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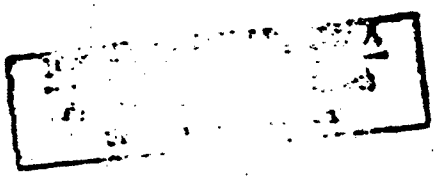

USSR Report

MILITARY AFFAIRS

No. 1711

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ARMED FORCES

LECTURE ON MILITARY SERVICE

Moscow AGITATOR ARMII I FLOTA in Russian No 16, Aug 82 (signed to press 11 Aug 82) pp 19-22

[Article by Col I. Konovalov: "The Order of Performing Military Service";* passages rendered in all capital letters printed in boldface in source]

[Text] The CPSU CC Accountability Report to the 26th party congress given by Comrade L. I. Brezhnev expressed confidence that the Motherland's armed defenders will continue to stand reliably on guard over the Soviet people's peaceful, creative labor. Inspired by the high appraisal of their military work given at the supreme forum of Soviet communists, Army and Navy personnel deeply perceive the full extent of responsibility placed on them and are striving to fulfill with honor their sacred constitutional duty of defending the socialist homeland.

This year, the year of the 60th anniversary of the USSR's formation--Soviet military personnel are gripped with special patriotic enthusiasm. Competing under the motto "Reliable protection for the peaceful labor of the Soviet people!", they are striving to reach new heights in combat improvement and in raising the combat readiness of subunits, units and ships.

"THE SOVIET ARMED FORCES," noted the CPSU Central Committee Greeting to participants of the 6th All-Army Conference of Primary Party Organization Secretaries, "VIGILANTLY AND RELIABLY SAFEGUARD THE PEACEFUL, CREATIVE LABOR OF OUR PEOPLE. BEING A LIVING EMBODIMENT OF SOCIALIST INTERNATIONALISM, THEY REPRESENT A SINGLE COHESIVE FAMILY IN WHICH THE SONS OF ALL THE USSR'S FRATERNAL NATIONS UNDERGO IDEOLOGICAL, COMBAT AND PHYSICAL CONDITIONING."

The sacred duty of every USSR citizen to defend the socialist homeland and personal responsibility for performance of obligations of military service are fixed in the USSR Constitution, our state's Basic Law. The demands of the USSR Constitution on Soviet military personnel find a more concrete reflection in the military oath, military regulations, the USSR Law on Universal Military Obligation, as well as documents regulating the order of performing active, first-term military service, orders of the USSR Minister of Defense, manuals and instructions. In accordance with the USSR Law on Universal Military Obligation, all male citizens of the USSR regardless of race, nationality, religion, education, way of life, or social and property status are obligated to

*It is recommended that this article be used in preparing for political classes on the topic "Order of Performance of Military Service. The USSR Law on Universal Military Obligation."

perform active military service in the USSR Armed Forces. Young men who will be 18 years old by the day of call-up are drafted for active military service. Military schools accept young men when they reach the age of 17.

Military service consists of active military service and service in the reserve. Citizens on active military service are called servicemen and those in the reserve are called reservists.

The law sets the periods of active military service as follows: two years for privates and NCO's of the Soviet Army, shore units and aviation of the Navy, Border Guard Troops and Internal Troops; and one year, six months for persons with a higher education. It is three years for seamen and petty officers of ships, vessels and shore combat support units of the Navy and sea units of the Border Guard Troops; and two years for persons with a higher education.

After completion of active first-term service those who wish to do so may remain on extended-term service. Privates, sergeants, seamen and petty officers who have served active first-term service as well as those in the reserve who are no older than 35 years, who are morally stable and faultlessly disciplined, who have at least an eighth-grade education, who have good knowledge of a military specialty and who meet the necessary requirements for service in appropriate branches of the Armed Forces and combat arms are accepted for extended-term service.

Acceptance for extended-term service is voluntary and for a period of 2 and 4 or 6 years. At the end of this term this service may be extended voluntarily, each time for any of the periods indicated.

Servicemen are accepted voluntarily for military service as warrant officers for a period of at least five years. A voluntary extension of the term of service each time can be for at least three years.

Service in the reserve consists of attendance at periodic short training and test courses by reservists, the duration and number of which is established by law.

A call-up for active military service is accomplished twice a year: in May-June and in November-December and, in addition, it is accomplished in April and October for troops located in remote and certain other areas, by order of the USSR Minister of Defense. The number of citizens to be called up is established by the USSR Council of Ministers. Those called up in the first half of the year have their term of service figured from 1 July of the year of call-up, and for those called up in the second half of the year it is from 1 January of the following year.

The release of servicemen to the reserve also is accomplished twice a year on the basis of a USSR Minister of Defense order. Release to the reserve may be regular or ahead of schedule. A regular release occurs after completion of active first-term service. Grounds for ahead-of-schedule release may be the serviceman's illness or a change in his family status while he is performing service, as a result of which the right of deferment from call-up has arisen.

The beginning of performance of active military service is considered the day a draftee reports to the military commissariat for dispatch to a military unit. From that day the force of Soviet laws, military regulations and other legal acts about the duties, rights, privileges and responsibilities of the serviceman extends to the draftee. Completion of active first-term service is considered the day the serviceman receives documents from the military unit about his release to the reserve. If necessary servicemen may be kept on active military service by decision of the USSR Minister of Defense for another two months above the prescribed periods or be transferred from one branch of the Armed Forces or combat arm to another with a corresponding change in periods of service.

Servicemen receive the rank of private or seaman simultaneously with their being placed on the rolls of a unit or, in the Navy, with their assignment to an appropriate arm. Servicemen may be given the ranks of Pfc or senior seaman for exemplary performance of duties in service, for good or outstanding indicators in training and for exemplary military discipline on being assigned to a position for which the T/O&E prescribes the ranks of Pfc or senior seaman. The ranks of Pfc and senior seamen also may be conferred on the best privates and seamen on their release to the reserve.

Military personnel who possess stable moral-political qualities, who have high general educational preparation and who are distinguished by discipline, will and physical conditioning are sent to training units which prepare junior commanders. The list of specialties for which they are trained and training periods are determined by the USSR Minister of Defense. Privates and seamen who undergo training in these units are called cadets.

After completion of the training course and after successfully passing established tests cadets receive the ranks of junior sergeant or petty officer second class, and those who have completed them for a grade of outstanding receive the rank of sergeant or petty officer first class. The initial sergeant and petty officer ranks also can be conferred directly in the unit or aboard ship on those privates and seamen who are performing sergeant or petty officer duties, who have good or outstanding indicators in training, who have exemplary military discipline and who have passed tests for the established program.

During their performance of first-term service servicemen may be given leave as follows: as an incentive, for illness, for family circumstances, or in connection with special conditions of service. The right to grant a leave rests with the unit commander. Departure on leave and return from leave is formalized by a unit order. The time necessary for traveling to and from the leave location is added to the length of the leave. A leave of 10 days is granted as an incentive no more than once to servicemen with a two-year period of service and up to two times for those with a three-year term of service.

The diligence and conscientious attitude of privates and seamen toward performance of their military duty and their successes in combat and political training do not remain unnoticed. The USSR Armed Forces Code of Disciplinary Punishment grants commanders and supervisors great rights for encouraging

outstanding soldiers. During the period of their service servicemen may be decorated with USSR orders and medals for particularly outstanding services and exploits.

Disciplinary punishments are imposed on servicemen for committing infractions of military discipline and public order. The severity of the punishment is increased when the guilty person has committed infractions repeatedly or took part in a group infraction of military discipline and public order, and when the infraction was committed in the performance of official duties, during operational readiness, or in a drunken condition.

A serviceman is criminally liable for military crimes. Especially grave crimes are disobedience to a superior, nonfulfillment of an order, absence without leave from the unit, desertion, misappropriation of a weapon, intentional destruction or damage of military property, violation of rules of operational readiness or performance of guard service, and divulging military or state secrets. Treason is the most serious crime before the people.

The Soviet soldier is distinguished by a deeply conscientious attitude toward his duty to the Motherland. He is called upon to fulfill all demands of the military oath, military regulations and the orders of commanders and superiors not out of fear, but out of conscience.

The Motherland's armed defenders enjoy specific privileges. Their term of service is counted as part of their overall period of work and after release to the reserve they have the right to join that enterprise, organization or establishment where they were working before call-up into the Army or Navy. In addition, military personnel released to the reserve have the right to be enrolled for continuation of studies in that educational institution and that course where they were studying before call-up into the Army.

The living space in which first-term service personnel were living before the Armed Forces is retained for them. They are not stricken from the rolls of persons in line for receiving living space. They are relieved of the tax on single citizens, citizens living alone or citizens with small families and from payment of income tax on all kinds of monetary allowances. Privileges also are prescribed for families of servicemen.

Soviet military personnel live in bright, clean barracks and well-planned military posts. The soldier's ration is high-calorie and nourishing. The soldier and sailor's uniform is handsome, attractive and comfortable. Military personnel have at their services light classrooms, everyday services rooms, drying rooms and storage rooms for personal articles. The medical service watches over the soldiers' health vigilantly.

The Motherland's armed defenders have all opportunities for developing and improving their spiritual culture. This is aided by reading rooms and cabins, regimental and shipboard clubs, libraries, radio broadcasting centers and so on. Every soldier can take an active part in amateur activities, various circles and sports sections.

All conditions have been created in the Army and Navy for successful accomplishment of one of the most important tasks posed in Comrade Brezhnev's speech at the 19th Komsomol Congress: "YOUNG PEOPLE MUST STUDY CONSTANTLY, AND NOT ONLY TO GAIN KNOWLEDGE. THEY MUST LEARN HONEST LABOR AND AN ABILITY TO SEE LIFE WITH ALL ITS COMPLEXITIES FROM A POSITION OF SOVIET PATRIOTISM AND COMMUNIST CONVICTION . ... AND LEARN TO MASTER MODERN WEAPONS AND COMBAT EQUIPMENT TO PERFECTION IN ORDER TO BE READY TO DEFEND THE MOTHERLAND ALWAYS."

Service in the Army and Navy is a genuine school of courage, a school of indoctrination. It develops and reinforces in a person the positive qualities he needs both as a soldier and as a conscientious citizen of our country. It is a matter of honor of every soldier to serve the Motherland wholeheartedly and to spare neither energy nor life itself for the sake of its reliable protection.

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ARMED FORCES

LECTURE ON MILITARY DUTY

Moscow AGITATOR ARMII I FLOTA in Russian No 16, Aug 82 (signed to press 11 Aug 82) pp 15-18

[Article by Col G. Rodin: "For Political Study Group Students and Assistant Instructors: Defense of the Homeland Is a Sacred Duty"*]

[Text] On entering the USSR Armed Forces, every Soviet soldier is ready to perform his constitutional duty to the Motherland worthily and is imbued with a high sense of responsibility for reliable protection of the Soviet people's peaceful labor, achievements of a developed socialist society and the cause of building communism.

The socialist homeland born of the Great October is the first homeland of workers in the world. Lenin substantiated the need for its defense scientifically, concluding that in an era of imperialism socialism cannot win in all countries simultaneously. By virtue of the highest degree of unevenness of economic and political development of capitalism, socialism will win initially in one or several countries, while the other countries will remain bourgeois or prebourgeois for some time. This has to generate a desire by the bourgeoisie of other countries to defeat a victorious proletarian socialist state.

Under these conditions armed defense of the socialist homeland becomes an objective historical necessity and generates enormous revolutionary enthusiasm in the workers. Lenin wrote that "the homeland . . . is the most powerful factor in the proletariat's class struggle."

The entire course of history following the victory of the Great October is convincing proof of the ingenious foresight of the leader of the revolution and embodiment of the ideas and theses of defense of the socialist homeland which made up an integral, orderly teaching and serve as the ideological-theoretical foundation and basis for Soviet military organizational development.

To stand selflessly on guard over the Great October's achievements, to strengthen vigilance and combat readiness steadfastly and to learn military affairs in a genuine manner--these and other Leninist precepts are a law of

*It is recommended that this article be used in preparing for political classes on the topic "Defense of the Socialist Homeland and Military Service are a Sacred Duty and Honorable Obligation of USSR Citizens."

life and combat training for Soviet military personnel and confirm a readiness for any exploit for the Motherland's sake. Following the great leader's behest, they are constantly preparing seriously, intensively and steadfastly to defend the homeland and the socialist Soviet republic.

As is true of all Soviet citizens, military personnel of the Land of Soviets are proud of their homeland and are ready to defend it against all encroachments. They are proud of their nation, which in a comparatively brief historical period under direction of the party of Lenin covered a path equal to centuries and rose to the pinnacles of economic, social and spiritual development.

As early as the battles of the Civil War, imposed on the young republic of Soviets by the overthrown exploiting classes with support from the international reaction, the Red Army utterly routed numerous detachments of internal counterrevolution and foreign interventionists. The traditions of boundless allegiance to the socialist homeland which were characteristic of Civil War heroes serve even now as a source for bringing up courageous fighting men ready to battle selflessly for the sake of a triumph of communist ideals.

In fighting for the freedom and independence of their Motherland, Soviet military personnel always have displayed supreme heroism, courage, fearlessness and utter dedication to their duty. An incalculable multitude of examples of heroism, valor and allegiance to the military oath was provided by the Great Patriotic War. The whole world knows of the exploit by Komsomol member Pvt Aleksandr Matrosov, who closed the embrasure of an enemy pillbox with his chest. Some 300 fighting men performed similar heroic self-sacrifices during the war years. In the first days of the war the crew of Capt N. Gastello's aircraft performed a legendary exploit. He directed his burning machine against a column of enemy tanks and fuel trucks and inflicted a great loss on the fascist invaders. The exploit by the 28 Panfilov heroes at the suburban Moscow siding of Dubosekovo went down in Great Patriotic War history as a golden page. Twenty-eight persons against 50 armored vehicles! But the Soviet fighting men did not waver and took the iron blow on themselves. This legendary fight lasted four hours. The enemy lost 18 tanks and dozens of men, but he did not succeed in penetrating the defenses here.

Our great victory and the unparalleled exploit of the Soviet people and their Armed Forces in this most brutal and difficult of wars ever known by mankind reaffirmed the deep truth of Lenin's words that a nation defending its own Soviet power and its own just cause and future can never be defeated. The unprecedented mass heroism recognized by numerous awards is convincing proof of this. Over seven million privates, seamen, sergeants, petty officers, officers, generals and admirals were decorated with orders and medals. Over 11,000 soldiers became Heroes of the Soviet Union and among them are representatives of all nations and nationalities of our country.

In the postwar years the Motherland's armed defenders also always have been and remain equal to those demands placed on them by the Communist Party and Soviet people. In daily military routine the soldiers of every generation strive to be the equal of the veteran-heroes and learn from them courage,

valor and the art of winning and of valuing peace and security of the homeland above all else. They are immeasurably proud of the fact that they are defending the peaceful labor of the people who for the first time in mankind's history built a state of developed socialism.

It is a great honor for the Soviet citizen to serve in the USSR Armed Forces. Military labor and military service are surrounded by universal respect in our country. This was graphically reflected in the USSR Constitution, where Article 62 states that defense of the socialist homeland is the sacred duty of every Soviet citizen. Military service in the ranks of the USSR Armed Forces, states Article 63, is the honorable duty of Soviet citizens. A separate chapter entitled "Defense of the Socialist Homeland" was included for the first time in our state's new Constitution, and this is a new manifestation of the constant concern by the Communist Party and Soviet state for the Motherland's security.

In the year of the 60th anniversary of the USSR's formation Army and Navy personnel, like all Soviet citizens, are implementing resolutions of the 26th CPSU Congress with a great creative upsurge and with political and labor enthusiasm, and they are preparing for a worthy greeting to the Motherland's banner jubilee. The fervent patriotic inspiration with which Soviet soldiers are working is producing worthy fruit. Their successes in combat training and in competition received high praise at the 6th All-Army Conference of Primary Party Organization Secretaries. Conferees and all Army and Navy party members took the CPSU CC greeting signed by CPSU Central Committee General Secretary Comrade L. I. Brezhnev as the party's behest to continue to perform worthily the sacred duty of defending the socialist homeland, and as a program of action.

In defining the responsible missions facing party organizations and all personnel of the Armed Forces, USSR Minister of Defense Mar SU D. F. Ustinov gave a reminder that the Soviet people have to accomplish the tasks of building communism in our days under complicated foreign policy conditions. Aggressive forces of imperialism, and American imperialism above all, are attempting to shove international relations from the path of detente to the path of confrontation and dangerous brinkmanship. They are attempting to recarve the political map of the world and are resorting to various sanctions and threats of the use of armed force including even nuclear and other weapons of mass destruction. Under such conditions it would be an inexcusable mistake to underestimate the real danger stemming from imperialist forces. It is impossible to ignore the fact that they possess impressive resources and are relying on modern, comprehensively outfitted armies. While countering imperialism's aggressive course with high vigilance, firmness, and a weighed and realistic approach to burning problems of modern times, the Soviet Union steadfastly pursues a line of strengthening the peace, which was reflected clearly and precisely by the 26th CPSU Congress and was developed and concretized in subsequent party and state documents.

The USSR's consistent love of peace is not a sign of weakness. It does not at all preclude but, to the contrary, assumes constant concern for the country's security. The Soviet Union has taken and will take necessary steps to keep

its defenses and the combat might and combat readiness of the Armed Forces at the proper level. These are the primary indicators of the qualitative condition of Army and Navy forces and reflect the personnel's capability to carry out their primary mission--reliably defending socialist achievements and the Soviet people's peaceful labor and ensuring the security of our country and that of its friends and allies.

Mar SU Ustinov says that combat readiness cannot bear a temporary, seasonal character or be frozen at some level. It must be raised and improved constantly. The efforts of all Armed Forces personnel must be directed at this.

It is important to remember here that high combat readiness cannot exist without firm discipline, efficiency and execution in everything. No deviations from regulation order, even the slightest ones, are admissible in military collectives. It is important to learn to act always and in everything in strict conformity with demands of the oath and regulations, to obey commanders implicitly, to conduct oneself tactfully and respectfully toward comrades and to show constant concern for their moral improvement. To be disciplined means to place a high demand both on one's own conduct and on the acts of colleagues, and to struggle actively to create a healthy microclimate in the collective of one's subunit, unit or ship.

In their years of service in the Army or Navy, military personnel go through a major school of life in self-control and discipline. High moral and spiritual qualities of the Soviet citizen--the conscientious builder and defender of communism--are shaped by the entire tenor of Army and Navy life. The Soviet soldier's selfless military work confirms and defends the principles of the Soviet way of life and communist ideals.

The daily military routine and successes of Army and Navy personnel in accomplishing the missions facing them convincingly attest to the fact that they are performing honorably their constitutional duty and behests of the Communist Party and Soviet people to defend October's achievements reliably.

Allegiance of the youth and military personnel of the 1980's to the grand heroic traditions of older generations is reflected vividly and movingly in the words of Comrade L. I. Brezhnev in a speech at the 19th Komsomol Congress: "Your predecessors, the legendary fighting men of the Civil War, shock workers of the first five-year plans, heroes of the Great Patriotic War and the postwar rebirth, and participants of the gigantic construction sites of the last decade have created everything we have today. They are transferring into your hands an invaluable property--the first state of victorious socialism in the world, a society building communism. . . . And we believe that you will be worthy of the historic tasks facing you."

Soviet military personnel fully realize the entire complexity of the present-day international situation and their missions. The formidable weapons given them by the Motherland are in reliable and capable hands. True to Lenin's precepts about reliable defense of the socialist homeland, missilemen, motorized riflemen, tankmen, artillerymen, aviators, navymen, military personnel of all professions are struggling for expert mastery of their entrusted weapons and equipment. They are always on guard, in readiness to give a worthy rebuff to any aggressor.

UNATTRIBUTED ARTICLE STRESSES NEED FOR ALERTNESS

Moscow VOYENNYYE ZNANIYA in Russian No 6, Jun 82 (signed to press 6 May 82) pp i-ii

[Article "History Teaches Alertness"]

[Text] It has been 37 fast years since the time that peace came to Europe. However, the day of 22 June 1941 continues to sound a troubling echo in the hearts of people. It was then that a terrible war, which took 20 million lives of just Soviet citizens alone, began. And how many were left maimed and needy is difficult to say. Not a single family was spared the grief of the loss of relatives and friends. The graying walls of the Brest fortress, the bronze monuments to the defenders of Moscow, Stalingrad and Novorossiysk, to the liberators of Warsaw and Prague and to the soldiers that stormed Berlin constantly recall the irretrievable losses. Fire-scorched fragments of metal are still being extracted from the bodies of war veterans in surgical wards today.

Such a war cannot be forgotten. And now things are restless once again in the world. American imperialism and the aggressive NATO bloc it leads are attempting to redraw the political map of the world, announcing vast regions to be zones of their "vital interests." They have assumed for themselves the "right" to command some and to judge and "punish" others. They are increasing the arms race, hastily filling the arsenals with neutron bombs, developing new forms of mass destruction weapons and attempting to fill Europe with cruise missiles.

These malevolent preparations say a great deal. And what they say first of all is that as in the past, the aggressive policy of imperialism, a policy of anti-Sovietism and anticommunism, threatens the world today. "...he who forgets the constant danger threatening us," declared V. I. Lenin, "which will not cease as long as world imperialism exists, he who forgets this will forget about our laboring republic." The urgency of what the leader of the world proletariat said is confirmed by the entire course of history.

Fascist Germany's attack upon the Soviet Union was prepared by world imperiali The rabid fuehrer hypocritically declared the presence of a "Soviet threat" many times in those days. The same old tactic is being used today.

In this complex and contradictory international situation, the party and the Soviet government are doing everything they can to justify the hopes of the laborers of our country and of all mankind for a strong peace, for clear skies

above the peaceful planet Earth. The Peace Program of the 1980s, developed by the 26th CPSU Congress, is being implemented consistently and purposefully. New constructive proposals on reducing nuclear arms in Europe--this is a key issue associated with preventing the growing threat of world nuclear missile war--were suggested by Comrade L. I. Brezhnev in his speech at the 17th Congress of USSR Trade Unions.

However, the continuing militaristic course and aggressive policy of the NATO bloc, headed by the USA, are compelling the Soviet Union to take steps to keep its defense capabilities at the required level. Such is the harsh necessity.

Avidly approving the peace initiatives of the USSR and of other countries of the socialist fraternity, the Soviet people are watchfully monitoring the intrigues of imperialist and reactionary forces, and they are untiringly strengthening the defensive power of the motherland. Army and navy soldiers are persistently improving their combat proficiency, and they are always ready to offer a decisive repulse to any aggressor.

The twice-awarded order-bearing defense society is also making a substantial contribution to instilling high alertness in the laborers of our country. Fulfilling the decisions of the 26th CPSU Congress, active DOSAAF members are striving for integrated solution of the problems of military-patriotic indoctrination of the Soviet people.

Such work is being conducted constantly and effectively in the primary DOSAAF organization of the Dneprovskiy Machine Building Plant imeni V. I. Lenin, where the committee chairman is Comrade D. Negoda. Lectures are regularly given here on the need for all members of the defense society to maintain high alertness, and meetings with participants of the Great Patriotic War are frequently organized. In them, the aggressive essence of imperialism is revealed with the help of concrete examples, the problems of preserving state and military secrecy are debated with special acuity, and the insidious plans of the NATO bloc are unmasked.

But unfortunately we still encounter certain DOSAAF organizations in which adequate attention is not yet being devoted to instilling alertness. Such a situation leads to indifference, to a decline in the activity of DOSAAF members. The CPSU Central Committee decree "On the 60th Anniversary of Formation of the Union of Soviet Socialist Republics" states the need for shaping every Soviet citizen's political alertness and preparedness to defend the motherland and the accomplishments of socialism. It is with a consideration for these requirements that we must organize military-patriotic indoctrination of members of the defense society.

Explanation of the untiring efforts of the communist party to implement V. I. Lenin's commandments on protecting the socialist fatherland, the unceasing concern of the CPSU Central Committee and personally of Comrade L. I. Brezhnev for strengthening the country's defense capabilities, and the heroic, revolutionary, combat and labor traditions of our party, the Soviet people and their armed forces must continue to hold an important place in agitation and propaganda. The anti-Soviet essence of the reactionary circles of imperialism and their Beijing accomplices must be revealed persuasively.

The ideologists of anticommunism are placing special hopes on the young. They are attempting to play upon the political inexperience of certain young men and women, upon their passion and suggestibility, they are trying to diminish the services of senior generations in their eyes, and they are attempting to sow mistrust in the ideas of socialism and communism. All of this must be accounte for when organizing training and indoctrination in DOSAAF schools and clubs, and more-effective forms and methods of instilling young people with a spirit o Soviet patriotism and socialist internationalism must be sought.

Many young people get their initial military training in schools, vocational-technical schools, tekhnikums and training centers. Every future soldier must firmly assimilate the fact that irrespective of his combat specialty and the arm and branch of troops, he will be in possession of information sought for by hostile agents. The soldier must always be on guard, and he must unfailingly comply with the oath, in which he vows to be alert and to strictly preserve military and state secrecy.

Civil defense subunits and formations perform specific tasks. The entire arsenal of the resources of ideological work must be directed at making civil defense personnel deeply understand the need for maintaining high alertness every day and for strengthening the country's defense capabilities.

Instilling high political alertness in Soviet people today is a task of priorit importance. It is the duty and responsibility of civil defense staffs and DOSAAF committees to continually improve military-patriotic propaganda and create a sense of constant preparedness to rise to the defense of the fatherland in the consciousness of the people, under the guidance of party organs and jointly with the trade unions, the Komsomol, the "Znaniye" Society and the military commissariats.

11004
CSO: 1801/306

ENG-MAJ GEN VOINOV ON USSR ARMED FORCES' WEAPONS

Moscow VOYENNYYE ZNANIYA in Russian No 6, Jun 82 (signed to press 6 May 82) pp 6-7

[Article by Eng-Maj Gen Yu. Voinov: "High Equipment Availability"]

[Text] "A firm alloy of high equipment availability, military proficiency and invincible morale--such is the fighting potential of the Soviet Armed Forces."

L. I. Brezhnev, from the Accountability Report of the CPSU Central Committee to the 26th CPSU Congress.

Displaying constant concern for strengthening the country's defense capabilities, the CPSU and its Leninist Central Committee have always attached and continue to attach great significance to the equipment available to the Soviet Army and Navy. This concern is natural, since armament and combat equipment are among the most important components of the fighting potential of the USSR Armed Forces.

V. I. Lenin, the creator and leader of the Soviet state, viewed equipment availability in the army and navy as one of the fundamental sources of the state's military power. He pointed out that in war, "the upper hand belongs to the one with the greatest equipment, organization and discipline and the best machines."

Attaching enormous significance to this aspect of military development, and being faithful to the commandments of the great Lenin, the CPSU devoted the most persistent attention to furnishing modern weapons and combat equipment to the army and navy in all stages of the state's development. Our military doctrine has been based in this case on the need for proportionate development of all arms and services, their maximum motorization and the fullest possible utilization of the latest achievements of science and technology.

It is not for aggression that we do this. The Soviet Union has always been against the arms race, and it is against it now; it has never aspired to military superiority over the West, and it has no such aspirations today.

Nevertheless reactionary imperialist forces, mainly the United States of America, have invariably rejected and continue to reject the peace initiatives of the USSR, and they are increasing their military-technical power at a forced pace. The USA was the initiator of the development of intercontinental strategic bombers and atomic submarines carrying ballistic missiles. It was the first to initiate mass deployment of ground-based intercontinental ballistic missiles. The USA was not only the first to create the atomic bomb, but it was also the only country in the world to use it without any military need against a peaceful population. It was the USA that started large-scale production of neutron weapons and adopted a new program of "chemical rearmament."

In response to the aggressive preparations of the USA and its NATO allies, the Soviet Union was compelled to create modern types of weapons.

"The arms race has always been imposed upon us from without," said CPSU Central Committee general secretary, chairman of the Presidium of the USSR Supreme Soviet, Comrade L. I. Brezhnev in a speech at the Great Kremlin Palace at a luncheon in honor of a Polish delegation representing the party and state. "Were this to depend only on the Soviet Union, there would be no nuclear weapons on earth, and newer variants of mass annihilation resources would not be developed.

Modern forms of weapons entering the Soviet Armed Forces are characterized by high effective range, high speed, significant striking and destroying power and high target accuracy. We are utilizing the achievements of the scientific-technical revolution in the interests of strengthening the country's defensive power and for the purposes of dependably defending the accomplishments of socialism against the transgressions of its enemies and averting a third world war.

The appearance of qualitatively new, more-powerful forms of weapons, their mass introduction into the troops and their further improvement have naturally led to changes in the organizational structure of the troops, in their combat formations, in the rate of offensive, in the forms of maneuver and in the nature of defense and other forms of combat activity. Thus creation of nuclear missiles led to formation of a new arm of the Soviet Armed Forces--the Strategic Missile Forces. Today they are outfitted with the most sophisticated missiles capable of carrying charges of colossal power, surmounting all distances and making accurate and indefensible strikes on the aggressor, no matter where he is. The Strategic Missile Forces possess rockets and powerful thermonuclear charges, the accuracy of their weapons is high, and they are in constant combat readiness. They possess well defended launching pads, automated communication systems and other sophisticated control resources.

The branches of the ground troops--motorized rifle, tank, rocket and artillery, engineer, signal and so on--have a formidable countenance today. As a result of complete motorization, the ground troops have become much more mobile, and their personnel are completely covered with armor.

Motorized rifle units and formations, for example, are outfitted with the most diverse combat and auxiliary equipment, automated control systems,

computers and radiotechnical resources. Aboard armored transporters and cross-country infantry combat vehicles, they can make long marches, enter into combat on the move without having the subunits disembark, fight in coordination with tanks, cross water obstacles and exploit an offensive at a high pace.

The main striking power of the ground troops is represented by the tank troops, which are characterized by significant stability in the face of mass destruction weapons, by high maneuverability and by great firepower.

Rocket troops and artillery make up the foundation of the firepower of the ground troops. Outfitted with operational-tactical and tactical missile complexes, the rocket troops are a highly important means of destroying enemy groupings. The great range of the missiles and the high traveling speed of the launchers make it possible to extensively maneuver both the missile strikes and the missile subunits themselves. Artillery of all forms and purposes is also capable of extensive operational-tactical maneuver. It is armed with fully motorized gun, howitzer, rocket and antitank artillery and mortars, and effective antitank guided missile complexes.

The engineer, chemical and signal troops possess modern equipment.

The airborne troops are furnished with airliftable self-propelled artillery, mortar, antitank and antiaircraft resources, armored transporters, combat vehicles, automatic rifle weapons and communication and control resources. Modern paratrooper equipment and high-capacity airplanes make it possible to drop personnel and cargo in all weather and terrain, day and night from various altitudes.

The National Air Defense Forces are one of the complex and well-outfitted arms of the armed forces. They possess surface-to-air missile complexes, all-weather supersonic missile-carrying fighter-interceptors, and highly effective equipment for target detection and indication, and resources for controlling interception of airborne targets. Broad use of automated control systems and high-speed communication resources at all levels is a typical trait of the National Air Defense Forces.

The equipment of the air force is constantly improving. It possesses fighters, armed with air-to-air missiles capable of annihilating manned and unmanned airborne resources of the probable enemy in the entire range of their flying altitudes and speeds. Missile-carrying airplanes are armed with highly accurate guided weapons outfitted with all-weather navigation and sighting systems and capable of striking all ground targets with nuclear and conventional ammunition. Military transport airplanes can airlift and drop troops and combat equipment over great distances.

Soviet scientists and designers have created vertical take-off and landing airplanes. Our helicopter building industry has achieved great successes.

The Soviet Navy is an inseparable component of our glorious armed forces. The main properties of the navy are: great striking power of its principal forces, high maneuverability of ship and air groupings, great spatial scope of actions,

the capability of covertly and quickly deploying its forces and making annihilatory strikes with them against objectives on land and at sea, and constant high combat readiness.

Our navy has become a missile navy capable of conducting successful combat activities in any region of the World Ocean. Atomic submarines armed with ballistic missiles carrying powerful charges serve as a dependable means of restraining aggressors. Aircraft carriers, missile boats and antisubmarine ships embody the latest achievements of domestic power engineering, missile design, aviation equipment and electronics.

Coastal rocket-artillery troops and marines play an important role in the general disposition of naval forces. They are armed with coastal missile complexes and with permanent and mobile artillery. Marine subunits and units possess special armament and amphibious combat equipment. Presence of modern assault landing ships in the navy has greatly increased the possibilities for landing marine assault parties.

Such is the present level of the equipment availability in the Soviet Armed Forces, created by the labor of our people. This high level allows us to successfully execute complex and important missions associated with providing dependable security to the USSR and other countries of the socialist fraternity.

While on this subject, I should emphasize once again with all certainty that the Communist Party and its Central Committee and the Soviet government are compelled to allocate an amount of assets to improving armament and military equipment which would be enough to keep the army and navy at a high level of combat readiness and ensure the security of the socialist fatherland and our allies. Compelled is precisely the right word, since the USSR has never armed itself just for the sake of arming itself, it has never been and will never be the initiator of an arms race. We have always pursued a policy aimed at consolidating the peace, and we will always do so.

"The peace program for the 1980s proposed by the 26th CPSU Congress and supplemented by the new initiative suggested by L. I. Brezhnev, "states the CPSU Central Committee decree "On the 60th Anniversary of Formation of the Union of Soviet Socialist Republics," "suggests realistic, constructive ways of weakening the threat of war, deepening detente and developing broad cooperation among states with different structures. It opens up possibilities for solving complex international problems not through confrontation but on the basis of honest and equitable negotiations."

Unfortunately the peace-loving Leninist policy of the USSR and the entire socialist fraternity is opposed by the aggressive course taken by militant circles of the USA and other NATO countries. Placing their hopes on achieving military superiority over the Soviet Union and the Warsaw Pact countries, they are continuing to aggravate the international situation and spiral the arms race upward. Imperialist reaction is grossly interfering in the internal affairs of sovereign states and waging a malicious campaign of attacks upon the Polish Peoples' Republic and the Republic of Cuba, it is continuing its undeclared war against the Democratic Republic of Afghanistan, and it is stirring up centers of tension in the Near East and in other regions of the globe. The political leaders of China are assisting the most aggressive forces of imperialism in their plans.

Under these conditions the CPSU and the Soviet state, persistantly implementing Lenin's peace-loving foreign policy, are doing everything necessary to strengthen the country's defense capabilities and raise the combat readiness of the armed forces. Created by V. I. Lenin and the Communist Party, they are standing in a single combat formation with fraternal armies of the Warsaw Pact states, alertly and dependably protecting the peaceful labor of the Soviet People and the great accomplishments of socialism. They are always ready to honorably perform their patriotic and international duty.

However, Comrade L. I. Brezhnev said at the 26th CPSU Congress "we have never aspired to military superiority over the other side, and we do not do so now. This is not our policy. But we will not allow such a superiority to be achieved over us. Such attempts, and discussions with us from a position of strength, are absolutely unpromising!"

The interests of the motherland's defense demand effective utilization of the results of scientific-technical progress to create promising models of weapons and combat equipment. Our unified military-technical policy foresees everything for satisfying, in the fullest way possible today and in the future, the need of the country's defense for modern weapons.

High equipment availability doubtlessly plays an important role in achieving victory over the enemy. But at the same time it is absolutely clear that no matter how well the army and navy are armed and no matter what sort of equipment they possess, this alone would not be enough. It is also necessary that the soldiers to whom the weapons are entrusted have an outstanding knowledge of them, handle them proficiently and approach practical problems creatively and responsibly.

The proficiency of the personnel, their ability to get the most from their weapons and equipment, high political consciousness of the servicemen and their morale maximally predetermine the fighting power of the Soviet Armed Forces.

11004
CSO: 1801/306

DEPUTY MINISTER OF DEFENSE FOR PERSONNEL ON OFFICER SERVICE

Moscow VOYENNYYE ZNANIYA in Russian No 7, Jul 82 (signed to press 9 Jun 82) pp 8-9

[Interview with Army Gen I. N. Shkadov, deputy minister of defense for personnel: "Officer Service Is Special"]

> [Text] Ivan Nikolayevich Shkadov began serving the Soviet Army in 1935. He took part in the fighting against the Japanese militarists near Lake Khasan. He fought at Moscow and Stalingrad in the Great Patriotic War. He took part as commander of a tank regiment in the fighting for Dnepropitrovsk and Dneprodzerzhinsk, in the Yassi-Kishinev offensive operation, in the liberation of the peoples of Romania, Bulgaria and Yugoslavia from the fascist yoke. He ended the war as commander of a separate tank brigade. Since the war he has occupied an important position in the Soviet Armed Forces.

