. It is no less important that the aircraft be kept clean and that the engines and numerous pieces of equipment be checked regularly to see that they are in good repair.

Constant attention to the training of personnel for the Military Transport Aviation contributes to the development of specialists with the higher ratings. Aviation schools are only the first stage, however. Further training takes place in the Military Transport Aviation's units and subunits, where the airmen receive practical training to achieve the higher ratings. They refine skills and abilities previously acquired and expand their knowledge in the daily military work.

There are unlimited possibilities for improving one's professional skill, and the more the fighting man knows and the greater his abilities, the more knowledge is required by commanders and the more aware must be their approach to subordinates and to the organization of smoothly functioning daily training for the military subunit.

Political organs and party organizations have the leading role in the development of ideologically strong airmen in the Military Transport Aviation, and they perform their work as an inseparable part of the combat training of the fighting men.

"As we organize the party-political work," Marshal of the Soviet Union D. F. Ustinov, minister of defense, points out, "we must also take into

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account the nature of modern warfare. We must achieve a situation in which each commander and political worker has a clear understanding as he organizes the training and indoctrination of the personnel of the new moral, physical and psychological trials to be encountered by our fighting men and the reserve of strength--combat, ideological and moral--essential to the defenders of the homeland now being trained." 37

Today's party-political work is based on the thorough study of decisions of the 25th CPSU Congress and the Constitution of the USSR, focusing on indoctrinating the fighting men with communist conviction, good morale, political views and fighting efficiency and keeping them prepared to defend the accomplishments of socialism and the peaceful, creative labor of the Soviet people.

National discussion of the draft Constitution of the USSR provided a good school of political indoctrination for the personnel. During the discussion airmen of the Military Transport Aviation made more than 2,350 verbal and written statements and declarations in support of the Constitution, and around 120 suggestions and additions were incorporated into the draft of this historic document.

The most difficult and important tasks facing units of the Air Force Military Transport Aviation are accomplished through the party organizations. Demonstrating a thorough knowledge of affairs and delving deeply into all aspects of the life and work of units and subunits, they help the commanders to accomplish the combat tasks and to eliminate deficiencies in the organization of the training process. Party organizations constantly focus their attention on improving the combat capability of the units and maintaining permanent combat readiness. As they pursue these objectives, party organizations endeavor to raise the communists' awareness and sense of responsibility for the assigned work, to insure that they function in the avant garde and that they set a personal example in the performance of their service duties. Setting a personal example gives them the moral right to persuade and indoctrinate personnel who are not party members, seeing to it that they train with excellence and perform their service jobs irreproachably.

The comprehensive approach and ideological and indoctrinational work, which was thoroughly substantiated in materials of the 25th party congress, is presently being adopted more and more extensively in Military Transport Aviation units. This approach is essentially a matter of closely combining ideological-political, labor and moral indoctrination. With respect to the military it means closely interlinking political indoctrination with the combat training. The daily practical work, the combat training, life and living conditions of the fighting men therefore comprise one of the main focuses of the work performed by political organs and party organizations of the Military Transport Aviation. Political workers devote all of their experience and knowledge to the complex process of moral-political

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and psychological indoctrination, which calls for the simultaneous development of political and moral qualities and improvement of the individual's psychological aspects. The professional skills of the fighting men are improved and their combat readiness is strengthened in this manner.

Training commanders of heavy aircraft is one of the most important aspects of the training carried out in units of the Military Transport Aviation.

A faultless knowledge of the aircraft equipment, practical aerodynamics and navigation constitutes the basis for mastering the specific skills required for flight work and for piloting military transports. The fact that the transports carry personnel, combat equipment and valuable cargo means that the pilot must perform unerringly, demonstrate great piloting proficiency and have a feeling of exceptional responsibility during the performance of his duties.

The moral-psychological conditioning of the aircraft commander and his ideological strength are especially important because of this. It is not enough to possess good piloting sophistication. In difficult situations an aircraft commander must possess mental calmness, stamina and the ability to analyze a situation rapidly and to make intelligent decisions on his own, since military transports frequently fly without direct contact with the flight operation officer and frequently in difficult weather.

Development of the qualities required to organize the crew's work on the ground and in the air constitutes an important stage in the indoctrination of a young commander. An aircraft crew can only perform a mission successfully when the commander is able to explain the purpose of the mission to his subordinates precisely and clearly and to organize their work in specific situations.

Such is the role of the military transport commander, and it would be difficult to attach too much importance to that role, because it is the aircraft commander who bears full responsibility for the accomplishment of the mission and for the timeliness and correctness of the decisions made. And the most unexpected situations sometimes arise during flights.

Captain Byshev's crew was assigned an operational mission to deliver cargo to airfield X. Around 40 kilometers from the airfield of departure, while it was still gaining altitude, the aircraft was struck by a strong bolt of globular lightning. The flash blinded the crew, several instruments went out of order, and the radar sight and aircraft intercom system (SPU) failed. The commander's self-control, his confidence in each crew member and familiarity with the alternate instruments helped the commander emerge from the dangerous situation with honor. In dense clouds, Captain Byshev made it possible for the radio operator to report the incident to the take-off airfield by shortwave. The crew members performed the

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necessary operations rapidly and accurately, understanding each other without words. Dropping below the clouds, the aircraft landed safely at the nearest airfield. Such is the role of good coordination and mutual understanding on the part of the crew and of control and skillful action on the part of the aircraft commander.

Personnel of the Military Transport Aviation strive persistently to improve their theoretical training--their knowledge of the equipment and the laws of aerodynamics, navigation and tactics. The more technically sophisticated the crew and the better their tactical training, the more successful will be the flights performed over a prescribed route and the dropping and landing of personnel and cargo. When an airman has an accurate theoretical understanding of the aircraft's behavior under all flight conditions, from take-off to landing, he masters the skill of piloting and navigation more rapidly and is cognizant of the need for strict discipline and irreproachable performance.

Performance efficiency is one of the basic laws of flight work. The new weapons and extremely complex combat equipment necessitate strict discipline in order to insure the competent and precise operation of the combat aircraft, the instruments, various devices and mechanisms. The latest weapons demand strict discipline both of the military team as a whole and of each fighting man individually.

Troop discipline is primarily the ability of the personnel to apply maximum mental and physical effort to perform their service duties irreproachably and to carry out the assigned mission with excellence.

Efficiency of performance and strict discipline are extraordinarily important in the air force. The equipment of modern aircraft with extremely complex instruments has considerably reduced the amount of time available to perform the individual operations involved in flying them. The rapidly changing situation, enormous distances and extremely high altitudes all require that the airmen observe instructions and flight plans exactly. It can be boldly stated that maintaining the prescribed flight conditions constitutes the keystone supporting the skill of the crew and flight safety.

Combat skill is improved and good results achieved in the combat training and the performance of highly diverse missions in the process of serving in the units of the Military Transport Aviation, which are headed by experienced and highly trained commanders and political workers, in which all services--command, navigation, engineering, communications, logistics, meteorological and others--are performed according to rigidly conceived plans, which take into account the requirements of higher agencies and the daily training tasks.

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Many good things can be said of the commanders and the political workers of the unit commanded until recently by Officer Nikolay Ivanovich Trifonov, a veteran of the Great Patriotic War and Distinguished Radio Operator of the USSR. This team strives constantly to be first.

An excellent training base has been created in the unit, and special classrooms for the moral-psychological conditioning of the radio operators and radio training facilities have been set up there. I would like to mention the fact that N. I. Minakov, the new unit commander, has received an early promotion for the successful performance of combat and political training tasks. A great deal of work is done in the unit to qualify these specialists for the higher ratings. A composite team from the unit regularly competes for first place in the Air Force in radio sport and has repeatedly won prizes, and Sergeants A. Teplaykov, T. Berezina and N. Ivanova have participated in All-Union competitions. Such radio operators as these can clearly cope with the most difficult and important tasks in any exercise.

Following are two more examples taken from the life of our line units which I recently visited.

First of all, I shall describe one day of combat training--preparations for and the performance of training flights under the supervision of Colonel Vasily Afanas'yevich Polyakov, distinguished military pilot and commander of a Military Transport Aviation unit.

I chose to visit this unit deliberately. At one time I was chief of the political section of the guards formation of which it was a part, and now I wanted to see what changes had occurred in the unit and what it is like today.

Before departing I inquired as to what was scheduled for Colonel Polyakov.

"For the next few days, ordinary night flights," I was told.

Truthfully speaking, I do not like the expression "ordinary flights": it indicates an attitude toward flights as something routine and ordinary. I like to see the very description of the daily mission reflect a mood of creativity and persistent exploration.

The efforts of the flight crew and of each specialist should constantly focus on the performance of a clearly defined task, on working out the more difficult parts and perfecting their skill. When organizing and conducting tactical flight exercises, it is essential to create a situation approaching actual combat conditions, a situation which will help the commanders and other groups of key personnel to develop their tactical thinking and provide them with solid practical skills.

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In the contemporary situation the demands made of the tactical training of the airborne fighters are mounting sharply. No one should count on some sudden inspiration for coping with a critical situation, hoping to perform an assignment without careful, thorough flight preparation. "An air battle must be won on the ground,"--this principle, which has been repeatedly stressed by Chief Marshal of Aviation P. S. Kutakhov, commander in chief of the Air Force, fully applies to the combat training of airmen in the Military Transport Aviation. Each class or exercise and each flight assignment should result in an advance in the improvement of combat skill and should contribute to the successful execution of any air mission.

This is precisely what I expect to find in the unit commanded by V. A. Polyakov.

I have known Vasilii Afanas'yevich a long time and am very fond of this sensitive and modest man, an excellent pilot and a superb commander, who shows constant concern for his men and for the job entrusted to him.

His unit has deservedly been awarded the Banner of the USSR Ministry of Defense for military valor, and other awards. It has been an excellent unit for many years, occupying a place of honor among the standard bearers of the Military Transport Aviation.

I visited one of the classrooms at the training center. The commander was conducting a meeting for supervisory personnel on the planning and conduct of flights. The subunit commanders and their deputies were quite serious. They all had notebooks and their faces reflected unfeigned interest in the meeting to follow, in what the commander would have to say.

The commander took his time, however. He spoke calmly and did not attempt to explain everything at once. One could tell that the meeting had been carefully conceived.

It frequently takes a fairly long time to explain a flight assignment. Every commander knows that it is not such a simple matter to put zest into a routine job, to be able precisely to formulate the idea underlying a specific mission and make it clear to each individual. In order to accomplish this, one must have a good understanding of the personnel, their theoretical and practical backgrounds and capabilities, of the condition of the aircraft equipment, the airfield and radio support facilities, and must know the weather forecast for the days immediately ahead and what means of material and technical support are available. The commander must consider and think over a great deal before arriving at a decision as to how the flights are to be carried out.

After informing those gathered that night flights were scheduled, Colonel Polyakov asked the unit chief of staff to present his ideas for organizing and directing the flights. The deputy commander then presented his thoughts on the subject.



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The subunit commanders also reported on their plans for the flight day and on the tasks to be accomplished on the flights.

The unit commander's brief questions and comments were to the point and demonstrated a good knowledge of the personnel's training level.

After all the reports had been made V. A. Polyakov began assigning the flight missions for the day. It was clear from the commander's very first words that he was not simply explaining the flight training requirements but, as the commander, was issuing an order that the combat mission be accomplished. Assignments were clearly defined for the subunits and flight operation group and the schedule was established for reports and for the preparation of planning tables and all documents pertaining to preflight preparations....

■ The commander's exceptional discipline and precision and the thoroughly conceived clarification of assignments could not help but affect the men. Everything was understood without any sort of additional questions, and the officers left to prepare for the forthcoming flights.

That evening there was another meeting with the personnel--a discussion of current events. Air Force Day was approaching and the conversation was therefore about the history and the traditions of the Air Force, about specific matters and about plans for the near future.

As soon as I went outside the next morning, I immediately sensed the special rhythm of life typical of this garrison.

Although it was not yet 0700 hours, many people were heading for the unit sports complex, where the activity was especially lively. All of the personnel--officers, warrant officers and regular service personnel--were lined up on the sports field. For 30 minutes they all performed a fairly heavy schedule of calisthenics. There was time left for volleyball. Even there, on the sports field, one could clearly feel how firmly the people were united by a common regimen, a common cause and a common mission.

Incidentally, when I arrived at the flight personnel's messhall this impression was confirmed for me in a special way. Some of those sitting at the tables were not eating, although breakfast had already been served up. I asked about that. I learned that they were waiting for their commanders (the personnel were seated at the tables by crew and no one would begin eating until the crew commander sat down).

The solidarity and concord of the military team is developed in the daily service process, and it is important that these qualities be manifested throughout, even in minor every-day details.

A class on flight preparations was under way. The officers were bent over their work. The commander was checking to see how each officer

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had defined the essence of the mission, checking on the procedure for performing preliminary preparations and designating the time for checking the crews' flight readiness.

All of the crews had different missions: there were flights at maximum range, maneuvers and the landing of airborne forces under specified circumstances. Some crews were making preparations for polishing up their piloting techniques at the range, while others were making preparations for instrument flights and for making landing approaches in an enclosed cockpit (in this case the cockpit windows are covered with special hoods, which cut off any view of land or of the natural horizon). The objective of all these diverse missions is the same--to develop skill.

In the flight briefing room the combat mission is explained once more and the entire procedure for performing it--from starting the engines to cutting them off--is gone over.

After the specific preparations of all services are explained the crews continued to ready themselves for the flights in their own subunits.

The unit has excellent facilities for training and drills. Each subunit has its own classroom, properly set up for the purpose and containing the necessary equipment. The pilots, engineers, navigators, radio operators, gunners and other specialists have made functioning displays, diagrams and mock-ups. An area has been set up on the grounds, where various parts of operations performed in the air are also refined.

Various flight patterns, landing approaches and other elements of flightwork are attractively depicted on one wall of the building.

One has the feeling that all activities at the garrison serve to achieve a smooth tempo of combat training and work and that the people derive pleasure and satisfaction from this.

And now, a few details characterizing the nature of the ground training. One of the subunit commanders, for example, began a class by reminding the men of piloting errors made during the performance of the preceding flight mission. Was this the right thing to do? I feel that it was. It motivates the men and forces them to find ways to overcome shortcomings, that is to say, of striving for the best possible performance of the mission.