[Question] Comrade Army General, many young people dream of becoming an officer and prepare themselves for officer service in various ways. How did your officer career begin?

[Answer] It will obviously not be original of me to say that I also dreamed of serving in the military even as a child. This dream did not leave me after I graduated from secondary school, when I worked in the rayon Komsomol committee. One day the secretary announced that two Komsomol activists were to be sent to a tank school. I was one of the two. I accepted the news with joy and pride. I soon became convinced that my true calling lay in the military service.

[Question] Right now many young people want to enter military schools, and experience tells us that the median competition level is fairly high. It is no doubt a matter of deciding whom to select?

[Answer] The selection process is a matter of prime importance for every VUZ, and the problem is doubly acute for the military school. I shall tell you why. Officer service is special. It involves great responsibility and the sacred duty to defend the homeland. It is therefore entrusted to the cream of the crop. The candidates selected for the schools are politically active young people with good moral qualities, physically fit and well developed, who have not only successfully

graduated from school and received a secondary education, but who also feel in their minds and their hearts that their calling is to be an officer.

In my opinion, the collectives in which the young people study or work, Komsomol and DOSAAF organizations and military instructors should have a large role in the selection of candidates for military schools. Their recommendations are highly important.

It is no less important, of course, for the young man who has decided on a career as an officer to weigh his own possibilities and determine his own aptitudes. The romanticism of military service should also be seriously assessed. There is no question that it exists. Behind it, however, lies daily, intensive military work, work which requires extensive political knowledge, professional training, strong moral and physical conditioning.

With his personal example the author must teach the fighting men to overcome the difficulties of the service with honor and be able to provide them with everything needed for combat and for their lives. You must be an expert on the equipment and the weapons, a propagandist, a sportsman and an individual with a broad perspective capable of convincing, of subordinating, of leading the personnel.

[Question] Even when the Red Army was first created our commanders demonstrated devotion to the cause of the revolution and the Lenin Communist Party and demonstrated courage and heroism on the fronts. The Great Patriotic War was an especially rigorous test for the nation, for our people and their Armed Forces. Please tell us, Comrade Army General, at least briefly, something about the role played by Soviet military regulars during hard years.

[Answer] The war unleashed upon our nation by German fascism was truly a war of all the people. A total of 5.3 million people were mobilized into the Soviet Armed Forces during the first eight days alone. A total of 291 rifle divisions and 94 brigades were formed during the first 5 months after the war began. Naturally, we had to do more than simply arm the millions-strong masses of workers and peasants who had donned the soldier's overcoat, in order to rout the enemy. We also had to unite them into rigidly disciplined military collectives, teach them the art of handling the weapons and inspire them to engage in a determined struggle for the socialist homeland's freedom. It was up to the military commander and political cadres--officers and generals of the Soviet Armed Forces--to accomplish those tasks. And they successfully accomplished the tasks, demonstrating selfless courage, heroism, an unbending desire for freedom and the ability to direct the troops. The war confirmed the inseparable unity of our command and the rank and file. They were united by class kinship, by shared political objectives in the battles fought for the homeland and by their Marxist-Leninist perspective.

The best party forces were sent to reinforce the army, as they had been during the civil war years. Around 9,000 supervisory party workers joined the active army by decision of the party's central committee just during the first 6 months of the war. These included Comrade L. I. Brezhnev, presently the general secretary of the CPSU Central Committee, chairman of the Prasidium of the USSR Supreme Soviet, chairman of the USSR Defense Council and marshal of the Soviet Union.

The party produced a remarkable group of military leaders and generals. Many generals and officers proved themselves to be talented production organizers. The names of generals D. F. Ustinov, B. L. Vannikov, V. A. Malyshev and A.M. Shakhurin, defense industry leaders and former people's commissars are well known. Generals and officers--scientists and designers--made a significant contribution to the equipment of the Armed Forces with first-class weapons and combat equipment.

We know that the partisan movement, which became an organized, national campaign, provided the fronts with powerful assistance. I do not think that everyone knows, however, that more than 10,000 regular officers fought in the partisan units and formations, ordinarily serving as chiefs of staff or deputy commanders of detachments and formations.

I could not fail to point out the fact that more than 80,000 female officers were at the front and made their own contribution to the achievement of the Victory.

During the last war our nation's officers corps demonstrated their loyalty and devotion to the people, to our own Communist Party and to the homeland. Throughout the war Soviet officers bore out their great reputation as people in a heroic occupation, as talented organizers and directors of combat, as skillful indoctrinators of their men.

[Question] Could you give us a few examples showing how Soviet officers demonstrated courage and heroism on the battlefields.

[Answer] There are many such examples. I shall mention only a few which I myself witnessed. I recall the year 1938 and the military conflict with the Japanese militarists at Lake Khasan. After completing the Khar'kov Armored School, I elected to serve in the Far East and there, as a tank platoon commander, I received my "baptism of fire," as they say. I will not forget how Lieutenant I. Moshlyak, secretary of the party organization and one of the adjacent rifle regiments, went into the attack with the fighting men three times. When the battalion commander was put out of action, Communist Moshlyak assumed command of the subunit and led it in the storming of Zaozernaya Hill. He fought with the fighting men up to his neck in water, under a storm of enemy fire. During the most heated part of the battle, when its outcome was being determined, the color-bearer was wounded. The unit's sacred battle colors fell from the dying fighter's hands. Moshlyak grabbed the standard and was one of the first to reach the top. The valorous officer was wounded twice in that battle, but he continued to lead the soldiers. Lieutenant I. Moshlyak was awarded the title Hero of the Soviet Union for courage and heroism demonstrated in the fighting against the Japanese samurai. He then fought on the fronts of the Great Patriotic War. He was promoted to the rank of major general.

Soviet fighting men, including officers, set an unequalled example of courage and valor during the difficult years of the Great Patriotic War. Take just the combat actions of Moscow's defenders, as an example. I took part in those battles from August to November of 1941, and witnessed the courage of our fighting men. I clearly recall Lieutenant I. Petrov and Junior Lieutenant G. Breslavets, communists, brave soldiers and men of remarkable spirit. A company of heavy KV tanks, which

I was temporarily commanding, was firmly holding the defense line and engaging in fierce battles with superior enemy forces near the cities of Venev and Novomoskovsk. It destroyed around 20 enemy tanks and a considerable number of infantrymen. The platoon led by G. Breslavets destroyed 7 fascist tanks and killed as many as 200 Hitlerites by changing positions skillfully and with tactical competence. The same sort of heroic actions were demonstrated by lieutenants A. Timoshenko and I. Petrov, platoon commanders. All three were awarded the Order of Lenin.

Beginning in 1943, I commanded the 52d Separate Red-Banner Order of Suvorov, Dneprodzerzhinsk Tank Regiment and served with many brave people. The officers evoked special admiration. In the fighting for Dneprodzerzhinsk, for example, the crew of a medium tank led by Lieutenant N. Yagunov took part in three attacks under powerful enemy artillery and mortar fire, destroying a 75mm cannon, three mortars, an observation post, an ammuniton dump, two earth-and-timber emplacements and two infantry platoons. Major P. Kalozhnyy, deputy regimental commander for political affairs, frequently turned up in the combat formations, especially where a difficult situation was developing. With his words and his personal example he inspired the men to perform real feats. Major P. Tulev, chief of staff, performed with initiative. Senior Lieutenant A. Topor, a company commander, and officers M. Negrov, A. Svetlichnyy, A. Brodskiy, V. Shpakov and I. Kiselev performed fearlessly in the fighting. They all honorably fulfilled their duty and received high awards from the homeland.

In summary, I would mention the fact that more than 7,000 officers, generals, admirals and marshals were among the 11,500 fighting men awarded the title Hero of the Soviet Union during the war. A total of 104 of them were awarded the title twice, and G. K. Zhukov, A. I. Pokryshkin and I. N. Kozhedub ended the war three-time Heroes of the Soviet Union.

Many Soviety officers are continuing the traditions of their fathers and older brothers today by performing heroic actions.

[Question] Comrade Army General, what demands are made of the officers today?

[Answer] The reality of the commander, the political worker and the military engineer involves great responsibility for the indoctrination, the training and the lives of the men and for the expensive equipment, and the performance of their service duties, as I have already mentioned, frequently involves risk for them. The demands made of the officer cadres are therefore constantly growing and expanding. I shall mention the main ones.

The Soviet officer is distinguished, first and foremost, by good moral fiber, selfless devotion to the cause of the CPSU and the Soviet people and profound communist conviction.

Good discipline, efficiency and a sense of responsibility are another highly requirement. V. I. Lenin regarded aware military discipline as an extremely important factor in the strength and invincibility of our army.

It is important for every officer to develop and instill in himself initiative, independence and a strong will and bring out his organizational abilities.

It is impossible to conceive of an officer today without a high level of professional training, general and technical military sophistication. Changes have occurred and are presently occurring in military affairs, which make it impossible to keep up with the development of military equipment and military art without a solid background in general science and the special fields of knowledge, without a thorough study of physics, chemistry, mathematics and other disciplines. This is why the modern commanders are engineers in various specialized fields.

The officer must have good health, of course, and solid volitional and physical conditioning. In modern combat men will experience great physical, moral and psychological stress. The officer must be able not only to bear them stoically himself, but to set an example for his men as well.

Finally, there is one more demand made of the officer today--the ability to train and indoctrinate subordinates. This is a difficult and important task. The officer has to deal with men whose character is developing and whose outlook and attitude toward life are being formed. Only he who has mastered Marxist-Leninist methodology and the fundamentals of military pedagogics and psychology is capable of training and indoctrinating them. The Soviet officer corps is successfully coping with this task. Service in the army becomes for our youth an extensive school of life, an integral part of the entire system of Soviet indoctrination.

In order for the officers to acquire in full the above qualities, they should sacredly follow Lenin's instruction to thoroughly study military affairs, study it everywhere--within the walls of military educational institutions, among the troops, at the firing ranges and on the tank training grounds, in the expanses of the sky and on ocean cruises.

[Question] The last question, Comrade Army General. What would you wish for those who have decided to become an officer, to enter a military school?

[Answer] They should prepare themselves in advance for entering a school. What does that mean? First of all, it means that they should study well, strengthen themselves physically, take part in the social life of the collective and develop in themselves the active stance in life of a Soviet citizen. They must develop in themselves those qualities which we have discussed.

I would recommend that the young people be active in DOSAAF groups, sections and schools, which are the first, but very important, steps toward a career as an officer. The foundations for military expertise, which the officer must expand throughout his life, of course, are laid in NVP [initial military training?] classes and in DOSAAF training organizations.

I hope that all of you who have decided to enter military schools will pass the exams and be successful in the training which follows. Most importantly, remember that when you take the military oath you are entering the ranks of the homeland's defenders as heirs to the glorious combat traditions of your fathers and grandfathers. Upon graduating from the military school, bear the great title of the Soviet officer with honor.

11499
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REQUIREMENTS OF MILITARY OATH AND SERVICE REGULATIONS

Moscow VOYENNYYE ZNANIYA in Russian No 7, Jul 82 (signed to press 9 Jun 82) pp 12-13

[Article by Col I. Semenov: "...Study Military Affairs Conscientiously"]

[Text] Twice a year, in the spring and in the fall, young replenishments enter the combat formation of the homeland's defenders. The youth come to the Armed Forces to fulfill their constitutional duty. Our state's Fundamental Law states that military service in the Armed Forces of the USSR is the honored duty of Soviet citizens. As they don the military uniform, the young patriots are profoundly aware of the enormous responsibility with which they are charged by the people, the party and the state.

That responsibility has become even larger in the current international situation, deliberately exacerbated to the limits by reactionary circles of the imperialist powers. This situation requires great vigilance and increased combat readiness of the homeland's defenders. One of its important components is an excellent understanding by every soldier and sailor of his military specialty and expert handling of the equipment and weapons.

V. I. Lenin repeatedly underscored the great importance of military equipment and weapons as the material foundation of the Red Army's combat capability. Better equipment, in his opinion, was one of the main sources of superiority in military affairs, because in a war "he who has the best equipment, organization and discipline and the best machines will get the better...."

While pointing out the exceptional importance of the latest means of warfare, V. I Lenin at the same time underscored the fact that the strength of new weapons lies in people who have mastered these weapons and are capable of making the most effective use of them in combat. During the difficult civil war years the party leader demanded that the communists, that all the workers, master military affairs and study the military equipment. His well-known instruction: "We should have only one motto—study military affairs seriously...."

Loyal to the precepts of our leader and teacher, the CPSU is doing everything possible to see that in the current complicated international situation the Armed Forces have everything necessary to repel the imperialist aggressors, to reliably

protect the peaceful, creative labor of the Soviet people. Comrade L. I. Brezhnev general secretary of the CPSU Central Committee and chairman of the Presidium of the USSR Supreme Soviet, has said: "With respect to the Soviet Union, we have never sought and are not seeking military superiority. We are going no further than to concern ourselves for reliably protecting our nation's security and the security of our allies, and we do not intend to go beyond that. The Soviet Union constantly appeals for a halt to the creation of new and even more terrible types of weapons. I will say with full responsibility, however, that we will not be indifferent to the appearance of such weapons in the arsenals of the United States and other NATO participants. If this occurs, then the Soviet Armed Forces will have a reliable countertalance for such weapons."

It was pointed out at the 26th CPSU Congress that the fighting strength of the Soviet Armed Forces was made up of a strong alloy of good equipment, military skill and invincible morale on the part of the personnel. Following the instructions of the CPSU Central Committee and orders from the USSR minister of defense, our fighting men see their most important task as that of constantly building up that strength and serving as capable defenders of the socialist homeland.

The powerful combat equipment and weapons with which all services of the Soviet Armed Forces and branches of troops are outfitted have been created by the will of the Communist Party, the talent of Soviet scientists and the selfless labor of our workers and engineers. It is the duty of every fighting man to whom the homeland has assigned weapons or entrusted vehicles or gear, instruments, mechanisms or other equipment, to learn to handle skillfully, to look after them carefully and maintain them in a complete state of repair, and when necessary—to employ them skillfully in combat.

When he takes the oath, the homeland's young defender formally vows "to study military affairs conscientiously, to protect military and the people's property in every way...." The Internal Service Regulations of the Armed Forces of the USSR, in turn, require that every soldier and sailor "study military affairs conscientiously, diligently and firmly memorize everything he is taught by commanders (or chiefs)...."

And this is not simply a reminder to the fighting man of his service obligation. It is a vital necessity, an urgent dictate of the times. The better the soldier or sailor has learned his combat specialty and the weapons and equipment entrusted to him, the more precisely and rapidly will he perform in the most difficult situation, the more confidently will he fulfill orders and the greater will be his chance of defeating the enemy in combat and remaining alive himself.

Once, during a talk with some young soldiers, Hero of the Soviet Union I. S. Kostsev, a former sergeant, said that it is not enough simply to want to carry out an order, that one must also know how to carry it out. He recalled a time during the war, when he was serving as a machine gunner and he and his comrades forded the Dnepr with makeshift means and under a storm of enemy fire. He helped capture a springboard on the opposite bank and defended the captured position in fierce fighting.

"If my muscles had been flabby," the veteran said, "it is doubtful that I would have been able to cross the Dnepr and keep my machine gun on the raft. A man without good physical conditioning is not a soldier. Later, my machine gun failed me. Had I not eliminated the problem instantaneously, the order would not have been carried out and the enemies would have overcome us."

It is possible in today's situation that a soldier will not have to force a water barrier, of course. Military technology has come a long way. Powerful combat vehicles carrying personnel on board are capable of crossing the widest river in full motion, at a high speed. The importance of the soldier's or sailor's moral and psychological conditioning in a battle in which the latest means of combat will be used has increased greatly, however. And the contribution of military expertise to successful operations in a combat situation has become especially significant. Naturally, it is still very important for a machine gunner or a submachine gunner to be able to promptly correct any problem arising while he is firing, of course, to learn to fire accurately and destroy targets with the first shot or the first round.

Let us assume for a minute that due to inadequate training or inexperience, a radar operator monitoring the air situation on the radar screen misses a blip indicating an enemy object, an aircraft or a missile. When we consider the tremendous speed and great destructive force of modern means of mass destruction, it is not difficult to see that such an omission by even a single serviceman can have the most serious consequences.

The outfitting of the army and navy with new types of weapons and combat equipment has resulted in a rapid increase in the number of technical military specialties. While there were 15-20 military specialties during World War I and as many as 160 during World War II, there are now almost 2,000 military specialties. The rapid rate of technological progress has resulted in a situation in which two or three generations of missiles have come and gone in the armies of the largest states during the past 10 to 15 years, and a considerable part of the fleet of combat aircraft and ships, antiaircraft missile systems, radar weapons and communications equipment has been replaced with newer models.

Modern weapons are collectively employed as a rule. This means that each member of the team bears great responsibility for his skill level and that he must strive constantly to perfect it, in order not to let down the squad, team, crew or battle station in a time of trial. Success in the fulfillment of the mission assigned by the commander will depend greatly upon precise coordination among the fighting men, their mutual understanding and their preparedness to help each other at any time. Every soldier and sailor should therefore attempt to establish better relations with his comrades so as to strengthen the spirit of collective endeavor, mutual respect and support in the subunit and to enhance friendship and military comradeship.

It goes without saying that capable use of the modern weapons and combat equipment is only possible with the strictest of military discipline. Military discipline is no longer a simple matter of carrying out the commander's orders or fulfilling the

daily schedule, rapidly and precisely. It also involves a high level of military skill, the ability to value every second during the fulfillment of combat training norms and the technically competent servicing of the weapons entrusted to the soldiers and the materiel assigned them. It should also be remembered that the combat equipment assigned to the fighting men for protecting the homeland represents great material value. It is therefore very important for each serviceman to service it in complete accordance with the requirements of instructions and manuals, to strictly observe the regulations and conditions for its operation and to maintain it in a constant state of readiness for combat employment.

It is not a simple matter to achieve the pinnacles of military skill, to become the real master of the combat equipment. It is perfectly within the capabilities of our draftees, however, who ordinarily have an adequate general education and in many cases, technical training as well, received in the DOSAAF organizations. It requires intensive, daily work in the classrooms, at the firing grounds, ranges an tank training grounds, in the course of tactical exercises, live firings, missile launchings, plights, sea and ocean cruises. It is important, however, to see that not a single hour of training time is wasted and does not give a proper return, that from the very first day of his service the fighting man carefully listen to and remember everything taught him by the commander, that he drill persistently, adopt the know-how of those excelling in the training and of the rated specialists and strive to join their ranks as rapidly as possible.

Participation by the soliders and sailors in the socialist competition is a clear demonstration of their patriotic desire to serve the homeland honorably and conscientiously. The campaign for excellent results from each hour of classwork, each day of combat training, for the ability to destroy targets with the first shot or the first missile launching, at maximum range, to operate at night by daytime norms, to master all the subunit's TOE weapons, to learn related combat specialties and improve ratings--now fill the military workdays of the homeland's defenders.

Soviet fighting men are surrounded by the love of all our people. Their work is just as essential and important as that of the steel smelter, the grain grower or the scientist. After all, they are guarding the most sacred of sacred things--our socialist homeland's security. Proud of the honored duty assigned to them, the young patriots are conscientiously studying military affairs and sparing no effort to achieve an excellent mastery of the first-class combat equipment and weapons entrusted to them. They are always on the alert, always prepared to issue a fitting rebuff to any aggressor.

11499
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BACKGROUND OF AIRBORNE SOLDIER DISCUSSED

Moscow VOYENNYYE ZNANIYA in Russian No 6, Jun 82 (signed to press 6 May 82) pp 20-21

[Article by A. Solov'yev: "How Does One Become a Paratrooper?"]

[Text] The reader may recall seeing the photograph below [not reproduced] on the cover of the January issue of this journal. Vladislav Kutsubey, a member of a Guards unit and an outstanding soldier of combat and political training, is a gallant lad, and he probably has character, seeing as the hard service of a paratrooper has not diminished his broad sincere smile. How did this character evolve? I traveled to Vladislav's home territory to answer this question.

Sources

Even a river can have several sources on occasion, but how many of them are there in the individual? Vladislav's grandmother assumed the role of mother and father to him from his early years. Such a situation is referred to as unfavorable. But what creates well-being? True, he did lack a real mother's care, and to speak honestly, there were also other things of greater necessity that he lacked. But there was no lack of kindness, humanitarianism and justice. It would take a whole other article to write adequately about this Russian woman, Yelena Andreyanovna Denisovna. Anyone can understand what sort of lady she must have been to be able to simultaneously raise both her own children and her grandchildren. Respected throughout the entire village of Rosovka for her diligence and benevolence, and her even character, she worked extremely hard to see that they would all grow up. "Grow up"--to her this meant not that they should necessarily achieve positions of authority but, most importantly, that they become real persons, that they learn to love work and that they would be able to look anyone straight in the eye.

But don't get me wrong: When I say kind, I do not mean doting. Now, years later, she recalls something which Vladislav, his character being what it is, would not recollect to me himself: No matter what it was, to water the garden or help around the house, Vladik was always there! Vitaliy, his older brother was no longer at home, and his younger brother Stanislav was still too small.

In this way his grandmother, who never did finish her schooling, introduced a most wise and ancient principle into the raising of her children--raising through labor.

This habit of working hard more than likely became the main support to Vladislav on his road.

"When the Cuckoo Coos, Remember Us"

That is what Vladislav said on graduation night, on giving his class leader, Yekaterina Andreyevna Slavgorodskaya a wall clock, purchased with contributions from all the graduates. Memory is such that sometimes it brings back incidents that would seem so insignificant in an entirely different light.

"You know," recalls Yekaterina Andreyevna, "sooner or later a boy experiments with smoking. As long as the parents smoke, the teachers are helpless, because they must fight not only a harmful habit but also a child's natural curiosity and a desire to be like an adult, so normal in this age of transition. But Vladik never touched cigarettes. Once I wondered why. It was not until later on, after observing him for some time, that I came to understand the reason: He subordinated all of his acts to a single goal."

That which came into Vladislav's mind could not perhaps be called a dream. It was a goal, one which he pursued stubbornly and consistently--that of becoming a military paratrooper. Later on in one of his letters written while in the army, he said: "I felt that it was only in the airborne troops that I could learn 'military affairs' as they should be learned."

This desire probably manifested itself within him back in the days of his first "Zarnitsa" war games. Vladislav always distinguished himself in these games by his agility and initiative. As early as in seventh grade, while answering a school questionnaire, the young boy confidently wrote: "What would you wish to become?--An officer. What are your interests?--Radio engineering, classical wrestling. What helped you in arriving at these interests?--The profession toward which I am working.... (Would interest be the right word to use? A better term would be an independently developed, diversified training program aimed at ensuring attainment of one's aspiration. Setbacks did not worry Vladislav. Thus following eighth grade he went to Ussuriysk with the purpose of enrolling in the Suvorov school. They told him there that they could not promise him that he would serve in the airborne troops. The young boy left). "Where do you usually do your favorite thing?--In school."

Of course, Vladislav had more than studies in mind. After his first steps in "Zarnitsa" he went on to a closer relationship with the school's DOSAAF organization. The chairman of the society's primary organization and military instructor of the school, Petr Vasil'yevich Mal', immediately noticed the young man's lively interest in the army.

"Strictly speaking, developing an interest in military affairs means making use of this interest," reasoned Petr Vasil'yevich. "The natural interest of children

in military affairs invariably makes itself known sooner or later--and at this moment it must not be left unattended, it must be brought out. Otherwise the young man will dream a little, and then forget, becoming distracted by something else."

And he tries to implement this point of view in his work. Each year about 150 of the school's students take part in "Young Riflemen" and "Sharpshooter" circles. With the most active assistance of the children a shooting gallery, an athletic field and an obstacle course appeared. According to the military instructor, they began using the obstacle course "even before they finished building it."

The defense collective of "Pamyat' Chapayeva" Kholhoz is prepared to support the school in all of its initiatives. The DOSAAF members of this farm are distinguished by creativity and energy. Their efforts led to the creation of a machine and tractor repair classroom for the training of drivers, and a new shooting gallery was recently opened.

All of this made up the environment in which Vladislav's aspiration to become a soldier grew stronger. The young man enjoyed real possibilities for preparing himself for the military profession. As classroom commander in NVP [not further identified] lessons and permanent commander of Rozovsk "eaglets," he tried to absorb everything that might be useful to him in the army.

After graduating from school he sought admission to the Ryazan' Higher Airborne Command Twice-Awarded Red Banner School imeni Leninskiy Komsomol. Once again misfortune awaited Vladislav. He failed to qualify in the competitive exams.

Acclimation to the Sky

Grandmother Yelena Andreyanovna, whose wisdom never conflicts with naivete, on hearing that her grandson had joined a DOSSAF aeroclub and was intending to jump out of an airplane, exploded:

"They'll toss you out somewhere, and then how am I ever going to find you again?"

But Vladislav seemed to glow with joy.

The fact that he could not get into the airborne school did not discourage the young boy at all. On the contrary all that a few days at the school did was conclusively persuade him as to the correctness of his choice. Therefore he joined SPTU-14 [not further identified] located in a neighboring town, deciding to learn to be a driver--a paratrooper does need the skills of a professional driver. As before, he distinguished himself in military sports functions. In a word, students never experience a lack of such functions, since more than a dozen competitions are held here every year, and an outstanding base has been created for them, to include a driving range, an obstacle course and a shooting gallery. And what was most important was that this year, Vladislav learned to use a parachute.

"It was not until later, after I joined the military, that I realized how much I got from my lessons at the Omsk DOSAAF Aeroclub," wrote Guards Private Kutsubey a year later. Today other youngsters are taking their first steps in the sky. I had the fortune of gaining the acquaintance of one of them.

Experienced parachute jumpers assert that the second jump is psychologically harder than the first. However, this time the rule did not hold. The face of Yuriy Loktev bore no noticeable traces of the shock he had just experienced in his second jump. Tall and strong, in some way he resembles Vladislav Kutsubey. Their biographies are similar, and Yuriy was also attracted by the aeroclub owing to his desire to serve in the airborne troops. He said:

"I have long wanted to jump with a parachute. I wanted to know what it would be like. So I came here, and I'm not sorry for it. There are very interesting people here, we spend all of our time together, and they tell me about many things. They have all served in the airborne troops, and before that they worked at the Omsk Aeroclub. And they are very good teachers."

This is what was said to me about instructors of the aeroclub's parachute unit:

"They work like ants."

Colorful and accurate. In any case, that is exactly what they looked like--fast and business-like--on the field where they were preparing new "flights"--this is how they referred to the shifts of parachute jumpers--for jumping. Each of their commands carried a hidden message: "Concentrate more on what you're doing, boys, this is serious work, but there's nothing to be nervous about."

One could see that they had kind feelings for the young boys, whom they once themselves resembled. They know that the spirit of a novice is never empty: If it is not filled with a desire to jump, the free space within it is filled with fear.

"Once I was confronted by two youngsters in tears," related Vladimir Khristianovich Bocharov, commander of the parachute unit. "A girl of short stature, who was forbidden to jump owing to some indiscretion on her part, begged me to let her jump; and a huge hulk of a boy who would rather enter a burning house than get into an airplane. That might appear funny. But not to us. The first jump is a process of acclimation to the sky."

The Omsk DOSAAF Aeroclub is nearing its 50th anniversary. During its existence thousands of persons were acquainted with airplanes, gliders and parachutes. Among them are 12 heroes of the Soviet Union and champions of the country and the world. Vladislav and his peers were truly lucky: The traditions of the aeroclub and the labor of today's teachers have resulted in numerous responses of gratitude from unit commanders--the students were serving excellently!

Accessible to All

It was a bright May morning when Vladislav left for the unit together with his parachute jumping certificate. Not long after, Ye. A. Slavgorodskaya received the first letter from him. "The other boys here are good and friendly. Sometimes we think about home. How we long to go swimming in the Irtysh' right now! I am studying in a young soldier's course. I have now served exactly a week. I feel great. Meat usually makes you feel sluggish, but here I don't notice it, I'm always feeling ready to go."

Ask any former soldier of any generation, and he will tell you how difficult the first days in the army are. The backpack bears heavily upon the shoulders, discipline bears down upon the soul, the boots don't fit, and the cot is too small. The sergeant has an understanding look about him, and he offers encouragement:

"You'll make it."

He is right: A month goes by, and then another, and all of these "woes" which are part and parcel of early service are forgotten, and begin to appear funny. Nevertheless the first days in the army are not easy ones.

Of course, it might seem better to avoid all of this. It is one thing when a soldier spends his days fighting his boots, and something altogether different if it takes him a whole month to learn a truth: The order of a commander is a law to the subordinate. This means that an entire month of his training had gone by without full benefit. These are all highly simple examples, but they all show that the recruit will have to spend an awful long time trying to catch up with comrades who have progressed far ahead. There is only one prescription here: Do not lose time getting used to things. Get ready for the army like Vladislav did. Everyone has this possibility, and it is for this purpose that military instructors are investing so much labor and DOSAAF organizations are working so hard.

"According to the reports from his immediate supervisors and commanders," the deputy commander for political affairs of the unit in which Vladislav serves informed us, "Guards Private V. T. Kutsubey got used to the order of the day much faster than his comrades in service, he is enduring the burdens of service more easily, and he has assimilated the airborne training program faster and better. This is a reflection of the successful training he received from the DOSAAF training organization."

Being a young boy from a Siberian town, Vladislav Kutsubey did not enjoy any special advantages in preparing for service. What he did do to learn about motor vehicles, parachutes and radios and to make himself physically fit can be done by any youngster.

All that is needed is that personal human quality we call purposefulness.

Here is another passage from a letter written by the commander of the unit in which Vladislav serves: "He likes serving in the armed forces very much, and he wishes to continue and become an officer of the Soviet Army. He has submitted a request for permission to apply to the Ryazan' Higher Airborne Command Twice-Awarded Red Banner School imeni Leninskiy Komsomol."

The Goal

Yes, the goal which Vladislav placed before him is still something in the future As before, it remains the sole and most important goal. Vladislav selected the profession of officer-paratrooper with the confidence that it would help him

become decisive, bold and willful. He achieved all of this on the road to his goal on his own. I would like to make special mention of this. Only those who work hard on themselves can attain their dreams. Let all who decide to become officers remember this.

And here is another thing: Organizations of the defense society helped Vladislav in many ways to reach his goal. This is not just my opinion alone. Here is another passage from a letter:

"The unit command requests the journal VOYENNYYE ZNANIYA to convey a big thank-you to the primary DOSAAP organizations of 'Pamyat' Chapayeva' Sovkhoz and the Rozovsk Secondary School for the good education they provided to Guards Private V. T. Kutsubey and for how well they prepared him for service."

The editor's office is often asked: How do you become a paratrooper? It was with the story about Vladislav Kutsubey that we wished to answer this question.

11004
CSO: 1801/306

PRE-DRAFT TRAINING: LECTURE ON SNIPERS

Moscow VOYENNYYE ZNANIYA in Russian No 6, Jun 82 (signed to press 6 May 82) p 28

[Article by Engr-Col V. Kuptil': "Sniper"]

[Text] Encyclopedias carry the following definition: "Sniper--rifleman who has mastered the art of accurate fire, camouflage and deception, and observation." Short but precise. This term is broadly employed today in army life. Often, when we describe the accuracy of fire of gunners or tank crews, we use the term "sniper's shot." When the reference is to missilemen, we say a "sniper's launch." And in aviation the term "pilot-sniper" has appeared.

My story is about a military specialty having to do with, if I may use the expression, a real sniper--that is, a rifleman armed with a sniper's rifle, for example a Dragunov semiautomatic rifle. It was adopted by the military in 1963, and it is the most sophisticated of all models of this type of rifle.

The maximum range of the Dragunov semiautomatic rifle with an optical sight is 1,300 meters. It permits successful fire in twilight, in moonlight and in cloudy weather, when firing a rifle with an open sight is difficult.

How does a sniper work? First of all the point of fire--the sniper's position--is selected. It is indicated by the commander. But if the sniper is operating on his own, he selects it himself with a consideration for the situation, the nature of the terrain and his mission.

A properly selected sniper's position must ensure good conditions for observation and fire within the effective range of fire of the rifle, it should provide good cover to the sniper from observation by the enemy and from his fire, and it should be comfortable. The position is selected in such a way that swift and covert movement to back-up and new positions would be ensured. This is sometimes the decisive condition. Especially in cases where a sniper duel occurs. One can imagine how many times in the Great Patriotic War satisfaction of this condition saved the lives of our snipers! Displaying resourcefulness and boldness, they covertly moved to a back-up position, forcing the enemy to reveal himself. The rest, as specialists sometimes say, was simply a technical matter--an almost instantaneous killing shot.

If a subunit is advancing or if it is making a short halt somewhere, gun and mortar shell craters, ditches, shrubbery, ruins, trees and other objects can serve as a sniper's point of fire.

In all cases of a combat situation the sniper must necessarily fulfill one important condition: Never select a position located beside readily noticeable landmarks--that is, ones which stand out from others and naturally attract attention. These may include, for example, a lone tree, a bush exhibiting some unique characteristic, an individually standing structure and so on. The eyes of enemy observers are naturally attracted by such objects, which in the end facilitates detection of sniper's positions and range determination by the enemy.

One of the principal responsibilities of a sniper is to observe the battlefield. He must do more than simply look at the terrain; he must observe it in the literal sense of the word, and study it--attentively and continuously moreover. There is one goal of such observation--prompt detection of the most important and dangerous solitary targets. Note that observation must be conducted competently as well. There are immutable laws in this area. First of all special attention must be turned to the approaches from the enemy's side and to those places where he may conveniently locate his gun positions and observation posts.

The sniper is obligated to maintain observation, successively examining the terrain from right to left, and from close objects to distant ones. He uses binoculars or an optical sight to study them more carefully. He must mandatorily take steps to keep reflections from the binoculars or sight from revealing his position.

During observation, not a single detail should be ignored, since even the most insignificant clues may facilitate detection of the enemy. Such clues will objectively always be there; all one needs is the ability to notice them: rocking of branches, movement of bushes, vibration of grass, appearance of new objects, reflections from metallic parts and glass, change in the position and shape of landmarks, flashes from fired weapons, dust and so on.

If one target is detected, it must be destroyed. But what if there are several targets? Then the sniper is obligated to consider their significance to combat. In other words he must destroy first those targets which are important and dangerous. Of two targets of equal importance, he is obligated to select that which is closer and more vulnerable. If in the course of fire a new more important target appears unexpectedly, the sniper must immediately transfer his fire to it.

A sniper must also remember that most targets on the battlefield are small, hard to notice, camouflaged, and appear for a very short time. Therefore he must attentively and continuously observe the battlefield, and quickly identify, evaluate and strike such targets with the first shot.

"Anticipate the enemy, and you've won," goes a soldier's saying.

What is the guarantee of an accurate shot? The sniper must quickly determine the range to the target, calculate the corrections, set the scale of the sight and the elevation micrometer at the appropriate division, load his rifle or release the safety, prepare for fire, lie down, take aim and smoothly squeeze the trigger. And all of this must be done in just a few seconds.

Sighting and squeezing the trigger are the most critical and decisive stages. When sighting, the sniper must hold his breath after exhaling naturally, squint his left eye and situate his right eye about 7 cm from the ocular. He must rest the aiming point on the tip of the sighting chuck and simultaneously squeeze the trigger. The equalizing hairlines must be horizontal, and the sniper should be able to see the entire field of vision of the sight. He must learn to squeeze the trigger smoothly for 1-2 seconds. Let me emphasize that he should not jerk it, but release it smoothly. Then there is a guarantee that the rifleman will become a sniper.

The conditions of fire will not always be ideal. For example a lateral wind may blow. This means that a wind correction would have to be made. How large? That depends on the wind speed and direction. The sniper must know how to determine wind speed and calculate the correction. He should memorize the basic correction table. Assume for example that the target is 600 meters away and a side wind is blowing at a speed of 8 meters per second. In this case the correction would be very large. The aiming point would have to be moved six lengths (!) from the middle of the target. If the air temperature is high the aiming point would have to be lowered, while if it is low the aiming point would have to be raised. There are the appropriate correction tables for this case as well.

There are people who are born snipers. For example Siberian hunters going for pelts can kill a squirrel in winter with a single pellet in the eye, so as not to spoil the pelt. Of course, such a person can quickly master the use of a sniper's rifle.

But what about people who are not hunters? Could they become accurate riflemen? Of course they can. All that is needed is the desire, diligence and patience. It should not be thought that a sniper is some sort of superman. When necessary, anyone can master the art of accurate fire by attending lessons given by the rifle section of the primary DOSAAF organization or the rifle sports club.

11004
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SERVICEMEN/GRADUATES OF DOSAAF NAVAL SCHOOLS PROFILED

Missileman from Tallinn DOSAAF Naval School

Moscow VOYENNYYE ZNANIYA in Russian No 7, Jul 82 (signed to press 9 Jun 82) p 4

[Article by Capt Lt V. Kostomarov: "I Take Off My Cap to the Missilemen..."]

[Text] The sailors rapidly descended down the vertical ladder. Each one had a camera in his hand. A bystander would probably have taken the sailors for amateur photographers rushing to film some rare scene. The stern faces of the sailors, however, told one that they had no time for lyrical endeavors right then. They were inspectors and were rushing to the combat stations to provide documentary proof that the missile firing was successful.

At the time the escort vessel Druzhnyy was maintaining a course to an assigned area, where it was to conduct a training battle as part of a surface strike group, during which it would fire a missile at an air target as part of the Navy championship competition.

The missile station was in semidarkness. The missilemen were bent over the brilliantly fluorescent screens of the firing station. I recognized Warrant Officer S. Andros among them. These final minutes prior to the firing were filled with tension and inner activity, as they always are. A missile launching occurs very rapidly, and complicated and painstaking preparations are made for it.

"Air target!..." the radar operator/look-out on duty reported to the primary control station.

And the action began! Time appeared to accelerate its flight from that moment. Every second is worth its weight in gold in a modern naval battle. So be on the alert, missilemen! Any delay which might occur brings the threat of defeat in the battle. A training battle today, the real thing tomorrow.

After receiving the target designation, the operators of the antiaircraft missile system set about their combat work. Sporadic reports, the abrupt switching of tumbler switches, the barely audible hum of instruments at work--all of this made the tenseness of the moment even greater. After assessing the situation, Captain 3d Rank Yu. Stupin, ship commander, finally gave permission to open fire.

"Launch"!

The missile rapidly thrust itself away from the launching rack, marked off a fiery flight path and rushed to intercept the air "enemy." One has to sympathize with the missilemen themselves: Hidden behind armor in the bowels of the ship, they do not see the crowning point of the training battle.

Warrant Officer Andros and his men peered intently at the screens of the firing station until their eyes hurt. Now the brilliant, clear cut blip began to pale and lose its outlines. There could be no doubt—the target was destroyed!

The ship commander descended to the missile station. He said:

"I take off my cap to you missilemen. Well done! Your performance deserves the highest rating."

And he vigorously shook each one's hand.

Warrant Officer Andros has served on the Druzhnyy around 3 years. This does not sound like a long time, but during those years the petty officer in charge of a missile crew has proved himself to be an expert at the job, with an excellent understanding of the fine points of automatic systems, remote control and radio electronics. Is it not remarkable that although only a specialist second class, Sergey services the missile system at the level of a master of military affairs. And it is with good reason that the warrant officer and his men are entrusted with the most difficult and important firings. People know that the crew will always send the missile to the "bull's eye."

The high level of skill did not come to the outstanding missileman "with a wave of the wand." Behind it lies hard work, a tireless quest for the best solution to the assigned problems, creative study of the experience of the formation's best missilemen.

"I am greatly indebted to the Tallinn DOSAAF Naval School," Sergey told me with conviction, "for my successes in the service."

"But you trained to become a radar operator, did you not"?

"That didn't prevent me from doing the other. Both specialties come out of radio electronics and the need for a high level of operator training."

I should point out the fact that even as a student Andros spent all his leisure time working with electronics. He assembled transistor receivers, amplifiers and other devices. This interest, Andros himself feels, is what brough him to the defense Society's naval school, where he perfected his technical knowledge under the supervision of experienced instructors, many of whom had served in the navy. This is what determined his selection of a career.

Another important factor in his successful development was the fact that the missilemen of the excellent escort vessel Druzhnyy have traditionally been considered the best in the navy. They have earned the right more than once to represent their formation in competitions for championship of the Navy.

I know many of them personally. I recall, among others, Officers A. Kotov, V. Baramov and S. Maslikhin and Warrant Officer S. Akeyev. They were all masters of combat skills and set a good example of missile expertise for the sailors. Is it not from them that Warrant Officer Andros developed the character of a real fighter, character which lets him feel confident in any training battle situation and not to shirk his duty at the most difficult time?

This occurred during his first independent firing. Everything went smoothly at first. An electronics exercise had been held on the ship, the results of which had confirmed the fact that all of the air defense crews, including the missilemen were prepared to perform a firing exercise for the record.

The unforeseen then occurred. Just before the firing the radar screen suddenly went dead.

"What is the situation there, missilemen?" the commander asked with concern. "Can you manage it by yourselves"?

What did they answer? The warrant officer unfolded a schematic diagram and began searching for the key to the puzzle. An unpleasant, troublesome thought undermining his confidence. He thought to himself: "Has all our work really been in vain? Am I going to fail my very first firing"? Inwardly Sergey was all in an uproar, so to speak. Outwardly he was calmness itself. Those witnessing the scene say that it was precisely this calmness which transmitted itself to the other missilemen. Working together, the operators rapidly found the malfunction: A hypothetical problem had one of the fuses burned out....

The even roll of a drum broke the quiet, immediately followed by the piercingly resonate and pure polyphony of trumpets introduced the first notes of a march. For a moment it seemed to Warrant Officer Andros that it was not he, but someone else standing statute-like in the formation. Sergey could not rid himself of that feeling even when he heard his name read, marched up to the senior commander and the latter awarded him the medal "For Excellence in the Military Service" second degree, shook his hand vigorously and congratulated him on receiving the high award. The award was for skill and endurance demonstrated in the "Zapad-81" exercise.

What was going through his mind during those minutes? Perhaps he was thinking about how pleased his father, a regular military officer, would be to learn that his son was continuing the family tradition in a worthy manner and, as they say in the navy, had gotten his correct bearings in the service. Or perhaps he was recalling with a feeling of warmth his instructors at the DOSAAF naval school, who had helped him find his place and life and a career to his liking. Perhaps he was thinking with gratitude about his colleagues, who had helped him stand firmly on his own two feet, to overcome the difficulties which one always encounters when he takes up something new.

He was probably truly happy during those minutes. Happy because he had selected a career difficult but filled with the romantic, that of defending the homeland. Happy that he had become a real naval missileman, a master of sharpshooter launchings. Happy that he had won the respect of the crew, initiators of socialist competition in the twice Red-Banner Baltic Fleet in honor of the 60th anniversary of the founding of the Union of Soviet Socialist Republics. One can envy in a kind way an individual experiencing such pleasant moments.

Signalman from Vladivostok DOSAAF Naval School

Moscow VOYENNYYE ZNANIYA in Russian No 7, Jul 82 (signed to press 9 Jun 82) p 5

[Article by A. Radushkevich: "Beneath the Blue-And-White Flag"]

[Text] Sergey Baranov's certificate of graduation from the Vladivostok DOSAAF Naval School as a radio telegraphist contained only "fives." During graduation the school chief presented him with a certificate of honor for his successes in the training and for his exemplary discipline, and wished him excellence in his naval service.

Baranov regarded this important period in his life seriously. Prepare as he did for the service, however, it was not easy at first. It began with the fact that the radio-telegraphist slots on the ship were filled. There were not enough men in the BCh-3 [mine and torpedo division], however. He was sent there. Petty Officer 1st Class Aleksey Polishchuk, division commander, took the newcomer to the battle station, showed him the arrangement of the mechanisms and instruments and told him briefly about their purpose and about the duties of the crew member servicing them. It seemed to Sergey that it would not be a simple matter just to understand this whole "setup," let alone get it all arranged in his head. He did not throw up his hands, however, but began to study intensively.

Everything had to be done at the same time--learning about the ship and the setup in his department, memorizing paragraphs of instructions and articles in the regulations. In addition, there were calisthenics, drills, exercises and other kinds of training.... His teacher, the division commander, quickly monitored his subordinate's every step, explained in detail what Baranov did not understand and "drove" him mercilessly through the parameters of the equipment, the schematics, the operating principles and the purpose of each assembly.

"The sooner you learn everything, the easier it will be for you to perform your duties," he said, when he saw the fatigue in Sergey's eyes. "Make an effort"!

And Baranov did make an effort. New men are given a month to prepare to handle the department by themselves and to stand watch. Baranov needed only a week. We can state frankly that this is an unusual case. And Sergey himself feels that the main reason for the rapid success was the training which he received at the DOSAAF school and even earlier, at a GPTU [city vocational and technical school?]. The

fact that he was accustomed to studying, his knowledge of various equipment, his patience, diligence, industry and physical conditioning--these were the factors contributing to the initial successes of the young sailor, who 18 months later was performing at the level of a second-class specialist.

Senior Lieutenant Aleksandr Vladimirovich Iguminov, commander of the excellent department, has known Baranov since he arrived on the ship. This is what the officer has to say: "In all the months of our last cruise, not only were there no breakdowns of the equipment, but not even a single parameter dropped. We thank industry for this. A great deal also depends upon the personnel, however. The sailing conditions are sometimes very difficult. Tropical heat, the high humidity.... And electronics are a delicate thing. I have fine men. Take Baranov, for example. He is a specialist first class, an outstanding sailor and a member of the subunit Komsomol bureau. He has the best battle station in the best section of the division's best team. This is no exaggeration. He has mastered his specialty to perfection. He has also mastered a related specialty, that of computer and range-finder operator. He serves well, with enthusiasm. He is constantly trying to learn. He delves into all the subtleties with a sportsman excitement. He is strong and steadfast and possesses excellent sailor's qualities During the cruise he constantly engaged in sports. He ran, despite the fact that he had little free room for this, and worked out with weights. His comrades love him. Sergey has a good personality. I have never heard him argue or even simply speak sharply to anyone. He is easy-going and fair, tactful and cheerful. He knows a great deal, thinks and makes judgments about the most diverse things for himself."

His involvement with radios and his training at the DOSAAF naval school have come in handy to Baranov in the service not only with respect to mastering the specialt He installs, adjusts and repairs all the domestic television and radio equipment on the ship. When a man is trusted, it means that he has earned trust with his work. And Sergey is trusted. It was with good reason that his comrades elected him to the Komsomol bureau.

After serving a year and a half, Baranov was given a leave to visit his hometown, Vladivostok. Sergey toured around town, slowing down when he met patrols and giving them a sharp salute. Now he came to his home, a tall building on Krasnoye Znamya Prospect. Darkness was closing in, and the whole family had gathered at this evening hour. The man on leave buried his face in his mother's hair, breathing in the familiar warmth. He embraced his father stoutly. He patted his younger brother on the back. At tea, following rapid questions and inconsistent answers, the talk turned to Sergey's future, his plans and dreams. He honestly did not know what to say. It was so good to be there in the homey warmth, under the gaze of his family, in the familiar situation. He recalled how he had been touched almost to the point of tears by his birthday congratulations on the ship. The deputy commander for political affairs presented him with a gift and read a letter from his mother in front of a unit formation. Nadezhda Sergeyevna had written that she always baked a pie for Sergey on his birthday and she asked command to make her son feel as he had at home, there in the service on his birthday. The ship is home to the sailors. And the pie baked by his best friend Vasiliy Balog was as good as one baked at home.

What was there to say about the future? His parents insisted, while he was there on leave, that Sergey not waste his time but prepare to enroll at a polytechnic institute. Sergey Baranov began to think more and more frequently not about an institute. He understood in the service that education does not determine an individual's value. It is better to be a good worker than a poor engineer. And one does not need to begin studying until he has selected a career to his liking, for his entire life.

Naval regulations brought him to the galley, to assist the cook. It is Baranov's nature, however, that he can do nothing just any old way. Everything he does has to be excellent. In the process of learning the fine points of the ancient culinary art, he discovered new and unexpected aspects and found many interesting things in it. He is now preparing himself for the fourth-class rating and seriously plans to become a cook after he leaves the service. Here we have Senior Seaman Sergey Baranov, electrician in the mine and torpedo division of an escort vessel.

He is to be discharged into the reserve in the fall.

"Wherever I live and work," Baranov said in our conversation, "I will always have the memory of a fast-moving, awesome combat ship, of loyal comrades, of distant seas and the blue-and-white Navy flag."

Electrician from Krasnodar DOSAAF Naval School

Moscow VOYENNYYE ZNANIYA in Russian No 7, Jul 82 (signed to press 9 Jun 82) p 6

[Article by Lt Col N. Stupnev: "Graduates of the Defense..."]

[Text] On the morning following the ship's return to base from a long cruise, Captain Lieutenant N. Romanov, the political worker, summoned Petty Officer 2d Class V. Ashitok to his cabin and asked him:

"Whom do you recommend that I appoint as section commander while you are on leave"?

"Senior Seaman Danelyan."

"I agree. And now I wish you a good rest in your home parts. You have earned your leave."

During the hours remaining until departing for shore Viktor had the urge to visit the Krasnyy Krym's combat glory room. Ashitok had first visited the room 2 years before when he climbed the ladder onto the renowned ship as a graduate of the Krasnodar DOSAAF Naval School.

...Viktor glanced at one of displays. Here was that inscription "I wish the glorious Black Sea Guardsmen success in their combat and political training, good

health, success and happiness in life! Thank you, fellows"! The signature and the date: L. Brezhnev, 7 September 74.

The minutes rushed by, but Petty Officer 2d Class Ashitok kept delaying his departure. Yes, he had earned this leave. In the Mediterranean, where each day was filled with activity, he had performed according to the laws of modern combat, although it was not always easy. The conditioning received back at the DOSAAF naval school had seen him through it, however. It was there that Viktor had first learned what it means to be an electrician/specialist. He had spent dozens of hours studying diesel generators and mobile electric power plants under the supervision of experienced instructors. The future fighting man also received psychological conditioning at the school and learned to be sharp and disciplined.

Within that short time Viktor Ashitok has made the section an excellent one. He knows the equipment from top to bottom and demands the same of his men. Viktor is the secretary of the group Komsomol bureau. To him goes the credit for the fact that Senior Seaman I. Danelyan and Seaman I. Shevkhovtsov have become right-flank participants in the socialist competition for excellent results every day. And with respect to Petty Officers 2d Class Anatoliy Levshunov and Sergey Novikov and Viktor, you couldn't tear them apart. Both Levshunov and Novikov graduated from DOSAAF naval schools.

Once, during a move at sea, Sergey Novikov came up to Viktor, when the latter was correcting a malfunction in a high-pressure compressor, and said:

"You know, Krutin came to see me. He doubts that he will be able to pass the tests certifying him to handle the station on his own. What can we do"?

"Do you remember, after you came on board the ship, how you checked out all the compartments and inspected every wire, literally within a matter of days. You managed it, though."

"But I had the DOSAAF naval school behind me."

"So now help your comrade. Go through all the compartments with him once more, explain to him and show him. In short, get going."

Novikov listened to his colleague's device, mapped out a plan of accelerated training for Krutin and immediately set about the job. He soon noted with satisfaction that the fighting man had markedly enhanced his knowledge and was ready to take the tests. He was not mistaken: The sailor passed the tests with honor and began to handle the complex modern equipment by himself.

"Congratulations!" Ashitok said, when he learned of this.

"I too had no doubts that you would succeed," Anatoliy Levshunov said in support of his comrade. "The person with naval school training will neither fall behind himself nor fail to help out a comrade. Were we not taught this in the defense Society? I still remember my first supervisor N. Gunin. A former regular serviceman, he always said: "The equipment at the school is a serious matter. It is

many times more complex on the ship. If you shirk your duty now, you will regret it later." And we did not shirk our duty.

"Yes, one could not say that you did," Novikov agreed. "You destroyed targets with the first shot, you have made the section an excellent one and are out front in the competition with your rivals. You hold the artilleryman's reputation high."

Anatoliy was pleased by his colleague's praise. He never bragged of his successes to his comrades. Why this would not be appropriate for a member of the battery Komsomol bureau, even though he was inwardly pleased with himself. It was true that he and his men always won in the practice firings.

...His eyes kept sliding over the ship's sacred relics. The names of those who fell in battle. Petty Officer 2d Class Ashitok knew them by heart. Behind each name was a man whose fate had become a small part of the ship's history. Viktor was profoundly respectful of them, the dead and the living war veterans. His father, Mikhail Fedoseyevich, also defended the homeland with weapon in hand during the harsh times of trial and took part in the partisan movement in Belorussia. The veteran now worked on his native kolkhoz in the Bensk area, and in his letters he ordered his youngest son to serve the homeland in the same selfless way as Viktor's brothers were doing.

Brothers.... Viktor was truly proud of them. Both the eldest, Nikolay, a captain second rank and the middle brother, Yevgeniy, a senior lieutenant, were now serving in various parts of our vast country as it prepared to commemorate its 60th anniversary. They serve with excellence.

...That evening, after dinner, when Viktor had already packed his things in a traveling case, Anatoliy Levshunov and Sergey Novikov came to the crew's quarters.

"Are you going to visit your naval school?" they inquired.

"Of course," Viktor assured them. "Our replacements are now being trained there, after all. I would like to know just what has changed during these intervening years, what sort of young men will be joining the navy. And I need to visit my instructors. If not for them, it would have been rather difficult during my first days of service on the ship."

"Give them our regards as well, although we graduated from other schools. Tell them that we have not brought shame to our teachers."

The crew of the large Guards ASW ship Krasnyy Krym is fulfilling with honor the socialist commitments accepted in honor of the 60th anniversary of the founding of the USSR. This was also confirmed by the long sea cruise. When the results were summed up, the commander spoke warmly of the officers, warrant officers, petty officers and seamen. All the tasks had been performed well, there had been no breakdowns of the equipment and the people had demonstrated themselves to be real

patriots of the homeland, prepared to come to its defense at any time. The most worthy received awards. They included Petty Officer 2d Class Viktor Ashitok, a graduate of the defense Society.

Signalman from Nikolayev DOSAAF Naval School

Moscow VOYENNYYE ZNANIYA in Russian No 7, Jul 82 (signed to press 9 Jun 82) p 7

[Article by Lt V. Yermolin: "A Dependable Sailor"]

[Text] "Now, when I am about to end my military service, it is even pleasant to recall my first days," I was told by Senior Seaman Mikhail Krivolapchuk. "After all, the ship greeted me with more than just navy noodles and stewed fruit. During those first days I was still preparing myself to take the test for independent control of the combat station, salt oozed through my overalls from the perspiration, even though a telegraphist is not a stoker and our job does not require any special physical effort. You have only to make the key clatter or take down Morse code. The training regiment on a combat ship and that of a DOSAAF naval school are not the same thing by far. During those difficult days, though, I frequently remembered our school, located on one of the most verdant little streets in Nikolayev. I also though about Dmitriy Bel'chik, my first instructor in the fine science of telegraphy.

Yes, young seaman Krivolapchuk frequently recalled the words of former Black Sea sailor Dmitriy Bel'chik:

"Remember, fellows, your service duties begin immediately. No one will give you any time for breaking in. You had better study your future naval specialty conscientiously, while there is time. You will be grateful later."

And when Seaman Krivolapchuk received his first expression of gratitude from the ship commander for passing the tests in his specialty ahead of schedule, he mentally thanked those who had given him knowledge and understanding of the navy 6 months before.

Things could have turned out otherwise, though. At the rayon military commissariat he was told that he was being sent for training to the DOSAAF naval school in Nikolayev. He was upset at first, and one of his friends had to add fuel to the fire:

"Three years of service is not enough for you. You have decided to begin serving ahead of schedule. It is still not time for you to be drafted. You should have some fun, Misha, as a civilian. This school has real military discipline, you know: 'Attention!,' 'At Ease!," that sort of thing."

It was all decided by a talk with bosom buddy Sereshka Kravchuk, however. He was also being sent to Nikolayev for training.

One evening the two friends were sitting on a bench near the Kravchuk home, looking at the bright stars in the autumn sky and attempting to make out their imminent naval future in its enigmatic depths. Mikhail, who had already forgotten his doubts of that day, talked about how wholesome it was to travel the seas and oceans, to make magic in the radio room and link the ship to land with an invisible thread of dots and dashes.

Upon arriving at the naval school, the friends came to the joyous conclusion that they had not made a mistake. The classes were interesting. The instructors, themselves enthusiastic about the work, knew how not only to reveal the wisdom of the specialty, but also to tell about the sea, about the service, in such a way that the impatient young hearts began to pine with anticipation: When would they have their real encounter with the sea?

Like Kravchuk, Krivolapchuk completed his training with excellent marks. Together with Anatoliy Iachchuk, also from their parts, the fellows were sent to the far northern shores. All three ended up on the same ship.

"Excellent replenishments," the commander said with a smile after looking over the sailors' papers. "Graduates of a DOSAAF naval school are ready specialists. We have many seamen on the crew with the same attestations. So keep up the good work"!

During those first days Mikhail heard such references to the school more than once. He also retained in his mind a talk with the section commander.

"Are you from a training subunit?" the petty officer asked when he first met them.

"No sir."

The petty officer frowned. Later, Mikhail understood why: The commander was preparing to be discharged into the reserve and was concerned about training a replacement. And here he had a sailor who would need training and more training.

"Well, friend," the petty officer said, drawing out his words thoughtfully, and asked with a dry smile, nodding at one of the transmitting devices: "And do you know anything about this set"?

Mikhail only glanced at the set and gave a precise summary of its technical data, not forgetting in the process to mention the norms which the rated specialists had to meet in working with it.

The petty officer cheered up perceptibly:

"What if this sort of malfunction should occur?" he asked, and described for Mikhail one of the complications which Krivolapchuk had studied in his classes.

Krivolapchuk explained without any special difficulty how to correct the malfunction. He then added, with a tinge of embarrassment:

"Comrade Petty Officer, we worked out problems more difficult than this at the DOSAAF naval school."

"Oh, so you are a DOSAAF graduate," the petty officer said, and slapped himself sharply on the forehead. "Why didn't you say so? That makes it an entirely different situation."

Mikhail's service on the ship had begun.

"It is hard in the navy at first," Krivolapchuk told me. "Twice as hard, if you have come unprepared for the service, either physically or morally. All three of us were able to get a fairly accurate idea of the service while still at the defense Society. It was only because of this that we rapidly settled into the new life. The rigid requirements of the regulations were not unexpected for us. The rigorous navy discipline did not seem to any of us like something thought up by picky commanders."

I talked about Senior Seaman Mikhail Krivolapchuk with many of the sailors on the crew. And everyone had something good to say about the individual.

"A real agitator. He sets a good example in the service and knows how to be demanding of others from a standpoint of principle, in the Komsomol way," the secretary of the ship's Komsomol organization said.

"Have you heard him play the accordion or the guitar?" the sailors in the crew quarters asked. "You haven't? You have missed a lot. The heart sings when he plays. You come off watch, your legs numb with fatigue. You want to get to sleep as soon as possible. Then he starts to play, and your legs start to dance by themselves."

His immediate commander, a captain third rank, made the brief statement:

"A dependable sailor. When you're behind him, it's like being behind a brick wall."

Krivolapchuk's battle station is one of the most important on the ship. It requires a highly skilled specialist, as well as a strong masculine disposition. Mikhail met the standards for a first-class rating long ago. He now operates the transmitting equipment at a speed twice or even three times as fast as that required for a first-class specialist.

"It sometimes storms for real, so to speak. It turns one's heart inside out," Mikhail says. "One has to transmit rapidly, without errors, though. And you force yourself to forget everything except the job. What else can you do, when people are counting on you"?

Senior Seaman Krivolapchuk has been awarded the "Naval Excellence" insignia.

...When he met the new man, Mikhail asked the latter:

"Did you study at a DOSAAF school before entering the service"?

Upon hearing an affirmative answer, he explained, as his first section commander had once done:

"Well, that makes it an entirely different situation"!

11499
CSO: 1801/307

CIVIL DEFENSE

FIFTIETH ANNIVERSARY OF USSR CIVIL DEFENSE NOTED

Moscow VOYENNYYE ZNANIYA in Russian No 6, Jun 82 (signed to press 6 May 82) pp 8-9

[Article: "In Behalf of the Lives of Millions"]

> [Text] "We do not want war, and we are not preparing for war. But the Soviet people know from their own bitter experience the enormous sacrifices of the population that could be elicited by the actions of an aggressor. And it is too often that we hear talk from the other side as to its readiness to make 'powerful, destructive, anticipatory strikes' and so on, not to take the necessary protective measures."
>
> L. I. Brezhnev

On 4 October of this year our country's civil defense celebrates its 50th anniversary. Its creation was a necessity of history. The fact is that during the civil war the young Soviet state had to devote the most serious attention to protecting the population and its rear objectives. This need arose in connection with the arisal of aviation, which even in those days was capable of striking administrative-political centers in the rear and economic facilities at the front. This meant that their protection had to be organized, and especially protection of the population against enemy air strikes. But this danger arose not everywhere but only in specific regions. This is why defense came to be called "local air defense."

Following World War I the resources of armed conflict continued to develop quickly. The operational possibilities of aviation widened especially swiftly. Naturally the organization of the protection afforded to the population and the economy and broader use of manpower and material resources in local air defense became necessary. Organizational decisions also had to be made on a countrywide scale. On 5 April 1932 the USSR Council of Peoples' Commissars adopted a decree in which leadership of the air defenses was assigned to the People's Commissariat of Military and Naval Affairs, and the Sixth Directorate of the RKKA [Workers' and Peasants' Red Army] staff was reorganized as the RKKA Air Defense Directorate.

In that same year, continuing to improve the organizational structure of the air defense forces, the Council of Peoples' Commissars approved the "Statute on the USSR Air Defense Forces." In it, protection of the population in the country's rear were assigned to the air defense forces of the Peoples' Commissariat of Military and Naval Affairs, and the local air defense forces became a component of the latter.

The day of approval of this document--4 October--became the birthday of the MPVO [local air defense], which was reorganized later on into civil defense. Locally, meanwhile, in threatened zones within the range of aviation MPVO was managed by the staffs of the frontier military districts. The cities in these zones were named "air defense points," and enterprises were named "air defense facilities." The points were divided into regions and sectors, the chiefs of which were the commanders of special air defense units. The directors of the air defense facilities also served as their air defense chiefs.

In the 1930s the MPVO forces of the cities consisted of territorial and regular battalions and regiments and nonmilitarized formations--sector and facility self-defense teams and groups. It was not until 1939 that MPVO territorial units were abolished and the number of regular units began increasing.

Even in those years overall leadership over the training of the population and the country's national economy in air and chemical defense was provided by local soviets. MPVO executives, commanders and chiefs underwent training in schools of the Osoaviakhim [Society for Assistance to the Defense, Aviation and Chemical Construction of the USSR] and in special courses. As long ago as in 1937 the USSR Council of Peoples' Commissars adopted a decree on the MPVO of Moscow, Leningrad, Kiev and Baku imposing the responsibility of managing MPVO in these cities on the city soviets, and their chairmen correspondingly became the MPVO chiefs. MPVO staffs were created in these cities at that time, and regular commanders of the Red Army were appointed MPVO deputy chiefs.

The Central Committee of the All-Union Communist Party (of Bolsheviks) exercised political leadership over the MPVO system through the RKKA Political Directorate and local party committees, which appointed political instructors for the MPVO regions and sectors. The secretaries of facility party organizations were the facility political instructors as a rule.

When World War II began and the threat of an attack by fascist Germany arose, a decision was made to transfer MPVO to the USSR Peoples' Commissariat of Internal Affairs and to create a Main MPVO Directorate within its composition for the purposes of concentrating the efforts of the Peoples' Commissariat of Defense on the problems of active defense.

By the beginning of the Great Patriotic War almost 40 million persons had undergone training in air defense and in air and chemical defense in the threatened regions; about 30 million gas masks were accumulated, and more than 25,000 formations were created and trained. By decision of the Council of Peoples' Commissars compulsory training of the population in air defense was instituted. All citizens from 16 to 60 years old were obligated to master the necessary MPVO knowledge, create self-defense groups and take an active part

in self defense functions. This decision also applied to women from 18 to 50 years old.

In a radio broadcast aired on 3 July 1941 I. V. Stalin declared the need for immediately "organizing local air defense." On that same day the Main MPVO Directorate of the Peoples' Commissariat of Internal Affairs approved the "Statute on Organization of MPVO Self-Defense Groups and Their Training Program." Steps were taken to force accumulation of the pool of protective structures. Hundreds of thousands of slit trenches and dugouts capable of sheltering 20 million persons were built.

The great attention devoted to MPVO by the party and government raised the effectiveness of its measures. In a year and a half of war 53 million persons were trained in the air and chemical defense norms.

MPVO personnel displayed real heroism during the war. They successfully controlled the aftermath of more than 30 thousand enemy air raids, they put out almost 90,000 fires, they prevented 32,000 mishaps at national economic facilities, they defused almost 3 million unexploded bombs, shells and mines, they provided medical assistance to 135,000 bombing and artillery casualties, and they restored 200 km of railroad bridges and thousands of kilometers of railroad tracks and communication lines.

After the war began the party organs intensified their influence upon all MPVO activities. They assumed constant control over the construction of shelters and over the training of unit and formation personnel and the public at large. In cities such as Moscow and Leningrad the problems of MPVO readiness were examined every week at the bureaus of the rayon party committees.

Party organizations attached important significance to publicizing defense resources and methods among the public. The command and political workers of MPVO staffs and units and workers of Osoaviakhim and the Red Cross were encouraged to participate in this work. Agitation collectives, agitation brigades and propaganda groups were created and attached to enterprises, institutions and housing administrations. Much attention was turned to explaining the corresponding provisions of the law on the responsibility of citizens for fulfilling MPVO obligations.

The behavior of Soviet people in those menacing days of war was distinguished by high aggressiveness, fighting spirit and patriotism. MPVO personnel stood duty, implemented blackout measures, corrected the aftermath of bombing raids and built and outfitted shelters.

When intensive air raids on Moscow began, persons of all ages and occupations were included in air defense. They displayed courage and self-sacrifice in their efforts to clean up after air raids. Moscow was the only European capital that was inaccessible to the Germans not only from the ground but also from the air. This had enormous political significance, since the effectiveness with which Moscow was protected against bombing, Mikhail Ivanovich Kalinin noted, was used as the yardstick for measuring the state's ability to resist.

Under the guidance of party and soviet organs, numerous local and air defense formations, units, staffs and services of Leningrad, Odessa, Sevastopol', Stalingrad, Tula, Gor'kiy, Murmansk and other cities fought fires, provided medical aid to casualties and rescued national economic facilities from annihilation.

Considering the significant contribution made to protection of the population and the national economy from raids by fascist aviation, Leningrad's MPVO, the firefighting service of the city of Lenin, and the 4th and 7th engineer-antichemical MPVO regiments were awarded orders of the Red Banner. The exalted title of Hero of the Soviet Union was awarded to Ivan Ustinovich Kharchenko. He personally disarmed 1,250 bombs and shells. The Order of Lenin was awarded post mortem to MPVO warrior Aleksandr Fedorivich Belavin. At the price of his own life he saved Leningrad's main post office from destruction. An act of heroism by 16-year-old Komsomol member Raya Butrova, the daughter of a worker at the Izhorsk plant, was marked by the Order of the Red Banner. Medic Aleksandra Turova of the port of Murmansk rescued dozens of wounded Soviet and foreign seamen during bombing raids. She was awarded the Order of Lenin post mortem. Over 300,000 defenders of our cities and MPVO soldiers and commanders were awarded medals for defense of Moscow, Leningrad, Odessa, Stalingrad, Sevastopol', Kiev, the Caucasus and the Soviet Arctic.

The rich combat experience of the MPVO during the Great Patriotic War and the mass heroism of the warriors and commanders of its formations and units are of tremendous value to the indoctrination of the Soviet people in the spirit of the glorious traditions of the civil war.

MPVO enjoyed further development following the war. The rich experience of organizing and conducting local air defense measures during the Great Patriotic War was generalized and creatively developed. By as early as 1949 the organizational structure and missions of MPVO were reclarified. The USSR minister of internal affairs was made the country's MPVO chief, while in the republics and oblasts the position was filled correspondingly by the republic ministers of internal affairs and the chiefs of the oblast directorates of the Ministry of Internal Affairs. MPVO was prepared in the cities and city rayons, meanwhile, by the executive committees of the city and rayon soviets of labor deputies. The chairman of the latter became the MPVO chiefs of the cities and rayons.

In connection with swift development of air strike resources and especially of nuclear missiles, the organizational structure of MPVO changed significantly, and its missions were widened and made more specific. In 1956 MPVO was included for the first time in the system of national measures to protect the population from modern weapons, to create the conditions for dependable wor of national economic facilities in the presence of the threat of an aerial attack, to conduct emergency repair and restoration operations and to render assistance to casualties. The ministers of internal affairs retained their posts as MPVO chiefs, but overall leadership of MPVO was now exercised locally by the republic councils of ministers and by the executive committees of local soviets, ministries and departments. The directors of ministries, departments, enterprises, kolkhozes and sovkhozes now became their MPVO chiefs, while the

chairmen of executive committees of krays and oblasts became the chiefs of these MPVO organizations. MPVO staffs became the controlling organs. The entire MPVO system was channeled into organizing defense against mass destruction weapons. This is why the means of protecting the public and the national economy were subjected to reexamination at this stage. Plans for evacuating organizations and the ablebodied population began to be written for the first time. The problems of protecting the national economy were examined on a broad scale. Union, republic, oblast, city, rayon and facility MPVO services were created. Life demanded a new approach to preparing the cities and national economic facilities for air defense and for atomic and chemical protection. Correspondingly the entire population and especially the MPVO formations had to be prepared in the same way. Emergency rescue detachments, brigades and squads were created, and self-defense groups were organized in residential buildings.

In the 1960s imperialist circles of the West, and especially the American war machine, began openly advertising plans of nuclear attack upon the Soviet Union. The USA dramatically increased its production of mass destruction resources. We were compelled to take the appopriate steps to strengthen our defense capabilities. The Strategic Missile Forces were created, provision of the latest weapons to the armed forces was completed, and MPVO was reorganized. In July 1961 it was reorganized as civil defense, to become a part of the system of nationwide defensive measures aimed at protecting the public and the national economy of the country from mass destruction weapons and at conducting emergency repair and restoration operations in centers of destruction and in flood disaster zones. The position of USSR civil defense chief was introduced at that same time, and the USSR Civil Defense Headquarters and a number of directorates and independent sections were created.

From this day forward, civil defense was organized according to the territorial-production principle. It received its support from government organs and, in production, from the enterprises, kolkhozes, ministries and departments. The missions and volume of civil defense measures increased dramatically, and the need arose for coordinating these functions on a nationwide scale. The theoretical principles of civil defense were developed, and the methods and resources of protecting the public and the national economy from modern weapons were improved and practically tested. As a result of these measures three basic groups of missions came into being in civil defense.

Protection of the population from modern mass destruction weapons makes up the first and most important group of civil defense missions, the foundation of civil defense, since the safety of the Soviet people has always been and will continue to be the most important concern of our party and government, and because no other missions could be executed without first ensuring completion of this one.

The second group of missions consists of measures to raise the stability with which national economic facilities and sectors operate under extraordinary conditions.

The third group of missions includes civil defense measures aimed at correcting the aftermath of the enemy's use of mass destruction weapons--that is, creation

and preparation of civil defense forces in peacetime, organization and conduct of emergency repair and rescue operations in centers of destruction, organization of aid to casualties and maintenance of uninterrupted control.

Measures to improve the organizational structure of civil defense raised the leading and guiding role of the party and state government even more. The Communist Party's concern for strengthening the country's defense capabilities is the main source of civil defense's constant preparedness. The appropriate local party organs provide leadership to party-political work conducted in staffs, services, nonmilitarized formations and civil defense services.

Local party organizations conduct party and organizational work aimed at implementing civil defense measures foreseen by decisions of the CPSU Central Committee and the USSR Council of Ministers, and they promote active efforts by all state, cooperative and public organizations to fulfill their civil defense missions; they maintain constant surveillance over the training afforded to the population and to civil defense forces, and they organize indoctrination and moral, political and psychological training for them. Local party organizations provide, from among active party members, unofficial deputy commanders (chiefs) of political affairs for the nonmilitarized formations, and their representatives in evacuation organs.