The officers at work in another classroom were carefully drawing some sort of diagrams in notebooks and on the board, looking through manuals and patiently making some sort of calculations. Most of them wore the insignia of first-class pilots or navigators on their uniform jackets.

Captain X, one of the aircraft commanders, had drawn a runway on the board and was making intricate circles on it.

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I went up to him and asked him how long ago he had graduated. He told me, four years. During that time he had become a first-class pilot, had learned to fly in practically any conditions, meeting the norms, and had been promoted to the rank of captain.

He was now faced with the task of restoring his night piloting skills: He had recently returned from leave and had only been able to work on day flights since returning.

"Are you going over all of the details so thoroughly because you are having some sort of difficulties?" I asked him.

"Not really, but I must perform the entire group of exercises within a prescribed amount of time, which means I will have to strictly adhere to the prescribed flight conditions, speed, altitude and all of the other conditions."

Yes, the pilot would need a great deal of skill to perform the assigned mission, and I wished him luck.

The entire crew, first and foremost, the aircraft commander, bears responsibility for the success of the flight and for the completion of the mission. In order successfully to cope with the assigned mission, the commander must prepare thoroughly on the ground and objectively evaluate his capabilities and those of each crew member. And such preparations, which I found myself witnessing, constitute the basis for successful performance of the flight assignment.

The unit commander invited me to watch the crews in a "flying on the ground" drill.

In a special area the airmen were slowly moving along lines drawn on the asphalt, listening carefully to the commander's orders and questions. New commands were continuously given: the flight echelon, wind speed and weather conditions were changed; the focus of the mission was changed for the crew; and hypothetical problems involving the failure of individual systems and the power units were introduced.

"Are such drills useful? Are there not too many conditionalities?" I asked.

"No, Comrade Commander, a conditionality does not interfere with a detailed run-through of a forthcoming mission," the colonel answered with conviction. "The airmen are accustomed to such drills and prefer them to any other type of classes."

I must say that such drills are presently being employed fairly extensively in Military Transport Aviation units and that they are unquestionably beneficial.

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Preflight preparations were being completed. And as V. A. Polyakov and I went from one classroom to another I experienced a growing feeling of pride for our pilots and navigators, all of our specialists, who were preparing for their flights with such enthusiasm and vigor and demonstrating such a good understanding of the job.

One could not call this routine training. It was intensive work, the refinement of essential elements of a flight under the most diverse conditions, conditions which were changed somewhat each time. Each time there was discovery and creativity, and it would not allow of the routine.

It was time to rest up before flying. I was amazed by the quiet which settled over the camp despite the fact that it was midday. There was no movement of vehicles. It seemed that even the voices of children had been stilled. Duty personnel saw to it that silence was observed and that a certain order was maintained during the hours set aside for resting.

We had arrived at the airfield. Brief commands and the serious discussion of specialists with the various services could be heard. It was only here, at the airfield, that one could fully appreciate the intensity of that special preflight atmosphere.

The air suddenly shook from the roar of aircraft engines, started up at a single command. All noise stopped 20 minutes later. The crews received their final instructions. The weather forecaster, the communications chief and the heads of the other services gave brief reports.

A command was given:

"Attention! Raise the Air Force flag!"

The airmen froze at attention. The triumphant and exciting melody of the never-aging march "Ever higher and higher..." was heard, and the gold-tinged blue flag rose slowly into the late-afternoon sky.

The formal ceremony had ended.

"To the aircraft!"

The commander and I headed for the control tower. Colonel Polyakov was directing flights that day.

It was becoming darker outside.

"117. Request permission for group to move to take-off position."

This was the commander of one subunit preparing to drop a tactical airborne force.

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"Permission granted":

Lights blinking, the heavy aircraft taxied on to the runway and assumed take-off position.

"121. Request permission for take-off."

These were the call numbers of Captain X, with whom I had spoken during preparations for the night flight. The aircraft commander was requesting permission to taxi on to the runway.

"Permission granted":

Rising lightly from the concrete runway, the aircraft rose into the sky one after another. From this point the flights could only be followed from the blips on the radarscreens and from reports from the aircraft.

I checked the time, wondering how the captain was coping with his difficult assignment.

"121. Mission completed at the range. Request permission to enter return pattern."

The captain had performed superbly, right on schedule.

A few minutes went by, and the familiar voice came over the air once more:

"Distant marker reached. Landing gear down. Request permission to land."

Another minute went by, and the aircraft smoothly reduced its speed and came to a stop at the end of the runway.

"Five, five!" the flight operation officer announced.

This meant that the crew had made the landing computations and performed the landing expertly. The performance of the other parts of the assignment would be appraised later, based on data from the objective control equipment.

The flights continued. From time to time reports were received from the aircraft commanders and the flight operation officer sent out commands in response. The exchanges were brief and concise to avoid clogging the frequencies with excessive instructions.

This cadenced performance, the operations of all members of the flightline crew and of the flight crews in the air, and the precise reports received at the control tower reflected the intense life of the military team faced with the task of mastering the extremely complex aviation equipment.

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A new day dawned, and unit personnel gathered in a training room. Diagrams and posters showing how the flight assignments had been performed were on display.

Colonel Polyakov summed up the night flights.

The men listened attentively to their commander and teacher, a veteran military pedagogue with a thorough knowledge of his job and deeply concerned for the performance of each element of training, each detail influencing the improvement of combat skill.

Another phase had been completed, and the airmen were preparing themselves for even more difficult and at the same time, more interesting, tasks, the performance of which would be a new step upward in the school of proficiency, the school of life....

The following example gives an idea of the work performed by the unit staff during preparations for and the conduct of an airborne landing of troops.

This occurred quite recently. An exercise was under way in which one subunit of the Military Transport Aviation was assigned the mission of dropping an airborne group of "southern forces" at a limited site deep in the rear area of the "northern forces." Upon receiving the "combat" mission, the unit commander issued instructions on preparing for the exercise and on organizing interaction with the landing force and with the units enlisted to provide combat support.

The development and adoption of the plan for a landing operation is a complex and creative process requiring vast knowledge in various areas of military affairs. The commander, his deputy for political affairs, commanders of the various services, and party organizations have a direct role in this process, as in all of the routine and unusual missions performed by personnel of the Military Transport Aviation.

The chief of staff, however, bears special responsibility in the preparations for the performance of a landing operation.

Based on the commander's instructions, he assigns the missions to the chief of communications and radiotechnical flight support and to the reconnaissance and weather service chiefs. When he issues the instructions he indicates the schedule for submitting reports and documents, because smooth and well coordinated work on the part of the staff as a whole would be impossible without efficiency on the part of each officer. Finally, he assigns the actual mission: The operations group and forward detachments are to leave for the take-off area for the landing operation, where they are to coordinate the distribution of the landing force, the schedule and procedure for its concentration, the schedule and procedure for loading the combat equipment and the personnel, the sequence and conditions of the landing operation

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and the organization of control, communications and reconnoitering of the airfields. After the landing schedule is firmed up, it is to be transmitted to headquarters immediately.

Thanks to the smoothly coordinated work of the commander and staff, a plan is rapidly adopted and reported to command.

Staff officers work in the units themselves during the period of preparing for a landing operation. There, they can spot and immediately apply anything new and useful produced by the people's initiative and can help the airmen to improve their skill and the commanders to indoctrinate and train their men skillfully.

Preparations had been completed. The report had gone up through the chain of command:

"Readiness confirmed. Prepare to begin landing operation."

A period of anxious waiting began. The staffs had taken their places at the command posts, although outwardly everything seemed the same--radio exchange and line communications traffic remained as before.

Another crucial period was approaching, in which the political workers had a special role--the first meeting with the airborne troops at the loading airfield. The aircraft commanders and senior aircraft technicians, together with officers of the Airborne Troops, would appoint those responsible for the loading and define the tasks to be performed by the crews of the combat vehicles for the airborne troops during the process of the landing operation. This first meeting was important for building up a feeling of general camaraderie and a sense of mutual responsibility for the performance of the assigned mission. There would be discussion of the loading procedure and safety measures and the tasks of the airborne troops while en route to the area, on the final leg and when leaving the aircraft. Representatives of the air unit (this is always done by political workers) would present certificates and banners to representatives of command of the Airborne Troops, which would be awarded to the best of the landing forces. The meeting was brief but useful.

The next report was made:

"Loading of equipment and personnel completed."

Tension mounted. Reports came in, one after another.

The weather reconnaissance aircraft reported on the weather in the landing area: degree of overcast, height of bottom edge, wind force and direction.

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From the command post the unit commander directed the take-off, the formation into combat orders, the flight to the landing site and the drop itself.

More reports followed:

"Take-off of accompanying weather reconnaissance plane...."

"Take-off of forward airborne landing group...."

And finally, the report:

"Take-off completed."

The workload mounted. The assembling of the groups and their flight to the landing area were depicted on radarscreens at the radar stations and monitored throughout the entire flight.

The operations officer listened closely to the reports, recorded them and forwarded them through the proper channels.

The airborne group of "southern forces" was dropped within the limited area deep in the rear of the "northern forces" at precisely the right spot and the right time. The director of the exercise thanked the personnel of the air unit for their skillful and smoothly coordinated performance.

The combat mission had been completed, but the staff's work had continued. They now had to collect, summarize and analyze data on the performance of the crews, commanders and the services, in order to derive lessons for the future.

The day-to-day work of an air unit staff is like or approximately like what I have just described. Naturally, however, neither the commander nor his deputy for political affairs or the chief of staff could organize the combat training and achieve the successful performance of the assigned tasks without well-organized work and interaction among all services comprising the military system.

The navigation and engineer service is extremely important in the combat work of air units.

The navigation service in the Military Transport Aviation is in charge of aircraft navigation and the dropping and landing of airborne forces. Its main task is one of achieving the greatest possible degree of accuracy and dependability in the piloting of aircraft along the routes and to see that they arrive precisely at the designated areas at the right time. The navigation service is also in charge of ensuring flight safety and precise interaction with the other special services.



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Engineer support for the combat operations and combat training of military transport units is provided by the air force engineer service. Its main task is one of maintaining the aviation equipment in good repair and in a state of constant readiness to perform all missions, and of making certain that it is highly dependable and effective.

The young regular specialists and other servicemen assigned to units of the Military Transport Aviation find there a school of real combat training and become brave, ideologically strong, highly skilled specialists in the field which they have selected for themselves.

The development of the young airmen takes place under the supervision of commanders and political workers and is shaped by the very tenor of the day-to-day military service. They learn the secrets to mastery of their selected job and achieve a high level of combat readiness.

Our Winged Profession

Silver wings on a light blue patch--the insignia of the military aviation, is infinitely precious to those who have known the joy of flying and the feeling of ruling the air.

Many fine things have been written about the airman's occupation. When the aviation was still young, writer A. I. Kuprin made the following statement about airmen: "I love their society.... The constant risk, the beloved and dangerous work, the eternal focusing of attention; the sensation of awesome heights and depths and the intoxicating ease of breathing, unknown to most people; weightlessness and enormous speeds--all of this seems to expel or exterminate in the heart of a real pilot such ordinary, base emotions as hatred, avarice, cowardliness, pettiness, irritability, vanity and dishonesty, leaving only the pure feelings."

It is splendid to serve in the air force. The individual who masters the air experiences a feeling of direct contact with the entire world and feels the primeval essence of nature and its power. The enormous distances, vast spaces, various latitudes--and the individual sees the earth in all its diversity and boundlessness.

It is probably precisely this elevation of feelings which accounts for the airmen's profound devotion to their profession, for their deep and genuine love for it.

Great honor goes to that heroic airborne race which produced such remarkable aces as V. Chkalov, A. Serov, M. Gromov, V. Kokinaki, S. Suprun, N. Gastello, A. Pokryshkin, I. Kozhedub, S. Gritsevets, A. Vorozheykin, D. Glinka, N. Chulayev, V. Lavrinenkov, and hundreds and thousands of other heroes.

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These people, who are aware of the extent of their responsibility to those who have entrusted them with the important and responsible task of preserving peace and tranquillity in our land, are infinitely devoted to this cause.

What is that great feeling of love for our occupation composed of? What is it based on? What nurtures and develops it? These eternal questions have no doubt occupied the minds of more than one generation of fliers, and they can be answered in various ways. But it is doubtful that anyone would deny the close dependency between love for the profession and real skill on the job, irreproachable moral principles and a highly developed feeling of duty. We can therefore say that love for the occupation is not an inborn quality but the result of a single, continuous process of indoctrination of training, based on the methodical principles of military pedagogy and psychology.

The military flier is first and foremost a fighting man, and he must be prepared to demonstrate his ability and skill at any time. Service in the air force involves great difficulties and restrictions. Continuous drills, training, night flights and bad weather.... One must be able to get by without rest and entertainment, to forget sports and shows temporarily, to postpone visits with friends.

Love for the profession forces those who have selected it to explore, demonstrate boldness and discover new ways of doing things. The individual devoted to his job regards his work as a joy, as a creative thing, as having the greatest meaning in life.

It is not enough just to love the air force, however. In order to be a real master in one's work, to be able to utilize all the capabilities of the modern equipment, one must possess great knowledge and solid skills.

V. I. Lenin instructed us that "that army is conducting itself imprudently or even criminally, which is not training itself to use all types of weapons, all means and methods of warfare which it has at its disposal, or which the enemy may possess." 38

The Soviet Air Force is steadily becoming better equipped each year, a process based on the latest achievements of science and technology. In order to achieve absolute mastery of a modern aircraft the commander and crew must possess extensive and thorough knowledge and a broad technical range.

The role and purpose of the Soviet Air Force in the defense of the USSR and nations of the socialist commonwealth is now greater than ever before.

The feeling of pride in their military profession, a feeling based on the glorious fighting traditions of the Air Force and one of the combat branches of the Air Force--the Military Transport Aviation--is effectively helping to improve the combat training and the tactical and technical preparedness of the airmen.

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The commanders and political staff of the Military Transport Aviation and the party and Komsomol organizations regard their mission as one of thoroughly and profoundly explaining the foreign and domestic policy of the CPSU and the Soviet Government and of molding and developing in the personnel communist conviction, loyalty to Lenin's legacy and a correct understanding of the nature and purpose of our Armed Forces, and of using this as the basis for developing in every airman a love for and pride in his military profession.

An important part of this work is the task of publicizing the military specialties and their role and importance in the overall effort to improve combat readiness. There are no secondary specialties in the air force: They are all closely interlinked and form a single system. Success in the air would be impossible without precise and competent work on the part of technicians and mechanics and on the part of specialists in the rear service, communications and radio technical units.

Socialist competition, which has the slogan "Have an Excellent Understanding of the Aviation Equipment and Maintain It in Excellent Condition, and Be Able to Use the Weapons Expertly," is helping to promote creative activity on the part of personnel of the units and the subunits in the Military Transport Aviation. Productive initiatives and undertakings are being produced, and the ranks of experts and rated specialists are growing.

These people, devoted to their profession, are distinguished by vigorous action, creativity and effort to look ahead and a capability for giving their all for the beloved cause.

Who are these workers of the peacetime skies, airmen with the Military Transport Aviation of the 1970's?

They have various air force specialties and various degrees of experience and each of them has his own personality and leaves his own mark in the work, but they are all united by the main qualities: a highly developed sense of duty, a love for their profession, awareness of their responsibility for the assigned work and constant readiness to put their full effort into serving the homeland.

I would like to discuss these representatives of the Military Transport Aviation in somewhat greater detail in this chapter.

I recall the year 1959. It was late fall. At that time I was serving in Belorussia in command of an air regiment. One time, the unit duty officer reported that some officers had arrived to serve in the regiment.

Five men entered my office. My attention was drawn to Major Nozdrachev, a tall, well-built, trim individual with an easy smile on his lips. Everything about him indicated confidence and great energy. I had the impression that he could cope easily with any job.

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This proved to be true. He was placed in command of a subunit, adjusting rapidly to his duties and developing into one of the more competent commanders.

Our military service soon separated us, but not for long.

I met Major Nozdrachev again in 1961. He had developed and matured, and he gave the appearance of greater firmness, but the relaxed smile on his lips was the same.

I witnessed Vladimir Nozdrachev's subsequent service.

In 1967, it was Colonel Nozdrachev who had the honor of demonstrating the force, power and combat capabilities of the Military Transport Aviation in an air parade at Domodedovo. He headed an air group which landed an airborne force on the flying field, and thousands of spectators watched with fascination as the heavy combat equipment was rapidly unloaded and the aircraft took off again within a matter of minutes. Crews commanded by V. V. Nozdrachev have performed many flights, and no matter how difficult they were, no matter how complicated the situation, they always emerged victorious. A great deal of the credit goes to their commander, Distinguished Military Pilot Vladimir Viktorovich Nozdrachev.

All of this did not just happen. His life had led him in this direction, naturally and from the very beginning. In 1945, at the age of 16, he enrolled in one of the special Air Force schools—a family tradition: four members of the Nozdrachev family had devoted their lives to the air force. He subsequently went to pilot school and studied at the Military Air Academy and the General Staff Military Academy. The young commander thirsted for knowledge and demonstrated extraordinary abilities as an organizer and commander. This predetermined the entire course of his flying career.

General Nozdrachev was a delegate to the 25th Congress of the Communist Party of the Soviet Union. Holder of the Order of the Red Banner, the Order "For Service to the Homeland in the Armed Forces of the USSR," third degree, and many medals, he represented airmen of the Military Transport Aviation at the historic assembly of communists in a worthy manner.

Military Pilot First Class Vyacheslav Vasil'yevich Yefanov is of a somewhat different mold. This young general is distinguished by profound knowledge and erudition and a solid mastery of flying skills.

Yefanov's development was probably determined to a great degree by what was occurring when he joined the Military Transport Aviation: it was being reoutfitted with turboprop aircraft, and our air force was undergoing an advance in its development. This dictated the need for continuous, intensive study.

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Yefanov is unhurried in his deliberations and does not talk much. The decisions he makes show careful thought and depth. A thinking man who seeks new ways to achieve the best results in the work, Yefanov is strict and demanding and consistently strives for absolute fulfillment of the laws governing flight work. And there is a good explanation for this. This is what Yefanov himself has to say on the subject: "Our commanders, many of whom were veterans of the Great Patriotic War, always set an example for us. They taught us to be steadfast. From them we learned self-control, combat skill and absolute adherence to the laws governing flight work. They were strict with us but always tried to make it possible for us to demonstrate initiative and developed our abilities as organizers. I became solidly convinced that the main factor in training is the personal example set by the communist-commander."

The unit which V. V. Yefanov has commanded for a number of years has successfully performed the difficult tasks involved in training airborne landing forces under difficult conditions. Again, Yefanov has demonstrated creativity, resourcefulness and such important commander's qualities as purposiveness, strong will, determination and professional competence in evaluating the situation and making decisions.

Vyacheslav Vasil'yevich has also learned another rule: diligence is the most typical feature of pilots with the Military Transport Aviation. It is only natural that they are popularly referred to as toilers of the skies. And General Yefanov makes a great effort to develop this quality, so essential in the day-to-day service, in his men.

Lieutenant Colonel Vladimir Ivanovich Overchenko has given a quarter of a century to the air force. Accepting the baton from the frontline soldiers in 1950, Vladimir Ivanovich has carried it fittingly all of his years in the air force, passing on the best traditions of the older generation of airmen to the young pilots with painstaking indoctrinational work and with his personal example.

A quarter of a century represents an entire era for the air force: During that time it was completely reoutfitted with jet and turboprop equipment. And communist V. I. Overchenko's flight history is a brilliant illustration of that era: He has flown the Po-2, the Li-2 and four modifications of the An-12.

Vladimir Ivanovich has served as a flight instructor and indoctrinator of the young airmen since 1962. In the course of his work as an instructor, Overchenko has prepared a large number of pilots for solo flights as aircraft commanders, and as many as 30 of them have become pilots first-class.

Lieutenant Colonel Vladimir Aleksandrovich Galyas, First-Class Pilot, is a typical representative of the postwar generation of commanders.

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I recall an incident which goes back to the time when he first assumed command of an An-12 crew. Once, during a night flight in icy weather, the pilot made an error when he lowered flaps in the prelanding glide pattern. The aircraft abruptly went into a steep glide, and it became more difficult to control with each passing second. The young commander did not lose his head in the dangerous situation, however. He set the engines for take-off, circled a second time and landed, this time observing all the rules.

A difference of only 10 degrees in the lowering of the flaps would not seem to be much. It might have gone unnoticed in normal weather, but when it is cold enough to produce icing the inexact observance of instructions could entail undesirable consequences.

After landing, Galyas described his error honestly and in detail, which helped him and his comrades as well to master the technique of landing in freezing weather, in the presence of icing.

In general, honesty, sincerity and frankness are quite typical for Galyas.

He still loves to fly, loves it above all else, and never tires of improving his flying skill. When pilots began retraining to fly the An-22, the airman was ready to accept any assignment so long as he could fly the new aircraft.

V. A. Galyas is now a highly qualified commander. More than once my service duties have made it necessary for me to accompany men under his command on test flights, and I have always noticed complete coordination of action on the part of all crew members. It is pleasant and interesting to work with such people.

Anatoliy Ivanovich Serdyuk is also a member of the glorious family of airmen.

"I knew that I wanted to be a pilot when I was in the second grade," he once said. How does one account for this choice of a career at such an early age? A boy's dream, the impression left by the first Po-2 he saw and the stories told by his cousin, a military navigator? He joined a model aircraft club and was very active in sports. When he came of age, he took the entrance exams for admission to a higher air school for pilots....

The road only appears smooth from a distance—the young pilot experienced both joys and disappointments. One thing remained unchanged, however: his persistence, diligence and determination to master his elected profession.

After serving three years, Anatoliy Serdyuk became an aircraft commander. His flying skill grew month after month, and his organizational abilities became more clearly manifested. He was a subunit commander two years later.

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Everything would appear to be going smoothly: He was successful in the service and the future looked good. The young communist was bothered by his lack of training as a commander, however. And Serdyuk made the firm decision to renew his studies.

Another three years of persistent work and he graduated with a brilliant record from the Red Banner, Order of Kutuzov Military Air Academy imeni Yu. A. Gagarin.

He then took over a new unit, and there were new cares. This was only at first glance, however: The situation developed with the same speed and at the same intensity. The young commander understood what was most important: precise organization, thorough preparation and control, an excellent knowledge of the operating principles of the aircraft equipment and the laws of aerodynamics, and a profound sense of responsibility for flight safety on the part of aircraft commanders. These are the elements on which the practical work of the personnel is based.

There were all sorts of things to do: compile a schedule, train a flight operation group, and numerous other tasks. The skill acquired by a commander during his years of service, his great potential for creative action, his personal example, will and organizational talent are reflected in a high level of theoretical training and flying skill on the part of the airmen.

And this is the goal, a goal which Major Serdyuk, pilot by calling, devotes all his abilities and knowledge to achieve.

Not everyone is fortunate enough to achieve his dream right away, however. Vyacheslav Fedorovich Loginov did not become a military pilot immediately, and the path which led him to the Military Transport Aviation was a fairly difficult one. Communist Loginov is now a military pilot first class and an aircraft commander.

Captain Loginov has earned great respect from his comrades for his serious attitude toward the job and for his conscientiousness in the service. His crew is always one of the best and performs every flight assignment with good or excellent ratings, with no strain at all.

This is not Vyacheslav Fedorovich Loginov's first year in charge of the sub-unit party organization, and he handles the difficult tasks involved in combat and political training with great competence and party principle.

Captain Loginov has been awarded the Order of the Red Star for the performance of government assignments.

School, the Lenin Komsomol and the Party have produced a true Soviet man and a mature communist.

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Damir Karimovich Akhmetzyanov was born in the harsh year of 1942 in the small Tatar village of Kargali, Chistopol'skiy Rayon.

Damir was not fated to enjoy paternal tenderness and concern: his father, Karim Miftakhovich, died in 1943 at the wheel of a one-and-a-half ton truck on one of the frontline roads.

As the son grew older, his mother frequently told him about his father. The boy knew everything there was to know about him without ever having seen him. Islamiya Sigbatovna instilled in her son a love not only for his soldier-father but for the army in general. Damir decided on a career in the military while still in school. At that time he had no idea how he would accomplish this, however.

Fate once brought the youth into contact with Lieutenant Colonel Krasnopevtsev, an instructor at a military air school. He told Damir about the difficult and interesting occupation of aircraft navigator.

And the choice was made. In 1960, Damir became a cadet at the Higher Red Banner Air School for Navigators.

Higher mathematics, aviation cartography, aircraft navigation, combat employment, tactics--far from a complete list of the disciplines required to become an aircraft navigator.

Cadet Akhmetzyanov studied with determination and persistence to master all of the knowledge required for a career as a navigator, and the instructors at school gave his work high ratings more than once.

On his very first day at the school, Damir thoroughly grasped the fact that careful flight preparations on the ground insured the success of a flight mission. In his fourth year, Akhmetzyanov was the best bombardier in his class.

After passing the graduation exams, however, Lieutenant Akhmetzyanov was sent to a unit of the Military Transport Aviation for training on the An-12. It was not easy for the young tactical bomber aviation navigator to part with his jet bomber, but he had to bend his will to military duty and begin training on the unfamiliar turboprop aircraft. The better acquainted Damir became with the aircraft's tactical and technical characteristics, with its purpose and missions, the more respect he developed for the aircraft, a plane which appeared awkward at first glance.

Rapidly completing his training, Lieutenant Akhmetzyanov was first assigned to veteran navigator Yu. N. Fedorov. During his extensive flight duty Yuriy Nikolayevich has trained dozens of young navigators and provided them with a passport to the skies. This man combines a high level of proficiency and demandingness with the ability to train and indoctrinate those under him and personal concern for them.



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Damir Akhmetzyanov improved his combat skill by the day and within a short time had become one of the best navigators.

Time was not standing still, however. The influence of the scientific and technological revolution in military affairs was increasingly felt in the means and methods employed by the Military Transport Aviation. New types of aircraft and new and improved navigational and radar equipment came into being.

Navigator Akhmetzyanov began to feel that what he had learned at the military school was not enough. It was essential to acquire a better theoretical background.

Following three years of study at a military academy, Major Akhmetzyanov was assigned once again to his former unit as a navigator. As it happened, Damir arrived to take over from his former teacher. It was not easy for Yu. N. Fedorov to part with the team, which was like a family to him, but the knowledge that he was being replaced by one of the most capable of his students filled the veteran's heart with pride for his work.

Major Akhmetzyanov's most characteristic trait is a highly developed sense of responsibility, and this is what compels the navigator to prepare painstakingly for each upcoming flight, to work out the navigational plans down to the smallest detail, because there is no such thing as trivialities in the navigation service.

The periodic technical servicing group of the technical maintenance unit commanded by Engineer-Captain Nikolay Dem'yanovich Shavlo has been an outstanding one for eight years.

It is understandable why the group has held this title of honor for many years in a row. Captain Shavlo devotes a great deal of effort and energy to ensuring flight safety in the air regiment. The laboratory for maintenance and repair of the objective control system is an object of special pride and concern for him. Every component, even the smallest, and every tape has its special place in an arrangement based on the aircraft numbers. This is not the most important thing, of course, most important is the preventive work performed by specialists in the group directed by Engineer N. D. Shavlo. When Engineer-Colonel General V. Z. Skubilin inspected the laboratory it was no surprise that he judged it one of the best.

I would like to devote a few words to Captain of Technical Service Yuriy Il'ich Romas.

Captain Romas is the senior instructor-technician on the best aircraft in the subunit.

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Yuriy Il'ich understands the equipment on the An-12 from top to bottom, operates it competently on the ground and in the air, and continuously improves his technical knowledge and practical skills in working with the aircraft equipment.

Unit command has repeatedly used the excellent special training of officer Romas as an example for all of the technicians.

Warrant officer Anatoliy Ivanovich Yanovskiy, senior aircraft mechanic, is equally devoted to his job.

During his very first days in the military, Yanovskiy, of peasant origin and the son of a frontline soldier killed in action, stood out for his industriousness and efficiency. Wherever he worked, wherever his military career took him, he has always performed his duties as a soldier and a citizen with honor.

Yanovskiy is distinguished by modesty and simplicity and by his enthusiasm for the work. Anatoliy Ivanovich loves his aircraft and he imparts this love to the young specialists.

This is what young commander Andrianov has to say about his occupation and the path which led to it:

"From childhood I dreamed of becoming a pilot. And now my life is interwoven with the air force.