A ukaze adopted by the Presidium of the USSR Supreme Soviet on 19 March 1971 on the basic rights and responsibilities of rayon and city soviets of labor deputies played an invaluable role in raising the activities of the soviets of labor deputies and leadership of civil defense measures. This ukaze emphasized their special responsibility for managing civil defense.

Active participation of civil defense nonmilitarized formations and subunits in the struggle against large forest fires and in correcting the aftermath of natural disasters and production mishaps had important significance to raising the combat readiness of civil defense. It was also for this purpose that effective training methods such as command-and-staff and special tactical exercises, integrated facility exercises and so on became a regular practice in civil defense. A modern training material base was created at facilities, in the rayons and cities and at civil defense schools, which have now acquired exceptionally important significance.

USSR civil defense is a whole people's effort. Its reinforcement and improvement is important to all Soviet people. The successes of civil defense measures depend in many ways on the active, competent and conscious participation of all laborers in them. A clear confirmation of this can be found in the numerous examples of truly heroic actions by Soviet people in the efforts to fight natural disasters.

The heroic battle against the "rust of death" left by the past war is being continued by civil defense pyrotechnic specialists. Their deeds today are based on the same selfless love for the motherland which brought us victory over fascism, and the readiness to courageously and steadfastly perform one's duties and act competently in the most complex situation.

Moral, political and psychological training foreseeing purposeful indoctrination of people in the spirit of communist ideals and the readiness to protect the socialist fatherland, and formation of the moral principles of the behavior of the individual in the most complex conditions, and conviction and confidence in the effectiveness of protection against mass destruction weapons is now given special significance in civil defense training.

Civil defense propaganda now occupies a rightful place in this highly difficult mission.

Being essentially a whole people's effort, Soviet civil defense pursues the highest humanitarian goals. All of its measures are conducted in behalf of the people.

Attempting to frighten the common citizen of the West with a mythical "Soviet military threat," imperialist propaganda is deliberately distorting the true goals and tasks of our civil defense, and it is continuing its efforts to try to prove that supposedly the "Soviet program of civil defense threatens to destabilize the strategic balance of forces." But the absurdity of these fabrications is obvious.

In replies to questions from the editorial board of the West German journal DER SPIEGEL, L. I. Brezhnev said that the Soviet Union threatens no one and has no intentions of attacking anyone. Our military doctrine is defensive in nature, and it excludes preventive wars and the conception of a "first strike." And if the Soviet Union is strengthening its defense capabilities, it is forced to do so in the face of the military threat coming from aggressive circles of imperialism.

Note: Propagandists and local radio broadcasters may base their presentations on articles published in our journal illuminating the heroism of MPVO and civil defense soldiers and commanders in the Great Patriotic War and in the days of peace: "Until the Last Possibility," "The Courage of the Citizens of Voronezh," "In Defense of Kiev, Our Home," "Smolensk, Year 1941," "Contribution to Victory," "Warriors of the Fiery Front" and "In Behalf of Your Capital" (correspondingly No 6-12, 1981), "Courage, Steadfastness," "It Was Named the Road of Life," "In an Arctic City," "In the Hard Days of Blockade" and "This Happened in Murmansk" (No 1-5, 1982) and other materials published earlier. We also recommend reading the articles "In Behalf of the Lives of Millions" by N. Dolgin (No 1, 1981) and "Propaganda--At a New Level" by A. Korzhavin (No 2, 1982).

11004
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CIVIL DEFENSE

PROBLEMS WITH CIVIL DEFENSE PROGRAM IN VOROSHILOVGRADSKAYA OBLAST

Moscow VOYENNYYE ZNANIYA in Russian No 6, Jun 82 (signed to press 6 May 82) pp 12-13

[Article by Special Correspondent V. Mironov: "Who Is N.I.S. 'Tickling'?"]

[Text] It was hard not to believe the letter that came to the editor's office from Voroshilovgradskaya Oblast. The facts it presented charmed, amazed, perturbed and summoned one to the assistance of a wronged woman, an honorable person. Judge for yourselves. "I have now been working three five-year stretches for an industrial ORS [department of workers' supply] as a civil defense engineer," wrote N.I.S. "In the time I have worked, I have received certificates and letters of gratefulness.... Everything was going normally until a new chief came to the ORS...." What followed was a portrait of an outright antagonist of civil defense. "During the time of his work, not a single defense function was conducted, and he completely prohibited staff training exercises...; he does not understand that the responsibility lies mainly on the top executive. 'You're paid for it so you do the work, and I've got to get on with the commodity turnover plan'."

Soon came a second letter, even more alarming than the first. It created the impression that its author was suffering reprisals for her criticism and that she was dismissed as being unsuited to her position, after just being presented a labor veteran medal 2 weeks previously. The slander was so great that local government organs were taken in, failing to harken to the alarms of the veteran. The letter's author asserted that the people's court also turned a deaf ear to her, refusing to restore her to her previous place of work on the excuse that N.I.S. had never gone beyond 10th grade and was lacking in knowledge. Here is how that letter ended: "I am writing you because I have faith in the truth, since I gave the best years of my youth to a just cause. I am writing you because it is hard to get justice to prevail locally. I know that you do not have enough correspondents to check out every letter, but I am sure that the situation at our ORS has hardly come up anywhere else. I hope that my letter will not be left without attention. I bear full responsibility for all that has been stated here, and I attest to this by my signature below."

A visit to the ORS persuaded me that things were far from the way they were represented by the author of the letters. Alas, the imagined ideal of an honest

interested and concerned person, a fighter of justice melted away before the eyes as a lump of snow in the sun's rays. The picture I found was entirely different.

She was believed at first because everyone was taken in by her former participation in combat and by the hypnotic spell of her awards. She was believed so much that she was hired just on the basis of her autobiography, without examining all of the other documents as required. Capitalizing on this, she reduced her age by 5 years and raised her educational level. Such acts are of course, not the best show of morality. But this was not all. Knowing how much Soviet people love and esteem participants of the Great Patriotic War and how much attention and concern the state surrounds them with, N.I.S. took upon herself only the privileges and rights, consciously discarding all responsibilities and forgetting that veterans are a bright example to the young, a model of an attitude toward labor and toward duty to the motherland. Working as a teacher at a vocational-technical school before joining the ORS, she received many reprimands for absenteeism and a disinterested attitude toward her responsibilities. Time and time again she was dismissed and once again rehired (the respect for veterans, which served as a dependable shield to N.I.S., had its effect), though she never instilled diligence or respect for the collective in her students and never showed any concern for increasing her knowledge. If she did not like someone, if he tried to make her see reason, and put her in her place, she began "tickling" him (this was her favorite expression)--using blackmail and slander, and sending complaints to various authorities.

Working as a civil defense engineer at the ORS, she continued to display lack of discipline, she was late for work, and sometimes she absented herself without permission. Disciplinary sanctions followed, including along the lines of civil defense. It would not be hard to understand that she estranged the collective from herself rather quickly. She was expelled from the trade union. The question of dismissing N.I.S. was raised twice, but each time she got away with it. Moreover her colleagues had no wish to endure her "tickling"--her complaints and scandals. This was exactly what N.I.S. wanted, and civil defense at the ORS stagnated more and more. Luckily for her, no one ever troubled her with inspections. Only on occasion the senior civil defense engineer of the oblast URS [administration of workers' supply] urged her to come to her senses, and to do her work. But she had already become accustomed to wriggling out of situations with promises, and she made an effort to stay out of visual range of the management.

Chiefs came and went, but the attitude of the civil engineer to her responsibilities remained the same. As before, her rights remained most important to her. She punctually pumped the collective for them in the form of prizes, financial assistance and other goods and awards. Before every meeting of veterans, forgetting the sacred nature of the title, she declared to the local committee: "If you don't provide me with the right kind of clothes, I'll 'tickle' you." Her "tickling" never failed, and tribute was paid to her without fail. In the end she felt herself to be lying in a cradle which the collective had to constantly rock, and if anyone stopped doing this, that capricious "tickling" went into action.

This cradle would have gone rocking for a long time to come, had not a new ORS chief appeared on the scene a year ago. The civil defense engineer's inactivity was obvious on the background of the good work of the ORS in general. It was demanded of her that she work, and her activities were monitored. Conversations in which it was basically said that she was being paid for work and not for prior services and that there had to be a concrete relationship between labor and her pay began to occur more frequently. It was in this regard that the first sparks of conflict appeared. N.I.S. put her favorite "tickling" strategy into motion. And while the battle went on, civil defense at the facility remained beneath a sleeping spell.

Desiring to know what concretely the civil defense engineer and he himself should be doing, the ORS chief decided to call fire upon himself, asking the higher authorities to check out the state of affairs with the facility's civil defense. The commissions which visited the various organizations in the course of the conflict shook the ORS's civil defense awake from its long sleep. They bared its present inadequacies to the maximum. The training material base, the inspectors asserted, was nonexistent, there was no place for people to take shelter, efforts to adapt basements as radiation shelters were not being conducted, plans and other basic civil defense documents had not been drawn up, the training of neither the formations nor the laborers and white collar workers was being monitored, the latter did not know the civil defense warning signals or what to do in response to them, there were no civil defense nooks, no visual agitation, and propaganda was at a low level. The communication and warning system had not been developed. Even the guidelines furnished to the facility by the oblast ORS had been lost. The facility's civil defense chief, his deputy and the civil defense engineer had a poor knowledge of the responsibilities, and there was no documentation of any of their efforts. Nor had an evacuation commission been set up at the ORS.

Of course, the blame for this cannot be placed entirely on the author of the letter. As the commission of the oblast civil defense headquarters concluded, the civil defense effort at the ORS had been poor for a number of years. Also because the city civil defense chief of staff, the chief of staff of the trade and food services and the civil defense chief of the ORS had not provided adequate control and assistance. But it was also noted that the civil defense engineer's training was weak, and that she was not taking steps to eliminate shortcomings depending directly upon her.

Had they just regained their senses in time, and realized that this was not a whim but a necessity, the will of the times, that the new civil defense requirements demand full effort from everyone, had they rolled up their sleeves and attempted to pull her out of this quicksand with the help of the ORS administration. But that was too much to ask for! The concern for the common good fell by the wayside. Understanding the uselessness of reprimands and suggestions, the management of the oblast ORS proposed dismissing the ORS civil defense engineer from her post and placing her in another job. Other inspecting units came to the same conclusion.

Later on followed the complaints from N.I.S. again, who went to court. But the rayon and oblast people's court rejected her suit to restore her to her

previous job. A reserve officer with the necessary education and practical experience in the civil defense system was appointed to the position. Things are gradually returning to normal. A plan for eliminating the revealed shortcomings has been drawn up, and it is now being implemented unfailingly. The basic civil defense documents have been drawn up, control over the lessons of the laborers and white collar workers has been organized, and a civil defense classroom has been outfitted.

Much is also being done that had not been done for many years by N.I.S. All of this was placed under unweakening control, meaning that the inspections did have some benefit. Now that the persistent attention of many levels of authority is riveted upon this issue, members of the party bureau and the local committee, evaluating their position more exactingly, cannot fail to recognize that they were too patient with N.I.S., that they stood on the sidelines of civil defense issues, which they had no right to do.

We would hope that everything will now change fundamentally, that no one will pass his responsibilities in civil defense to someone else. The collective came to realize the true worth of exactingness and concern for people shown by the new chief. The climate now evolving is good and business-like. But there is even no thought of laughing or joking about N.I.S. The people are humanly sorry for the lady veteran, whom they wished to retire warmly and honorably, as is befitting any self-respecting collective. They presented her with the labor veteran medal. But she had no intention of leaving honorably. With amazing stubbornness she continues to storm various authorities, failing to note that her shield had rotted away long ago.

Yes, N.I.S. should "tickle" her own conscience, and recall that she recently sent her son off into the army. What sort of legacy will she leave him? What will he really think of his mother? It is precisely for these humanitarian considerations, and in keeping with N.I.S.'s own urgent request, that the editor's office is not making public her name or the city in which this unpleasant story occurred. Let her son serve honorably and calmly, let him treasure his image of his mother.

11004
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CIVIL DEFENSE

VOLUNTEER FIREMEN ON MOLDAVIAN SSR KOLKHOZES DESCRIBED

Moscow VOYENNYYE ZNANIYA in Russian No 6, Jun 82 (signed to press 6 May 82) p 14

[Article by V. Ryabchich, chairman, Moldavian SSR Kolkhoz Council: "A Shield Against Fire"]

[Text] Successful implementation of the program drawn up by the party for developing agriculture is based on extensive growth of its productive forces, improvement of production organization, conversion of farming and animal husbandry to an industrial basis and decisive acceleration of scientific-technical progress.

Were we to look at the face of the Moldavian countryside today, we would find that the towns contain large buildings and structures serving industrial, social and cultural purposes, an enormous fleet of modern tractors and agricultural machinery, motor vehicles, electric motors and machine units. This in general is social production at a high level of development. In terms of nationwide division of labor Moldavia is a special region, and possessing little farm land, it produces over 2 percent of the country's agricultural products. Moldavia is first among the union republics in production of per 100 hectares of agricultural land.

The changes that have occurred in the structure of agricultural production are also causing changes in the organization of its fire protection. It has become more reliable. The number of fires in kolkhoz production buildings decreased by a third during the 10th Five-Year Plan in comparison with the Ninth, and the losses due to fires have decreased by 27 percent. And although these indicators are noticeably more modest in relation to animal buildings, we can boldly state that a trend toward reducing the total number of fires in the republic's kolkhozes has taken shape.

This work has become more purposeful with publication of the joint directive of the Ministry of Agriculture, the State Committee for Supply of Production Equipment for Agriculture, the Ministry of Internal Affairs and USSR Civil Defense "On Measures to Improve Fire Safety in Agriculture in 1981-1985." We examined this directive at a meeting of the presidium of the Moldavian SSR Kokhoz Council and approved a detailed plan of measures aimed at raising fire safety at the facilities of kolkhozes and interfarm associations during the five-year plan. We also discussed this issue with colleagues of the republic's Ministry of Internal Affairs and drew up a joint long-range plan of firefighting measures.

In compliance with these measures, the republic's kolkhozes are building fire stations and water basins, they are installing protection against lightning storms, they are outfitting their facilities with automatic firefighting resources, and they are razing old flammable structures. In just 7 months of last year they built 8 fire stations and 48 water basins, they acquired 8 fire trucks and 56 motor-driven pumps, and masses of agitation materials have been distributed. Incidentally we maintain special surveillance over the way the firefighting units of rural facilities are equipped. We feel that such firefighting units are the most promising means of fighting fires in the presence of swift development of scientific-technical progress, all the more so because the demand for electric power is rising from year to year in the kolkhoz and cooperative sector. Such units already exist at many farms of the republic. Now we are working to introduce automatic firefighting equipment into all large agricultural complexes.

The fire resistance of buildings and structures is rising as well. Formation of the "Kolkhozstroy" Production Association has significantly promoted the increase in fireproof construction. It is responsible for all rural construction, and it provides planning documents and construction materials to the kolkhozes and interkolkhoz enterprises.

Before planning measures to raise the fire safety in rural areas, we carefully analyzed all fires that arose at facilities of the republic's kolkhoz council in the last 10 years. We also accounted for the fact that about two-thirds of Moldavia's population lives in rural areas and that more than 70 percent of all fires in the republic have been registered in rural areas. This made it obvious that we needed to fundamentally improve our organizational work and raise the quality of the training afforded to the population and agricultural specialists in the rules of fire safety. It was for this purpose that we developed and published, jointly with the Fire Prevention Administration of the Moldavian SSR Ministry of Internal Affairs, a journal containing instructions for firefighter training of stock breeders, machine operators, electricians and other specialists. These instructions have now been supplied to the commanders of nonmilitarized civil defense firefighting formations at the kolkhozes and associations, and to the chiefs of fire guards (PSOs) and volunteer firefighting companies (DPD). They report on work done to monthly rayon seminar-conferences, which are conducted on certain days every month. At these seminars, unofficial fire inspectors--mainly group leaders, interfarm fire squad chiefs and kolkhoz safety engineers--undergo training. This form of training has made it possible to teach fire safety rules to 385,000 persons in just 7 months of 1981. Nonmilitarized firefighting formations have been created in all kolkhozes and associations of the republic. Most of them are outfitted with traveling firefighting equipment.

Work with public firefighting organizations--technical fire commissions, unofficial fire inspectors, PSO and DPD chiefs and labor protection, safety and fire protection organization engineers. Their professional and firefighting training is a topic of special concern of rayon kolkhoz councils. advanced training courses in safety practices that include fire prevention subjects have been organized at the republic exhibition of the achievements of the national economy for kolkhoz engineers. Systematic training of the

personnel of nonmilitarized firefighting formations of the kolkhozes and associations made it possible for these formations to put out more than half of all fires last year.

Whenever the status of civil defense is inspected, attention is mandatorily turned to the organization, quality and effectiveness of training, mainly of specialists and machine operators, in the methods of fighting fires. Practical lessons in putting out simulated fires are provided, and help is given to facility civil defense chiefs in conducting special tactical exercises.

The Floreshtskiy Rayon Kolkhoz Council organized a seminar for labor safety, industrial safety and kolkhoz fire protection organization engineers jointly with the inspection office of the state fire inspection. During it, a tactical fire exercise was conducted in which both facility nonmilitarized firefighting formations and units of the Ministry of Internal Affairs' professional fire service participated. Two seminar-conferences were also conducted last year by the republic kolkhoz council: one at the Demonstration Farm imeni S. Lazo, Drokiyevskiy Rayon, and one at the "Pobeda" Interfarm Feed Production Association, Kaushanskiy Rayon. The seminar participants acquainted themselves with the work of agricultural equipment adapted to put out fires.

Fulfillment of the planned firefighting measures is kept under unweakening control by the republic's kolkhoz council. Last year this issue was considered twice at meetings of the council's presidium. The topics were the unsatisfactory status of fire safety at facilities of the Teleneshtskiy Rayon soviet, and the status of fire safety at facilities of the Kutuzovskiy Rayon soviet. The chairman of these rayon kolkhoz councils, I. Troyan and A. Terenta, were reprimanded for unsatisfactory organization of facility fire prevention.

Of course we still have many great and important tasks before us. We understand that the effort to raise the readiness of nonmilitarized firefighting formations of the kolkhozes and associations for effective fire control is a continuous process. However, that which has already been done attests to the correctness of the planned path. The task now is to continue to strengthen the fire protection afforded to rural areas, and to minimize losses of kolkhoz and cooperative property due to fire.

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NEED FOR MORE ATTENTION TO MEDICAL STATIONS DISCUSSED

Moscow VOYENNYYE ZNANIYA in Russian No 6, Jun 82 (signed to press 6 May 82) p 15

[Article by Maj Gen Med Serv V. Zav'yalov: "More Attention to Medical Stations"]

[Text] This article concludes the discussion of the letter "Not to be Left Unattended" by medical station chief A. Danilova published in this journal, No 8, 1981.

First of all I would like to give credit to the initiative shown by the editor's office of this journal, which has offered room for discussion of this important issue. It is a fact that medical stations have not been spoiled by too much attention. This is confirmed by both the responses to A. Danilova's letter and the results of inspections and exercises.

Territorial civil defense staffs, facility chiefs and civil defense staffs and public health organs often understate the role of medical stations, they do not provide adequate attention to their training and to organizing competitions, and they are not asked to participate in exercises. The best experience in training medical stations is not generalized and disseminated adequately.

But this is not the situation everywhere. There are many examples attesting to the fact that when adequate attention and concern are shown and when all available possibilities are realized, significant successes can be achieved.

One such example is the Estonian SSR, where the medical station training plans are completed every year. The mass media are used broadly everywhere in the republic to publicize and introduce the best experience. One can only be sorry that there are not more examples of this sort.

Discussing A. Danilova's letter, readers touched upon a number of issues requiring some explanation. I will talk first about the role and place of the medical station.

According to the existing statute, most medical stations are formations of the civil defense medical service. They are created in shops and at farms, in institutions and schools, and in transportation, irrespective of whether or not such facilities possess medical teams, and they are intended to render first aid directly to the labor collectives assigned to them, including in

the case of disasters. The one exception is the medical stations of schools of general education, vocational-technical schools and secondary special training institutions. These stations participate only in sanitary improvement measures, and they are not civil defense formations.

Being formations of the medical service, medical stations may be used to organize medical care for the public, laborers and white collar workers in the time of evacuation and dispersal. It is with this purpose that the civil defense medical service of the cities and rayons plans this work beforehand jointly with committees representing the Red Cross and Red Crescent societies under the guidance of civil defense staffs.

In the suburban zone, medical stations perform important tasks, as do the medical teams. They are called upon to render first aid to patients and the injured, to escort patients to therapeutic institutions, to reveal persons suspected of carrying an infectious illness, inform medical workers of such problems and, if the latter are unavailable, take steps to impose temporary quarantine. The responsibilities of medical stations include caring for patients in isolation wards and participating in public health and epidemic control measures. And this is only part of the tasks that may be imposed upon medical stations in the suburban zone. Depending on this, the corresponding medical service is supplied with the equipment it needs.

Medical stations also participate in medical care to evacuees seeking shelter. For example they are obligated to check the status of medical supplies and take steps to replenish them, to ensure compliance with sanitary norms in shelters, to conduct current disinfection of buildings and to render first aid to shelter occupants.

It must be considered that when necessary, medical stations may be brought in for work at therapeutic institutions. Consequently they must have some idea of what sort of procedures are conducted there.

Even this far from complete list says something about the important role played by medical stations and about the need for preparing them well. It is no accident that this idea is stated in all responses to the editor's office. The readers understand the place occupied by medical stations in peacetime, and the serious responsibilities that will be imposed upon them in the event of arisal of centers of destruction.

There are all the grounds for believing that medical stations would be capable of handling the most complex tasks, if appropriately trained. Even today they are helping public health organizations to conduct improvement measures, and they are providing first aid to injury and accident victims and to persons contracting fast-progressing illnesses right at the places of accident or injury, and thus they bring medical care closer to those needing it. A comparatively new form of work of the Red Cross and Red Crescent societies is creation of road medical stations on the most important motor highways of the country.

The public-supported work being done by medical stations not only provides a tangible economic impact, as is rightfully noted by the readers. The moral aspect of this work is no less significant, demonstrating unselfishness and comradeship to be inseparable traits of the citizen of socialist society.

A number of the readers' responses raised the issue of difficulties in organizing training for medical stations, and they contained complaints that the necessary conditions and possibilities were absent. Before answering these letters, let me recall that medical stations are trained in accordance with the same program followed by medical teams, and in exactly the same conditions. The general training is provided during time off work, but special and tactical-special training is provided during work time. As is true with other civil defense formations, integrated exercises are the highest form of training afforded to them. Moreover the chiefs of medical stations are encouraged to participate in teacher training rallies organized by committees of the Red Cross and Red Crescent societies jointly with public health and civil defense organs.

One question often asked is who is responsible for training the medical stations, and what is done when there are no civil defense workers and medical personnel that can contribute their full time and when there is no training material base. Such questions are encountered in the editor's mail as well. What sort of answer can be given?

Every enterprise and every institution, kolkhoz and sovkhoz has its own primary organizations of the Red Cross and Red Crescent societies, and each one has its own civil defense chief. It is upon them that the responsibility for training medical stations lies. If a facility does not possess its own medical worker, a request must be submitted promptly to the chief of medical service of the rayon (city) civil defense service.

A number of readers have proposed reducing the amount of time devoted to some general subjects of the program and devoting more time to studying the specific features of the particular production process, the possible injuries and the rules of providing first aid for such injuries, and to organizing preventive measures.

Corrections and supplements aimed at improving the training of medical stations can and must be introduced as necessary, depending on the training level of the personnel, the specific features of production and the local conditions. However, the minimum knowledge foreseen by the program must be firmly assimilated by the students, and the allocated number of hours must be utilized in their entirety. All changes in the program must be coordinated with committees of the Red Cross and Red Crescent societies, and approved by the facility civil defense chief.

I would like to emphasize in conclusion that the executives of enterprises, institutions and organizations at which medical stations are created bear the responsibility for their staffing, training and equipment. Civil defense staffs and primary organizations of the Red Cross and Red Crescent societies are the immediate organizers of this work at the facilities. Higher civil defense staffs and the Red Cross and Red Crescent society committees are called upon to maintain constant control over assignments to create such stations and over the quality of their training. Public health organs train the medical stations together with the committees of the Red Cross and Red Crescent societies, and together with the civil defense staffs they plan their use. This is why the efforts of all of these organizations must be coordinated, why they must maintain a proper understanding of the role and significance of medical stations in peace and in war, and why they must show daily concern for them.

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CIVIL DEFENSE

MAJ GEN TECHNICAL TROOPS M. MAKSIMOV WRITES ON CHEMICAL DEFENSE TRAINING

Moscow VOYENNYYE ZNANIYA in Russian No 6, Jun 82 (signed to press 6 May 82) pp 18-19

[Article by Maj Gen Tech Trps M. Maksimov: "Gas Mask Training"]

[Text] The gas mask dependably protects the individual's breathing organs, face and eyes from the action of toxic agents used in any form (in the form of vapor, mist, gas, smoke and liquid droplets), radioactive substances scattered in the air, pathogenic microbes and toxins, but using them does cause certain discomforts: Breathing is encumbered, the field of vision is limited, hearing is poorer, and the face part of the gas mask presses against the head. This discomfort is especially noticeable when doing any sort of physical work. After all, the quantity of air consumed depends on the kind of work being done. Thus while in a state of rest a person inhales 8-10 liters of air per minute, he inhales 25-30 liters per minute while walking at a speed of 4 km/hr, and when he runs at a speed of 12 km/hr his consumption is 60-65 liters per minute. Consequently the higher the physical load, the greater the amount of oxygen consumed by the individual. The rate of flow of air through the gas mask increases correspondingly, which makes breathing harder. On the whole, the performance of an untrained individual using a filtering gas mask is 15-25 percent poorer.

The harmful influence of these factors and the difficulty of working in a gas mask can be weakened to a significant extent by correct selection of the size of the face part and its fit, and mainly by regular training exercises requiring prolonged use of a gas mask.

Having acquired the habits of using a gas mask, a person can work while wearing one just as quickly and confidently as without it. It is very important in the training to impose a certain physical load corresponding to the work to be done in real conditions. But the load must be increased gradually, in the presence of meticulous medical supervision.

First of all the rules of breathing must be analyzed. A person wearing a gas mask must breathe evenly and deeply. Such breathing helps the heart work. Moreover it makes fuller utilization of the gas mask's protective properties possible, since the more evenly contaminated air passes through the filters, the better it is decontamined.

It is also important in the training exercises to learn to hold the breath for 40-60 seconds. This would become necessary if a gas mask has to be donned in a contaminated atmosphere or if a damaged gas mask has to be replaced by

an operable one. The individual should also learn to exhale deeply automatically after putting on a gas mask, so as to remove harmful impurities from inside the gas mask.

The individual must know how to put on a gas mask in any conditions and in any position--while standing, while moving, while sitting, while lying down, and in darkness. Experience shows that a trained individual can easily satisfy the time standards.

Depending on the conditions and tasks, the following forms of training exercises can be conducted: exercises in using the gas mask, training in prolonged use of a gas mask while doing one's job, work in exercises, firing a weapon while wearing a gas mask, hikes and ski trips, and rides aboard motor vehicles.

The habits of breathing correctly are developed beginning with the first lesson with the gas mask. Following acquaintance of the students with the layout of the gas mask, the rules of breathing and the procedures of donning and removing a gas mask, they should be allowed to wear them for about 10 minutes in a relaxed state. They should try to achieve a normal breathing rate--5 seconds for inhalation and 7 seconds for exhalation. It is impossible to get used to such a pace right away. Therefore in the first lesson the students should be taught to inhale for 2-3 seconds and exhale for 4-5 seconds. The lesson should end with movement (90 steps per minute) in gas masks for 5-10 minutes at a breathing rate of three steps for an inhalation and five steps for an exhalation. In the second training session the time of movement in the gas mask may be increased to 10-15 minutes at a rate of 110 steps per minute, and in the third training session the time could be increased to 15-20 minutes. Beginning with the third training session it would be suitable to go on to a more complex breathing rate: inhalation for five steps and exhalation for seven steps. Subsequently the size and duration of the load should be gradually increased, lengthening the time of the march, accelerating the rate to 130 steps per minute and adding short runs (of up to 100 meters).

The first three training sessions would best be conducted in the first month of training, and then it would be sufficient to organize one or two training sessions per month, gradually increasing not only the duration of the exercises (not more than 45-60 minutes) but also the physical load imposed upon the body. This is needed for the purposes of training the breathing musculature and heart muscles, so that they could be prepared to do hard work in a gas mask.

The training sessions must be conducted in such a way that working in gas masks could be performed simultaneously by the entire collective of laborers and white collar workers. But the training should begin not with general but partial (group) 1-2 hour training sessions with the participation of individual services, shops, offices, sections and departments, with regard to the unique features of their work.

After the necessary result is achieved, we can go on to simultaneous training of entire enterprise and institution collectives. The time of work in this case must not exceed 2-3 hours. Training is conducted according to a plan, with the permission of the administration and under its immediate supervision.

At the eve of the first training session the subdivisions that will be participating must be subjected to medical examination. Exemptions and limitations are determined at this time. Medical observation should be organized during the time of the training sessions themselves, and medical aid should be organized in the necessary cases.

A medical examination is also necessary when organizing long hikes in gas masks. A physician or medical assistant is appointed to each squad for this purpose. It would be suitable for the civil defense staff to have one or two passenger cars and an ambulance at their disposal; it would be desirable to equip one of them with loudspeaker communication. Moreover several messengers riding motorcycles or bicycles should be foreseen. Various acoustic signaling devices can also be used for communication. Prior to the hike, it would be suitable to conduct drill training, so that the participants of the training exercises would learn to keep their places in the columns during travel.

Hikes in gas masks are taken for 3-12 km at a speed of 4-5 km/hr. The usual formation for hikes is platoon columns of four; the rate of travel is 120 paces per minute; when traveling uphill and over rough ground it is 100-110, when rising up 20-30° slopes it is 60-70 and when descending it is 130 paces per minute. It would be best to perform such hikes in the morning or in the evening, but not in hot weather and in cold below -15°C.

Prior to a hike, attention should be devoted not only to preparing the gas mask and defogging the eyepieces but also to fitting the footwear properly. Steps should be taken in winter to prevent frostbite: The face and hands should be covered with petroleum jelly. It would be desirable to organize a snack at the end point.

After forming up, the participants of the hike are given the command "Prepare gas masks"; 2-3 minutes later they are given the command "Gas!", and then "Forward, march." Fifteen minutes after the start of the hike they are given the command "Remove gas masks," and a 10-minute halt is provided. During their rest the commanders determine how well the participants of the march are feeling. Those who feel weak or ill are excused from the hike. Shortcomings in the fit of footwear, in defogging the eyepieces and so on are eliminated simultaneously.

Then the commands to form up the columns, put on gas masks and continue the march are issued. An hour later another 10-minute break is provided; however, gas masks are not removed. Removing the gas masks immediately after the hike is not recommended. They should be removed after first doing arm exercises that relax breathing.

Ski trips in gas masks are conducted for distances of 5-15 km at a speed of 6-7 km/hr. The participants are broken down into groups in such a way that each would consist of persons having about the same sports training, especially in cross-country skiing.

The usual formation for a ski trip is detachment columns of one with a 1-5 meter spacing between skiers and 5-10 meters between detachments. The

lead skiers in the detachments should be replaced every 500 meters. Breaks are organized in the same way as with hikes.

On the day before the trip all of the participants must be brought together, and their readiness for the ski trip must be checked: the fit of their gas masks, skis and footwear, their gear and so on. It would be best to begin early in the morning, at a temperature not less than 15 degrees of frost.

Participants of hikes and ski trips in gas masks may be from 18 to 50 years old. and they must be of suitable health to work at the enterprise or institution. Schoolchildren 16-18 years old are also permitted to participate in group hikes and ski trips up to 10 km long. In this case the rate of travel should not exceed 4 km/hr in hikes and 5-km/hr in ski trips.

Only persons who have undergone the appropriate training and have driver's licenses can participate in motor vehicle trips. Such trips must be preceded by individual training for distances of 5 and 10-15 km at a speed of up to 25 km/hr, and at 25 and 50 km at a speed of up to 30 km/hr with 10-minute rests after each hour of driving, without removing the gas masks.

After this, a group run 100 km long may be performed at a speed of 20-35 km/hr. In this case a 10-minute rest without removing gas masks should be organized after 25 and 75 km, and an hour break in which gas masks are taken off should be provided after 50 km.

It should be considered that persons with diseases of the heart, lungs, throat, skin of the face and head and some disorders of the central nervous system are not permitted to participate in such training. Training sessions should be limited in duration and physical load for such people as well as for elderly people. The limitations are determined in each specific case by a physician. In this case it should be taken into account that the load imposed upon the body by a gas mask is highly significant only in the course of hard physical work, and that it is very minor when doing light and moderate work. Prolonged training must be limited for adolescents up to 16 years old to relaxed wearing of gas masks and to travel that does not require great physical exertion (limited to 1 hour). Such persons are prohibited from running in gas masks. Disabled individuals and collective farms workers may undergo gas mask training at their work stations.

When training on the job, and especially when the temperature is high and complex production operations must be carried out, the pulse and breathing rhythm may be observed to be faster at the beginning than at the end of work in gas masks. This can be explained by the more sizeable reaction of the body to restricted breathing. However, in all such cases bodily activities usually settle down completely toward the end of work in such cases, after the person becomes accustomed to the gas mask. The greater reaction of the body to use of the gas mask at the beginning of a training session has no reflection upon the health, and it is easily surmounted in repeat exercises.

The collectives of many enterprises have long understood that it is not hard to get used to using a gas mask and that one can work just as productively with one as without it. Good experience has been accumulated in this respect, for example, by laborers and white collar workers of the Leningrad Opticomechanical Association, the Shatury Furniture Combine and the Magadan Machinery and Repair Plant. These enterprises conduct purposeful training sessions right during work. The standards have been surpassed by three to four times. The time of moderate work in a gas mask has been increased by some workers to 4-6 hours. And no harmful consequences have been noted. Moreover some incorrigible smokers have started poisoning their bodies with nicotine to a lesser extent. Thus the main thing here is to surmount the psychological barrier, and to explain to the people why such training is necessary and beneficial.

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CIVIL DEFENSE LECTURES BROADCAST ON OMSK TELEVISION

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[Article by M. Shapran: "Showing in Omsk..."]

[Text] It would be difficult to remember who came up with the idea of conducting television competitions among family teams, based on the standards specified in the program of universal, mandatory minimal skills for the population in protection against weapons of mass destruction. But that is not so important. What is important is that the idea came to fruition as a result of old and close ties between two collectives—the oblast staff and the television studio--which were identically concerned with bringing civil defense propaganda among broad segments of the population into conformity with the demands set forth in the decree passed by the CPSU Central Committee "On the Continued Improvement of Ideological, Political and Indoctrinational Work," and instructions coming out of the 26th party congress with respect to strengthening the nation's defense capability.

There are many instructive examples of such contacts in the aktiv, examples which we believe should be widely disseminated. During the years of the 10th Five-Year Plan alone local television showed multiphase civil defense competitions among student teams of higher educational institutions in Omsk, called "Poberka," the medical teams which won the oblast zonal encounters named "If You Should Have to Leave on a March Tomorrow...," and rayon teams of young future soldiers undergoing initial military training at training centers, called "Six By Six." Each of these broadcasts (and there were a total of more than 20) occupied between 40 and 80 minutes of air time.

In short, the Omsk people have accumulated considerable experience in broadcasting television programs on civil defense subjects. Naturally, this experience was extensively used in preparing for and conducting the television competitions called "On Your Mark--The Entire Family"! A special group was formed to work out the rules for these competitions. It consisted of representatives of the television studio and civil defense services, civil defense veterans, the oblast DOSAAF committee and the Red Cross Society. It was headed by Colonel (Reserve) V. Shchurenko, assistant oblast chief of staff for propaganda. They defined the objectives of the competitions and the procedure for conduting them, the composition of the teams

(three individuals--the father, the mother and a sixth-grade student), the tentative time and place for them to meet, the procedure for judging the results and for awarding prizes to the winners. Since the competitions involved one team each from eight rayons (seven from the oblast center and one from the rural Omsk area), it was decided to conduct them in five phases. In the first four phases the rivals would meet in pairs, drawing lots to see who would compete with whom, and in the final phase the winners of the paired encounters would compete for first place.

The program of universal, mandatory minimal skills and the norms for it, as well as the pamphlet "Everyone Must Know This and Be Able to Do It," were taken as the basis for the assignments.

Both the rules and the competitive assignments for the teams were coordinated with specialists at the television studio and approved by civil defense chief A. Blokhin, chairman of the ispolkom of the oblast soviet of people's deputies. They were then discussed in detail at an expanded conference of rayon civil defense chiefs of staff, with participation by production training masters of rayon civil defense courses, medical workers and other specialists directly responsible for preparing the teams for the competitions. Also attending was a group of specialists from the television studio, headed by Z. Berezhnaya, editorial director of propaganda. The conference was directed by Engineer-Colonel N. Kolesnikov, oblast civil defense chief of staff.

Lots were drawn and the first teams to compete were from the Kirovskiy and Tsentral'nyy Rayons in Omsk--the families of I. Vol'f, fitter at the "Omskgidroprivod" plant, and I. Trunilin, a worker at the Siberian Zonal Machine-Testing Station. They had to determine the right size for the facepiece of a respirator, assemble it properly and put it on; prepare and use a hood, a breast flap and panels to reinforce the protective features of ordinary clothing; prepare for use the KZD-4 protective chamber for infants; put on and take off the L-1 light protective suit; negotiate an area of terrain designated as contaminated with radioactive substances; give first aid to a "victim" and carry him from the area; and perform preliminary personal cleansing. The program also included theoretical competition involving two subjects: When was the USSR Civil Defense created, and for what purpose, and the tasks of adults with respect to protecting children against weapons of mass destruction. During the drills and at the advice of specialists from the television studio, certain competition assignments were grouped together into relays and made more difficult by adding sports activities.

Along the family teams, one of the best medical teams in the oblast, that of the Omsk City Dairy Combine, was readied to appear on television. It was to demonstrate for the television viewers several techniques for rendering first aid to victims in centers of various types of destruction.

The day of the competitions finally arrived. Omsk residents learned about them not only from the weekly television schedule, but also from the oblast newspaper OMSKAYA PRAVDA, which carried a special notice that day, with the heading "On Your Mark--The Entire Family." It thoroughly explained the objectives of the competition and what they consisted of, and also told about all the team members.

The teams arrived at the site of the competitions, in the sports complex of the Spartak Society, together with their fans. They included blue- and white-collar workers, housewives and students. The brass band from the Omsk Higher, Combined Arms Command, Twice Red-Banner School imeni M. V. Frunze was also invited to provide musical accompaniment for the competitions.

The words of announcer Anna Reznik came over the air:

"Respected comrade television viewers! Today we begin a new cycle of broadcasts on civil defense--competitions between family teams of rayons in our oblast. These competitions will take place in several phases...."

After the oblast civil defense chief of staff spoke briefly about the objectives and the makeup of the competitions and the procedure for conducting them, the encounter between the teams began. A determined struggle by parents and school children lasted for 1 hour. The umpires, among whom were representatives of the oblast civil defense staff and its various services, the oblast DOSAAF committee and the Red Cross Society, sometimes had a hard time deciding which team should be named the winner. The intervals between competitions were filled with demonstrations by a medical team and by the brass band. During one of the intervals, Sergeant (Reserve) Yuriy Korobchenko, a television announcer, interviewed Major (Retired) Valerian Sergeyevich Saltykov, civil war veteran and a participant in the defense of Moscow.

The team from Kirovskiy Rayon became the first finalists by winning this encounter. Summing up the score, the referees especially noted the exemplary practical actions of the women and students, Nadezhda Petrovana and Igor' Vol'f, Galina Vasil'yevna and Oleg Trunilin.

The competitions among the teams of other rayons were equally intense. Along with the competition assignments on civil defense themes, the participants demonstrated their ability to destroy a target with an air rifle and hand grenades, to work a field radio set and find their way by azimuth, and perform sports exercises specified in the "Ready for Work and Defense of the USSR" group. On the day of the encounter between the teams of Kuybyshevskiy and Oktyabr'skiy Rayons--the families of N. Solodkiy, an engineer at the Electrical Engineering Plant imeni K. Marks, and V. Sugonyak, a designer/engineer with the Production Engine-Building Association imeni P. I. Baranov, which took place in a specially prepared area, the television viewers saw rescue, fire, medical and other nonmilitary formations from Reinforced Concrete Plant No 1 of the "Omsktselinstroy" trust and a traveling blood collection brigade from the oblast blood transfusion station perform in a hypothetical area of nuclear destruction. Young DOSAAF youth from the oblast center--cartographers from the Yunost' and Krasnaya Zvezda technical sports clubs--appeared on television.

The final competitions were set up with special thoroughness. The right to participate in them had been won in the preliminary encounters by three teams--those of Kirovskiy, Pervomayskiy and Omskiy Rayons. The fourth finalist was the team from Oktyabr'skiy Rayon, but, unfortunately, due to the illness of one of the participants, it was not able to compete.

The program for the final competition was an extremely full one. It consisted of four relays, which included, along with sports exercises, putting on and removing various means of individual protection for the respiratory organs and the skin, protecting food and water, laying out simple shelters, working with radiation and chemical reconnaissance and dosimetric monitoring instruments, extinguishing fires, finding victims in centers of destruction, giving them first aid and hauling them out by various means, including loading them onto motor vehicles.

Six weeks prior to the final competition the participants were familiarized in detail with the competition assignments. Their training was taken under supervision by rayon civil defense chiefs of staff A. Gritsenko, N. Dikun and V. Koshmanov. Each team was visited by producer A. Kulinich and other workers from the television studio, specialists of the oblast civil defense staff, deputy chairman of the oblast committee of the Red Cross Society Z. Volos, A. Tokovoy, engineer with the oblast fire fighting directorate, and trainers from the Trud and Spartak sports societies. Reserve officers V. Shchepin, A. Mitrevich, V. Lisin and N. Musiyenko, production training masters in the civil defense courses. All of this helped the finalists to come to the starting line totally armed, so to speak. Acrobats from the volunteer sports society Trud, students from the local physical culture institute and graduates of Children's Sports School No 1 of the Omsk City Public Education Department appeared on television in the intervals between competitions.

The team from Pervomayskiy Rayon, the family of B. Matskov, a worker with SibNIISKhoz [Siberian Scientific Research Institute of Agricultue], was the champion, winning a cup especially instituted for the occasion and a first-degree diploma. Only one point behind it was the family of V. Mokrykh, a land-reclamation engineer from the Nadezhdenskiy Sovkhoz in Omskiy Rayon. Trailing by only two points was the team from Kirovskiy Rayon, the family of I. Vol'f. They were awarded pennants and second- and third-degree diplomas respectively. All participants in the final competition were given mementos of the occasion.

Summing up the televised competitions, the oblast civil defense chief told the television viewers about the tasks set for civil defense for the current year and called upon the entire oblast population to become actively involved in the accomplishment of those tasks.

Long before the final competitions among the family teams, notes for new civil defense programs appeared in the television studio's operating plans for 1982. Much of this has already been accomplished. Among other things, the television viewers have been shown reports from comprehensive exercises for the "Pamyat' Chapayeva" sovkhoz in Omskiy Rayon, the Moskovka Railroad Station, the Omsk Scientific Research and Design Technology Institute of the Tire Industry and the "Omskneftеorgsintez" production association. Preparations are under way for televising competitions among reconnaissance and other nonmilitary civil defense formations.

A series of popular talks on civil defense subjects, with training films, is also planned. The implementation of these plans will constitute a new contribution by the television workers to the cause of military and patriotic indoctrination of Omsk residents and to the training of the population in protection against modern weapons and will contribute to the further improvement of the entire oblast civil defense system.

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TRAINING FOR MEDICAL ASSISTANTS AT RYAZAN' MEDICAL INSTITUTE

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[Article by Docent A. Burtsev and Candidate of Medical Sciences N. Shteling: "Reliable Assistants"]

[Text] Physicians, medical assistants and nurses, that is, members of the medical service, are enlisted for teaching the population first aid techniques to be used in areas of destruction. Upper-level students of higher medical educational institutions are successfully handling these duties in many places. This is true of the Ryazan' Medical Institute imeni Academic I. P. Pavlov.

The subjects of classes for the population were worked out in advance at the institute, using the 20-hour program as the guideline. It was then coordinated with the rayon civil defense staff and medical service specialists, as well as the civil defense leaders at facilities where it was planned to conduct the classes.

Practical exercises were the main form of training. They were conducted primarily with the working population at institutions and enterprises, and less frequently, with pensioners and housewives at housing management offices. They were conducted by fourth- and sixth-year students entering the schools of medicine, sanitation and hygiene, and pharmacy.

They prepared at the institute in advance for visits to the different installations. All of the preliminary work was carried out under the supervision of instructors, who checked the individual plans of the students and conducted classes on instructional methods for the more difficult subjects such as first aid in the case of compound injuries and a number of others. The texts of the lectures and synopses of the practical classes were also discussed in the student groups and were only then recommended for use.

Understanding the importance of graphic effects, the students gave a great deal of attention to the preparation of illustrated material. Tables and diagrams or drawings, as well as real items such as personal first aid kits, stretchers, tourniquets and so forth, were displayed in the classes and at the lectures.

Each presentation of new material was concluded with a practical drill in the procedures covered. For the drills the trainees were divided up into pairs and were in turn "victims" and then the ones rendering assistance. These drills in pairs proved especially effective for studying the techniques of artificial respiration, the application of bandages and tourniquets, the administration of antidotes with syringes, and the task of putting individual protective equipment on a victim.

In order to make the training situation as nearly as possible like a real one and to complicate the task assigned the trainees, a limited amount of time was allotted for the performance of certain procedures (putting a gas mask on a victim, administering an antidote, stopping external bleeding by means of a pressure bandage or a tourniquet, and so forth).

After serveral effective classes and drills there was a marked increase in the number of individuals capable not only of correctly performing a procedure, but also of teaching it to others. The popularity of the classes conducted by the students was convincingly demonstrated by letters regularly received by the institute chancellor over a period of 3 years.

The most positive statements received were about the work of fourth-year medical school students V. Voznesenskaya, Ye. Chepuryaeva, N. Tarasov, V. Fomin, T. Sukhorukova and V. Feofanov, and sixth-year student in the school of sanitation and hygiene I. Umerova.

The chancellor's office and the administration understand the importance of this work for the development of the future specialists, for developing in them an active attitude toward life and for improving the methods skill needed by every doctor called upon to disseminate civil defense information. In organizing this work the VUZ instructors pursue the objective not just of making a certain contribution to the job of preparing the population for civil defense, but also of developing an interest in these subjects on the part of the students. The institute administration is doing everything possible to encourage the conduct of classes for the population. Students excelling to the greatest degree--fourth-year students in the medical school M. Volkova, T. Chalikova, I. Safonova, R. Kuznetsova and others--were commended in institute-wide orders.

More than 6 years have passed since the first class was conducted by students at the Ryazan' Medical Institute. Around 350 lectures and practical classes have been conducted during this time. The VUZ has established solid practical relations with the Ryazan' Construction and Installation Administration, Tsentroneftekhimstroy, the telephone and telegraph station and other installations of the national economy. Civil defense chiefs of staff N. Agapkin, P. Kulichkin and N. Sladkikh help with the organization of the classes. And I need to mention A. Khokhlov, chairman of the local committee of art-and-production workshops in Ryazan', who also contributed considerably to the success of the joint effort. Experience has shown that it cannot be adequately effective without active assistance from the installations.

With respect to lessons of a purely pedagogical nature, the past 6 years have also not been uneventful from this standpoint. Among other things, they showed us that it is sometimes beneficial to go beyond the material indicated in the program, in order to depict it more graphically. For example, the program did not call for information from the field of human anatomy and physiology, but this information proved to be absolutely essential in certain cases. It would have been more difficult to grasp the training material without this information.

The classes conducted by the students at the installations themselves are of specific practical assistance to public health agencies. They help to enhance the medical sophistication of the population and to improve civil defense training.

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LECTURE ON DUTIES OF FIRST AID PERSONNEL

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[Article by P. Kurtsev, chief of the Administration of Defense Hygiene and Health Hygiene Work of the Ispolkom of the Union of Red Cross and Red Crescent Societies of the USSR: "And Objectivity, Without Fail"]

[Text] The effectiveness of competitions among medical aid teams and stations depends upon a number of factors, including the quality of the judging. The work of the judging committee and of each individual judge involves great responsibility. Their performance greatly determines the value of the training and indoctrinational process of the competitions as a whole and of each individual phase and event. Experience has shown us that far from all medical workers are capable of being competent judges.

Despite its seeming simplicity, judging demands special training and an excellent knowledge of the official documents, training literature and literature on training methods. Only when these requirements are met can we be certain that the judging will be performed at a high methodological level and that when disagreements are reviewed, should they occur, the decisions of the judging committees will be objective and competent.

An important feature of the Statute On Competitions Among Medical Aid Teams and Stations, approved in 1980, was the reference information for judges contained therein. This includes a list of possible errors for which penalty points are subtracted and a general symptomatology of injuries, which indicates not only the symptoms, the diagnosis and the degree of injury, but also the extent of the first aid required and the sequence in which it should be performed, and the order in which victims should be evacuated. It is with good reason that this document is something the judges always keep at hand.

The training is not limited to the study of documents and reference material and literature on training methods. Life moves on, and the civil defense system and its medical service is constantly being improved. This requires that the judges update their knowledge and remain constantly informed.

They undergo advanced training each year. Seminars and briefings are systematically arranged for them, and they are familiarized with current views on the performance of protective measures and the rendering of first aid. The requirements made of the formations are clarified in the seminars.

It is just this sort of systematic, goal-oriented training which makes it possible to adjust to everything new in the civil defense system and its medical service, to perform in accordance with current principles. Until relatively recently, as an example, medical aid teams in a "center of nuclear contamination," in an area contaminated with radioactive substances, had to work in gas masks and to begin rendering first aid by putting a gas mask on the "victim." Now, they are only required to have respirators or multilayer gauze (or cotton-and-gauze) masks for working under these conditions.

Competition is more than simply summing up and verifying the results achieved, of course, and more than simply an effective form of training. It is also an important mobilizing factor. Well organized competitions, with accurate and competent judging gives the participants enormous psychological satisfaction and provide unequaled motivation to further improve the training. The indoctrinational effect of competitions can be reduced to naught by poor judging, however.

Unfortunately, the editors have received frequent complaints about deficiencies in the performance of competition judging committees, especially in the oblast, kray, zonal and even republic competitions. Such complaints have been received, among other places, from the Moldavian, Georgian and Tajik SSRs, Namaganskaya Oblast in the Uzbek SSR, Sumskaya Oblast in the Ukrainian SSR, Krasnodarskiy and Stavropol'skiy Krays, Lipetskaya and Novosibirskaya Oblasts of the RSFSR.

Inspections have shown that the most frequent causes of complaints have been the poor selection of judges or deficiencies in their training. Cases have been mentioned, in which the judging committees have included unqualified medical workers. The judges have not always been required to attend one-day seminars or classes on instructional methods prior to the competitions. Briefings have frequently been conducted as a formality, and stress has not been placed upon the need for a standardized approach for determining whether the first aid techniques have been properly performed.

In competitions among medical aid teams in the Tajik SSR, for example, it was learned that the medical aid teams are considerably better trained theoretically than certain judges. It is not surprising that a judging committee could not resolve disagreements competently and objectively. I would like to stress once more the fact that every instance of incompetent judging has a negative effect upon the competition participants and upon their attitude toward future training and the fulfillment of their civil defense duties.

For the sake of fairness, we should point out incompetence on the part of the judges is not always the cause of disagreements. It sometimes happens the other way around. The Ispolkom of the Union of the Red Cross and Red Crescent Societies of the USSR received a letter from the city of Dzerzhinsk, Gorkovskaya Oblast, in

which the medical aid teams complained about the judges, who allegedly subtracted 20 points from their score as penalties. The young women contested the fairness of the judges' decision and made reference to their textbook. It turned out they had used obsolete training aids to prepare for the competitions, and the judges were not at all to blame.

The joint training of judges, activists of the Red Cross Society and the Red Crescent Society and the medical workers training the medical aid teams, which is conducted in a number of places, helps to avoid such conflicts. Joint seminars develop common views on methods for training medical aid teams and a common approach to the assessment of their performance in the competitions. As an example, the seminar of obkom chairmen of the Red Cross Society and the main oblast competition judges, which was conducted by the Central Committee of the Kazakh SSR Red Cross Society, was extremely beneficial.

The judging must be not only competent, but objective as well. We have to mention this fact for the simple reason that, unfortunately, we are still receiving frequent complaints about biased decisions by the judges. In almost every competition one finds participants who sincerely believe that the judges have made incorrect decisions and are patronizing one of the medical aid teams. Far from all of these suspicions are well founded, but they harm morale and prevent normal performance.

In order to overcome these attitudes, we must systematically adhere to the principle of publicity and make maximum use of the radio for broadcasting information. This will also help to heighten the demands made of the judges and their sense of responsibility, and will contribute to objective judging.

Before competitions begin, the main judge ordinarily introduces the judging committee and points out its qualifications and objectivity. He also warns that every medical aid team performs at the time determined by the drawing of numbers, and the judges are forbidden to ask the participants what department they represent. This is all designed to convince members of the medical aid teams that they all have an equal opportunity in the contest for first place.

The judges' evaluation of the performance of the competition participants must be accurate, based on principle and objective and must be expressed in genial terms. Petty fault-finding will be eliminated, if every judge evaluates the performance of the participants according to the end result, as they say, and not on the basis of purely formal factors. Any rule is not dogma, after all, but a guide to action, to intelligent action.

Take the following graphic example. Disagreements frequently arise in the competitions about the movement of victims: Should they be hauled out on stretchers feet- or head-first? How important is this, however, when a victim is to be hauled only a short distance and when all of the other requirements have been met? Equally groundless is the controversy about whether to fit the straps over the body when hauling a victim only a few meters, if the straps have already been used and the judges could see that the members of the medical aid teams know how to use them. In this sense, judging is not just a responsible job, but a creative one as well.

It is important that we observe the requirement that the commander and the political worker of the team and the senior judge sign the judging sheets after each stage of the competitions is completed. It is also essential to inform the medical aid team as to the errors for which it received penalty points. I would like to direct special attention to this, since there have been cases of discrepancies between the verbal evaluation given a judge and the penalty points recorded in writing.

It should be borne in mind that the commander of a medical aid team or platoon has the right to correct an error made by the members of the medical aid team. If this is done promptly and the error has not had an adverse affect upon the state of the victim, the team should not receive penalty points.

The appointment of an arbitration judge contributes to objective judging. Without intervening in the judging, he meets with the commander of the medical aid team and the judges to resolve disputed matters. He then reports to the main judge, who makes the final decision. Unfortunately, far from all of the commanders and political instructors of medical aid teams know and observe the procedur for submitting a protest, when they disagree with the judges' evaluation. They sometimes react improperly to errors on the part of judges. The situation sometimes gets so far out of hand that some individuals feel they have the right, as a sign of protest, to withdraw from the competition instead of calmly and seriously resolving the conflict.

A great deal depends upon the judges in any disagreement, of course, particularly the main judges, upon their tact, experience and ability. The Society's committees, public health agencies and civil defense staffs are expected to devote daily attention to the selection and the training of judges. Those who violate the established rules governing the judging should be held strictly accountable. This will help to remove judging errors and to eliminate the possibility of disagreements.

We should also make more active use of incentives, including moral incentives, for commending the honored work of the medical workers and reserve officers, who have conscientiously and competently performed the duties of judges over a period of many years. Many good things have been deservedly said of A. Alendar' of Poltava (in the republic category), A. Shelikh of Kalarashskiy Rayon, Moldavian SSR (first category), V. Smirnov of Moscow Oblast and many others. The new Statute on judges for competitions among medical aid teams and stations, which was approved this year, stresses the importance of the judging.

In order to make this work more effective we must sum up the results, reveal deficiencies and bring out positive experience, and outline steps to further improve the judging. Precision, competence and objectivity in each of the judges' decisions are the foundation for this.

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CIVIL DEFENSE

FIRE PREVENTION AND FIRE FIGHTING AT AGRICULTURAL ENTERPRISES

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[Article by P. Kotov, chief of the oblast agricultural production administration, Kursk: "For the Rural Area--Fire Protection"]

[Text] In the situation of extensive intensification of agriculture and increased amounts of capital being invested in its continued development, the task of improving the effectiveness of the work performed by agricultural agencies to provide fire protection for the rural area is becoming more and more urgent.

The Kurskaya Oblast Agricultural Production Administration, the Administration of Internal Affairs, the Production Association for Providing Agriculture With Production Equipment and the oblast civil defense staff have issued a special directive, which calls for increasing the responsibility of agricultural leaders for the state of fire protection at their installations. The directive directs attention to the need to increase the battle readiness of the fire guard (PSO) and the volunteer fire fighting companies (DPD), to provide round-the-clock duty by the members of fire fighting formations, to maintain the fire fighting machines and equipment in a state of good repair, to improve line and radio communications between the formations and the rayon fire units and to work out a system for warning of fires and for assemblying the personnel. It is important that the system of measures prevent fires, rather than providing for extinguishing them after they have started, and that it develop fire prevention propaganda among the rural workers.

We were guided by precisely these considerations when we worked out, together with the fire protection department of the administration of internal affairs, a long-range plan of major undertakings for the 11th Five-Year Plan to improve fire protection in the rural area. The oblispolkom then adopted a decision "On Measures to Enhance Fire Safety at Agricultural Installations During the Period 1981-1985."

Unfortunately, there are still a great many fires on oblast livestock farms. The fires destroy cattle and other livestock and feed stores. The leaders of certain kolkhozes and sovkhozes are careless with respect to observing fire safety measures and underestimate the possible effects. Fire-guard workers and members of the volunteer fire companies are not always involved in the work of preventing

fires or the large-scale training of the population for combating fires. Fire stations are not being constructed rapidly enough, and proper facilities are not being created for maintaining the fire equipment.

The oblispolkom's decision took these deficiencies into account and specified measures to correct them.

I need to stress the fact that it gives deadlines for fulfilling the measures and names those responsible for their accomplishment. Work is under way to improve the water supply, roads and communications for fire fighting agencies, to make buildings and installations more resistant to fire and to install automatic fire warning and fire extinguishing systems. Fire stations are being constructed with radiation shelters. The oblast fire safety department is monitoring the fulfillments of these measures in all the rural rayons.

The availability and the state of repair of mechanized fire extinguishing equipment and tools are checked each year on kolkhozes and sovkhozes in our oblast. A strict records system has been instituted. A check is made on the degree to which the kolkhoz fire guard and rural volunteer fire companies, out of which the nonmilitary fire formations of installations are created, are provided with fire extinguishing means, special clothing and personal fire protection equipment.

It should be noted that requests made by the agricultural administration for fire fighting equipment, special clothing, fire hoses, connecting pieces and other fire equipment are only partially met. Equipment is sometimes not delivered for funds already allocated. The Vargashi Fire Equipment Plant failed to deliver a fire truck, for example. That plant also failed to provide us with a single unit of equipment under schedules for the first and second quarters of last year. Not enough motorized pumps, hoses or connecting pieces are being allocated for agriculture.

In view of this we are taking steps to adapt agricultural equipment for extinguishing fires. We conducted a special conference on the use of motor transport equipment for extinguishing fires, with the chief engineers of the rayon agricultural administrations, Sel'khoztekhnika, kolkhozes and sovkhozes, and the leaders of the fire guard and volunteer fire companies. We reproduced drawings of the attachments and sent them to those responsible for making the attachments. We held joint meetings of the boards of the agricultural production administration, the administration of internal affairs and the oblast civil defense staff, at which we discuss the state of fire safety in agriculture. At one of them we summed up the state of livestock facilities with respect to fire prevention and the preparedness of fire fighting formations during the grain maturation and harvesting season.

Our administration gives a great deal of attention to the training and preparation of heads of the kolkhoz and sovkhoz fire guard and volunteer fire companies. Each year, together with the fire guard department of the administration of internal affairs, we schedule three-day meetings for the heads of the fire guard and volunteer fire companies at rayon inspectorates of Gosposharnadzor [State Fire Inspection]. We set up on-the-job training for drivers of kolkhoz fire trucks in the

rayon fire units. We have worked out the principles for conducting rayon and oblast competitions among the kolkhoz and sovkhoz fire guard and volunteer fire companies in applied fire sports for best civil defense fire formation of a rural installation.

We have instituted a certification system for agricultural installations in the oblast, for purposes of promptly revealing and eliminating violations of fire safety rules. At our request the fire guard department and the agricultural institute developed a fire equipment certificate. This sort of certification is making it possible to effectively monitor the state of affairs at rural installations with respect to fire prevention and fire fighting preparation.

I would like to mention the fact that the work of ensuring fire safety and the battle readiness of fire formations is well organized in Oboyanskiy Rayon. V. Vasishchev, chief of the rayon agricultural administration, devotes a great deal of attention to fire protection, constantly demands that farm leaders observe fire safety standards and rules, and helps the kolkhoz and sovkhoz engineer services to work out plans for major undertakings. We see to it that heating units are safe, and the position of full-time fire guard chief has been officially instituted for each kolkhoz.

The fire service on the Oboyanskiy Fruit Sovkhoz (A. Ryzhenkov, chief engineer) is excellent. During the last five-year period a standard fire station was built on the sovkhoz, a fire truck was acquired and the wiring for electric light was replaced. Combustible structures of storehouses and livestock buildings were soaked with a fireproofing compound. Plans for the 11th Five-Year Plan call for the construction of two reservoirs for fighting fires, the improvement of telephone and radio lines of communication between the rayon fire unit and the police department, and the erection of water towers for filling the fire trucks. Round-the-clock duty by the members of volunteer fire companies has been instituted at the fire station. The sovkhoz fire formation is well trained and regularly participates in competitions in the applied fire sports.

N. Kuznetsov, chief of the agricultural production administration of L'govskiy Rayon, also concerns himself with fire protection in the rural area. Grain fields on the rayon kolkhozes and sovkhozes are broken down into sections which can be harvested by one combine in a single day. The borders are always plowed, and a strip plowed around stacks of straw and hay. The harvesting equipment is outfitted with fire extinguishers, and their electrical and fuel systems are always checked for safety. The units which prepare vitamin-enriched meal are provided with fire tools. All of the machine operators and workers on the threshing floors and in the grain storage facilities are instructed in matters of observing fire safety rules and what to do in case of a fire. All of this is done jointly with Gospozharnadzor and the rayon civil defense staff.

The Kolkhoz imeni Kuybyshev in Sudzhanskiy Rayon also has an interesting practice. The leaders of the fire service give reports at meetings of the trade union committe (A. Prilutskiy, chairman) on the battle readiness of the fire guard, the readiness of the equipment and the organization of watch duty by members of the

fire guard. Fulfillment of the plan for major fire prevention measures is also discussed there. Thanks to Comrade Prilutskiy's efforts the kolkhoz has replaced the flammable roofs on the farms, added protection against lightning and built a fire pier on the Sudzha river.

Not all of the farm leaders are yet giving proper attention to fire safety matters, however. On the Pobeda Kolkhoz in Oktyabr'skiy Rayon (A. Chernikov, chairman), for example, the fire formation is undermanned, the fire truck is used in part for other than its designated purpose, no one is teaching fire safety rules to the kolkhoz workers, round-the-clock duty by members of the fire guard has not been organized, and strips are not plowed around grainfields and haystacks.

The oblast agricultural production administration is setting stringent requirements for such negligent farms, for the rayon agricultural administrations, fire safety engineers and the fire guard. It is gratifying that not a single crop has been lost to fire in the oblast for many years now.

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CIVIL DEFENSE

LECTURE ON EVACUATION AND DISPERSAL

Moscow VOYENNYYE ZNANIYA in Russian No 7, Jul 82 (signed to press 9 Jun 82) p 32

[Article by L. Antipov, senior instructor in Moscow's civil defense courses: "Evacuation and Dispersal," for those who teach, seventh subject]

[Text] The initial military training program allocates 1 hour for the study of evacuation and dispersal. And the subject is not taught the same at city and rural rayon educational institutions.

When starting the presentation of the new material, one should first of all explain what is meant by evacuation and dispersal, and describe their objective. As one of the means of protection, these measures are designed to considerably reduce the density of the urban population and as a result, possible losses of the population in case the enemy should employ weapons of mass destruction.

During the class the students will be introduced to a new concept—the suburban safe-zone. In this case it is an area located outside areas of possible destruction. As a review of what has been covered, the students should be asked what areas of destruction they know about and what they know about evacuation, including knowledge gained from films and the literature. Summarizing their answers, the military instructor stresses the fact that the scope of the evacuation carried out during the Great Patriotic War can in no way be compared with that of evacuation undertakings today, should there be a need for them. This is the reason for the high requirements set for each participant in these measures.

He then explains that evacuation and dispersal are conducted according to the production-area principle. The evacuation of blue- and white-collar workers and members of their families is therefore arranged by the enterprises where these individuals are employed, and the population not engaged in production—by housing and housing-maintenance offices. Children ordinarily accompany their parents, but it is possible that they will be evacuated along with schools and kindergartens.

Evacuation committees are created for performing the actual evacuation measures. They set up evacuation assembly points (SEP), where the population registers in advance, and designate transport boarding points—railroad stations, wharves and and truck boarding sites.

Upon receiving notice of evacuation, the people go to the evacuation assembly point, where they are registered. Those who are to be transported out are assigned to trains, truck columns and so forth, the others--to pedestrian columns.

Transport means evacuate the elderly, invalids, the ill and women with children first. Those to be evacuated on foot depart the city along routes designated in advance. Columns of 500-1000 individuals, which form up at enterprises (organizations or establishments), move at an average speed of 4-5 kilometers per hour.

After he finishes his presentation of the first training topic (procedure and methods of performing evacuation and dispersal), the military instructor then moves on to the next topic--the duties of evacuees and rules of behavior during the evacuation. He begins by familiarizing the students with the plan for evacuating the given educational institution. It should be borne in mind that when an evacuation is announced, classes are halted at general education schools. The students return to their homes and are evacuated with their parents. The school administration arranges for the evacuation of the permanent staff and their family members. Secondary specialized educational institutions, some of the vocational and technical schools and boarding schools are evacuated to a suburban safe-zone, where they will continue their classes.

...Notification is received as to when the evacuation begins, and the evacuation must be conducted as rapidly as possible. Preparations must be immediately made for the trip (on foot or by transport means) to the suburban safe-zone: Essential items must be collected, individual protective equipment, money, documents, food and water must be prepared.

In order to relate the new material to that already covered and to reinforce the knowledge acquired in previous classes, the military instructor asks the students what they will do in case the "Air Alert" catches them at home. He then moves on to the duties of evacuees and the rules of conduct during the evacuation, including what they should do at the evacuation assembly point, en route and in their quarters in the suburban safe-zone.

He underscores the fact that when the evacuation is carried out by transport means, they must strictly follow instructions from the senior individuals in the railway cars and in the trucks. They must not crowd or shove at the doors of railroad cars, ship or boat ladders, or the sides of motor vehicles, and they must not leave the railroad cars (motor vehicles or vessels) or switch from one transport vehicle to another without permission.

Senior members are also designated for groups of 20-30 people in columns evacuated on foot. Their instructions, the same as commands and signals from the march leaders, should be strictly obeyed. The travel speed and intervals must also be observed, and the evacuees must be ready at the "Air Alert" signal to take shelter in the nearest protective structures or take advantage of protective features of the terrain. It is the duty of each to help a comrade, especially those who become weak or fall behind on the way.

A day's march by a pedestrian column ends when it reaches an intermediate evacuation point (PPE), which is designated outside areas of possible destruction. Local authorities house the evacuees, provide food and water, and arrange for them to take shelter in protective structures at the "Air Alert" signal and for their delivery to the sites where they are to be settled.

Upon arriving at the suburban safe-zone citizens must register at evacuee reception points (PEP), from where they are sent to their place of residence. They must obey all instructions from local authorities and take an active part in the preparation and construction of radiation shelters and in measures to provide normal living conditions for the evacuees. Students continue with their studies in schools or other educational institutions. It is forbidden to leave the evacuation site without permission.

The program deals separately with the matter of protecting evacuees at their dispersal sites. The fact should be underscored that the system for protecting the population during evacuation consists of a whole group of measures designed to prevent injury to the people.

In order to reinforce the students' knowledge of the material they should be questioned on the procedure for conducting evacuation and rules of conduct for the evacuees, and on how they are protected during the evacuation and in the dispersal areas.

We have discussed the content of the seventh subject as applicable to educational institutions of cities. At rural educational institutions the first topic can be presented in the same manner, but with slightly less time devoted to it than to the study of urban evacuation agencies. When the second topic is discussed, the fact must be mentioned that the reception and distribution of evacuees and individuals undergoing dispersal in a rural area is assigned to the civil defense chiefs of staff of rayons, kolkhozes, sovkhozes and their staffs. An evacuation reception committee is formed at the ispolkom of the rayon soviet of workers' deputies, which includes responsible workers of rayon organizations and services dealing with the reception and placement and the provisioning of the arriving population. Evacuation reception points (PEP) arrange for meeting the evacuees, registering them and sending them to their final locations.

The homes of local residents are used for housing the evacuees, and they are advised of this in advance. Various public buildings, including tourist and sports facilities, schools, clubs, recreation centers, sanatoria and boarding houses are used for housing establishments and educational institutions.

Upon receiving instructions to conduct evacuation measures, the civil defense staffs of rural rayons and installations, together with the evacuation committees, assure that local residents are notified of the beginning of the evacuation and remind them of their duty to take in the urban population.

Before explaining these duties, the military instructor returns to the material already covered and asks the trainees what they will do at the threat of an enemy attack. It is also a good thing to ask them what simple shelters they are familiar with and about the procedure for constructing a covered slit trench.

The following historical parallel can be made. During the Great Patriotic War, Leningraders dug 201,651 running meters of trenches in a 3-day period. Around 40,000 people took part in this work each day. An enormous amount of work to erect simple shelters was also performed in Moscow and other communities threatened by the enemy air force.

The Great Patriotic War experience also has other examples which can be used. Among other things, they demonstrate the selfless joy and concern with which the population evacuated from the cities was greeted by the rural residents and tell how friendship among the peoples of our multinational state grew and gained strength as the people underwent the trials and tribulations of the war. The students can be asked in advance to collect and record the accounts of people who recall those events, in order to read them in the classroom.

It should be noted that the seventh subject contains great possibilities for indoctrinational work, possibilities which should be used to the maximum degree possible when explaining such matters as the preparation of the population for receiving and housing the evacuees, meeting them and distributing them among the homes, and so forth. For purposes of reinforcing what has been learned, the students can be asked how the reception and distribution of the evacuees will be organized, what evacuation agencies will handle these matters, and what the duties of rural school children during the conduct of an evacuation.

It is recommended that the civil defense table (No 10, 9th grade) and the filmstrip "Evacuation and Dispersal by the Combined Method" be used as illustrative material.

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SIMULATOR FOR CHEMICAL DETECTION DESCRIBED

Moscow VOYENNYYE ZNANIYA in Russian No 7, Jul 82 (signed to press 9 Jun 82) inside rear cover

[Article by Yu. Yanovskiy, civil defense instructor: "For Simulating Toxic Substances—Make It Yourself"]

[Text] In the civil defense courses of the Khar'kovskaya Oblast Trade Administration, a simulator has been created, which makes it possible to graphically depict the process of detecting toxic substances with the VPKhR [military chemical reconnaissance instrument].

The simulator's operating principle is based on the use of colored pieces of glass, which simulate changes in the coloring of indicator tubes. The colored pieces of glass are lighted up by electric bulbs.

The main part of the simulator is a wooden frame 65 X 75 X 6 centimeters. The face is made of glass (organic glass can be used), onto which an opaque film has been pasted. Four 5 X 55 centimeter cuts are made in the film in advance to fit the dimensions of the indicator tubes. If no adhesive film is available, the glass can be painted black, leaving clear spaces for the indicator tubes.

Four indicator tubes are depicted on the face of the simulator: two (a control and a working tube) for the organophosphoric toxic substances (FOV) sarin, (soman) and V-gases, one for mustard gas and one for non-persistent toxic substances (hydrocyanic acid, cyanogen chloride, phosgene and diphosgene) ampules and filler are visible inside the tubes.

Ordinary medical ampules are used. Five are needed. The ampules are suspended on a wire or a capron thread. The filler is simulated with white parchment paper (yellow in the tube for mustard gas), which is glued onto the inside of the tube.