"I remember when I was still quite young, I would yell each time an aircraft flew over: 'Mama, mama, daddy's flying!' This is perhaps how my attraction for the air force began—with love for and pride in my father. It was my father, navigator first-class and veteran of the Great Patriotic War, who instilled in me a love for that profession without which I cannot imagine my life. Understanding full well that it would be impossible to achieve my dream without determined and diligent work, I passed the entrance exams and entered an air school in 1968. My years as a cadet passed by rapidly and were over almost before I realized it. Upon graduating from the school in 1972, I was assigned to a flying unit.

"That was the beginning of my working career, a life filled with joyous and creative spirit, of flights on a modern transport and participation in assignments approaching actual combat missions. This forced me to engage in even more thorough study of the aircraft equipment and the documents governing flight work.

"Naturally, one does not learn all of the secrets of flight skill at once. I learned from my commanders, from the veteran pilots and from my senior comrades. I began to study under the supervision of experienced instructors and teachers and improved my flight skill.

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"After I had assimilated the program, I was placed in command of an aircraft. An unforgettable time: my first solo flight, my first acts as a commander.

"I am fully aware of the fact, of course, that my knowledge and skills are still too limited for me to consider myself a real experienced pilot and commander. I want to become as proficient at the job as was my father, however, and I am working hard to achieve this."

Lieutenant Colonel Yu. P. Kornev shares his memories:

"Upon graduating from secondary school, I had the good fortune to meet a remarkable individual, V. M. Baranov, a flight instructor with the Ivanovo Flying Club. He is the one who inspired me with a love for flying.

"In 1958, at the age of 18, I became a member of the Ivanovo Flying Club. Four months of theoretical studies seemed like an eternity: I wanted to try my skill in the air right away. It is rightly said that one's first impression is a lasting one. I still have a clear memory of my first solo flight on a Yak-18.

"This was followed by flights to the range to work on piloting techniques. I began with the spin and then went on to banks, chandelles, half-rolls, rolls and loops, all of which added to my self-confidence, and I truly began to feel the joy of flying, a joy which has no comparison.

"It was no longer enough just to fly for the pleasure of it, however. I wanted to use my favorite activity for the benefit of people.

"In 1959 I entered a higher air school. In four years of training, in addition to the Yak-18, I learned to fly the Il-12 and the Il-14. I developed a great fondness for those aircraft, especially the Il-14.

"In my last year at the school, I began to train on the An-12. Separate systems and parts of a "real" aircraft were used as visual aids. I wanted to learn to fly the An-12 as rapidly as possible, which required a great deal of theoretical conversion training. The training was finally over. It was 1963. It would be difficult to describe my feelings when I took my place as a co-pilot at the controls of that beautiful giant, an An-12.

"One now sees that superb aircraft, the Il-76, in the skies along with the An-12. Compared with it, the An-12 is not very impressive, to put it delicately. Time takes its toll."

This is what Major N. S. Rad'ko has to say:

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"While still a student at the Leningrad Physical Culture and Sports Tekhnikum, I decided to become a flier, a childhood dream. I began preparing to enter flight school, which took almost a year. And there I was at last, standing in formation with my comrades. The chief of the school walked to the center of the formation, together with a group of officers, and read the order. Everyone was excited, expectant. When my name was read, I felt that I was the luckiest of individuals, with all of the difficulties behind me.

"Somewhat later, I understood that the real difficulties were only beginning....

"I recall the first time we were shown the cockpit of a Yak-12U. I thought that I would never be able to learn all of the instruments, to be able to monitor them in the air. It seems amusing now, but that is the way I felt.

"I became a member of the Party in December 1964.

"Each time you set out on a solo flight you feel that you are now a pilot. When you return, however, you know that you still have a great deal of work to do and begin practicing again."

Flying is traditionally a heroic occupation, surrounded by an aura of the romantic. Some individuals may find their way into any field purely by accident, but this is probably not true in the case of pilots: the flying profession does not permit this. Its ranks contain strong-willed, courageous people who have achieved their dream and know the value of continuous and painstaking work to improve their skill.

As I complete this account of a few members of that glorious detachment of Military Transport Aviation fliers, I would like to lay special stress on the fact that they all belong to that class of people who are infinitely true to their duty, love their profession and are capable of putting forth the maximum effort, because they do not simply perform certain duties, but provide a model of creative fervor.

There has been a continuous process of replacement of command personnel in the ranks of the Military Transport Aviation during the past decade. The older generation, who have invested their knowledge, skill and part of their lives to the formation and development of the transport aviation, have been replaced by those who became fliers in time of peace. They have brought with them proficiency in the job and that sense of responsibility which our veterans have taught the youth, imparting to them their experience and their love for the profession.

In our time, a time of scientific and technological revolution, service in the Military Transport Aviation has changed to an unrecognizable degree. Aviation today is comprised of the latest aircraft, extremely complex ground equipment and an entire system of preparation, organization and performance of flights.

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In order to handle the extremely broad range of work, the air specialists must have a complete understanding of the aircraft equipment, aerodynamics and methods and must have a broad operational-tactical perspective.

"Science-technology-tactics-efficiency--this is the practical formula which graphically depicts the requirements made today with respect to the perfection of flight methods work and the improvement of air training," states Chief Marshal of Aviation P. S. Kutakhov, Hero of the Soviet Union and commander in chief of the Air Force. "What is the logical connection? Science opens up prospects for the development of technology. Technology provides the material base for the air force's great combat capabilities. The commander and other airmen realize the capabilities of the modern equipment through the art of organizing and conducting combat, that is, through tactics. And the higher the level of the airmen's combat training, the more effective are their actions. A scientific approach is a vital requirement of modern flight practice, and all areas of the training and indoctrinational process must be imbued with such an approach."

Our fliers are capable of improving their flying skill in accordance with the above formula, because we are richly provided with people who are devoted to their profession, who have mastered the powerful equipment and are capable of utilizing it with maximum effectiveness. The strength of our Soviet system lies in such people.

The Combat Assistants of the Fliers

The Soviet Military Transport Aviation today performs extensive and important missions. And one should not think that they are performed by flight personnel alone.

The aviators of the Military Transport Aviation are not just the pilots, navigators, aircraft technicians and gunner-radio operators. In addition to them, there are numerous specialists in highly diverse fields, who support the work of the military transports. And it is not simply a matter of support: Quite frequently the possibility of flying and the successful performance of a mission in general depend on the specialists of the various services.

I have already mentioned the importance attached to the training of various ground service specialists. I shall now attempt to describe this service using the example of one of the air materiel units.

It was nighttime at the airfield. Officer N. F. Romashkin, graduate of a higher air school and commander of an airfield service subunit, had not left the flight line for almost 15 hours. More than once during the day he would recall his favorite saying: "Even if the sky should fall to earth, the airfield should still be in a state of readiness for flights. Therein lies the main principle underlying the aviation's combat readiness...."

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Romashkin's men understood this well and worked without letup. Trucks in staggered formation passed from one end of the runway to the other, sweeping the snow to the side. The trouble was that another blanket of snow would fall after they had passed. It was freezing weather at that time, and it was easy to sweep the snow aside with the stiff brushes mounted on the special vehicles. Toward evening, however, the temperature suddenly began to rise, approaching zero and the runway, cleared of snow, began to be covered with a thin film of ice, which presented a danger for the aircraft and which could not be scraped off.

It is very difficult to land an aircraft on such a "skating rink," and no less difficult, almost impossible in fact, to take off from one. This meant that the thing dreaded most could occur: The airfield might become inoperable. The powerful planes would stand helpless in their parking areas....

The ice-melting vehicles had been in Romashkin's thoughts all day, and he had kept them at the ready. Receiving a report from the weather service that a warm front was moving in, he cursed the "front" and ordered the ice-melting vehicles to be brought up to the "assault line"--tactics also have a place in this work.

An ice-melting vehicle is a powerful weapon in the battle to prevent an airfield from icing over. It pushes a wide strip of hot air emerging from a flat nozzle ahead of it, turning the icy crust into steam. The art of the operation consists in knowing when to put this vehicle onto the runway so that ice will not form again after it has passed. Changes in temperature, humidity and wind and other weather data must be accurately known.

It was dark and dank. Romashkin and the unit commander drove a Gazik back and forth down the runway, which covered nearly 12 hectares. They located the more crucial areas, squeezed lumps of wet snow in their hands, frowned with displeasure and made certain calculations. At last, the commander said in a resolute manner: "Now, you can put the ice-melting vehicles to work, Nikolay Fedorovich. This is exactly the right time. And move some of the equipment to the taxiways for the time being." Romashkin set out toward his vehicles.

In the meantime, covered vehicles and buses were moving in a stream over the field, separating to approach the parked aircraft. Stopping on the shoulder, where the airfield road branched, the commander observed the traffic. Some of the vehicles turned right and were lost in the semi-darkness of morning en route to an assembly area. Fire trucks and ambulances were stationed at the sites designated on the airfield, and a heavy tractor with mechanical aid equipment soon joined them.

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There was suddenly a great deal of action around the heavy planes spread out over the concrete: the aircraft commanders were removing the covers from engines and wings, opening doors and clearing away snow. Flight preparations began.

The powerful aircraft engines roared to life, breaking the silence. They were being tested prior to flying and were checked for all operating conditions.

Maneuvering skillfully around the aircraft, heavy specialized trucks fueled them and supplied them with liquid and gaseous oxygen, compressed air and nitrogen, carbonic acid and hydraulic fluid. Others charged various electrical systems on the planes.

Trucks and other equipment were loaded into the cargo compartments. Everywhere there was motion. It appeared impossible to make out anything in the chaos of moving vehicles and people, in the noise of engines, telephones and various types of signals....

If one could rise above the airport, on a helicopter let us say, and see the overall picture, it would be clear that there was nothing chaotic about the situation. Trucks and personnel were moving along specific routes, which rarely intersected, and there was no sort of oncoming traffic: everything occupied its own, rigidly designated place. Every individual on the flight line knew exactly what he was supposed to do, how he was supposed to do it and where.

Therein lies the essence of military organization, coordination and interaction.

Is it a simple matter to load a vehicle onto an aircraft within a matter of minutes? No, it is not.

The cargo hatch is opened and the ramp lowered and checked before the vehicle even reaches the aircraft. The driver lines the vehicle up and drives up the steep ramp into the cargo compartment, carefully and without relaxing his concentration even for a second. The slightest error could damage the aircraft.... Driving a heavy vehicle into an aircraft is also an art, a considerable one. The vehicle is placed at a strictly defined spot in the cargo compartment and made fast, the ramp is removed, the hatch is closed and everything is carefully checked once more.

Finally, everything was ready. The pre-flight work had been completed.

The flight operation group was working intently at the panels in the airfield control tower. A dim light on the panels lighted up various instruments and devices. The tense faces of the operators were visible above the remote radar indicators.

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Innumerable lights designating runways, taxiways and aircraft parking sites could be seen through the snowflakes flying beyond the large windows. One by one, the heavy aircraft left on their missions. They had barely lifted off before they were lost in the low clouds hanging over the airfield.

It was quiet in the control tower. Only now and then did one hear the quiet, concise reports of aircraft crews and the brief commands of the flight operation officer.

From time to time the even rhythm of the work was interrupted by reports from the radar operators on the air situation, reports from the command post on the performance of flight assignments by the crews of aircraft already many hundreds or even thousands of kilometers away.

Flights were under way....

Now, after performing their assignments, the aircraft were returning to their airfield. One of the most crucial moments was coming up--the landing.

Snow was still falling. Visibility was dropping to the minimum. The crews landed the aircraft skillfully, however, one after another. The modern ground radar and lighting equipment, combined with the airborne equipment, permits the fliers to come in accurately for a landing even in the most difficult weather.

The flight operation group, which is headed by Colonel Petr Savel'yevich Shchatin, Distinguished Military Pilot of the USSR, performed with precision and coordination. Ordinarily a man of few words, he spoke with great warmth of those who maintained constant communication and kept the radar equipment operating. They were all under the command of Major Nikolay Aleksandrovich Perevozchikov.

The communication and radio support subunits are equipped with complex radio electronic and other equipment. It includes various types of radar sets, radio technical landing and navigation systems, radio sets with various bands and of various power, complex light equipment and a large power supply system.

Most important are the people, however, in whose skillful hands the modern equipment helps the fliers to perform the most difficult tasks and to remain in a state of combat readiness. Flight safety and the success of flight missions depend to a great degree on the level of training of the soldiers and sergeants, warrant officers and officers supporting air communications.

Hundreds of radar eyes--the radar stations--continuously monitor the "fifth ocean." Among those working at the radar stations is Private



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Vasiliy Rozhka, operator of a landing system. The term "radar landing system" is self-explanatory. When ground is not visible, an aircraft is directed in for a landing by commands from the control tower, using this system. It is also used for reporting the location of other aircraft in the air, the existence of thunder clouds on the route, and so forth.

Vasiliy Rozhka monitors his complex equipment carefully. Continuous training, an inquiring mind and a love for the equipment made it possible for him to become an outstanding specialist. Once, when he was performing adjustment work, the young soldier was able to pinpoint and eliminate a complicated malfunction in a waveguide, which even an experienced engineer would not easily have found. Private Rozhka, a specialist first-class, has also mastered a second specialty: he has become an outstanding electrician. Before entering the army, he had no idea that he would be able to master the complex military equipment so rapidly and would provide support for aircraft landings.

Junior Sergeant Vitaliy Kalinin, a native of Yaroslavl', also served in the communications subunit. Prior to that he had worked at a plant, studied at a night university and been active in the Yaroslavl' DOSAAF Radio Club. Upon joining the army he rapidly mastered the specialty of radio technician and learned the complex modern circuits to perfection, and there was never a case in which the equipment in Kalinin's charge broke down during a flight. Vitaliy always provided good radio contact with the aircraft crews. Junior Sergeant Kalinin, a member of the Komsomol bureau, specialist first-class and an excellent sportsman, was always ready to help his comrades and to give the young fighting men advice and practical assistance as they learned to operate the complex equipment.

The proficiency of Private First-Class Nikolay Kovynev, radio telegraphist, was well known not only to those who served with him but also by many of the airborne radio operators who flew as members of Military Transport Aviation crews. Nikolay Kovynev was known as the sniper of the air.

Not so long ago, however, when, after being inducted into the army, he learned that he would be trained as a radio telegraphist, he decided that nothing would come of it. Proficiency did not come easily, but he possessed great industry, persistence and a desire to master the specialty of radio operator as rapidly as possible. Practice, practice and more practice.... After nine months of training Kovynev became a radio operator second-class. Soon thereafter, he passed the tests for operator first-class.

His hard work was not in vain: The young radio operator began to feel comfortable, at home, with the airways. Outwardly modest, even shy, Nikolay becomes a different person when he sits down at a radio set and finds his contact rapidly and unerringly in the solid mass of sounds.

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Wherever the planes fly--in the air above Chukotka, above the coast of the Arctic Ocean or the sands of Central Asia--radio contact with the aircraft is uninterrupted when Private First-Class Kovynev is on duty.

Private A. Zelenkov arrived in the army with a third-class chauffeur's license. He became a driver-electrician in the unit and prepared himself to take the exams for chauffeur second-class.

An inquiring mind, a desire to help his comrades on the combat team, classes by experienced specialists and training on his own--and Zelenkov became a radio operator-radio direction finder third- and then second-class. His comrades elected him group komsomol organizer. Zelenkov is also highly respected by the flight personnel. Whenever the airmen turn to him for bearings, he always provides them rapidly and unerringly with the precise figures, helping the crews to perform their flight missions successfully.

Illumination engineering at the airfields is an integral part of the communications and radio technical support service. The personnel who work with the illumination equipment--searchlight operators, electrical engineers and electricians--also do their part to make it possible for planes to fly safely, by day or by night and in various kinds of weather. In the most difficult situations, the runway lights are always ready, making it possible for the heavy military transports to land at the airfield. Searchlight operators and the detachments commanded by Junior Sergeants I. Medko and V. Golin perform smoothly and precisely.

A great deal also depends on the performance of the power engineers, who are in charge of electric power plants capable of supplying an entire city with electricity, on the ability of the driver-electricians to get the special trucks with the electric power generators to the airstrips in the field in any kind of weather and over all kinds of roads, and on the coordinated and precise performance of many other specialists.

In order to serve in the signal troops, servicemen must possess, in addition to good special and technical training, physical stamina and the ability to stay at their work station for lengthy periods (literally, days at a time) and to make decisions on their own, rapidly and correctly, under the most difficult conditions.

The men in the soldier's overcoats performing their difficult but honored duty in the Signal and Radio Technical Support Troops and in the aviation engineering units--these are the rank-and-file of the great air army and the combat assistants of their comrades-in-arms, the military fliers.

I once read that, according to statistics, for every member of a flight crew there are several individuals servicing the flight on the ground. I would

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like to restate the well-known fact that the ground services not only make it possible for the aircraft crews successfully to perform their missions in the air, but also insure the safety of every flight.

Readiness

In the course of their work, personnel of the Military Transport Aviation are continuously training and improving their skill. Doing their part, together with all Soviet people, to implement decisions of the 25th CPSU Congress, airmen of the Military Transport Aviation are persistently mastering the complex equipment, learning that which is required to achieve victory in modern warfare, and improving their everyday readiness.

The airmen improve their combat skills not only in training flights: Military Transport Aviation crews perform extremely difficult missions during troop exercises and maneuvers, in a situation simulating actual combat as nearly as possible.

Practically no exercise or maneuver has been planned in recent years without a parachute drop behind the front line or a surprise attack from the rear. It would be impossible to carry out such operations without military transports, which must deliver to the designated areas troops, combat equipment, ammunition and food, everything required for the successful conduct of combat operations.

In the training of flight crews great stress is laid on perfecting the more promising methods of employing the Military Transport Aviation for combat purposes. This includes refining flight procedures, a need dictated by the use of improved and more powerful aviation equipment. Along with the purely technical mastery of the new aircraft, this involves overcoming a certain psychological barrier, the rejection of conventional, obsolete methods and the adoption of new tactical procedures.

Experimental research flights are therefore systematically conducted in units of the Military Transport Aviation for purposes of studying possible combat formations, improving flight control from ground and in the air, ascertaining the operational and performance capabilities of the aircraft equipment, and a great deal more to improve combat proficiency.

And to sum up the results--troop exercises.

The "Dnepr" exercise conducted in the fall of 1967 is a good example.

The exercise took place in approximately the same area where determined battles were fought in September 1943 and where troops of the Central Front successfully forced the Dnepr and captured a vast bridgehead.

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The exercise, which was organized with consideration for the experience of the Great Patriotic War and the postwar development of the Armed Forces, along with the performance of a number of combat missions, was planned so as to demonstrate the training level of Soviet troops and to indicate the focus for future combat training.

In this respect, the Military Transport Aviation's participation in the exercise was of considerable importance.

The exercise was an excellent one. Large airborne landing forces were delivered precisely to the designated areas and landed within an extremely short time. The ground forces received the necessary reinforcements.

The Air Force command rated the performance of Military Transport Aviation crews highly. The flight personnel demonstrated good training, coordination of action and the ability to deliver and land large airborne landing forces precisely in the designated areas and within the time allocated.

The "Dnepr" exercise fully confirmed the importance of interaction among the various branches of troops to the success of an operation. This was the first time a landing operation involving large airborne forces had been carried out with a time limitation.

A specific feature of the training of crews of military transports for performing troop landing operations is the fact that during training flights, exercises and maneuvers, all of the missions are performed jointly with airborne troops. Exercises by air units of the Air Force Military Transport Aviation are carried out jointly with airborne troops. The Military Transport Aviation, in turn, takes part in all of the exercises of units and subunits of airborne troops.

It is not just good professional training and coordinated action which characterizes these strong ties between the Military Transport Aviation and the airborne troops: they are also joined together by a strong feeling of combat camaraderie, trust and mutual assistance, the source of which lies in long years of joint combat service.

During the period of preparations for and the conduct of the "Dvina" maneuvers, following a detailed analysis of the exercise plans and the coordination of interaction between airmen of the Military Transport Aviation and the Airborne Troops, the military transport and airborne units were massed at the airfields of departure, where command posts had been set up for the Military Transport Aviation and the Airborne Troops. The plans for the landing operation, computations and schedules, were meticulously clarified.

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The joint preliminary work was performed to make certain that every airborne troop thoroughly understood how he was to interact with pilots and technicians of the Military Transport Aviation. Through the crucial moments when the men and combat equipment were being loaded onto the aircraft and when the landing force was being dropped.

It was 10 March 1970, the beginning of the "Dvina" maneuvers. "Combat" operations were in full swing during the entire day, and the concentrations of airborne troops and airmen of the Military Transport Aviation at the airfields continued tensely to await the order to take off. No one knew when command would see fit to use the landing force, but the battle fervor was continuously mounting.

There were many veterans among the airborne troops and the airmen. They remembered well the combat operations carried out during the Great Patriotic War, recalled their experiences and told the young troops about other battles, real battles and not training ones. Their accounts became more animated when they came to the battles fought in Belorussia, where the "Dvina" maneuvers were being conducted.

As though echoing those distant and memorable days, circular appeals passed from one man to another among the airborne troops and the airmen of the Military Transport Aviation. Their fathers and grandfathers had exchanged just such letters during the Great Patriotic War in order to give each other support and to reinforce their confidence that they would succeed. These letters are printed below:

Dear Comrade,

We airmen have worked together in single formation with you more than once, just as we are doing now. We have always admired the courage, precision of action and good training demonstrated by you, airborne troop, as you abandon our aircraft. The jump is only the beginning for you, however. Ahead lies the most important task--"combat." Be brave in the "battle," airborne troop!

"Be true to the legacy of the great Lenin"--this is our motto as you now fly into the "enemy's" rear area. We know that you will remain loyal to the glorious traditions of the Airborne Troops of the Soviet Army in the "battle."

For our part, we assure you that we will deliver you to the drop site accurately and on time.

We wish you clear skies, airborne troop, a soft landing and an excellent performance in the maneuvers!

Aircraft Crew

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Dear Comrade Airmen,

We Guards airborne troops have been assigned the mission of taking part in the "Dvina" maneuvers. True to the fighting traditions of our valorous Armed Forces, we have accepted large socialist commitments in honor of the 100th anniversary of the birth of V. I. Lenin and have given our word to perform this entire mission with a rating of "good" or "excellent."

We are confident that you as well, proud eagles of the socialist homeland, will perform the drop with no less than an "excellent."

The long-awaited moment finally arrived: It was decided to drop a large airborne force into the "enemy's" rear area. It was to help the main grouping of forces carry out a successful offensive.

The air was rocked by the roar of powerful turbines. Neither the roar of numerous aircraft engines, however, nor the tractors, fuel trucks and combat vehicles rushing about the airfield interfered with the rapid and smoothly coordinated rhythm of the loading operation. The aircraft commanders oversaw the boarding of the airborne troops and the loading of the combat equipment.

A set amount of time elapsed, and the powerful wings lifted the many-thousand-strong landing force into the skies. For the airborne troops this was a time of relative relaxation, but for the airmen it was the period of greatest intensity. Each crew member followed the instrument readings closely, studied maps and charts.... The aircraft commander analyzed incoming information and issued instructions.

Adjustment and changes in the route are inevitable on a long flight, and totally unexpected elements are sometimes introduced: after all, the maneuvers are conducted in a situation approaching actual combat conditions.

It was nearly time for the drop.

The airborne landing equipment technician reported the weather to the commander of the airborne subunit--cloudiness, wind force at various altitudes and on the ground, and the temperature. It is very important for the airborne troops to know what awaits them outside the aircraft, to mentally rehearse the trip to the ground, even before jumping, taking the special problems introduced, this time, by nature, into account.

The aircraft were flying in close combat formations. The cargo hatches were opened simultaneously, and the orange and white parachute canopies opened up in the grayish haze of the March day. It took 22 minutes to drop the airborne troops and the combat equipment. In the "Dvina" maneuvers fighting men of the Military Transport Aviation and the Airborne Troops demonstrated good professional training and graphically demonstrated

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the power and capabilities of the combat equipment. While those maneuvers were under way, many of the airmen joined the ranks of the CPSU. Senior Lieutenant Yu. A. Fedotov, a navigator, who performed all of his tasks with excellence, also applied as a candidate for membership in the CPSU.

The "Dvina" maneuvers constituted a report from the Soviet fighting men to the Central Committee of the CPSU and the Soviet Government on the increased combat capability of the Armed Forces and their readiness to defend the conquest of the Great October Socialist Revolution. General Secretary of the CPSU Central Committee L. I. Brezhnev delivered a speech when the maneuvers were summed up. He also attended a review of the troops in Minsk, capital of the Belorussian SSR. This was yet another demonstration of the constant attention devoted to matters of military organizational development by the Communist Party and its Central Committee.

The year 1978 arrived. This was the 60th anniversary of the Armed Forces of the USSR, a year in which all Soviet fighting men demonstrated with a sense of special responsibility their readiness to protect the Soviet Nation.

A report from the USSR Minister of Defense was published in mid-January:

"An exercise will be conducted by troops of the Belorussian Military District. Code-named 'Berezina," it will take place between 6 and 10 February 1978 in the area of Minsk, Orsha, Polotsk.

"Ground forces together with Air Force units and subunits will be involved in the exercise...."

The exercise was again to be held in Belorussia, which had suffered cruelly during the harsh years of the war and was soaked in the blood of its defenders and liberators.

Statues and monuments, majestic and sorrowful memorials, are a silent reminder of the past.

Numerous monuments rising above the Belorussian earth preserve the gratitude of the descendants of those glorious eagles--fighters of the awesome heavens of the war. One of them stands at a fork in the road near the settlement of Radoshkevichi. It was here that Hero of the Soviet Union N. F. Gastello performed his immortal feat on the fifth day of fighting.

The forthcoming test of combat readiness was elevating the spirits of the fighting men. It seemed as though history itself were observing them, checking to see whether the past had been forgotten....

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The units and subunits read with real excitement the Appeal of the Military Council of the Red Banner Belorussian Military District to participants in the "Berezina" exercise.

"Comrade officers, warrant officers, soldiers and sergeants:

The units in which you serve are to take part in the 'Berezina' exercise. The importance of this exercise and the special responsibility involved stem from the fact that it is being conducted on the eve of the 60th anniversary of the Soviet Armed Forces and comprises a sort of report from the personnel to the Party and people on the combat readiness of the troops....

Comrade fighting men;

In the exercise you are representing your own Red Banner Belorussian Military District. The fighting colors of its units are covered with the glory of heroic victories. Your fathers and grandfathers wrote more than one brilliant page in the history of the Great Patriotic War. Pilot Nikolay Gastello, infantryman Yuriy Smirnov, tank driver Pavel Rak, partisan Konstantin Zaslunov and thousands of other patriots of the homeland performed their immortal feats here, in heroic Soviet Belorussia.

Be worthy of the heroic feats performed by older generations of defenders of the socialist homeland. Sacredly observe and add to the district's glorious combat traditions. The homeland has provided you with remarkable equipment and weapons, the most advanced in existence.

May skill, initiative, persistence, mutual assistance and stamina be your partners in the performance of the assigned missions.

The military council is firmly convinced of the fact that all of the personnel will spare neither effort nor energy to make the exercise a success, that they will add a new page to the Red Banner Military District's chronicle of combat glory and will prove that they are worthy of being called reliable defenders of the sacred borders of the Soviet State.

Military Council of the Red Banner  
Belorussian Military District"

The forthcoming exercise was important for yet another important reason: It was to be attended by representatives of ten socialist and capitalist nations.

Under the terms of the Final Act of the Conference on Security and Cooperation in Europe, our nation's government informed the nations taking part in the conference in Helsinki about the exercise. Military observers from the



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Kingdom of Belgium, the German Democratic Republic, the Federal Republic of Germany, the Kingdom of the Netherlands, the Polish People's Republic, the United Kingdom of Great Britain and Northern Ireland, the United States of America, the French Republic, the Czechoslovak Socialist Republic and the Confederation of Switzerland arrived in Minsk in February.

One was automatically reminded of the year 1935 and the large maneuvers carried out by the Kiev Military District, which had been attended by representatives of foreign nations. The dropping of a large airborne force during the exercises had produced a stunning effect.

What changes had occurred since that time? What capabilities did the modern, powerful and superbly equipped Soviet Military Transport Aviation possess? What heights had it attained? Our airmen were to demonstrate all of this during the exercise.