The colored pieces of glass are placed directly behind the filler. Blue-green and red glass is placed in the tube for simulating the presence of phosgene (or diphosgene) and hydrocyanic acid (cyanogen chloride), dark red glass for mustard gas, yellow and red gas for non-persistent toxic substances. The pieces of glass are arranged at an angle to each other in the tubes for simulating sarin, (soman) and V-gases, so that it is possible to show the color changing from red to yellow.

The bulbs are located behind the colored pieces of glass. When the top bulbs are turned on, the filler in the tubes turns red. When the bottom bulbs are turned on, it turns yellow.

The simulator contains a total of seven "min'on" bulbs and a corresponding number of switches. The panel containing the switches is located on the right side. The sockets for the bulbs are placed on inside wooden partitions, which separate the indicator tubes. The wooden partitions isolate the light flux in each tube. The power comes from an ordinary electric power system.

The simulator is easy to make and operate. It permits the instructor to explain the fairly complex material, graphically and intelligibly.

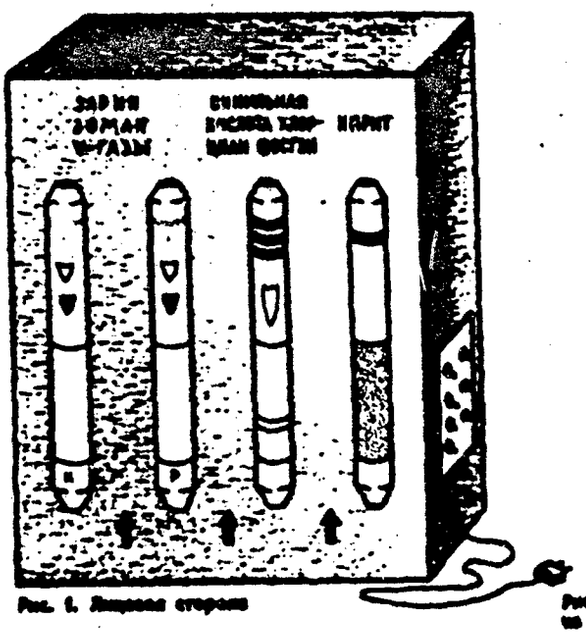


Рис. 1. Лицевая сторона

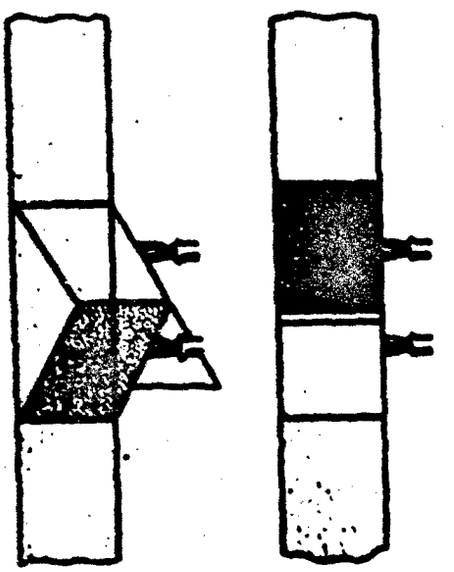
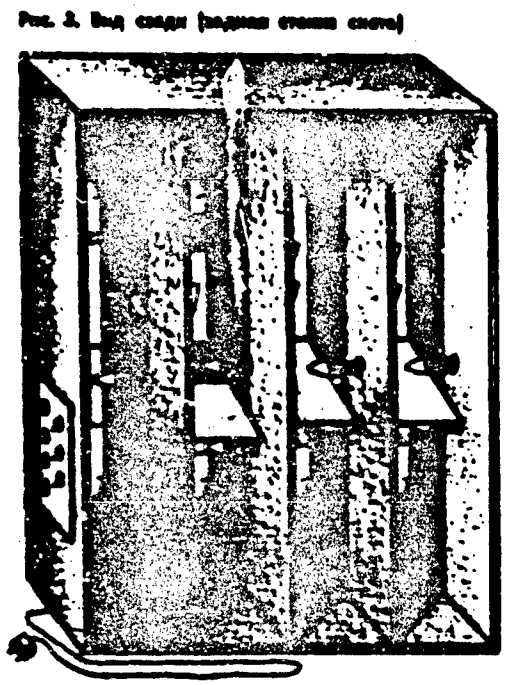


Рис. 2. Расположение светофильтров в трубках

Figure 1 Face

Sarin Hydrocyanic acid Mustard Gas
Zoman Cyanogen chloride
V-gases Phosgene

Figure 2 Arrangement of light filters in tubes for organophosphoric and non-persistent toxic substances



Legend:

Yellow
Green
Blue-Green
Red

Figure 3 Rear view (rear wall removed)

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DOSAAF AND MILITARY COMMISSARIATS

PREDRAFT TRAINING AT KREMENETS AUTOMOTIVE SCHOOL DESCRIBED

Moscow VOYENNYYE ZNANIYA in Russian No 6, Jun 82 (signed to press 6 May 82) p 24

[Article by Maj (Res) V. Mel'nichenko: "Not Only a Specialty"]

[Text] A specialty is not the only thing cadets get at the Kremenets DOSAAF Automotive School; much attention is devoted here to the physical and basic military training of conscripts.

To begin with, here are two examples. It was an ordinary spring day. From time to time the wind raised the collars of the jackets of the cadets as they stood beside the horizontal bar. But there was not a speck of dust for the wind to raise above the pad. White stripes applied for drill training distinctly outlined the black asphalt, and the sun reflected brightly from the glossy mats beneath the athletic gear.

The youngsters surrounded a man of moderate years in a neatly ironed dark blue suit.

"That's not right," he stopped a young boy who was preparing to jump up and grasp the horizontal bar. "You should approach the bar sharply. Like this."

The man took a few steps backward and showed how it had to be done. The relaxed manner of a trained athlete and the bearing of a regular military man could be sensed in his movements. A light leap, and he began demonstrating the exercise--a forward roll. Once, twice, a third time.... "He's pretty good," I thought with envy, noticing the row of battle decorations on the trainer's jacket--an indication that the man had "tasted" war (it also gave an indication of his age, one would have to agree), and then set off for the office of the school chief. It was closed.

"We're taking a break today," explained the duty officer. "Anatoliy Titovich is out. You probably saw him at the pad."

The study group marched in formation to the practical training classroom.

"Cadet Ivashchuk, why do you have your hands in your pockets? Are they cold?" came a voice from not far away.

The young boy reacted quickly to the voice, and I approached the man who made the remark. This was the school's deputy chief for training and production, Shevchuk.

"A soldier begins with military discipline," he said. And he added, "A DOSAAF school provides more than just a specialty."

These facts compelled me to ponder. I have visited military subunits and talked with officers many times. What do commanders wish new soldiers to be like? Disciplined, of course, and competent, physically fit and outstandingly trained in military respects. Where does a youngster acquire these qualities? Mainly in training organizations of the defense society.

However, I have also heard the following opinion from DOSAAF school chiefs: "Our main task is to provide technical knowledge, and the army will make them into soldiers. In our century--a century of scientific-technical revolution, the most important thing for a soldier is a technical specialty." Only people who have no idea about the modern armed forces can reason so.

Take as an example one of the most technical specialties--radar station operator. One would think that there would be no need for special strength or endurance. Simply sit by a screen and observe. However, we find that the reverse is true. The work of a radar operator requires, besides diverse knowledge, considerable endurance and physical fitness. After all, sometimes he must maintain a high level of performance for a long time while serving combat duty, without weakening his attention to the screen for even a second. Then there are the marches over rough terrain in mud, scorching heat and freezing cold! And there are the rapid changes in position, requiring the operator to deploy and pack up the radar station! Often the success of a mission posed to a subunit or unit depends on the work of a single person. An operator might fail to endure the tension, and weaken, and miss a target, while a radio operator might miss a signal. Thus we find that if high combat readiness is to be maintained, the individual must keep in shape constantly, he must participate in sports.

The task of a DOSAAF automotive school is, of course, to train drivers. Modern combat can place a driver in conditions requiring him to serve as a gunner, a combat engineer or a motorized rifleman. The need for physical fitness in representatives of these specialties is obvious. And things are not much easier for a military driver either. Especially on marches--cross-country, at night, in all weather.

"But the training program does not afford enough time for sports," someone may object, "we barely have enough time to train a specialist adequately." This is of course true. Nevertheless DOSAAF training organization directors who are truly devoted to their work do find the possibilities to develop sports among the cadets. Extracurricular time--time after lessons and study breaks--is utilized for this purpose at the Kremenets Automotive School. Incidentally not only the school chief A. Susskiy but also most of the instructors and masters maintain surveillance over the physical fitness of the cadets.

One parallel bar is set up right in front of the training building. Another is set up in the basement. This is in addition to a special athletic field

containing an applied military obstacle course and a grenade throwing range.

The school also managed to acquire a few dozen pairs of skis and build a swimming pool at the driving range, which incidentally did not cost all that much.

Drawing up the plan for theoretical and practical lessons, the school's deputy chief for training and production also plans the lessons called for by the integrated GTO ["Ready for Labor and Defense of the USSR"] program. Not a single cadet graduates from the school without a GTO badge.

Developing other practical habits necessary for war is also given an important place in the training of conscripts by the directors of the Kremenets Automotive School.

"For this to happen, the atmosphere at a DOSAAF school must be just like in a military subunit," said the school's deputy chief for training and indoctrination, V. Silant'yev. "We try to stick to this rule in everything."

Tactical training was going on. Taking training grenades, weapons and entrenching tools, the cadets left for the field. The study subject was "actions of a soldier in combat." Prior to this the youngsters had already studied the fundamentals of military topography and learned how to read a map. The lesson leader introduced the tactical situation to the cadets. Then, on his command, the students selected a place from which to observe the "enemy" and began preparing and camouflaging it. Going from one cadet to another, the lesson leader pointed out the mistakes and gave advice.

The youngsters returned from their field lessons singing like real soldiers.

The duty officer sat beside a table at the entrance to the building of the automotive school. The nearby wall was covered with displays bearing instructions for the daily detail. Cleanliness and order were everywhere. The duty officer issued sharp commands, and they were fulfilled just as sharply. In their interchanges with the future soldiers, the instructors take note of their appearance. Ordering cadets to reply, they require them to speak clearly. They evaluate not only the content of their replies but also their form, teaching the youngsters military precision and brevity.

Most of the instructors and masters of production training involved in motor vehicle driving--V. Moroz, A. Kisel', M. Kozlov, V. Tomashevskiy and others--underwent good training in the army, and in their work they comply strictly with the requirements imposed on military drivers.

Assume for example that a cadet arrives unshaven. It would seem to be a small thing, but in the theory classroom he would receive a reprimand and in practical training time he would not be allowed behind the steering wheel. Moreover this is all done with tact, without the least anger, but in such a way that the cadet would not forget about his appearance the next time.

"What is your name!" P. Nesteruk, a basic military training instructor, asked one of the youngsters in the first lesson with the group of novices.

"Cadet Zarvanskiy."

"And yours?" he asked another sitting not far away, who stood up to reply.

"Cadet Bigus."

"Comrade cadets! Here is an example of how you should come to lessons," the instructor pointed to the first cadet. "Your haircut should be like Cadet Bigus's, short and neat."

I also had the fortune of attending a cadet formation under the command of instructor V. Korol'chuk. One could see that the novices were trying, but things were not going right for all of them. The instructor halted the formation frequently to explain how a certain command was to be fulfilled correctly. By the way, this was not a drill class, but an ordinary march from one classroom to another. Where are youngsters going to practice their drill if the program allocates only a few hours for this purpose? This is why the instructors capitalize on every possibility. They even practice drill at the shooting gallery, while approaching the fire line and the targets.

"We teach the future soldiers army order from their very first days in school," the chief of the automotive school told me, "and this is probably why we receive letters like this." He handed me a sheet of paper bearing the photograph of a soldier.

"Sergeant A. Korchakovskiy, a graduate of the Kremenets DOSAAF Automotive School, has proven himself to be an outstanding specialist. Fulfilling the responsibilities of a junior officer, he is handling them successfully. He is a fabulous sportsman and a well trained soldier. In his time of service he has received eight letters of gratefulness."

I left the Kremenets DOSAAF Automotive School with the feeling that I had just visited a good military unit.

11004
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DOSAAF AND MILITARY COMMISSARIATS

PRE-DRAFT TRAINING: LECTURE ON SUBMARINES

Moscow VOYENNYYE ZNANIYA in Russian No 6, Jun 82 (signed to press 6 May 82) p 29

[Article by Capt 1st Rank S. Mikhaylov: "The Submarine"]

[Text] The submarine is a warship capable of conducting combat activities submerged and on the water surface, floating on the water surface, diving swiftly and traveling submerged for a long period of time without surfacing. It is intended for the annihilation of surface shipping, submarines and transporters, and for striking ground targets on enemy territory located enormous distances away counted in the thousands of kilometers. Moreover submarines can also be used for various special missions requiring covertness of action, for example minelaying, reconnaissance, the landing of sabotage and reconnaissance groups and so on.

Submarines of the USSR Navy are divided into missile and torpedo submarines depending on their armament, and they are also subdivided into atomic and diesel (diesel-storage battery) on the basis of the kind of propulsion unit. Additionally, submarines are classified in terms of their size and displacement into large, medium and small.

Construction of atomic submarines began in our country in the 1950s. Atomic submarines such as the "60 Let Velikogo Oktyabrya," "50 Let SSSR," "Leninskiy Komsomol" and "Leninets" are well known in the fleets today. The Red Banner Northern Fleet possesses the Guards atomic missile submarine "Krasnogvardeyets," named in honor of one of the pioneers of Soviet submarine building.

Atomic submarines embody the latest achievements of science and technology and the high proficiency of Soviet ship builders. The modern atomic submarine is a powerful and menacing ship. Its cruising range is practically unlimited. It can move to any point in the ocean at great speed, close to the speed of a courier train, it can catch up to high-speed surface ships, and it can attack them several times.

Atomic submarines are outfitted with modern electronic and navigation resources making it possible to "see" all of the underwater and surface environment, to dependably surface in an ice field and to effectively use weapons. The radio resources of an atomic submarine permit radio communication with the command and reception of orders while at any point in the World Ocean without having to surface.

The living quarters aboard our atomic submarines are comfortable, and the entire crew is furnished with compartments trimmed in eye-pleasing colors and the latest materials. The atomic submarine possesses a ward-room, a mess hall, television sets, a library and showers. The compartments are cleaned with vacuum cleaners. All of this allows the crew to perform their service, live and work in excellent hygienic and cultural conditions. The food of submariners is high in calories, tasty and varied.

Everything aboard submarines is subordinated to covertness of navigation--the law of service of submariners. A dependable system shielding the atomic power plant and constant control of safety aboard Soviet atomic submarines completely exclude the possibility of any sort of accidents.

The largest atomic submarines are the underwater missile carriers, which carry long-range ballistic missiles that are launched from beneath the water. Today, marine ballistic missiles are produced by the USSR, USA and France. The English navy uses American ballistic missiles.

American missile submarines, for example, store their ballistic missiles in vertical shafts (see an illustration of the "George Washington" class American submarine). The missiles are launched as a rule while the boat is submerged at a depth of 30 meters. In addition to ballistic missiles, submarines may be armed with cruise missiles. They are stored in submarines of the U.S. Navy in special containers mounted in conventional torpedo tubes. These missiles may be launched both when the submarine is submerged and on the surface.

In addition to missiles, atomic submarines are armed with torpedoes intended to annihilate warships and transporters and to combat enemy submarines.

As was mentioned earlier, our navy also possesses diesel submarines, or as they would be more properly referred to, diesel-storage battery submarines. On the surface they are propelled by diesel engines, while beneath the sea they are propelled by electric motors fed by current from storage batteries. Diesel submarines can also cruise beneath the water without using electric motors. They are outfitted with a special device for this purpose, referred to as the RDP for short--submerged diesel operation (the Germans call it a "snorkel," and the Americans and English call it a "snort"). The RDP consists of two tubes mounted in a single housing which is raised just slightly above the water. Fresh air is sucked into the diesel engine from the atmosphere by one tube, and exhausts are expelled through the other.

In the postwar era our country created marine and ocean-going diesel submarines having speeds and diving depths significantly greater than those of prewar submarines. Modern observation and communication resources have made it possible to use diesel submarines not only in the seas adjacent to shores, but also in the oceans. Some diesel submarines have undergone further improvement during this period, and they have been armed with ballistic and cruise missiles.

In some cases in addition to conventional types of submarines, supersmall or, as they are also called, dwarf submarines and baby submarines are built. They were used in World War II to annihilate large warships at bases, in harbors and at roadsteads. Their main shortcoming was their low speed and short cruising

range. This is why they had to be delivered to their places of combat use by large submarines. Modern supersmall submarines in foreign navies have a submerged speed of 6-15 knots (11-27 km/hr), their cruising range is 500-700 nautical miles (900-1,260 km), they can dive to 15-100 meters, and they carry a crew of two to eight men. They are armed with torpedoes and mines.

Soviet submarines are top-class modern warships. Created by Soviet scientists, engineers and workers, they have confirmed their exceptionally high qualities many times in exercises and during long cruises, including beneath Arctic ice, and beneath crusts of pack ice many meters thick. The strategic missile atomic submarines are the pride of naval seamen.

The Arctic cruises of the atomic submarine "Leninskiy Komsomol" are well known, as are the surfacing of an atomic submarine by Captain 2d Rank (presently Vice Admiral, Hero of the Soviet Union) Yu. Sysoyev right at the North Pole, the round-the-world cruise by a detachment of atomic submarines under the command of Rear Admiral (presently Vice Admiral, Hero of the Soviet Union) A. Sorokin and many others. All participants of these cruises--the officers, warrant officers, petty officers and seamen--received high government awards, and they were rewarded by the command.

The outstanding fulfillment of the highly complex missions of these cruises eloquently attests to the enormous possibilities of our navy, to the outstanding skill of Soviet naval seamen and to their high readiness to perform any order from the motherland.

Where and how are specialists trained in our country for submarines? There are higher naval schools and training detachments for this purpose. The schools prepare command and engineering officers. Training detachments prepare petty officers and seamen-submariners.

The heroic road traveled by Soviet submariners is graced by unfading glory and unexcelled bravery. Together with all soldiers of our armed forces, they are making an honorable contribution to the whole people's cause of strengthening the defensive power of the Soviet Union.

11004
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PREDRAFT TRAINING IN UKRAINIAN SSR DISCUSSED

Moscow VOYENNYYE ZNANIYA in Russian No 7, Jul 82 (signed to press 9 Jun 82) pp 42-43

[Article by I. Sevryukov, inspector for predraft military training of the Ukrainian SSR Ministry of Agriculture, Kiev: "Why the Results Vary..."]

[Text] Military-patriotic indoctrination combined with predraft military training is an important part of the preparation of the youth for military service. Experience tells us that success is achieved in this work only when a creative approach is taken to the job, when everything is done jointly, on a collective basis, when every instructor takes part in the training of the future soldiers.

Councils have been created in most tekhnikums of the Ukrainian SSR's Ministry of Agriculture. They have from 19 to 28 members and are headed by the directors. The councils draw up unified plans of military-patriotic measures, appoint those responsible for their fulfillment and specify the group of organizers. Every individual responsible for fulfillment receives excerpts from the plans each month. As a result, most of the activities are conducted right in the groups, they have become more diversified and interesting, and control and reporting have been enhanced. We cite the Bratslav Agricultural Tekhnikum in Vinnitskaya Oblast as an example. Its director is I. Mel'nik, and the military instructor is S. Benzsyuk. The tekhnikum has decided not to limit its tours to meetings with veterans and witnesses of the battles and engagements, the recording of conversations and searches for relics. Under the supervision of the military and the physical training instructors, the young people review and reinforce that which they have studied in predraft military training classes. They make short forced marches, switch from column to combat formation, attack "enemy" strongpoints, negotiate "contaminated" areas in protective equipment, dig foxholes and perform guard and reconnaissance duty.

Or, take the lessons in courage. Scenarios are worked out and fragments of filmstrips and films, posters, records and magnetic recordings are selected for each of them. The war veterans and the students prepare in advance. And director I. Mel'nik gives the first demonstration classes in courage for the classroom instructors. The traditional activity thus becomes emotion-filled and graphic, and the young boys and girls remember it for a long time.

The classes in the DOSAAF groups are assigned an important role in the training of the future soldiers at the tekhnikum. These include groups for studying the weapons, rifle and military-technical groups, civil defense groups and medical aid groups. They include exercises in the bicycling, swimming, boxing, weight lifting and skiing sections. More than 700 students regularly train in them. The tekhnikum turned out more than 340 rated sportsmen during the past training year alone.

Competitive reviews for best organization of predraft military training and military-patriotic indoctrination among the training groups of tekhnikums also make it possible to achieve good results. They are conducted annually in two stages (one for 23 February and one for Victory Day). The judges are headed by the deputy directors for training. Let us refer to the experience of the Nikolayev Agricultural Tekhnikum (N. Doroshenko, director, and K. Pavlenov, military instructor). This year 12 groups took part in the competition. The students compete in drill training and firing, worked on the norms for dismantling and assembling a submachine gun, for filling the magazine and donning a gas mask, chinned on a crossbar, tossed hand grenades, negotiated obstacle courses and ran a cross-country race. More than 80 percent of them received ratings of "excellent" or "khorosho," and 165 received second- or third-class sports ratings. Every group took a tour of sites of combat glory (which included military game elements), conducted a class in courage, met with war veterans and performed in a drill song review. The competitive reviews were summed in a director's order, the winners received awards, and their photographs were placed on display. The training group which took first place won a trip to the heroic city of Novorossiysk. Let us say a few words about the prizes. They were mementos autographed by war veterans and photographs taken at the tekhnikum's banner and bearing the inscription: "Today, by a labor banner--tomorrow, by a combat banner." In short, the competitive review was a real school of military learning, courage, physical, moral and psychological conditioning for the future soldiers.

It would be difficult to overestimate the role of rooms and museums of combat glory in the military-patriotic work and moral indoctrination. Exemplary museums have been opened at the Bratslav and Glukhov tekhnikums in Sumskaya Oblast and the Vladimir-Volynskiy Tekhnikum in Volynskaya Oblast. Thousands of valuable relics and displays are carefully preserved there. The feats performed by Soviet fighting men during the Great Patriotic War are simply and graphically described in displays. Quest, Tour Guide and International Club sections are active there. Materials are collected on people who fought the enemy bravely and stared death in the face more than once.

We could say a great deal more about the experience of the best groups. Unfortunately, however, we also have examples of another kind. At the Bobrovitsa Sovkhoz-Tekhnikum in Chernigovskaya Oblast, the Pribrezhnoye Sovkhoz-Tekhnikum in Donetskaya Oblast and the Kitsman' Sovkhoz-Tekhnikum in Chernovitskaya Oblast, for example, directors L. Yakovishin, A. Goncharenko and V. Babich have quite simply avoided conducting military-patriotic indoctrination. Those educational institutions also have councils, to be sure, but they exist only on paper. There are no unified, comprehensive plans of measures to be conducted by the director personally,

by his deputies, the party, Komsomol or DOSAAF organizations or the instructors. All of the work performed with the future soldiers is actually assigned to the military instructors. It is not surprising that the activities which are conducted there only take place on holidays, and in a routine and boring manner, with the participation of only a small part of the students. This accounts for the poor results in predraft military training.

The training process is not everywhere tied in with military-patriotic indoctrination. At the Rovno Tekhnikum (S. Vakulyuk, director), the Kamenets-Podol'skiy Sovkhoz-Tekhnikum in Khmel'nitskaya Oblast (I. Kovtunnik, director), military instructors I. Fedorkov and N. Poluektov do not maintain ties with the instructors of history, literature, physics and aesthetics, although there are actually plans for inter-subject ties. In the lesson plans (including the predraft military training plans) most of the instructors can find references to specific examples of courage and heroism demonstrated by Soviet soldiers and officers. Discussions "in general" and "on the whole" produce nothing. Part of the blame also lies with G. Semenyuk and V. Dem'yanenko, deputy directors for training. It is their immediate duty, after all, to monitor the inter-subject links.

Most of the educational institutions of the Ukrainian SSR Ministry of Agriculture have museums of combat glory. Frankly, however, not all of them have become centers of military-patriotic indoctrination of the students. Why is this so? I believe that one of the reasons is the fact that they are regarded as a formality, with indifference. At the Novokhakhovskiy Tekhnikum in Zhitomirskaya Oblast and the Novoushitskiy Tekhnikum in Khmel'nitskaya Oblast, for example directors V. Kapko and Ya. Reznik have allocated space for the museums, in which it is impossible to set up displays or to conduct a single activity the way it should be conducted. Irregularities in the setup are another retarding factor: Some museums have quality, interesting exhibits, while others have been turned into primitive text-and-poster displays. The museums at the Sumy Tekhnikum (I. Konev, director), the Poltava Tekhnikum (A. Negregetskiy, director) and the Tlumach Tekhnikum in Ivano-Frankovskaya Oblast (V. Ponomarenko, director) do not even have displays illistrutating the combat history of the formations to which the pathfinders have dedicated their research, their history, the combat traditions of the heroic fighting men. Even the research work is conducted very poorly. The tour guide sections are practically idle.

At the Rzhishchev Tekhnikum (B. Serdyuchenko, director) and the Tarashcha Sovkhoz-Tekhnikum (G. Gorokhovskiy, director)--both in Kiyevskaya Oblast--the resolution of all problems pertaining to the museums are again thrust upon the military instructors. They make up the displays, serve as council chairmen, tour guides, artists and... janitors. The teachers groups and the Komsomol and DOSAAF committees and the role of bystanders. Such a harmful practice cannot be justified in any way. The Ukrainian SSR Ministry of Agriculture is taking steps to correct these shortcomings. A plan of measures to further improve the military-patriotic indoctrination of the students has been worked out and issued to all the educational institutions. Progressive experience is being summarized. A republic-wide rally of outstanding students in the predraft military training was held at the Voroshilovgrad Tekhnikum, at which the participants told how they achieved their good results.

Many problems still remain, however. Museums at educational institutions are created and operate on a volunteer basis, of course. I believe it is time to legitimate them, as was done with the special-subject offices and libraries. This would change their treatment by directors and public organizations. They would find good premises for them and assign methods experts to them. There would be someone to answer for organizing the work in them. We need unified recommendations on the model museum setup, and their forms and methods of operation. Naturally, we need specific assistance on the part of the USSR Ministry of Education and Ministry of Higher and Secondary Specialized Education, the USSR Ministry of Defense and Ministry of Culture.

We feel that it is absolutely essential for the state museum institutions, the museums of the military districts and the war veteran councils to assume sponsorship of the educational institutions.

Finally, visual agitation at educational institutions is still poor and ineffective. There are too few posters, books, filmstrips and films, mock-ups, visual and methodological aids on predraft military training and military-patriotic indoctrination. The workers of publishing houses, movie studios and production enterprises, which are expected to provide the tekhnikums, schools and vocational and technical schools with everything essential for training the future defenders of the socialist homeland, should give some serious thought to this matter. This is a task of great state importance, and it should be accomplished at the state level, as required at the 26th congress of our Leninist party.

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DOSAAF AND MILITARY COMMISSARIATS

PREDRAFT TRAINING: LECTURE ON FLAMETHROWERS

Moscow VOYENNYYE ZNANIYA in Russian No 7, Jul 82 (signed to press 9 Jun 82) p 44, rear cover

[Commentary on rear cover drawings by Eng-Col V. Knayz'kov: "The Flamethrower"]

[Text] From time immemorial, when engagements and battles between peoples first began, man attempted to use fire as a weapon. Hot tar was poured from fortress walls onto the heads of enemies besieging fortified cities. This was fairly primitive, of course, but still a defensive weapon. But what about the arrow with a bundle of burning tow, sent by the powerful arm of an archer toward the wooden roofs of a fortress with the sole purpose of causing fires there? Was this not an aggressive weapon?

History has brought to us a description of so-called Greek fire, an incendiary compound supposedly consisting of saltpeter, sulphur, petroleum, pitch and other substances. One interesting feature of Greek fire was the fact that it could not be extinguished with water. Greek fire was extensively used in naval battles. It was shot from copper tubes installed on the bow and the sides of ships.

Flamethrowers in the contemporary sense of the term, were first used by German forces in 1915, during World War I. In World War II the warring sides made extensive use of both light and heavy flamethrowers.

Separate, motorized antitank flamethrower battalions were formed in the Soviet Army, for example, which were used for destroying enemy personnal and tanks, especially along likely lines of tank approach. The flamethrower operators honorably carried out the important assignments of command. And this is not surprising. After all, the 540 flamethrowers in a battalion could create a solid strip of fire with a front of 3-3.5 kilometers.

It is possible that some readers will wonder why, strictly speaking, we need fire throwers, if fire can be delivered to the target by incendiary aerial bombs, incendiary artillery projectiles or mortar shells. And it can, to be sure. Aircraft, howitzers, cannon and mortars are long-range weapons, however. Fire is carried great distances in "packages," figuratively speaking. The incendiary compound, ready for action, is "hidden" inside the bomb, projectile or mortar shell. But the flamethrower is a close-range weapon.

Let us take a look at the LPO-50 light infantry flamethrower. This is a manpack, powder-effected, reusable, breachless flamethrower with electrical control. It destroys the target directly with the burning fuel. No sort of projectiles filled with incendiary compounds are used. The fire flies to the target in "pure" form.

The LPO-50 is designed for destroying enemy personnel in the open or in trenches, dug-outs and other structures. Wooden buildings and other structures which must be burned due to the combat situation may also be the targets.

The flamethrower is operated by a single person. The loaded LPO-50 weighs 23 kilograms. How is this weight distributed? The load in the arms of the flamethrower operator is slight--a short gun 968 millimeters in length and weighing 3.2 kilograms. The bulk of the weight is on the shoulders, in the pack, which contains three tanks filled with the fuel. Each tank holds 3 to 4 liters. This is enough fuel for one firing. With high trajectory fire the flamethrower has a range of at least 70 meters. It is considered to be most effective at a range of 40 to 50 meters. This provides the best destruction of targets.

The flamethrower is of simple design. It consists of the tank pack, the gun, a hose and a gun rest.

We have described the flamethrower as powder-effected and breachless. Let us use an example to explain this feature. Certain magicians performed the trick of holding a burning candle and blowing upon it. A flame of fire flares from the mouth. This is a very effective trick, which makes a great impression on the uninitiated viewer. There is no magic involved, however. The individual has simply taken kerosene into his mouth and blown upon the flame. Here you have an extremely simple diagram of the flamethrower's design. It consists of fuel located in some sort of container, which must be thrust through the opening with force and ignited.

The LPO-50 has no breach. The function of a breach is performed well by the powder fumes. This is why the weapon is called a powder-effected, breachless flamethrower. A powder chamber is located in the upper part of each tank, which houses the powder load and a pyrotechnic cartridge. When the operator presses the detent slide, an electrical circuit closes. The pyrotechnic igniter is activated, and the powder charge ignites. The powder fumes produced create an over-pressure of 30 kilograms per square centimeter inside the closed-off tank. This forces the fuel through a non-return valve into a collector, which, incidentally, functions for all three tanks, and on through the hose into the gun barrel. A clip is attached to the muzzle, into which three standardized incendiary cartridges have been inserted in advance (each tank has its "own" cartridge). One of them is activated as soon as the operator presses the detent slide.

When the fuel is forcibly expelled through the gun's nozzle it is ignited by the flame from the standardized incendiary cartridge, and the stream of fire is thrown against the target.

After the fuel has been expelled, all of the fuel transfer components (the non-return valve, the collector, the hose and the barrel) are blown out by the powder fumes, which eliminates leakage of fuel at the muzzle face after firing.

The electrical circuit of the LPO-50 permits the operator to switch on the tanks in sequence. There is a special switch for this. The operator can fire from various positions--standing, thrown or kneeling.

...The command "Form up for battle!" is given. How long will it be before the operator can fire the flamethrower? He must swtich the LPO-50 from travel position to combat position and prepare to fire. The standard time for performing all these operations is no more than 20 seconds.

The flamethrower has been used and the target has been destroyed, let us say. Another target appears. How rapidly can the flamethrower be readied to fire again? Almost instantaneously. A total of only 5 to 7 seconds is required for three shots in a row.

The reader may have other questions. After the three shots at the target, the tanks in the pack will be empty. What does the operator do then? He refills the tanks. This takes 8 to 10 minutes, and the flamethrower is ready for action again.

The LPO-50 is a re-usable flamethrower. It is a guarantee of at least 600 trouble free shots, that is, 200 for each tank.

We also have the TPO-50 heavy infantry flamethrower. It is designed for destroying enemy personnel in the open or in shelters, and for repelling attacks and counter-attacks. The experts describe it as a powder-effected, breach-type, horizontal, reusable mounted flamethrower with mechanical and electrical activation modes.

What is a powder-effected flamethrower? This means that powder fumes formed during the combustion of the powder charge are used as the active agent which forces the fuel out of the tank. The principle is the same as that of the light infantry flamethrower.

A substantial difference, however, is the fact that the TPO-50 is a breach-type flamethrower. One should not be surprised at this. Compare just the outward form of the tanks for the LPO-50 and the TPO-50. There is a significant difference. The tank capacity for one firing of the LPO-50, as stated above, is 3 to 4 liters, that of the TPO-50--21 liters, almost six times as much. A special breach, an obturator, has been designed into the TPO-50. It shifts inside the tank and brings about even distribution of the powder-fume pressure on the surface of the fuel, while it is being ejected from the barrel during the firing.

The loaded TPO-50 weighs as much as 173 kilograms. A wheeled carriage has been adapted for hauling it to the battlefield. The carriage also restrains the recoil when the flamethrower is fired in place. The TPO-50 is operated by the gunlayer and an assistant.

The TPO-50 is of simple design. Three interchangeable barrels are fastened together with a band and mounted on a carriage. The following ammunition is used for producing the flame-throwing: the fuel, powder charges, incendiary clusters and igniter-charges for use with the mechanical fuse, or pyrotechnic cartridges for the electrical method of activating the flamethrower.

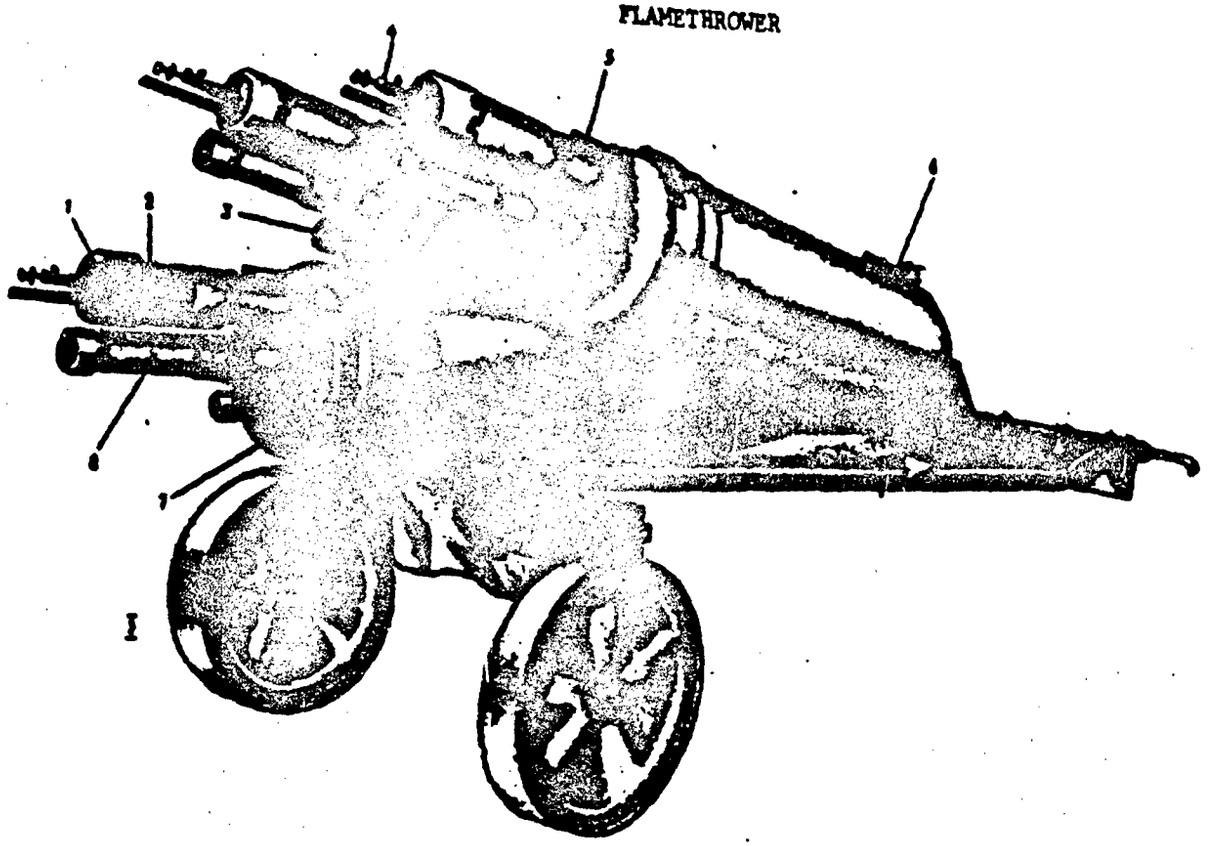
What is the flamethrower's operating principle? It involves ejection of the fuel and ignition of the stream as it leaves the nozzle. The flame-throwing shot is produced in the following sequence. The incendiary cluster comes into play, regardless of the method used for activating the flamethrower--a mechanical fuse or an electrical contact. It lights the powder charge with its flame. The gases formed perform the useful work. Let us take a look at this detail. The barrel nozzle through which the fuel stream is ejected is covered by a thin aluminum diaphragm before firing. This creates powder-fume pressure in the tank, or more correctly, in the gas-filled area of the barrel, which rapidly reaches a working pressure of up to 60 kilograms per square centimeter. The pressure remains constant while the flamethrower is being fired.