I could understand the impatience of unit and subunit commanders of the Military Transport Aviation, who were anxious to learn who would be entrusted with the important mission of dropping the airborne group during the "Berezina" exercise. Lieutenant Colonel Yuriy Timofeyevich Cherkasov, a young unit commander, was receiving special attention. He had never before had the opportunity to take part in such an exercise as a commander and group leader, but the lieutenant colonel's questions reflected such a readiness, such a desire to demonstrate his knowledge and abilities, to show what he had trained his men, and how well, that those around him were naturally infected with his impatience and fervor.

A short time prior to the beginning of the exercise, we received the concrete mission covering the dropping of the airborne landing force. Among the units to which it was decided to entrust the mission of landing the troops and cargo was the unit over which Lieutenant Colonel Yu. T. Cherkasov had assumed command relatively recently. Lieutenant General of Aviation N. N. Timoshevskiy and I set out for the unit.

Even at the airfield one could feel that the personnel--from the commander to the rank-and-file air specialists--were in an unusual mood. They were proud of the confidence and faith in their knowledge and skill and of the opportunity to demonstrate them in such an important setting.

Frankly speaking, we were slightly concerned about entrusting this difficult mission, part of the exercise, to young airmen: this was practically the third generation in that unit which had not only never known war but which also had very little experience in performing combat airborne landings of men and cargo.

Nonetheless, the youth could be relied upon: their excellent theoretical training, their desire to possess all of the keys to their profession, their tireless effort to achieve that goal and their training under highly rated commanders spoke for themselves.

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The unit leaders were given specific assignments: to determine the deadlines for preparing the crews, the aviation equipment and the signal and support equipment and that of all the other services who were to participate in the dropping of the airborne force.

The situation in which the impending mission was to be performed was analyzed especially carefully.

And the situation was a fairly complex one.

The importance of the forthcoming airborne landing operation was due in great part to the fact that foreign observers were to witness for the first time the dropping of an airborne landing force from Il-76's. Great professional skill would be needed to drop the heavy equipment and the combat vehicle crews precisely into the assigned area in the close combat formations of heavy but high-speed military transports.

The weather situation in the exercise area was also a source of concern. As a rule, the weather in February is stable: there are snow, winds and considerable variations in temperature. The weathermen predicted nothing to comfort us between 6 and 11 February, when the exercise was to be held.

I visited the unit a second time on the eve of the landing operation. Wet, sticky snow was falling and a solid blanket of clouds hung over the airfield, obscuring the sky. The cockpit of the aircraft on which I arrived became covered by ice crystals during the flight, but the de-icing system functioned well.

On the ground, specialists with the airfield engineering service were keeping the runway in usable condition with great difficulty. Hoarfrost formed on the concrete, which had cooled off during the night, instantly forming into a thin, seemingly polished crust of ice which could only be removed by the hot breath of special ice-melting vehicles.

Lieutenant Colonel Cherkasov reported that the aviation equipment had been fully readied for the forthcoming mission, the personnel were completing the last flight preparations and the aviation technicians, together with the airborne troops, were loading combat equipment onto the aircraft.

"Where are the flight personnel right now?" I asked Yuriy Timofeyevich.

"At the training area. In a few minutes we shall begin the final run-through of the flight."

I observed this form of training with great interest, a form which has become an established part of the work of our airmen. There is no longer

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any argument as to the need for such drills, and there is practically not a single one of our units which does not have an area set up for "flying on the ground" flights, an extraordinarily effective and simple form of training.

The entire route and all of the actions required of the crews were designated in the area, including, naturally, the most important moment--the dropping of the airborne landing force.

The commander was checking with hair-splitting thoroughness to see that all elements of the flight had been mastered and that the pilots and navigators were prepared to handle a change in the situation.

"Check time--1230. What will you be doing"--Cherkasov asked one of the aircraft commanders.

Young Captain Yuri Alekseyevich Zadykhin answered concisely: He knew exactly what his crew had to do and how.

"Captain Klopcv, what will you do in case one of the systems breaks down in the equipment for dropping the airborne force"?

The captain's strong-willed expression reflected a momentary play of thought, and then--a precise, competent answer demonstrating the thorough knowledge of the equipment and the ability to apply his knowledge in analogous situations not covered by instructions.

Answers followed questions, one after another, almost without pause. The men were well trained. It was a pleasure to see their confidence in themselves and their knowledge and the unrestrained manner in which they conducted themselves. I detected in this relaxed behavior the stamp of an individual present in spirit at the training area: Lieutenant Colonel Anatoliy Nikolayevich Murashov--instructor and subunit commander, who had taught all of these men to fly the Il-76.

First-class pilot, superb methods expert and a highly experienced commander, he is a model of the real instructor and knows how to impart his knowledge and experience to others, to teach them to think on their own, without pressure and to make well-considered decisions taking the smallest details into account.

The unseen presence of another teacher was also obviously there, that of Major Valeriy Ivanovich Sermavkin, a subunit navigator. He is an extraordinarily conscientious individual. I recall a class on combat employment in that unit, the thoroughness and graphic clarity of the diagrams and mock-ups needed for training the pilots and navigators, which were made under his supervision.

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These highly experienced airmen have hundreds of landing operation flights to their credit, flights to various areas of our nation in extremely diverse weather conditions. They have something to pass on to the youth. They can teach without evading difficulties.

The work at the training area was ending.

The preflight preparations were concluded with a talk with the flight personnel, which provided yet another opportunity to see how well prepared the flight personnel were to perform the forthcoming mission.

After the drills on the simulator, there was a report from a weather reconnaissance plane.

A cyclone was moving in, accompanied by secondary fronts. Heavy snow was falling in the landing area, and the wind force was "at the limit," that is, the wind was blowing with the maximum force which would still permit the landing operation to be performed.

The next morning airmen and airborne troops met at the aircraft parking areas. The commanders of the "flying infantry" subunits were introduced to the aircraft commanders--the usual procedure. The importance of this event leaves its mark on everything taking place, however. Sometimes, if it is a simple friendly handshake and the usual exchange of standard questions--routine preparations for routine work.

In exercises such as the "Berezina," however, the first contact between the airmen and the airborne troops prior to boarding the aircraft are especially significant. When they meet each other the participants in the landing operation scrutinize their comrades slightly more carefully than they ordinarily would. It is not difficult to guess the unspoken question. Everyone senses it and, if possible, answers it:

"Well, friend, has everything been worked out"?

"Everything."

"Everything will be O.K."?

"Up to standard"!

A solemn moment arrived. Airmen and airborne troops stood in a single formation of precise ranks. The Air Force flag fluttered in the swirling snow, and the traditional melody was heard: "Ever higher and higher...."

Now the ceremony was over. The airborne troops boarded the aircraft, and the airmen took their positions.

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The airfield was in the grips of a snowstorm. The vehicles which had cleared the runway moved off to the side so that the heavy aircraft could take off.

Signal flares shot up into the swirling elements with a hissing sound.

Take-off!

The aircraft lifted off exactly according to schedule.

In the first phase of the flight it was the job of the transport crews to take off precisely on course with the assigned interval, to form up in the combat orders and to negotiate the weather front.

Clouds enveloped the aircraft in a dense, multi-layered blanket, and the crews could see the other aircraft in their group only on the radar screens. Carefully monitoring the blips on the screens, the aircraft commanders made adjustments in their course and speed.

A certain amount of time passed, and the powerful aircraft showed up on the radarscreen of the director of the landing operation in the form of a neat chain with precisely measured links.

The aircraft reached the beginning of the target run--that section of the route on which final preparations would be made for dropping the airborne landing force.

It was 60 kilometers to the drop area. Some sort of community lay below. It was barely noticeable on the radar screens: Television and radio stations created a great deal of interference. The aircraft crews were forced to use self-contained facilities alone for approaching the area where the landing operation was to be performed.

The crews who were to drop the "snatch" force had an especially difficult job. The leader of that group was Lieutenant Colonel Nikolay Petrovich Abros'kin, unit deputy commander, and the aircraft navigator was Major Yuriy Aleksandrovich Drobyshev. They would be the first to arrive at the designated site. They must do so with absolute accuracy and drop the "snatch" force precisely at the designated spot and at the prescribed time. Those following them would have a far more simple job. Abros'kin and Drobyshev would provide the necessary corrections. The crews following them would also make adjustments by radar reference points which they could see on their radar screens.

"Distance 10. Opening cargo hatches," came the report from Major Drobyshev.

"Distance 10" meant that it was 10 kilometers to the objective, 1 and 1/2 or two minutes of flying left until the landing of the "snatch" force would begin.

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The airborne technician monitoring the cargo hatches reported:

"Cargo hatches open."

The combat equipment would now be dropped to earth. This was the beginning of one of the most difficult periods for the aircraft commander: When the first armored vehicle weighing many tons left the aircraft it affected the transport's stability relatively little, but after the second vehicle was dropped the center of gravity shifted and it became far more difficult to pilot the plane. The pilot needed a great deal of practical piloting experience in order to keep rigidly on course and lead the other crews.

Figures lighted up on the instruments, indicating the distance from the landing site to the turning point and lateral deviations. The commander had to consider several readings at once in order to make adjustments for deviations from the prescribed flight conditions, in order to maintain the precise course, speed and altitude.

"Distance 5."

The doors opened for dropping the combat teams.

The commander concentrated attention on what was most important--altitude, speed and course.

The indicator showed zero.

Major Drobyshev pressed the cargo release button and gave the command:

"Jump!"

Observers present at the landing site had been hearing the roar of powerful jet engines for several minutes. It was already growing noticeably fainter when the silhouettes of combat vehicles and the figures of airborne troops descending near them became visible against the snowy background.

The "snatch" force was headed by Senior Lieutenant I. Dolgov, son of Hero of the Soviet Union Lieutenant Colonel P. Dolgov, the intrepid parachute tester.

Following the "snatch" force, the military transports dropped the main forces.

Several more minutes passed, and the airborne troops were rushing to begin their combat mission.

The transport planes had dropped to minimum flight altitude and were returning to base.

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A voice was heard over the air:

"Excellent, comrade airmen! Well done!"

This is how the exercise director rated their performance.

The faces of the pilots, navigators, airborne technicians and radio operators lit up--all of those who had lived through the highly tense minutes and were now deservedly experiencing real joy from a job well done and from the performance of their military and comradely duty.

Our exercises are approximately like that just described. And each of them presents a new level in the achievement of combat proficiency.

It is not just during exercises and maneuvers, however, that the Soviet fighting men's readiness, stamina and training are tested. The performance of their ordinary day-to-day tasks also involve many difficulties and sometimes unexpected developments. These tasks may differ greatly with respect to degree of difficulty and intensity: they require not only thorough knowledge, steadfastness and training, but also resourcefulness, courage and selflessness for the sake of duty.

The Military Transport Aviation performs specific missions for the nation's economy and has to be on the spot immediately, wherever our equipment and professional know-how are required. It frequently happens that the performance of some previously unknown task is assigned to airmen of the Military Transport Aviation, and our fliers honorably justify this confidence.

Personnel of the Military Transport Aviation learned a great deal from helping builders of the Tyumen' oil pipeline during the winter. The flight crews delivered bulldozers and various machinery to the line, cargo which until then had been considered impossible to transport by air. Special supports and pallets were made, to which pipe and machinery were secured. This assignment was a test not only of the personnel's flying skill, but of their ingenuity, resourcefulness and physical stamina as well. N. F. Zaytsev, military pilot first-class, considered the complexity and the unusual nature of the assignment, made the first trip to deliver cargo to the site and then discussed subsequent flights in detail with the other officers.

Training flights were set up under conditions approaching those of the impending flights, the duties of the crews were defined with respect to loading and unloading the equipment, and the special aspects of flying aircraft at full load were determined.

This was not the only area, however, in which the commander's organizing role was revealed. At first, the crews were not able to perform more than

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one flight in the course of a day. N. F. Zaytsev was again the first individual to perform two flights, then three, and then four in a single day.

The formula "Follow my example!" justified itself entirely: Following the commander's example, all of the crews strove to achieve the maximum performance in their work.

A great deal of work was accomplished as a result, which accelerated construction of the oil pipeline and saved the state millions of rubles.

The Military Transport Aviation was for a number of reasons assigned the new and extraordinarily important job of opening up the line for transporting heavy, nonstandard, so-called single-item cargo for Glavtymune'neftegaz [Main Administration for the Construction of Oil and Gas Pipelines in Tyumen' Oblast] in the harsh winter conditions.

The single-item cargoes were gas pipes up to 2 meters in diameter and more than 10 meters long, bulldozers, excavators and pipeline pumping stations. Such cargo had never before been transported by air, neither by aircraft of the Ministry of Civil Aviation, nor by the heavy aircraft of the Military Transport Aviation. It is now a regular occurrence to fly the route with a 40-ton pumping station on board or with pipes which will not fit into the fuselage of an enormous aircraft, but at that time many individuals considered it not just fantastic or unrealistic but actually dangerous.

There was no experience to rely upon, neither for loading or securing the cargo nor for unloading it or for operating such giants as the An-22 in the harsh winter conditions. Temperatures sometimes dropped to 50 degrees below zero, and the heavy transports flew out of airfields little suited for their use.

Nonetheless, our airmen--aircraft commanders, engineers, navigators, airborne technicians and radio operators--demonstrated once again the enormous performance capabilities of the An-22, just as they had been demonstrated more than once during the performance of important missions under the most diverse conditions.

I would like to make special mention of the calmness and stamina and of the vast knowledge and experience which contributed to the search for the optimal solution to the problem.

Practical preparations began with the selection of the personnel. The group included the very best airmen, 50 percent of whom were communists and 30 percent members of the Komsomol. They included the crews of Lieutenant Colonel Podduvalov, Major Dobryanskiy, Major Kalinin and others. A number

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of talks were held with personnel of the group, and meetings with the Military Transport Aviation command, which were to give the personnel the proper orientation for the excellent performance of a mission of state importance.

All of the crews making up the group thoroughly studied conditions at the Tyumen', Surgut and Nizhn eavartovsk airfields, the special flight conditions and the peculiarities of operating aircraft in the low temperatures, over unmarked terrain and in difficult weather, the special requirements for landing with maximum and minimum loads and instructions for hauling oversize items.

All navigational preparations for the flights were made in advance: routes were plotted, computations were made for the flight plan and for the engineer and navigation plan, and the aeronautical features of the main and alternate airfields were studied.

An advance group, consisting of the crews of Lieutenant Colonel Podduvalov and Majors Panov and D'yakonov, arrived in Tyumen'. After the first test runs were made, there was an exchange of know-how on matters of preparing the aviation equipment at low temperatures, loading and unloading oversize cargo and performing flights. Majors Pestrov, Trofimov and D'yakonov and Captain Gerasimov made suggestions for reducing the amount of time required to load and unload the aircraft, which made it possible subsequently to make two trips in a flight day.

The list of essential work which was approved by the deputy commander for aviation-engineer support, shows the thoroughness of the preliminary preparations.

A regular technical crew and maintenance teams were assigned to each aircraft. Preliminary and preflight preparation of the aircraft was performed by regular crews according to flow charts.

A commission was created, which worked with designers and engineers of Glavyumen'neftegaz, to determine the An-22's capacity for hauling single-item cargo, to work out the specifications for rigging the cargo to make it possible to load and unload items and to secure them reliably in the aircraft, to determine what additional devices would be needed to prevent the aircraft from being damaged in the loading and unloading and while in flight, and to compile temporary instructions for hauling the required cargo.

Self-propelled tracked vehicles were driven onto the aircraft. The tracked vehicles were lined up precisely along the axis of the aircraft and moved on a sloping ramp, without any turning whatsoever. In order to make the equipment more stable, the ramp boards were covered with ropes from the aircraft loading kit.

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Cranes were used for loading excavators weighing 20 tons or more, since the limited mobility (poor maneuverability, the absence of grips on the track links, and the need to adjust the position of the jib and bucket for loading by ramp) made the process extremely difficult and not entirely safe.

When loading two self-propelled units, the first one was temporarily left in the central part of the cargo compartment, since moving it further might lower the nose section of the aircraft and increase the angle of incline of the ramp, and this would make it harder to load the second vehicle.

Difficulties were encountered in the performance of the mission, which held up and complicated the flights. The aircraft parking site and the loading area were not level and sloped toward the nose of the aircraft. Because of this the aircraft were tilted laterally and longitudinally. The surface was never the same after a snowfall, even when the snow was promptly removed, and this made it difficult to taxi on to and off the parking site and to load cargo.

Thanks to the skill of the airmen and technical personnel, however, all of the difficulties were overcome and the assignment was completed on time.

Throughout the operation, the party and komsomol aktiv devoted a great deal of attention to flight safety and the prevention of accidents. The party bureau kept watch over every single crew. The communists set an example by preparing the equipment well and reducing the time required to perform the missions. Thanks to purposive party-political work the personnel performed with endurance and professional skill in every situation, even the most difficult.

Ignoring the time and their fatigue, the technical personnel did everything possible rapidly to eliminate problems whenever they occurred, and the aircraft were always ready for the next flight. Captain A. Rysev and senior aircraft technician Captain N. Kondrat'yev, members of Major Dobryanskiy's crew, for example, and Captain N. Pisarenko, chief of the airfield support crew, worked six hours one night to replace a front window.

The other specialists taking part in that operation also gave their best effort. All difficulties were overcome, and an important government assignment was successfully fulfilled.

The transport aviation came to the rescue of builders and oil workers of Glavyumen'neftegaz one other time. This time the group of An-22's was headed by Lieutenant Colonel V. A. Volkov, commander of an excellent sub-unit.

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The following are a few lines from his work log. They give an idea of the situation and the intense pace at which our airmen work:

"The weather has no mercy. The land of Tyumen' is a capricious entity....

"After an inspection flight with Major V. Yefremov we had to land with minimum visibility. Three crews were ready for the first run. What an assortment of cargo! There were drilling rigs, pumping stations, caterpillar tractors, excavators, 'Ikarus's .... The centering of the vehicles is calculated with great care. The number of flights is growing. The crews have been specialized. Major V. Solodnik hauls primarily 'Sputnik' pumping stations weighing 11.5 tons; V. Yefremov hauls various machinery; and Major Yu. Yevelin and I haul containers, fittings and other 'trifles' weighing more than 30 tons. The men here work superbly! Major R. Anvarov, Captains V. Golubev and S. Grigor'yev, Lieutenants V. Kleshnev and V. Golubovich--it would be impossible to name them all. Yevelin's crew is solidly in first place in the competition. Yefremov is upset: he says that I assigned too few flights. 'It's embarrassing, Commander,' he says, 'we have the political worker and secretary of the komsomol organization on board but we are still not able to keep up with the frontrunners.'

"One night, outstanding ground radio operators Vasilenko, Belov, Levura and Pimenov worked until almost morning to ascertain why one of the sets was not performing right. The aircraft was ready for take off."

I would like to say a few special words about Vladimir Akimovich Volkov himself. His name is well known to all those who operate the giant An-22. Lieutenant Colonel Volkov was one of the first in the Military Transport Aviation to learn to fly this heavy aircraft, and he has flown it to the most remote areas in our nation.

I could not understand the make-up of this individual at once: at first, he seemed overly calm, even sluggish. I saw him once at the airfield, however, quick-moving, active and energetic, he infected everyone with his enthusiasm, and the work literally hummed along, easily and rapidly.

V. A. Volkov has a highly developed sense of responsibility and duty. I recall the following incident. Command decided to transfer Volkov as a veteran instructor to another unit. It was being prepared for a transition to the An-22 aircraft, and personnel had to be trained. Volkov's position would be the same, without any advantages. In addition, he would have to leave an area in which he felt at home and travel to a new location, which almost certainly did not have the comforts of a large city. This did not disturb Volkov, however.

He performed an enormous job at the new location and within a short time had trained his subunit to perform the difficult tasks of the Military

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Transport Aviation. It was for this reason that command entrusted his subunit to perform the mission for Glavtyumen'neftegaz.

Speaking of assistance to the national economy, I could not fail to mention the fact that as early as 1948, a group of Military Transport Aviation crews reached the North Pole flying Li-12's and contributed a great deal to the development of that forbidding region. Airmen of the Military Transport Aviation have had to work in the Arctic more than once in recent years.

Once, emergency cargo had to be delivered to an inaccessible transpolar area. Everything was considered in the careful preparations made for the flight, including such psychological factors as the long polar night, blizzards, magnetic storms, the silent expanses of the ocean and rapidly changing weather conditions. The flight, which would last many hours, was also complicated by the fact that the cargo had to be dropped so that it would all land on a barely discernible ice floe.

Even after approaching the designated site, at an altitude of around 200 meters, the airmen could see only a frosty haze and fog over the crevices and patches of water.

The mission was successfully performed, however. In the endless wasteland of ice and water the crews of Lieutenant Colonels D. L. Sverdlov and V. G. Konstantinov, Captain A. N. Mikhal'chenko and Major B. I. Orlov found the ice floe and dropped all of the cargo accurately in the designated area. The cargo was spread over an area no more than 100 meters wide and 500 meters long. It was pleasant to hear the words of gratitude sent over the radio by those who had received the cargo "from the sky":

"Wish we could have made it easier, but we could not! Well done! Thank you!"

And once again, there was only the North with its unbridled nature. The temperature was 49 degrees below zero, visibility 1500 meters; there was fog and light snow.

The crews painstakingly studied the route and the climatic peculiarities of the area to be prepared to meet any whims of nature fully armed.

The small dirt airfield lacked radar monitoring facilities. It had only a single homing station and was located in a valley on the bank of a river. The correct pattern would have to be determined for coming in for a landing along the river channel.

The technicians headed by Engineer-Captain D. P. Bespalov, deputy squadron commander for aviation engineer service, readied the aircraft equipment: They checked the instruments and the radio and electronic equipment and checked to see that the landing gear was in good working order.

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Captain V. V. Born and his crew flew out first to familiarize themselves with the flight and landing conditions. The airmen studied the situation thoroughly and, despite the limited amount of time available, prepared a mock-up of the landing airfield which included the smallest details. The flight personnel ran through mock landings by this map, and the persistent drills helped them prepare for the forthcoming flights.

The time arrived, and the subunit commander reported:

"Crews prepare to perform the government mission."

The command to take off was given. The aircraft lifted off one after another.

They flew at an altitude of 6,000 meters. The further north they went, the more the terrain changed. Hills and taiga gave way to snow-peaked mountains. In a few more hours they would be flying above water and islands.

The commanders flew the aircraft; the navigators plotted the course; the radio operators maintained contact; the senior aircraft technicians followed the performance of the engines carefully; and the aircraft technicians.... they were busy making coffee. In short, everything was as it should be.

Finally, the navigator reported that, according to plan, they would be descending in three minutes. A workers' settlement indicated on the map flashed by. They landed.

One by one the planes taxied to the unloading sites.

"Open cargo hatches!"

All of the crew members set about their work. Everyone understood that there was little time and that the cargo was urgently needed, and the work proceeded rapidly.

A brief critique of the flight, reports on the flight readiness of the equipment, and the aircraft took off and set out on the return trip....

Airmen of the Military Transport Aviation are always ready to aid those struck by natural disaster. I have already mentioned the assistance provided Tashkent after the earthquake. Even earlier, in October 1948, the airmen helped the citizens of Ashkhabad, which was hit by an earthquake. Medical personnel, tons of medical supplies and other emergency cargo were delivered to the disaster area.

A combat alert also takes our aircraft into the air when people who have suffered a disaster require assistance.

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The transport aviation performed an operation with a strictly peaceful name--"Seno [Hay]". It consisted in helping to save livestock in the steppes of the Kalmyk ASSR, where the delivery of feed was cut off because of a serious natural disaster--flooding. This occurred in the winter of 1967. The mission was performed by a group commanded by Colonel Starostin. An alert saw the aircraft in the air. They took off at night, in the rain, in poor visibility. The flights to the airfield where the hay was loaded was made safely, however. The hay was dropped at unfamiliar and unmarked sites from minimum altitudes.

The flights over the steppe at minimum altitude, without any sort of landmarks, required great exertion, concentration and stamina on the part of pilots and navigators, and most importantly--excellent piloting techniques to fly the heavy turboprop aircraft at minimum altitude.

The aircraft first took on 120 bales of compressed hay. After the first few flights, however, it was determined that the load could be increased to 180 bales. The loading process was delayed because the bales of hay were loosely packed and the airmen were forced to pack them better to prevent them from breaking apart when they hit the ground or while still in the air.

A total of 389 tons of hay was dropped within a short time (three to four days), and the livestock were saved.

The flight group received constant practical assistance from party and soviet organs of Volgogradskaya Oblast and the Kalmyk ASSR, especially from Comrade O. O. Gorodovik, first secretary of the Kalmyk ASSR obkom. . .

For their successful performance of the mission, by an ukase of the Presidium of the Kalmyk ASSR, Starostin's group of officers was awarded the Commemorative Red Banner, and many of the pilots, navigators, engineers and technicians were awarded honorary certificates of the Kalmyk obkom of the CPSU and the Council of Ministers of the Kalmyk ASSR.

Two years later, during the winter of 1969, a subunit of An-12's dropped hay and other feed to flocks of sheep in the Uzbek Republic.

The readiness of fighting men in the Military Transport Aviation to perform assignments for the homeland is tested in various ways. The assignments themselves also vary. Large or small, however, they graphically demonstrate the enormous capabilities of the Military Transport Aviation and its power.

The successful operations of units and subunits of the Military Transport Aviation under the most diverse conditions attest the fact that our aviation equipment is in a constant state of combat readiness and that personnel of the Military Transport Aviation are highly trained and have the morale and fighting efficiency to cope with the assigned job with excellence.

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It is to the honor of our Military Transport Aviation that it has never failed to complete a single assignment for the homeland. Personnel of the Air Force Military Transport Aviation are prepared to perform any task assigned them by the CPSU Central Committee and the Soviet Government.

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CONCLUSION

During the years of its existence, Soviet aviation, including units performing air transport missions, has traveled a glorious path of struggle and victory. The combat history of air units, out of which the Soviet Military Transport Aviation was created, has been a never-ending source of development of courage and skill in airmen of the Air Force Military Transport Aviation. The creative application of the experience gained from the Great Patriotic War, adapted to the modern material and technical base of the Soviet Armed Forces and their qualitative advances, is making it possible to improve and develop military affairs more rapidly, to anticipate what warfare of the future will be like, and to raise the combat capacity of the Army and Navy.

Our Party is making it possible to further improve the homeland's defense capability and to maintain the defenders of the world's first Soviet Nation at a high level of combat readiness as one of the main conditions for accomplishing the tasks involved in the building of communism.

The socialist state does not engage in predatory wars. All of the work performed by the Party to build up the military and all of the Soviet people's efforts to strengthen the fighting capacity of the Armed Forces are based on concern for reliably protecting the great conquests of October.

We must not forget the fact that the forces of reaction and aggression in the capitalist nations are continuing to hamper the process of detente, attempting to complicate the resolution of current international problems and making an effort not only to preserve existing sources of tension, but also to create new military conflicts.

Reactionary imperialist groups have not rejected their aggressive intentions: They are continuing the arms race and stubbornly resisting measures aimed at achieving political and military detente. They have not given up their efforts to retard the positive developments occurring in the world. It is therefore more important than ever to maintain vigilance and be prepared to repel them at any time.

True to the Leninist policy of strengthening friendship among nations, the Soviet Union, closely united with the fraternal socialist nations, steadfastly pursues a foreign policy based on love for peace. Because of these efforts, the principles of peaceful coexistence and mutually beneficial cooperation among nations with different social systems are becoming more and more solidly established on the planet, and the achievement of international detente is progressing.



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At the same time, the Communist Party and the Soviet Government, while pursuing a consistent and vigorous policy of peace, are devoting constant attention to building up the nation's defense capability and strengthening the fighting capacity of the Armed Forces.

The Soviet people, guided by the Communist Party, have advanced considerably in all areas of communist construction since the war.

In the aviation, these years have seen rapid technological progress, the achievement of supersonic speeds and unprecedented flight ranges and altitudes.

All of the successes achieved in the creation and development of our aviation, its combat glory and its present invincible power, are the result of the Communist Party's constant concern for strengthening the homeland and its Armed Forces.

The technical equipment of our aviation and the professional training of the personnel are now on a level to meet the highest requirements made in this modern era.