The pressure of the powder fumes causes the fuel to be forced by the breach-obturator through a siphon-tube running through the inside of the barrel, from which it is ejected through the nozzle against the target. The fuel begins to move inside the barrel at a fairly slow rate. This peculiar initial speed is 3 meters per second. Thanks to the simple but clever technical design features, however, the fuel accelerates to the considerable speed of 106 meters per second. It shears off the diaphragm, which is ejected together with the flame-throwing stream. This stream is ignited by the flame from the incendiary cluster, which emerges from the jet sleeve of the powder chamber.

With a steep trajectory, when the elevation angle is more than 4 degrees, the flame-throwing stream "will catch" a target at a distance of 180 meters. If the angle of elevation is less than 4 degrees, a target can be destroyed at a distance of up to 140 meters. No more than 8 to 10 minutes is allotted for switching the flamethrower from travel to combat status.

The flamethrower can be used in a combat situation in a wide range of temperatures--from 40 degrees above to 40 degrees below. Stable flame-throwing action is achieved in just such conditions.

FLAMETHROWER



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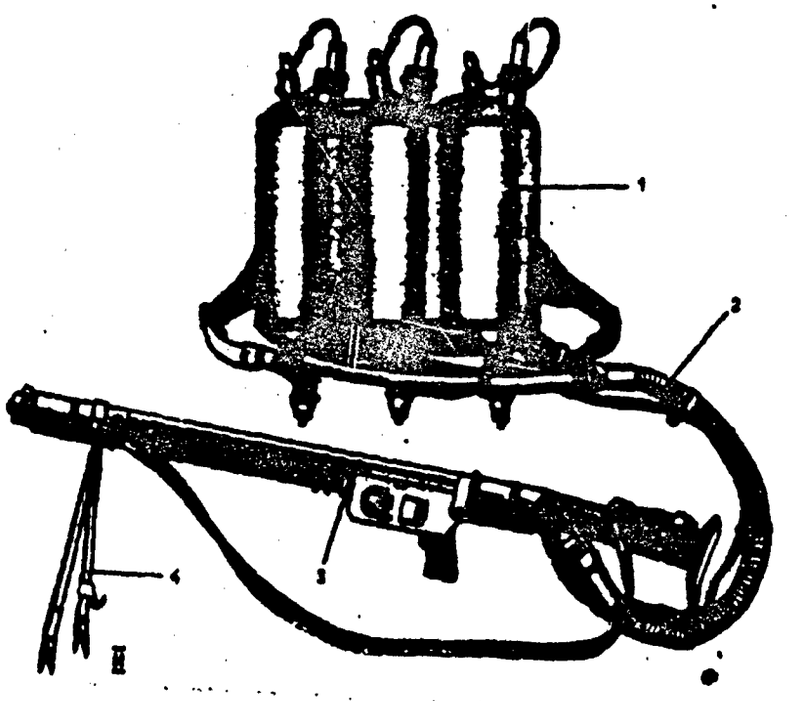

II

I. TPO-50 Flamethrower

1. Incendiary cluster; 2. powde charge; 3. safety valve; 4. mechanical fuse; 5. foresight 6. sight; 7. breach-obturator; 8. nozzle with stop device.

II. LPO-50 light infantry flamethrower:

1. pack; 2. hose; 3. gun; 4. gun rest

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DOSAAF AND MILITARY COMMISSARIATS

PREDRAFT TRAINING: LECTURE ON TANK COMMANDER

Moscow VOYENNYYE ZNANIYA in Russian No 7, Jul 82 (signed to press 9 Jun 82) p 45

[Lecture by Eng-Lt Col V. Kuptil': "The Tank Commander"]

[Text] The tank is a collective weapon. Success in combat is of course determined by how every crew member functions, including the tank commander, the driver/mechanic, the gunner and the loader. The commander directs the work of the crew members, because he is their immediate superior. He bears responsiblity for the training and indoctrination of his men. His duties are complex and diverse.

The tank must be prepared for combat at all times. The commander therefore sees to it that the machine is filled with fuel and oil, that other expendable materials and ammunition are replenished on a timely basis. He organizes and personally conducts the inspection and technical servicing.

The tank commander is an individual with a high level of technical sophistication. As a rule, he has a secondary general or specialized education. It could not be any other way. After all, it is far from simple to learn all about the modern, powerful engine with its numerous systems and electrical equipment, including dozens of energy consumers and various complex instruments. In order to thoroughly master these, one must have a clear understanding of the complex physical processes around which the systems are designed.

And so, the commander is responsible for the tank's technical condition and its combat readiness, while at the same time bearing responsibility for the combat training of the crew, for their ability to engage in modern combat.

What does this require of the tank commander? A great deal. Specifically speaking, he is required to know the working principles of the tank, of all its systems, its armament and equipment, better than any other crew member. He must continuously improve his military and political expertise.

Must the commander be able to operate the tank? Absolutely. Only in this case can he knowledgeably monitor the performance of the driver/mechanic and should the need arise, replace the latter. The commander must be able to employ the tank's armament with excellence--to fire the gun and the machine guns, to operate the radio set confidently, to operate the other instruments, to promptly detect and rapidly correct any malfunctions.

The combat mission has been received. What does the commander do? He clarifies it, thinks out a plan of action, then assigns the mission to the crew and organizes preparation of the tank for combat.

In combat the commander continuously directs the work of the crew members, the tank's movement and its fire, and sees to it that the tank retains its position in the subunit's combat formation. When the order "charge!" is given, the enemy must be attacked at maximum speed. The tank should fire on the move, without stopping. In addition, the enemy and the terrain must be continuously observed. Each crew member has his area of observation. The commander performs all-round observation, the gunner observes in front and to the left, the loader—in front and to the right, the driver/mechanic—in front. The commander is required to monitor the work of his subordinates as dictated by stern necessity. If you neglect the observation, you will be exposed to unexpected fire. If, on the other hand, the target is promptly detected, it can be rapidly destroyed.

The commander is required to take skillful advantage of the terrain to move undetected ahead and reach the flank and the rear of the enemy's weapons. One must constantly bear in mind the fact that maneuvering is the essence of an attack. And this is the way it should be. After all, the more skillful and concealed the maneuvering, the more difficult it is for the enemy to cope with the tanks and the easier it is for the crew to accomplish the assigned mission.

One other duty of the commander consists in seeing to it that the tank constantly retains its position in the platoon's combat formation and moves in the proper direction. Only then can the attack be joined simultaneously by the entire subunit.

You must also know how to counter antitank obstacles. It goes without saying that the tank commander must also be able to make the correct decision in accordance with the combat situation and terrain conditions. First, he has to answer the main question: Should he negotiate the obstacle or detour around it? If it is to be negotiated, then how? If the tank is to detour around it, then what kind of maneuver should be performed? In this case, he must not forget about adjacent tanks, and after the obstacle has been passed, he should once again take up his position in the combat formation.

When the tank is advancing together with a dismounted motorized rifle subunit, he must, figuratively speaking, lead the motorized riflemen along. The tank commander controls the combat vehicle's fire and its movement so that the tank can destroy weapons preventing the motorized riflemen from advancing, especially machine guns and mortars, with its artillery and machine gun fire and its tracts. And when a nearby tank finds itself in a difficult situation, the commander must unhesitatingly give it fire support. After all, the other tank will do the same, if necessary. In this case, the combat mission will be performed more rapidly and with a minimum of losses.

The tank commander must not only observe the field of battle. He must also assess the situation. Upon noticing that the enemy is withdrawing, he must immediately report this to the platoon commander and begin pursuit himself.

What should a tank commander do if the combat vehicle is suddenly damaged and can no longer move? The main thing is not to go to pieces. He must immediately report the incident to the platoon commander, and he must in no case stop conducting stationary fire. The tank commander must also do everything possible to repair the damage, of course.

The battle is over, but there is no slackening of the tank commander's work. He must see to it that the vehicle is restored to combat readiness--replenish hauled supplies, correct various kinds of defects and malfunctions, and so forth.

It would not hurt to remind ourselves that the tank commander must set a constant example of vigor, bravery and determination, personal discipline, persistence and efficiency for his men.

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PERCEPTIONS, VIEWS, COMMENTS

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Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 3, Mar 82 (signed to press 10 Mar 82) pp 1-2

[Full-text translated articles published in this report are indicated with an asterisk (*); excerpted translation - with a double asterisk (**)]

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GENERAL MILITARY PROBLEMS

GROUND FORCES

AIR FORCES

The articles by the Soviet authors and the chronicle were prepared from materials in the foreign press. Used in this edition are materials from "Jane's" reference book and from the journals: AVIATION WEEK AND SPACE TECHNOLOGY, ARMY, SOLDAT UND TEKHNIK, INTERAVIA, INTERNATIONAL DEFENSE REVIEW, INFANTRY, NATO'S FIFTEEN NATIONS, NO FORCE, NAVY INTERNATIONAL, FLIGHT, FORCE ARMEE FRANCAIS, ZIVIL VERTEIDIGUNG, AIR ET COSMOS, and ÖSTERREICHISCHE MILITARISCHE ZEITSCHRIFT.

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COMMENTS ON U.S. NUCLEAR WARFARE CAPABILITIES

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 3, Mar 82 (signed to press 10 Mar 82) pp 3-10

[Article by Engr-Col A. Fedorov: "The United States--A Nuclear Threat to Peace"]

[Text] People of good will of all countries and continents perceived with hope the specific proposals put forth by the 26th Congress of the Communist Party of the Soviet Union for the safeguarding of peace which meet mankind's interests and aspirations. The unshakable resolve of the CPSU and the Soviet government to do everything possible to lead the peoples out from under the threat of nuclear war and preserve peace on Earth is acquiring special significance under conditions of the unceasing attempts of American imperialism and aggressive militaristic NATO circles to bury detente and provoke a new, even more dangerous round of the arms race. The decision of the President of the United States, R. Reagan, concerning the full-scale production of neutron weapons increases sharply the danger of outbreak of thermonuclear war.

The military-political leadership of the United States, heading for a return to the policy of the "cold war," is placing its main reliance in the solution of international problems and the attainment of its goals on the use of military power. For more than two years, already, there has not been the slightest noticeable statement by official representatives of the American administration--former Democratic or present Republican--which would not proclaim calls for the "restoration of the United States' military might," the "improvement of weapons and combat equipment," the "increase in the American military presence in vitally important regions," and so forth.

To cover the hegemonistic pretensions and aggressive aspirations of American imperialism and the military preparations which it generously finances, the champions of intensification of international tension, being unable to withstand the large-scale peace initiatives of the Soviet Union with anything constructive, are resorting to the hackneyed myth of the "Soviet military threat." Leading political and military figures of the present Washington administration are taking an active part in the propaganda campaign for the invention and spreading of various types of anti-Soviet fabrications. By juggling and falsifying facts in publications of various types such as the booklet recently published by the Pentagon, "Soviet Military Power," and with the aid of verbal rope-walking, the ruling circles of the United States are trying to prove that allegedly despite the generally accepted estimates

about the military-strategic balance which has developed between the USSR and the United States the correlation of forces is changing in favor of the Soviet Union. The thesis of the "lagging" behind of the United States and NATO in the military sphere, about the "steady and rapid buildup of Soviet might...through the endless influx of new weapons systems," and about the striving of the Soviet Union to "attain superiority in nuclear potential" is being spread.

The essence of falsifications of this type is obvious--the attempt is being made to shift the blame for the arms race which is constantly being imposed by the United States to the other side. The facts show that over the entire postwar history it is not the USSR, but the United States which comes forth as the initiator of the creation and deployment of new, more destructive weapons systems. It is namely the United States which not only was the first to create, but also to employ nuclear weapons against the population of two Japanese cities without any military necessity in 1945. In the 1950's it deployed an armada of strategic bombers--carriers of nuclear weapons. At the start of the 1960's, the United States was the first to begin the mass deployment of intercontinental missiles in silo launchers. At the same time, it initiated a multi-billion dollar program for the construction of 41 nuclear submarines with ballistic missiles. At the beginning of the 1970's, the United States began to equip its ballistic missiles with multiple independently targetable reentry vehicles and, soon after this, began the crash development of a new type of strategic weapon--the long-range cruise missile.

Under these conditions, the Soviet Union adopted only responsive measures, reacting in the interests of ensuring its own security as well as that of its allies against the threats which were created by the West and, first of all, by the United States. In answers to questions of the American journal TIME in January 1979, Comrade L. I. Brezhnev declared: "We are not attaining military superiority over the West, we don't need it. We need only dependable security."

The United States is pursuing another goal. Creating and deploying new types of weapons, it is striving to ensure for itself "positions of strength" and to attain military superiority over the Soviet Union. This policy and the United States' practical measures in building up its military potential have acquired an especially dangerous character with the coming to power of the Reagan administration which, from the first steps, began to speed up military preparations.

This course of the White House is expressed in its most generalized form in the swift growth in military appropriations. Along the line of the U.S. Department of Defense alone, for fiscal year 1982 more than 214 billion dollars were approved--almost 40 billion more than last year. For 1983, 257.5 billion dollars in appropriations are planned for the American Department of Defense. A further increase in military expenditures is envisioned--in real terms by at least nine percent annually.

The Pentagon attaches primary significance to expanding the material base for the preparation of nuclear war. Here, the buildup of the combat capabilities of strategic forces and weapons is being moved up to first place.

In planning the organizational development and further development of strategic nuclear forces, the American military-political leadership proceeds from the necessity to retain all three components of the so-called "strategic Triad" in the combat composition of the U.S. Armed Forces in the future too: intercontinental

ballistic missiles (ICBM), nuclear-powered missile submarines (SSBN), and strategic bomber aviation. In the opinion of foreign specialists, this is caused by a number of reasons.

They believe that with consideration of the advantages and shortcomings of each of the independent components, their combined use "will reduce their weak aspects to the minimum and their strong aspects will be maximized." The following, for example, pertain to the latter: ICBM--high accuracy in nuclear warhead delivery and the large effectiveness connected with this with operations against various objectives, relatively short time of flight to the target, and a high degree of combat readiness, reliability, and stability of control; SSBN--secrecy and dispersal in the vast regions of the world's ocean and their high invulnerability which this makes for in war, and their ability to launch nuclear strikes from various directions; strategic bomber aviation--flexibility of combat employment against fixed and moving objectives with various degrees of protection which are known and newly disclosed, the possibility of repeated use in the course of launching a nuclear strike and redirection for the accomplishment of other missions or return, and the ability to evaluate the results from the launching of a nuclear strike in real time close to actual time and participation in combat operations with the employment of nuclear and conventional weapons as well as in "demonstrations of the resolve of the U.S. leadership" to launch a nuclear strike--patrolling in the air close to the enemy's state boundaries. The combination of these and a number of other special features of each "Triad" component, the American specialists believe, "attaches unique capabilities to strategic nuclear forces."

As regards the qualitative and quantitative structure of the "Triad's" components, according to the views of American specialists, "each of them separately should be capable of ensuring the guaranteed destruction of the enemy even in a retaliatory strike."

Proceeding from such theoretical premises, the Pentagon even now, as is stressed in the foreign press, contains more than 2,100 carriers in the composition of the strategic nuclear forces (with consideration of the reserve of heavy bombers in the units). Moreover, more than 200 B-52 bombers are in storage at Davis-Monthan Air Force Base.

The ICBM forces are represented by three types of intercontinental ballistic missiles which have been placed in 1053 silo launchers: 53 Titan-2, 450 Minuteman-2, and 550 Minuteman-3. Organizationally, all these forces are brought together in nine missile wings: three Titan-2 and six Minuteman.

The two-stage liquid-fuelled Titan-2 missiles which were deployed in 1963, each with a weight of 150 tons, are equipped with single-unit warheads each with a yield of 10 megatons. During the time that the missiles have been in the inventory, the modification of their onboard control systems has been conducted primarily to improve firing accuracy and reliability.

The three-stage solid-fuel Minuteman-2 missiles which have been in the inventory since the middle of the 1960's (launch weight about 32 tons) have multiple-unit warheads of the megaton class. As a result of modification of the control system the firing accuracy of these ICBM's has also been substantially improved.

The basis of the U.S. ICBM forces consists of the Minuteman-3 ICBM (Figure 1) [not reproduced] which was deployed in the first half of the 1970's and whose share is more than three-fourths of the total number of nuclear warheads counted in the land-based missile forces. This became possible as a result of equipping each missile (launch weight 35.4 tons) with a multiple reentry vehicle (MRV) of the multiple independently targetable reentry vehicle [MIRV] type with three warheads. The yield of the first-modification warhead is about 0.2 megatons [MT]. Since January 1980 these missiles are being reequipped with more improved MRV's with three warheads (Mk 12A) with an increased yield (0.35 MT). Altogether, prior to the end of 1982 it is planned to install such warheads on 300 missiles. A system for the remote insertion of flight missions against targets of opportunity has been deployed for the Minuteman-3 ICBM, which permits increasing significantly the efficiency of redirecting the missiles depending on the conditions which have developed and the flexibility of their employment.

Nuclear-powered missile submarine forces now include 648 ballistic missile launchers on 40 SSBN's (8 with Polaris A-3 missiles, 31--Poseidon systems with Poseidon-C3 and Trident-1 missiles, and 1--Trident systems with Trident-1 missiles).

The Polaris A-3 two-stage solid-fuel missile which was adopted in the inventory in 1964 is equipped with a MRV with three scatter-type warheads each with a yield of 0.2 MT. Range of fire is 4,600 kilometers.

The Poseidon-C3 submarine-launched ballistic missile [SLBM] now comprises the basis of the American nuclear missile submarine forces. In the period from 1970 through 1977 31 SSBN's were armed with them. The Poseidon-C3 two-stage solid-fuel missile is equipped with a MIRV-type MRV which can accomodate 10-14 warheads with a yield of 50 kilotons [KT] each.

Beginning in 1979, the reequipping of a portion of the Poseidon SSBN's with the new, more improved Trident-1 missiles was begun. It is a three-stage solid-fuel missile (similar in its dimensions to the Poseidon C-3) which is equipped with a MRV with eight warheads, each with a yield of at least 100 KT. Despite the considerably greater range of fire (7,400 kilometers)*, it is stressed in the foreign press, the Trident-1 is not inferior in accuracy to the Poseidon-C3 missile. Of 12 SSBN's planned for reequipping with new missiles prior to the end of 1982 eleven have already been reequipped or are at various stages of the work. It is noted in the Western press that as a result of the measures mentioned above, the regions for combat patrolling by the SSBN's are being considerably expanded. It is reported that nuclear submarines equipped with Trident-1 missiles will be able to launch nuclear strikes on the enemy's territory while on combat patrol in the immediate proximity of the United States coast.

U.S. strategic bomber aviation is represented by B-52 bombers (of various modifications) and the FB-111A which are grouped in 25 air squadrons.

Altogether, with consideration of the reserve the Strategic Air Command [SAC] of the U.S. Air Force numbers 347 B-52 heavy bombers of modifications D, G, and H and 65 FB-111A medium bombers. The B-52D aircraft (altogether about 80 of them) each carry in the bomb-bays four nuclear aerial bombs of the megaton class, and the B-52G

* According to other reports in the foreign press, about 8,000 kilometers-Ed.

and H--8 SRAM air-to-ground guided missiles [GM] (yield of the warhead 200 KT) and 4 nuclear aerial bombs contained in each bomb-bay. Aircraft of the last two modifications also have underwing attachment points by means of which, in cases of necessity, they can carry 12 SRAM GM's. The FB-111A medium bombers can have on board nuclear aerial bombs as well as SRAM GM's. All bombers are equipped with systems for aerial refueling from KC-135 tanker aircraft (there are 615 in SAC of the U.S. Air Force), which increases substantially their range of flight.

In swelling the budget and obtaining billions in profits each year, the U.S. militarists are making newer and newer plans to build up the country's military might. According to a statement of the Pentagon leadership, existing nuclear forces allegedly no longer fully satisfy the requirements of the new concept of "active opposition" which was legitimized by Presidential Directive No 59 in 1980. In accordance with it, a multivariant employment of U.S. strategic nuclear forces in a prolonged nuclear war is envisaged, including the mass employment (main variant) and the so-called "limited" nuclear strike.

These aims found reflection in the so-called "comprehensive strategic program" for the 1980's announced by President R. Reagan in October 1981 which envisages a substantial buildup of the combat capabilities of all U.S. "nuclear Triad" components.

In the land-based strategic missile forces main efforts are concentrated on the creation of new MX ICBM's As reported in the American press, this three-stage solid-fuel missile is capable of delivering 10 warheads with a yield of 600 KT each over a distance of up to 11,000 kilometers. Work begun on the MX system in 1974 reached the stage of full-scale development of the missile in the middle of 1979.

The Reagan administration has adopted the decision to deploy the first 40 MX missiles in 1986-1987 in existing silos of the Minuteman-3 ICBM. At the same time, the Pentagon intends to continue studies on other methods for basing the MX ICBM: on wide-body airplane carriers; in "superdeep" silos which ensure high survivability of the missile; under the cover of an effective antimissile defensive system. It is reported that it is planned to complete the studies on their technical substantiation by 1984. After this, the decision will be made concerning the deployment of an additional number of MX ICBM's which, as Secretary of Defense C. Weinberger declared, will be accomplished "probably using two or three basing methods." Altogether, it is planned to deploy 100 missiles on the first stage.

As reported by the newspaper NEW YORK TIMES, almost 1,000 companies which have already expended more than 2 billion dollars are involved in the creation of the MX system. In accordance with the military budget for fiscal year 1981, appropriations of 1.56 billion dollars have been approved, for 1982--about 2 billion, and for 1983, 4.5 billion are requested to continue the development of the MX and the purchase of the first nine missiles. According to estimates of foreign specialists, the total cost of the program will be at least 30 billion dollars. Deployment of the MX system in fact will mean a 1.5-fold increase in the total number of warheads in the ICBM forces.

The basis of further development of nuclear missile submarine forces is the Trident program which includes the construction of SSBN's of the "Ohio" type (Fig. 2) [not reproduced] and arming them initially with Trident-1 missiles, and subsequently--the Trident-2.

In October 1981 the lead SSBN "Ohio" with 24 SLBM launchers was turned over to the Navy, the construction of the second SSBN ("Michigan") was completed, and several other submarines are in various stages of construction. The first squadron of new submarines (10 units) will be on combat patrol in the northeast part of the Pacific Ocean and will be based at the Bangor, Washington, Naval Base which is already ready to receive it. According to estimates of American specialists, one submarine of the "Ohio" type with 24 Trident-1 missiles is superior in its combat capabilities to 10 SSBN's with Polaris-A3 missiles. It is planned to deploy a second similar squadron in the Atlantic Ocean.

As the Pentagon leaders themselves stress, the Trident-2 SLBM which is under development approaches the MX ICBM in its characteristics and will be "capable of destroying effectively any objectives on the enemy's territory." For these purposes, without waiting for the entry of the Trident-2 missile in the inventory which is planned for 1989, work is being conducted in the United States on increasing the firing accuracy of the Trident-1.

Development of strategic bomber aviation is planned along two basic lines: improvement of aviation missile armament and modernization of the airplane fleet.

The United States has already begun to reequip the B-52G bombers with AGM-86B cruise missiles. As reported in the foreign press, such a missile is capable of delivering a nuclear warhead with a yield of up to 200 KT a distance of 2,500 kilometers at a speed of M=0.7 at an altitude of 60 meters (flight is accomplished by hugging the terrain relief). Each bomber will be armed with 20 missiles: 12 on two underwing pylons (6 each) and 8 in the bomb-bay on a revolver-type launcher. The SAC command plans to introduce the first squadron of B-52G bombers armed with cruise missiles into the combat-ready forces in 1982. Before the end of the 1980's it is planned to equip all B-52G and H bombers with them.

The Pentagon is trying to substantiate the program of renovating the strategic aviation aircraft fleet and the creation and deployment of a new bomber by references to the forthcoming reduction in the effectiveness of existing aircraft. As such an aircraft the Reagan administration has adopted the so-called multipurpose B-1B bomber which is being designed on the basis of the B-1 supersonic heavy bomber (Figure 3) [not reproduced] which has been developed and tested but not put into series production. It will be capable of carrying various strike weapons, including long-range cruise missiles. The newspaper WASHINGTON POST reported that the Pentagon plans to form the first squadron of 15 aircraft as early as 1986 and to build 100 such bombers altogether in the 1980's, expending more than 25 billion dollars on this.

Simultaneously with the deployment of new strike weapons systems, the Pentagon plans the quality improvement of existing and the development of contemporary means which are called upon, as stressed in the American press, to ensure "the reliable control of strategic offensive forces in a long nuclear war." In addition, Reagan's "strategic program" includes plans for the radical modernization of all components of the strategic defensive forces--antiaircraft, antimissile, and antispace defense and systems warning of a nuclear missile strike.

All these plans, stresses the leader of the Defense Department, C. Weinberger, are directed toward seeing that the United States can "have both offensive and strategic defensive potentials" which, in turn, signifies the aim of the present American administration of creating the potential for the first nuclear strike in a strategic nuclear war.

As a substantial addition to the strategic offensive forces, beginning in 1984 the Pentagon plans to equip nuclear submarines as well as surface ships with the Tomahawk cruise missiles with a nuclear charge. Several hundred such missiles which, according to estimates of U.S. military specialists, are capable of launching strikes against objectives to the entire depth of the USSR's territory from various directions, "will have especially important significance as a strategic reserve--one of the main elements of deterrence."

In counting on a nuclear war restricted to the limits of the European continent, the U.S. military-political leadership is speeding up completion of preparations for the deployment of 464 land-based cruise missiles and 108 Pershing-2 ballistic missile launchers in a number of countries of Western Europe from 1983. According to the concept of American strategists, by using such missiles to launch highly accurate "preemptive" nuclear strikes against objectives virtually throughout the entire depth of the European part of the USSR, including against strategic objectives located here, the United States could not only change the correlation of forces in the European theater in its favor, but could also reduce the force of a retaliatory strike against the United States.

The United States is also increasing its tactical nuclear potential. The full-scale production of nuclear ammunition with an increased yield of initial radiation (neutron ammunition) for the Lance missiles and 203.2-mm howitzers was begun in 1981.

The Pentagon's increase in nuclear preparations and, first of all, in the field of strategic forces, is not "completion of arming" to eliminate some "windows of vulnerability," as the Washington administration tries to present its broad-scale nuclear programs. This is used to pursue the goal of breaking the military-strategic balance which has formed in the world and provide the United States with superiority over the Soviet Union and the capability to react with it "from a position of strength." Moreover, U.S. state and military figures have even begun to declare openly the possibility of unleashing a global as well as a "limited" nuclear war.

In answering the questions of a PRAVDA correspondent recently, Comrade L. I. Brezhnev again stressed that "only one who has decided to commit suicide can begin a nuclear war in the hope of emerging from it the winner. However much power the attacker may have and whatever the methods he may select to unleash a nuclear war, he will not achieve his goals. Retribution will inevitably follow."

At the same time, neither can we fail to consider the atmosphere of hostility which is now being forced by the United States and NATO in regard to the Soviet Union and the open threats and attempts at interference in the affairs of the socialist countries. Our party is always guided by the instruction of V. I. Lenin, which is timely for contemporary world development, to the effect that we should accompany our steps toward peace by the straining of all our military readiness. "In this connection," noted the USSR Minister of Defense Marshal of the Soviet Union D. F.

Ustinov, "it is necessary to remind several figures across the ocean that the peaceful disposition of the socialist countries should not be taken as their weakness. The experience of the Great Patriotic War is convincing confirmation of this. The socialist countries have everything necessary for the reliable defense of their peoples. The forces and might of the countries of the socialist commonwealth are sufficient to repel aggression and no one will ever succeed in bringing them to their knees."

The men of the Soviet Armed Forces and of the other fraternal armies of the states which are participating in the Warsaw Pact are standing reliable guard over the achievements of socialism. They are steadily increasing vigilance and are in constant combat readiness for the immediate rebuff of any aggressor.

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PERCEPTIONS, VIEWS, COMMENTS

COMMENTS ON WEST EUROPEAN MILITARY INTEGRATION

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 3, Mar 82 (signed to press 10 Mar 82) pp 10-16

[Article by Lt Col I. Vladimirov, candidate of historical sciences: "Basic Trends in the Military Integration of West European Countries"]

[Text] The 1970's have firmly gone down in history as the period of the active and purposeful struggle of the Communist Party and the Soviet state for peace and security in Europe when, thanks to the efforts of the USSR, many important problems which remained unregulated from the time of World War II were solved by means of talks. An important event was the Helsinki Conference which confirmed the principle of European security and collaboration and called for the undertaking of steps directed toward a reduction in military confrontation and for assistance in disarmament. In summing up the results of this fruitful activity, Comrade L. I. Brezhnev noted in the accountability report of the CPSU Central Committee to the 26th Party Congress that "in general, despite the efforts of the enemies of detente peaceful coexistence between the countries of the two systems is developing rather well on the European continent. Political contacts have become broader and more saturated. We often succeed in finding a common language as regards a number of important foreign policy problems. Economic, scientific-technical, and cultural ties are growing, acquiring new qualities. Multilateral conferences on various problems of general European collaboration have been conducted."

At the same time, in recent years the aggressive course of the enemies of detente which is directed toward a feverish increase in militaristic preparations to attain military superiority over the states of the socialist commonwealth has become noticeably more active. The main force which is stepping forth against the positive processes in Europe is the United States which heads the imperialist NATO bloc. The forcing of tension on this continent is also furthered by the dangerous activity of various regional organizations of the Western European countries which are closely tied to the North Atlantic Pact and which act in its interests. They now include, first of all, the West European Alliance, NATO Eurogroup, and the Independent European Programming Group.

The Western Alliance which was created in 1948 in accordance with the Brussels Treaty became the first military-political grouping of Western European imperialism. It included Great Britain, France, Belgium, the Netherlands, and Luxembourg. The official goal of the alliance, as declared in the foreign press, was "the adoption of joint measures against possible repeated German aggression." However,

intentions to combine the efforts of the leading capitalist states of Western Europe for a struggle with the Soviet Union, the countries of people's democracy, and other progressive forces of the region were concealed under this pretext.

In heading for the remilitarization of the FRG, in 1954 the Western powers signed the Paris Agreement which finally confirmed the lifting of the occupation regime of the United States, Great Britain, and France on the territory of West Germany and made official its inclusion in NATO. In accordance with these agreements, in 1955 the FRG and Italy became members of the Western Union, after which it was changed to the West European Union (WEU). The effective period of the WEU agreement expires in 1998. It does not have a military organization, and the armed forces allocated by its member countries make up the combined armed forces (CAF) of NATO in Europe.

According to data in the foreign press, the structure of the WEU includes an executive and parliamentary organizations (Figure 1) [not reproduced]. The highest organ of the executive organization is the council, and of the parliamentary organization--the assembly.

The council consists of the foreign ministers of the WEU member countries. It follows the accomplishment of all the provisions of the agreement on the West European Union and presents annual reports of its activity for the assembly's consideration. As a rule, the council's sessions are convened once every three months; however, there is no strict time limit in this regard. Thus, it assembled only once a year in 1973 and 1974. The council's decisions are adopted unanimously except for a number of questions for which a different procedure is envisioned.

In the intervals between the council sessions the leadership of the West European Union is accomplished by a permanent council (headquarters in London). It includes the ambassadors of the WEU countries in Great Britain and the representative of the British MID [Ministry of Foreign Affairs]. Sessions of the permanent council are conducted twice a month under the chairmanship of the WEU secretary general.

The executive organs of the council are the general secretariat, arms monitoring agency, and permanent committee on armaments.

The general secretariat (headquarters in London) prepares the sessions of the council, the meetings of the permanent council and various working committees, works out drafts of council decisions on the recommendations of the assembly, and maintains ties with other organizations, first of all with NATO. It is headed by a general secretary to which the arms monitoring agency and the permanent committee on armaments are administratively subordinate.

The arms monitoring agency is called upon to monitor the level of the armed forces and armaments of the WEU member countries (including the production, import, and export of weapons) by the analysis of information turned over to be at its disposal by the government organs and the NATO leadership and the conduct of inspections among the troops and at military warehouses and plants. The armed forces and installations subordinate to the NATO command are not subject to inspection. The agency's reports are presented to the WEU council. It is stressed in the foreign press that the agency's activity is distinguished by low effectiveness, in particular

because it is based on incomplete data on the status of the armed forces. Thus, during the entire time of its existence not once could it monitor the supplies of nuclear, biological, and chemical weapons.

One of the agency's most important tasks is considered to be monitoring the armaments of the FRG, including its implementation of the conditions of the Paris Agreements about rejection of the production and acquisition of nuclear, biological, and chemical weapons and about restrictions on the building of certain types of military equipment. However, in practice the WEU monitoring organ did not in the least prevent the rearming of West Germany. Thus, under the pretext of "equalizing" the military status of the FRG and NATO the West German leadership easily achieved the lifting of a number of restrictions on the production of antitank guided rockets and several types of guided missiles and free-flight rockets and the construction of submarines. In July 1980, on the initiative of the government of the FRG and the Supreme Commander of the NATO CAF in Europe, General W. Rodgers, the WEU adopted the decision which the foreign press considered as the "most important since World War II on the question of lifting restrictions on the rearming of the Federal Republic." All restrictions imposed on the FRG in the field of building big warships, including those with nuclear power plants, were lifted.

The permanent committee on armaments has the task of "raising the effectiveness of the armed forces of the West European Union's countries and improving their material and technical support." Its activity, which is accomplished in accordance with the requirements of the NATO leadership, should contribute to the development of collaboration of the WEU countries in the field of the development, standardization, production, and purchase of weapons and combat equipment. The committee presents semiannual reports to the WEU council on the basis of the results of the work which, in actuality, is extremely far from the initial intentions according to the evaluation of the foreign press.

The highest organ of the WEU parliamentary organization--the assembly--consists of 89 deputies from the member countries. The assembly's sessions, which are usually conducted in Paris, are convened once a year, but they take place in two stages--in May-June and November-December. The annual report of the WEU council is heard at the spring meetings. The assembly has the right to discuss virtually any political, military, economic, and scientific-technical problems and to provide recommendations on them to the WEU council and the governments of the Union's countries.

The leading organs of the assembly, according to data in the foreign press, are the bureau and the committee of chairmen. The bureau, which consists of the chairman of the assembly and six vice chairmen (one from each country) is occupied with all the administrative questions and, in particular, determines the candidacy of the assembly's general secretary. The committee of chairmen includes the chairman of the assembly, six vice chairmen, and the chairmen of the permanent committees. It accomplishes the leadership of the assembly in the intervals between sessions, determines the times for their conduct and the agenda for the plenary sessions, and works out the draft of its budget.

The assembly now has six permanent committees on the following questions: political, defense and armaments, scientific-technical and aerospace, protocol-legal, administrative-financial, and on ties with the national parliaments. The reports of the committees are considered by the assembly and, in the case of their approval, are sent to the council as recommendations.