The Soviet Military Transport Aviation is being improved by the day. Guided by the principles of Soviet military doctrine and Soviet military art, and relying on experience acquired in exercises and in the daily practical work, personnel of the Military Transport Aviation are building up the combat capabilities of the transport aviation.

As a result of the joint work carried out by scientists and workers, designers and fliers, aircraft of the Soviet Military Transport Aviation can operate at high or low altitudes, deliver troops and combat equipment over enormous distances and within a matter of hours and land airborne troops and weapons by parachute. The teams of experimental design offices are working persistently to improve the basic and most important features of the aircraft: speed, altitude, range and economy. Soviet military transports are deservedly considered to be among the best in the world. The names of Soviet aircraft designers S. V. Il'yushin, O. K. Antonov, G. V. Novozhilov, D. N. Kuznetsov, A. T. Ivchenko and others are known far beyond the nation's borders.

The Soviet Military Transport Aviation is very strong. Its large capabilities stem from the broad range of tasks facing the Military Transport Aviation at the contemporary stage. The delivery of troops and combat equipment and of every possible sort of cargo, landing them or dropping them by parachute, transport operations for the national economy and the rendering of assistance to victims of natural disasters-- this is far from a complete list of the missions which the Military Transport Aviation is capable of handling, as demonstrated by exercises.

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Nonetheless, considering the complexity of the international situation, we must continue persistently to perfect the entire Military Transport Aviation system to improve the reliability of aircraft and increase their capabilities.

A new generation of airmen is developing. The Military Transport Aviation has produced real experts in operating the heavy turboprop aircraft and performing landing operations.

Units of the Air Force Military Transport Aviation have repeatedly received awards from the USSR Ministry of Defense and the Commander in Chief of the Air Force for their successful performance of missions assigned them.

The great successes achieved by the Military Transport Aviation would have been impossible without good cooperation and exceptional understanding on the part of our comrades in arms--the renowned flying infantry. Hero of the Soviet Union Army General V. F. Margelov, commander in chief of Airborne Troops, Lieutenant General P. F. Pavlenko, chief of staff of Airborne Troops, and Lieutenant General I. I. Bliznyuk, chief of the political section, have applied themselves especially to the achievement of successful joint operations.

Outstanding units of the Military Transport Aviation have been highly commended for their achievements by the Communist Party and the Soviet Government. For their successes in combat and political training, hundreds of pilots, navigators, engineers and technicians, airborne gunners and radio operators have been awarded orders and medals: The more experienced aviation specialists have been awarded the honorary titles "Distinguished Military Pilot of the USSR," "Distinguished Military Navigator of the USSR" and "Distinguished Radio Operator of the USSR." Many units of the Military Transport Aviation have been awarded commemorative banners of the CPSU Central Committee, the Presidium of the USSR Supreme Soviet and the USSR Council of Ministers.

The day-to-day valor of our military collectives is reflected in the good results achieved in socialist competition for honorable fulfillment of decisions of the 25th CPSU Congress. In the 1977 socialist competition in honor of the 60th anniversary of the Great October Socialist Revolution and the 60th anniversary of the Armed Forces, more than 50 percent of the subunits achieved the ranks of the excellent and 60 percent of the personnel in units of the Military Transport Aviation achieved the level of excellence in combat and political training.

Personnel of the Military Transport Aviation are deeply aware of the noble and grand nature of the tasks assigned the Armed Forces of the USSR. Real patriotism and loyalty to communist ideals produce in the hearts of the airmen a love for their military profession, profound respect for their service and their elected specialty, and a sense of great responsibility for the job of defending the Soviet homeland assigned them by the people.

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In single formation with all Soviet people, fighting men of the Air Force Military Transport Aviation apply all their strength and knowledge to improving their combat training and their skill in operating the modern aviation equipment. They are always in a state of readiness to perform any task assigned them by the homeland.

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END

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Marshal of the Soviet Union M. N. Tukhachevskiy



P. I. Grokhovskiy, chief of the Special Design Office of the Workers' and Peasants' Red Army Air Force

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Lieutenant General I. I. Lisov, deputy commander of Airborn Troops, 1971

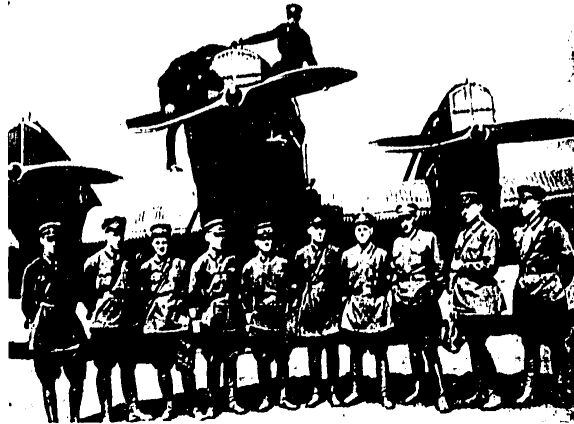


Chief Marshal of Aviation A. Ye. Golovanov, Commander of the Long-Range Aviation, 1944

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Airmen of a separate, special purpose detachment in one of the first air transport subunits, near an ANT-9 (detachment commander S.A. Shestakov, fifth from left)



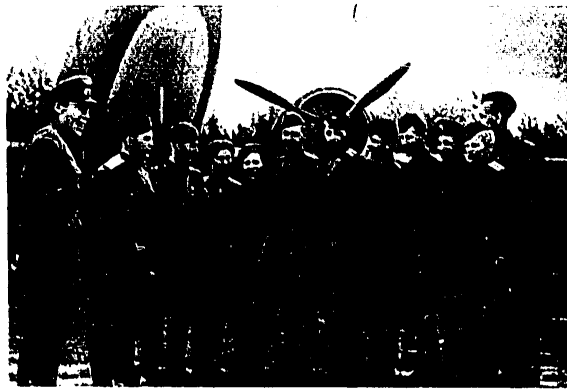
Lieutenant General of Aviation K. N. Smirnov, commander of Airborne and Transport Aviation 1946

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Major K. I. Lysenko



Personnel of an air transport subunit after a successful mission, 1943

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Marshal of Aviation N. S. Skripko



Command of the 2nd Special Purpose Air Division (V.G. Grachev is in the center)

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Hero of the Soviet Union, Guards Major B. G. Lunts, 1945

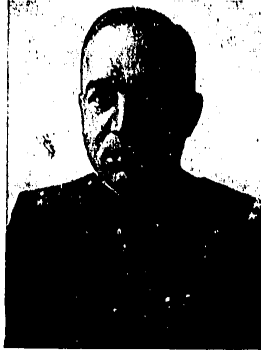


Hero of the Soviet Union, Colonel V. S. Griodubova, organizer and commander of the 101st Air Transport Regiment, 1943

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Guards Lieutenant Colonel S. S. Zapylenov, 1945



Hero of the Soviet Union, Lieutenant Colonel I.D. Kozlov, 1945

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Captain P. P. Abramov, 1945



Hero of the Soviet Union, Major T. K. Gavrilov, 1945

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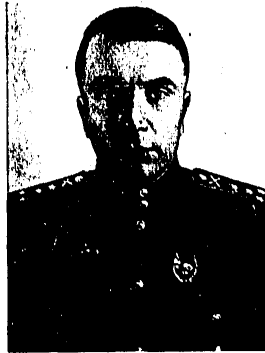


Captain A. P. Bulanov, 1945



Hero of the Soviet Union, Guards Major N.N. Pokachalov, 1945

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Captain O. A. Akimov, 1945



Hero of the Soviet Union, Guards Major A. D. Kasparov, 1945

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B. F. Chirskov explains the mission to the crew



Major General of Aviation V. V. Zakharov

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Colonel P. Ya. Yuger



Teacher and student--S. V. Il'yushin and G.V. Novozhilov

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Hero of the Socialist Labor, General Aircraft Designer O.K. Antonov



Lieutenant General of Aviation G. F. Bezborodov

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Engineer-Colonel General V. V. Filipov



Guards Major General of Aviation N. F. Zaytsev

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**(FOUO 16/79)**

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Major General of Aviation V. V. Nozdrachev



Major General of Aviation V. V. Yefanov

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Colonel V. A. Polyakov with a group of flight leaders



On a test flight

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After the first flight on an 11-76

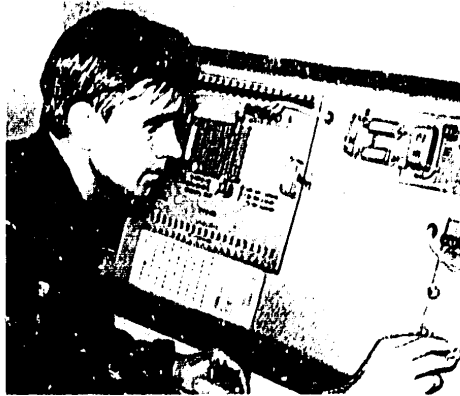


Major D. K. Akhmetzyanov

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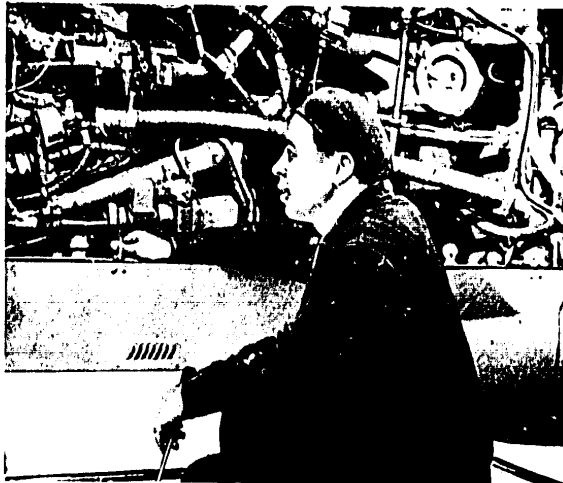
Engineer-Captain N. D. Shavlo



Lieutenant Colonel A. I. Serdyuk

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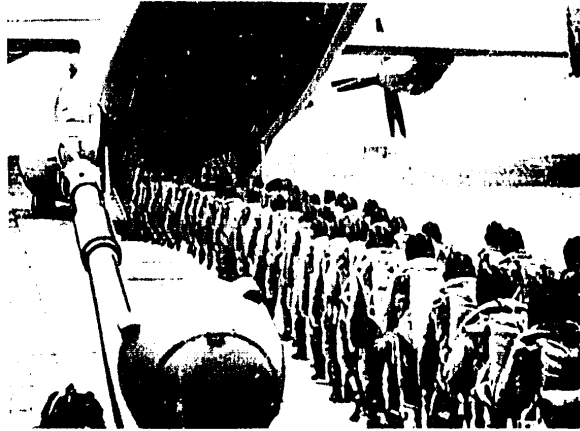
Warrant Officer A. I. Yanovskiy



The "Dvina" exercise: aircraft taking off before the colors

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Airborne troops boarding the aircraft



Loading combat equipment

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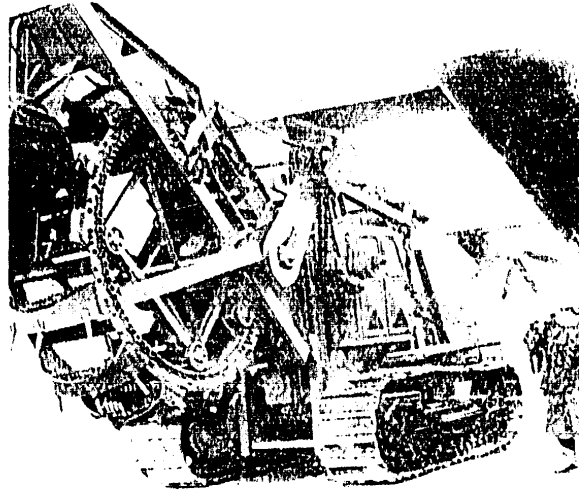
Airborne landing support group at the landing site (extreme left--chief navigator of the Air Force Military Transport Aviation V. K. Udal'tsev)



In the control tower at the airfield of departure (standing--Chief Marshal of Aviation P. S. Kutakhov, commander in chief of the Air force [right], and the author of this book, sitting--Lieutenant Colonel B. P. Zhukov, flight operation officer)

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AN-22 delivers a load of heavy machinery



Checking the fuel system of the AN-22 aircraft

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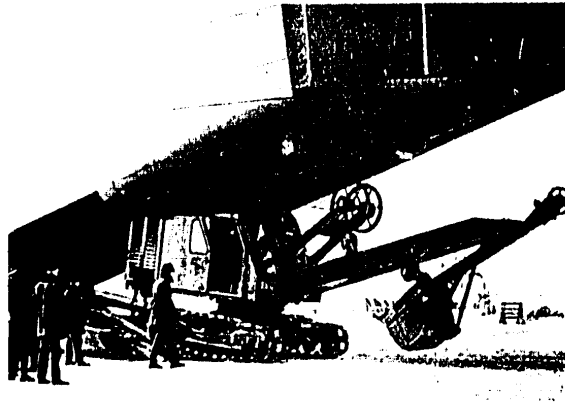
Temperature minus 45. Heating the motor of the AN-22 before completing the task (mission)



The loading of hay

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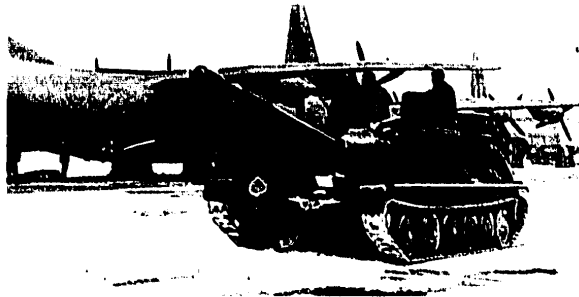
Loading a heavy excavator in the AN-22 aircraft



Final instructions

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Unloaded in minutes ... and the tanks head to battle

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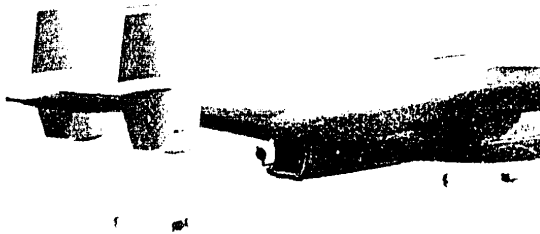
In the Far North

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Senior Lieutenant Yu. A. Fedotov



Training in Progress

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Airborne landing party departs the aircraft

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END

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