In creating the WEU, the leadership of the leading West European states hoped to use it as a means for the development of collaboration between the member countries and raising their role in determining NATO policy. According to the Paris Agreements, this Union was to contribute to the unity and stage-by-stage integration of the West European states in the military-political sphere and to the organization of the joint production of armaments and their standardization. However, in actuality, in the opinion of foreign observers, it was transformed into a purely consultative organ whose decisions do not have a mandatory character for the member countries. Moreover, the effectiveness of the WEU's activity is reduced to a considerable degree due to the constant clashing of the interests of Great Britain, France, and the FRG which are conducting a fierce struggle for the leadership in Western Europe.

Under these conditions, the task of stimulator of military integration was assigned to the NATO /Eurogroup/ [in boldface] which was created in January 1969 on the initiative of Great Britain (Figure 2) [not reproduced]. In addition to the latter, its composition included the FRG, Italy, Norway, Denmark, Belgium, the Netherlands, Turkey, Greece, and Luxembourg and, from December 1976--Portugal. Officially the Eurogroup is considered as an independent organization; however, it is so closely tied with the North Atlantic Alliance that the bloc's press organ--the journal NATO REVIEW--calls it one of "its permanent elements."

The creation of the Eurogroup reflects the so-called "Atlantic" path of West European military integration. Coordinating its actions within the framework of the "European nucleus" in NATO, the leadership of the West European countries strived to bring the political positions of this region into conformance with the increased economic capabilities as well as to raise its role in the bloc's activity. The idea of the creation of this group was also supported by the United States since, at the same time, the goal was posed to increase the military contribution of the West European states to the North Atlantic Pact and, thereby, to contribute to the buildup of its total military power.

During the years of its existence Eurogroup, according to the evaluation of foreign specialists, was transformed into a far-flung mechanism for coordination of the efforts of the member countries in the military, military-economic, and military-political spheres. The sessions of this group are conducted twice a year at the defense ministers' level, usually on the eve of sessions of the leading organs of the NATO bloc. In the intervals between them, leadership of Eurogroup is accomplished by the permanent representatives of these countries in the NATO council with the assistance of the secretariat whose functions are accomplished by the representation of Great Britain with the bloc's council. Practical work proceeds in the following main working groups.

/Eurolongterm/ [in boldface] is occupied with long-term planning in the field of armaments and the development of military requirements for weapons systems. Up to now seven lists of such requirements have been prepared; they are used for the development, production, and purchase of military equipment in NATO. They are approved on the basis of concepts for the conduct of combat operations which have been worked out.

/Eurotraining/ [in boldface] is responsible for the organization of joint combat training of the personnel. Together with the countries of Eurogroup, the United States and Canada have participated in its work since 1971. Therefore, this group

is usually called Euro-NATO-training. It has approved about 30 programs for courses in joint combat training. Thus, in December 1980 a program was approved for the joint training of air force flight personnel of the Eurogroup countries in the United States, which is evaluated as "most important." In May 1979 a plan was approved for the creation of a special strategic intelligence school. Another 25 plans for joint combat training are now being considered.

/Euronad/ [in boldface] accomplishes the coordination of military-technical collaboration and the working out of standardization programs. In 1972, Eurogroup approved the "principles of collaboration in the field of armaments" which had been prepared with Euronad.

In addition there are the working groups Eurolog (collaboration of national rear services organs), Eurostructure (unification of the organizational structure of the armed forces), Euromed (collaboration of the military medical services), and Eurocom (creation of single communication systems). It is planned to create a special subgroup for the study of the question of using human resources and determining the requirements of the Eurogroup countries in this area.

All the activity of the NATO Eurogroup is characterized by an openly militaristic trend. Each year, the member countries allocate more and more considerable appropriations for military purposes. If in 1970 they comprised 24.6 billion dollars, in 1980 they increased to 80 billion. Beginning with 1971, special programs coordinated with NATO for the arrival of a tremendous quantity of armament among the troops of the Eurogroup countries were adopted. As a result, during the period from 1971 through 1981, judging from the official data of this organization, more than 4,700 tanks, about 2,240 airplanes, 190 combat ships, and a considerable quantity of other combat equipment were sent to the troops. At the same time, models of armaments present in the units are being modernized. In 1981 alone, it was planned to outfit about 400 tanks and up to 450 combat airplanes with new equipment.

Judging from reports in the foreign press, the regular troops of the Eurogroup countries number about 2.5 million men in peacetime (in wartime their number will increase significantly due to the mobilization of reserves). They comprise 80 percent of the ground forces and 70 percent of the air forces of the NATO combined armed forces in Europe, and the armored and mechanized divisions--more than 90 percent (75 percent of the tanks).

Setting as its goal the buildup of the North Atlantic bloc's military might, at the contemporary stage Eurogroup is directing its basic efforts toward the speeding up of the accomplishment of its long-term military program. Here, judging from reports in the foreign press, main attention is devoted to raising the combat readiness of the armed forces, improving the system for mobilizing the reserves, improving the material and technical support of the reinforcing units being transferred from the United States, and the rationalization of planning of armament production.

At the sessions of Eurogroup, along with consideration of military-economic problems an evaluation is made of the military-political situation in Europe, the correlation of NATO and Warsaw Pact forces is discussed, and positions on the most important problems of relations between the East and the West are coordinated. It should be stressed that European affairs no longer comprise the only prerogative of

Eurogroup. As follows from the communique of its session in May 1981, the defense ministers are analyzing in detail questions of the North Atlantic bloc's activity beyond the limits of its "zone of responsibility."

One of the tasks of Eurogroup in the process of organizing European military-economic collaboration consists of balancing trade in weapons with the United States. However, it is noted that its solution is hindered to a certain degree by France's refusal to join the group in view of the latter's complete dependence on NATO. Meanwhile, finding itself in virtually complete isolation on this question and fearing the weakening of its positions in the competetive struggle with the United States, the French military monopolies agreed to seek a rapprochement with their West European partners, but under the condition that their collaboration have a nature less dependent on NATO. As a result of the compromise attained between Eurogroup and France in 1976, a new organization was created--the /Independent European Programming Group/ [in boldface] (IEPG) which included 11 countries of Eurogroup and France. Formally, it is not connected with the North Atlantic Pact. In official documents of Eurogroup IEPG is considered as the "main European forum for the development of collaboration in the field of military equipment." Its purpose is strengthening the West European military industry, converting it into a competetive industry in relation to the American industry, the development of the joint production of individual types of armaments, their standardization, and the balancing of trade in weapons and combat equipment with the United States. At the same time, the creation of this group pursued the goal of gradually drawing into the NATO organization France who left it in 1966.

Direction of the Independent European Programming Group is accomplished by the deputy defense ministers (Figure 3) [not reproduced] who conduct their sessions once a year. The chairman of IEPG is appointed for a period of two years. The functions of the coordinating organ are accomplished by conferences of the national directors for armaments. Meeting twice a year, they direct the activity of three groups: planning armaments production and preparing annual lists and schedules for their replacement on the basis of information on national requirements; the study and working out of plans for joint production; and working out the procedural aspects of collaboration. According to reports in the foreign press, during the first 10 months of its activity alone IEPG adopted decisions on the joint production of 6 weapons systems and the building of 1,000 tactical fighters from 1985 through 1995.

Thus, according to estimates of foreign specialists, a complex structure of mutually supplementing organizations has formed in Western Europe whose activity affects primarily the problems of military-economic collaboration and touches on problems of a military-political nature only to a certain extent. The discrepancy which has arisen between the two directions of military integration is explained in the foreign press first of all by the lack of coincidence of the interests of the region's leading countries in the military-political sphere, in particular by the difference in the views on the role of groups which have been examined in the establishment of Western Europe as one of the centers of the forces of imperialism. Thus, France is counting on the Western European alliance as the main organ for military-political integration. The FRG, for its part, in trying to get rid of the restrictions which are still maintained, is blocking the attempts of France to revive the WEU, and is striving to minimize its significance and giving preference to Eurogroup. As a result, not one of the organizations is succeeding in becoming the initiator of military-political collaboration.

Under the conditions which have been created, the supporters of the military and political integration of the West European countries are putting forth far reaching plans for the creation of a new military-political group based on the European Economic Community (EEC, or Common Market"). Here, they are proceeding from the fact that this integration can provide a thrust to the deepening of economic collaboration. For the long range, the goal has been set to transform the EEC into a military-political bloc--the European Union.

Back in 1976 the Prime Minister of Belgium, L. Tindemans, came forth with the proposal concerning the expediency of giving functions of a military nature to the EEC. Proceeding from the outstripping development of military-economic collaboration, the creation of a "European agency on armaments" at the first stages was recommended. According to an evaluation by the foreign press, the Independent European Programming Group, which is beginning to play the role of connecting link between the EEC and Eurogroup, has become the prototype of this agency.

Now the adherents of the European Union are more and more actively demanding the coordination of its member countries' military policy within the framework of the "Common Market." Thus, in May 1981 the deputy chairman of the EEC Commission, (K. Tagendkhet) declared that "it is necessary to consider the tie which exists between an industrial upsurge and requirements in the field of defense. The foreign ministers should discuss military problems." The foreign minister of the FRG, Genscher, prepared proposals on the intensification of political collaboration in the "Common Market," considering that one of the results will be more systematic cooperation in the military-political sphere. Foreign specialists do not exclude the formation of a special organ at the level of defense ministers in the EEC. It is believed that the next stages in the formation of the European Union could be the creation of European nuclear forces as part of the strategic forces of France and Great Britain with the financial and technical participation of the FRG, the adoption of a single military budget, and the creation of a combined European command and combined armed forces.

The activity of the West European groups and the plans of the supporters of the new military-political alliance reflect the striving of certain circles in Western Europe to raise the level of military confrontation in the region and to deepen its division into opposing blocs. These schemes are acquiring an especially dangerous nature under conditions of the aggravation of tension in the world as a result of the adventuristic course of the United States and NATO for the attainment of military superiority over the states of the socialist commonwealth. The interests of European security are met not by putting together new pacts, but by the concrete steps which the Soviet Union has repeatedly proposed and which are directed toward overcoming the splitting of Europe into blocs.

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PERCEPTIONS, VIEWS, COMMENTS

COMMENTS ON U.S. MILITARY MATHEMATICAL PROGRAMMING

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 3, Mar 82 (signed to press 10 Mar 82) pp 18-19

[Article by Engr-Col D. Sokolov, candidate of military sciences: "Financing Mathematical Modeling in the U.S. Department of Defense"]

[Text] The militaristic course of the Washington administration determined a sharp increase in the budgetary appropriations for the Pentagon. Big sums are being allocated for the development of mathematical models and the conduct of military studies with their use.* In fiscal year 1980 alone, 164 million dollars were released to the Department of Defense for these goals, but actually about 250 million were expended, which exceeded the level of such expenditures in the middle of the 1970's almost 1.5-fold and in the middle of the 1960's--more than 3-fold.

The indicated funds are being directed to the development of models, their technical exploitation and modernization, and studies in the interests of the Department of Defense and the services of the armed forces. American specialists divide all these expenditures into direct, indirect, and total. By direct expenditures are meant those which go for the development of the model itself (methods, algorithms, programs for the computers) and its subsequent updating, and by indirect--for the purchase (leasing) and servicing the computers, information service for the model, leasing communication channels, control, and so forth. Total expenditures are the sum of direct and indirect expenditures as well as those for the conduct of studies using the given model, including amortization of the technical base.

The share of the direct expenditures in the total expenditures for modeling is constantly being reduced during the last 15 years. If in the middle of the 1960's it comprised 39 percent, by the end of the 1970's it had dropped to 26-27 percent. However, as the foreign press stresses, total expenditures on the development of models gradually increased due to the complication of the latter. The structure of expenditures also changed due to a reduction in the number of inexpensive models and an increase in the number of expensive ones. According to reports in the foreign press, the updating of 36 percent of the models in the middle of the 1960's required no more than 10,000 dollars for each of them, but already at the beginning of the 1970's the number of such models had dropped to 16 percent. At the same time, the

* For greater detail on the development of mathematical modeling in the United States see ZARUBEZHNOYE VOYENNOYE OBOZRENIYE No 8, 1980, pp 27-34 and 1981, No 8, pp 43-48.--Ed.

share of the models whose updating cost lay within limits of 25,000-50,000 dollars increased from 9 percent to 23 percent.

The level of indirect expenditures during the 1970's was relatively stable and, in relation to total expenditures, was within limits of 28-31 percent. Their amount is influenced by two opposing trends: on the one hand a growth in the cost of the technical base is occurring, and on the other the improvement of the models and their information service, which leads to a reduction in the volume of the base indicated above or to a reduction in the time for its use.

A rapid growth in expenditures for the conduct of studies and war games with the use of models as well as their employment in military planning has been observed in the last 10 years. At the beginning of the 1970's, the share of these expenditures was no more than 30 percent, but now it has increased to 55 percent. This was caused by a rise in the volume of use as well as by an increase in the number of operating models.

The structure of total expenditures on modeling and the dynamics of its change are also of interest. At the beginning of the 1970's models with total expenditures of no more than 50,000 dollars comprised 29 percent of the total number, with expenditures of 50,000 to 250,000 dollars--39 percent, and above 250,000--32 percent. At the end of the last decade these indicators comprised respectively 20, 31, and 49 percent. Individual models appeared with the level of total expenditures from 2.5 to 5 million dollars. American specialists expect that this trend will be maintained in the immediate future.

Despite the sharp increase in the cost of mathematical modeling, the military leadership of the United States believes that the expansion of the number of models and their use for military planning purposes will create a certain savings in material and financial resources through a considerable improvement in the quality of planning.

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PERCEPTIONS, VIEWS, COMMENTS

COMMENTS ON NATO PROTECTIVE CLOTHING AND EQUIPMENT

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 3, Mar 82 (signed to press 10 Mar 82) pp 33-38

[Article by Engr-Col (Res) Y. Ivanov, candidate of technical sciences, and N. Mikhaylenko: "Field and Protective Clothing in the Armies of the NATO Countries"]

[Excerpts] Constantly intensifying the arms race, the NATO command believes that the effective use of weapons and combat equipment is possible only with the presence of well-trained, combat-effective personnel. In the middle of the 1950's, American specialists formulated several propositions, the accomplishment of which, in their opinion, in the course of battle would preserve the combat effectiveness of the personnel at the maximum possible level. Judging by reports in the foreign press, main stress was placed on ensuring their survivability, ability to function, and controllability. For this, it was necessary to create the appropriate system, the material basis of which would be primarily technical, medical, and engineer equipment. In their selection and the establishment of the optimum combination between them, the specific character of the conditions under which the personnel of the different combat arms find themselves was considered.

In giving their due to all components of the indicated system, foreign specialists have especially singled out technical equipment as the most important and numerous, allotting the main role to individual equipment. Views on it were completely reviewed soon after the creation of NATO. The initiator was the United States which proposed the model of the "soldier of the future" which subsequently became the basis for a long-term long-range program for the development of individual equipment for the armies of the bloc's countries. The model included: the personal weapon (automatic rifle), a comfortable and sufficiently practical field uniform, means for protection against conventional weapons and weapons of mass destruction (OMP), a radio receiver for the reception of commands in a deployed combat formation (officers had a transceiver), a night vision device, explosive-type entrenching tool, and a back-pack jet engine which permits accomplishing jumps for height and length to a relatively large distance. Subsequently, with the exception of the two latter all these elements of the "soldier of the future" were constantly developed. In the period of the aggressive war which the American militarists waged in Vietnam, this process became considerably more active and more purposeful. Specialists of the NATO bloc attach no little significance to the improvement of combat clothing which includes the field uniform, means to protect the skin against several damage-causing factors of OMP, and equipment for individual armor protection.

On the whole, according to reports in the foreign press, the further improvement of the field uniform and protective clothing is planned in the NATO countries, first of all in the direction of giving them good physiological and hygienic indices and also by raising heat-protective and other properties. The bloc's specialists link this primarily with the appearance of new types of clothing materials which possess the necessary complex of properties, that is, with further scientific and technical achievements in the field of creating polymers, synthetic fibers, adsorbing materials, and special coatings.

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PERCEPTIONS, VIEWS, COMMENTS

COMMENTS ON SKYGUARD-SPARROW SAM SYSTEM

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 3, Mar 82 (signed to press 10 Mar 82) pp 38-40

[Article by Engr-Col V. Viktorov: "Skyguard-Sparrow Surface-to-Air Missile Complex"]

[Text] To increase the effectiveness of troop air defense weapons, the surface-to-air missile [SAM] complexes of the foreign armies are continuously being improved by modernizing existing and creating new, more contemporary models.

In the 1960's in connection with the increasing significance of missions for the detection of and combating low-flying aerial targets, in a number of capitalist countries the development of new radar equipment which permits the effective and timely detection of such targets in the interests of SAM's and tube antiaircraft artillery (AA) was begun. In particular, the Swiss company "Contraves" created an all-weather fire control system , "Skyguard," which initially was intended for use together with antiaircraft mounts (the Oerlikon 35-mm coupled guns). According to reports in the Western press, about 20 such systems have already been delivered to the Swiss ground forces.

At the same time, Swiss specialists considered the question of employing this system as part of a surface-to-air missile complex. Here, its ability to control the fire of antiaircraft guided missiles (AAGM) was noted. In 1980, demonstration launchings of Sparrow missiles (Figure 1) [not reproduced] were conducted jointly with the American Raytheon Corporation at the China Lake Range in California to determine the characteristics and combat capabilities of the Skyguard-Sparrow SAM complex.

Altogether, three launches were conducted with SAM's on board which telemetry equipment was installed instead of warheads. The target aircraft flew in the direction of the SAM complex at an altitude of about 1,000 meters at a speed of 220-250 meters per second. In the foreign press it was reported that in the first case the AIM-7E Sparrow SAM, in intercepting a QT-38 target aircraft at a range of 4.7 kilometers, flew past it at a distance of three meters. This was evaluated as the destruction of the target since it was in the zone of destruction of the missile warhead. AIM-7F Sparrows (improved version) were employed in two subsequent launchings against QF-86 target airplanes. One of them (at a distance of 5.5 kilometers) landed in a wing tank, and the second (6.8 kilometers)--in the nose of the target airplane.

In conducting these tests, the complex included the Skyguard fire control system and a launcher containing four Sparrow SAM transport-launcher containers. It is noted that the Skyguard system can control the fire of three such launchers or one launcher and two 35-mm Oerlikon guns (see color insert) [not reproduced]. The latter version is considered by foreign specialists as the most optimum in the plan to combat low-flying targets.

The Skyguard fire control system is contained in a standardized van mounted on a two-axle trailer (Figure 2 [not reproduced], total weight 5 tons) or on an M548 tracked transporter. Its basic elements are: an acquisition radar with IFF [identification friend or foe] equipment, a tracking radar, television set, digital computer, control console, and source of power. Both radars are pulse-Doppler and use one common transmitter.

The acquisition radar, which operates in the 3-centimeter band, has an operating range of up to 20 kilometers. The width of the radiation pattern of the Cassegrain-type antenna is 1.7° for azimuth and 55° for angle of elevation. The antenna's rate of rotation is 60 revolutions per minute. Rapid retuning of emission frequencies and pulse repetition is employed to increase resistance to jamming. The transmitter (mean power 200 W) emits pulses with a duration of 1 or 0.3 μs on one of five previously set frequencies in the 900 MHz band. The station can detect targets flying at a speed of up to 1,350 meters per second and possesses range resolution of 160 meters. Data on the aerial situation is displayed on a PPI [plan-position indicator] scope (diameter 24 centimeters) which has a variable sweep in range from 0.3 to 20 kilometers.

The monopulse method of processing signals is employed in the tracking antenna (operating range about 15 kilometers, width of antenna radiation pattern 2.2°). A special feature of the station is that it can track simultaneously both an enemy aircraft and the air-to-surface-class missile launched from it. In this case, a sound signal is fed to the operator. He determines the degree of danger of each of the targets and launches the SAM against the most dangerous one. With good visibility and under conditions of strong electronic countermeasures [ECM], television equipment consisting of a television camera (mounted on the left on the tracking radar antenna) and a television screen (in the operator's van) can be used to track the aerial target in the automatic or manual mode. In case of necessity, the operator can again switch rapidly to tracking targets using the radar.

The Skyguard system includes a Cora-II computer which is intended for accomplishment of the following tasks: determining the degree of danger of the targets, calculating the coordinates of the predicted point for AA fire, generating commands for missile launching, issuing commands to control both radars and the television camera, and checking the fitness of all elements of the system for operation. Commands to control the antiaircraft artillery guns and the missile launchers are transmitted over cable communication lines. The computer can also be used to simulate a combat situation when training the crew of the complex.

The PPI scope, television screen, device for the input of data into the computer, handles to control the operation of the radars and television equipment (in the manual mode), a matrix which displays input and output data, and a control panel are arranged on the control console. Two people sit at the console (the commander and the operator).

Power supply for the Skyguard system is accomplished from a generator with an output of 20 kW (frequency 400 Hz) which is put into operation by an air-cooled gasoline engine. There is a voltage regulator. The electric power plant is contained in the standardized van of the fire control system.

The SAM launcher (Figure 3) [not reproduced] was developed jointly with the Raytheon Corporation and is mounted on the same wheeled carriage as the antiaircraft artillery mount with the Oerlikon 35-mm guns. The operator's cab with the target illumination radar and the optical sight are located in its middle portion on a rotating platform. Fastened in pairs on the sides of the cab, the transport-launcher containers with the missiles are replaced in five to six minutes using a truck-mounted crane. The launcher is controlled by the Skyguard system (connected with it by cable) or manually by the operator who occupies the place in the cab.

To destroy aerial targets, Sparrow SAM's of various modifications can be used in this complex (AIM-7E, AIM-7F), and RIM-7H). They are all equipped with a semiactive radar homing head.

The Sparrow AIM-7E missile (Figure 4) [not reproduced] has the following characteristics: length of body 3.65 meters, diameter 0.2 meters, wing span 1 meter, launch weight 205 kilograms, weight of high-explosive fragmentation warhead 30 kilograms. A single-stage solid-fuel motor generates the SAM velocity of up to Mach 3.5. The maximum aircraft intercept range of this missile is 10 kilometers, and minimum--1.5 kilometers. Maximum intercept altitude reaches 6 kilometers, and minimum--15 meters.

Specialists of the Contraves Company believe that after insignificant refinement of the Skyguard fire control system the Skyflash (Great Britain) and Aspid (Italy) missiles created on the base of the Sparrow SAM can also be employed in the SAM complex as a means for destroying aerial targets. The command of the Spanish ground forces plans to employ the Aspid in case of the purchase of the Swiss complex.

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PERCEPTIONS, VIEWS, COMMENTS

COMMENTS ON NATO'S USE OF AIR TACTICS BASED ON LOCAL WARS

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 3, Mar 82 (signed to press 10 Mar 82) pp 43-48

[Article by Col V. Kirillov, candidate of miltary sciences: "Utilizing the Experience of Local Wars in the Tactics of NATO Air Forces"; passages enclosed in slantlines printed in boldface]

[Text] As mentioned in the first part of the article (for the beginning, see ZARUBEZHNOYE VOYENNOYE OBOZRENIYE No 2, 1982, pp 43-50.--Ed), in the local wars unleashed by the United States in Southeast Asia and by Israel in the Near East, the aggressors' air forces widely employed electronic warfare (EW), in which regard, primarily to ensure surmounting the air defense [AD] system of the opposing side by the combat aircraft of their aviation.

In the opinion of American military specialists, although the use of EW means also helped to reduce significantly losses in combat aviation, nevertheless they still remained high. Therefore, in the course of the war the command of the U.S. Air Force was forced to undertake a number of additional measures. First of all, they began to allocate a large number of aircraft to combat the air defense (sometimes up to 50 percent of all those participating in a raid), thereby weakening the striking power of their aviation. In addition, special subunits were formed for the fire suppression of ground antiaircraft weapons, and electronic warfare means and methods for their employment were improved intensively.

Now the militarist circles of the NATO aggressive imperialist bloc, continuing active preparations for a war against the USSR and other countries of the socialist commonwealth, are attaching great significance to further development of the means and methods for electronic warfare, including those intended to support the combat operations of tactical air.

Presented below from information published in the foreign press are some conclusions of foreign military specialists which they have drawn as a result of the study of local war experience and views on the conduct of electronic warfare [EW] under contemporary conditions. The Western press comes forth with one voice for the conduct of such warfare. For example, the British journal FLIGHT wrote that after the study of the experience of local wars the firm conviction of the necessity to employ EW means in all types of armed conflicts appeared. In the opinion of foreign specialists, the skillful use of suppressive signals (jamming) in a broad range of

frequencies as well as deception of the enemy by the creation of a false aerial situation can reduce the effectiveness of his air defense system, in which regard sometimes more significantly than by suppressing his AD forces and weapons using conventional weapons. Experience shows, as reported in the same journal, that even the disruption of radio traffic between fighters accomplishing an intercept mission by noise jamming leads to confusion in their combat formations, and the dropping of regular radar chaff complicates significantly the discrimination and lock-on on aerial targets on the radar scopes of enemy antiaircraft complexes.

According to American concepts of electronic warfare, two types of aircraft protection are envisaged: group and individual. For the accomplishment of the former, special aircraft have been developed which are equipped with a large quantity of various EW equipment including equipment for electronic reconnaissance (ER) and equipment for active and passive jamming, that is, radioelectronic suppression (RES). In the U.S. Air Force, the EB-57 was the first such aircraft employed during the war in Vietnam. Then a more improved aircraft was developed for the country's naval aviation--the EA-6B Prowler. It was assigned two missions: from safe zones, jamming the radioelectronic means (REM) and, first of all the AD system's radars of North Vietnam, to ensure its breakthrough by the strike groups of its aviation; and the suppression of REM along the flight route of strike groups (in this case EW aircraft were included in their combat formation).

Sets of equipment for individual protection with which tactical fighters and other aircraft as well as helicopters are equipped include detection receivers (Figure 1) [not reproduced], various devices for dropping radar chaff and infrared (IR) traps, and radioelectronic suppression sets which, in the majority of cases are installed in suspended containers.

As foreign experts believe, the skillful use of EW equipment will permit the strike aircraft to fly at the desired altitudes, increase their capabilities for destroying assigned objectives, and reduce their own vulnerability. In their opinion, a mandatory condition in combating AD is jamming of the following types:

--/barrage/ jamming on fixed frequencies to mask the radar blips of attacking aircraft on the scopes of the enemy radar;

--/responsive-discontinuous/ jamming (in particular, in the form of decoy targets) in order to deceive the radar crews and command posts concerning the number of aircraft and their actual position;

--/passive/ jamming (including traps) for the possible disorientation of guided missiles with radar or infrared guidance systems;

--/radioelectronic suppression/ of nets for the control of fighter-interceptors and other AD means.

All these types of jamming were used and checked in local wars, and NATO military specialists believe that there are no grounds to doubt their suitability due to a change in geographic or weather conditions. The special attention of Western experts is attracted by the seemingly newly discovered effectiveness of passive jamming using metallized strips which possess the ability to reflect radio emissions in a broad range of wavelengths.

The West German journal TRUPPEN PRAXIS arbitrarily divides all contemporary AD means into the following four types: ER stations which ensure the detection of targets by direction-finding on their electromagnetic emissions; radars for the detection of aerial targets and their tracking; radars for the control of fire and the weapons themselves (fighters-interceptors, missile and artillery antiaircraft complexes). Here, it is noted that their own weapons and methods of combat should be worked out against each of them.

For the successful conduct of EW, first of all it is necessary to know the exact location and operating nature of the radars, radios, and other REM which make up the enemy's AD system, which is the mission of electronic reconnaissance. In the opinion of foreign specialists, only by having sufficiently complete information on the enemy's means can we successfully organize their electronic and fire suppression. The latter is the task of combat aircraft and, under certain conditions, surface-to-surface missiles and ground forces artillery and helicopter gunships can be involved in its accomplishment.

As regards ER, the foreign press stresses that the lessons of past wars require having information on the enemy AD in real time, and this is necessary for planning any air operation. This proposition is confirmed by several examples from the experience of local wars when reconnaissance data obsolete only by an hour destroyed the concept of a thoroughly calculated tactical procedure. For example, a diversionary action whose accomplishment was planned for execution prior to entry into the zone of destruction of an antiaircraft complex was frequently accomplished already within its limits since the crew of the SAM complex succeeded in occupying a new position during the time after reconnaissance was conducted and the aircraft which participated in the raid were convenient targets to be fired on.

The journal NATO'S FIFTEEN NATIONS wrote that NATO strike forces cannot get by without timely reconnaissance information, and obtaining it is considered a task of primary importance. Therefore, the air forces of the bloc's countries now have reconnaissance aircraft equipped with photographic, infrared, and radar equipment. They include the RF-4E Phantom-2, the first versions of which (RF-4C) were used under combat conditions in Vietnam. In addition, aircraft specially intended for the conduct of ER were created on the base of combat and transport aircraft. However, under conditions of a high density of radars and other electronic equipment, which is typical of Europe and especially of the Central Europe theater of operations, the equipment available in the NATO air forces is obsolete and no longer meets contemporary requirements. Therefore, the necessity for new systems arose. And such work is already being conducted in the United States and West European countries.*

According to the views of the command of the NATO combined air forces, ER should conduct the constant registration and analysis of the signals from enemy electronic equipment, and the intercept points should be located as close as possible to the enemy. The best version is considered to be duty of aircraft specially intended for this in the air (as was the case during the war in Vietnam), and also the use of artificial Earth reconnaissance satellites. For the rapid processing of data which are obtained, the system of electronic reconnaissance should include high-speed

* For greater detail on the development of EW equipment for U.S. tactical aviation, see ZARUBEZHNOYE VOYENNOYE OBOZRENIYE No 7, 1980, pp 50-54.--Ed.

electronic computers which can process with great speed, store for a long time, and rapidly put out information on the enemy to interested echelons.

However, the foreign press notes, the experience of local wars showed that to satisfy the requirements of air strike forces it is insufficient to conduct reconnaissance by placing radioelectronic means on friendly territory or above it. Then, for the immediate reaction to procedures for protection against EW undertaken by the opposing side, it was necessary to reequip a portion of the combat aircraft and assign their crews the mission to conduct electronic warfare. In this case, the maneuverability of these aircraft so necessary to accomplish procedures for the avoidance of active AD means was worsened since the suspended containers with reconnaissance equipment increased the drag and made the aircraft heavier. Aircraft with ER equipment were included in the overall combat formation with the fighter-bombers.

During the war in Vietnam, in the American Air Force in accordance with the "Wild Weasel" program special subunits were created which were equipped with F-105G aircraft and received the name "Iron Hand." They were manned with crack crews. Their mission was the detection of SAM complex launch positions, marking their location, and fire effect against the radars. The aircraft of the group tried to force the radars of the AD system to join in the work by demonstration maneuvers or the launching of decoy targets. If this was successful, the crew of such an aircraft, having determined the direction to the radar which began to function using an onboard direction finder, employed the Shrike antiradar missiles with a passive homing system for homing on the emission source. An AD suppression group coordinated with the aircraft carrying the Shrike guided missile. Receiving target indication, it built up the strength of the strike with the employment of aerial bombs (most often antipersonnel bombs). Then the fighter-bombers launched the strike against the assigned objectives. But frequently, the enemy radar went off the air in time, the guided missile went off the trajectory, and it deviated from the target. The attack failed.

Another version of joint operations of EW aircraft with fighter-bombers which was employed in Vietnam by American aviation was the attack of the target under the cover of directional jamming. The former, equipped with containers with jamming transmitters, were on duty in a zone which was located, as a rule, at a safe distance from the antiaircraft complexes. The latter moved toward the target without deviating from the assigned route, and the EW airplanes jammed the radars of the SAM complex. However, it is noted in the foreign press, if the radar crews succeeded in tuning out from the spot jamming they learned the direction of the attack ahead of time. The attention of the AD weapons was concentrated namely on this.

As evidenced in the foreign press, both methods for active electronic warfare continue to be employed on exercises of the air forces of the NATO member countries, and the shortcomings previously inherent in them are being considered and eliminated through the improvement of guided weapons. The power of the spot-jamming transmitters with which the EW aircraft which support the operations of the strike groups are equipped is also being increased.

At the same time, the missions of electronic reconnaissance continue to expand. In the West, it is already considered insufficient to provide information on the coordinates of the AD means and the nature of their operation. Their strike forces

require information on the degree of the actual threat and, first of all, its source. Also becoming important in flight in addition to information were recommendations on the selection of the most expedient measures for protection or evasion, in which regard, not by commands transmitted by radio but by the use of automated systems for the control of EW means which operate on the basis of the rapid computer processing of ER data and put out signals to turn on the appropriate means for electronic suppression.

In analyzing the employment of EW to support the breakthrough of the enemy AD, Western specialists came to the conclusion that frequently the turning on of the noise jamming transmitter on the aircraft did not lead to its concealment but, on the contrary, to its disclosure. The method of the "diverting" the target blip using onboard repeaters of radar signals also proved to have shortcomings. For example, during the war in Vietnam, when responsive-discontinuous jamming was used to suppress first-generation radars (target tracking on them was accomplished manually), it was learned that it is difficult to mislead an experienced operator. Noise-jamming transmitters were a more effective means against such radars.

NATO specialists consider one of the main lessons of local wars to be confirmation of the correctness of EW tactics based on electronic suppression and the protection of friendly means against such suppression on the part of the enemy. In this regard, the American journal AIR FORCE wrote that in aviation's accomplishment of almost all combat missions EW tactics encompass diverse methods for the employment of new and old technical means which hinder the employment of the same means by the enemy. In this regard, the power of the jamming transmitters or other emitters can in no way replace flexibility in their employment in conformance with the situation.

According to the views of the specialists, one of the most important requirements imposed on equipment in the conduct of EW is the combining of the capabilities of electronic reconnaissance and electronic suppression in a single continuous process. This is realistic with the possibility of accomplishment of the following missions by one crew (section):

--interception of signals from enemy radioelectronic equipment, direction-finding on them, selection, identifying the types of REM, and determining the sequence for jamming;

--measurement of the radar operating frequencies and putting out initial data for tuning the jamming transmitters on them;

--determination of pulse-repetition frequencies for timely responsive jamming;

--measurement of the radar scanning frequeny to organize jamming on this frequency.

With consideration of the requirements which have been listed, the United States has recently developed an EW aircraft, the EF-111A Electronic Fox (Figure 2) [not reproduced] which is equipped with an automated EW system. It is reported that it contains 10 active jamming transmitters.

The foreign press notes that American aviation suffered large losses in Vietnam from those AD means on which electronic jamming exerted no influence--antiaircraft

artillery with optical sights and short-range SAM complexes with electron-optical guidance systems. Therefore, back at the end of the war the United States began to develop equipment to reduce the effectiveness of such weapons. As a result, created and tested under combat conditions were infrared traps which are dropped from an airplane in the zone of action of short-range antiaircraft complexes which employed missiles with an infrared homing head (this method was completely adopted by the air forces of the other NATO member countries and now it is being worked out on various air exercises). In the majority of cases the pilot shot the traps out on the most vulnerable sectors of the flight in the target area (going into a dive, on the bombing run, coming out of an attack) regardless of whether or not his airplane had been locked on by the IR homing head of the antiaircraft missile. On the F-4 Phantom-2, IR suppression stations were tested which generate signals with a spectrum which corresponds to the maximum emission of the aircraft engine's exhaust gases. Air-to-air guided missiles with an IR homing head launched from a fighter-interceptor of the opposing side sometimes were reained at this signal. Such devices, just as much other equipment, were placed in suspended containers which increased the drag of the aircraft and worsened its maneuver characteristics.

As Western specialists believe, certain success has been attained in the development of IR traps, but the development of suppression stations in the IR band is lagging behind significantly. Pulsed xenon lamps, pulsed lamps filled with vapors of alkali metals, and others were tested to develop the latter. Their flashes were to blind the gunners on the guns (so-called active methods for protection against visual detection and aiming), but they did not demonstrate the required effectiveness, especially in the daytime, Therefore, some return is noted to the old tactic of counteracting firing weapons with electronic guidance—to camouflage, that is, to passive methods. In particular, specialists of the United States and its NATO allies are searching for coatings (paints) for airplanes which have a reflection factor ensuring the scattering of rays of the infrared and visible bands. For example, as the Western press notes, according to test data the gray-blue coloring of the F-15 and F-16 fighters decreases the range of their visual detection in the air by one-third in comparison with other colors.

According to raports in the foreign press, regular smokes were employed to camouflage the operations of ground forces and aviation in the wars in the Near East. There, posts for the visual detection of low-flying aircraft which transmitted information on the appearance of aerial targets to antiaircraft artillery batteries again occupied a firm place in the AD systems. Binoculars and battery commanders' telescopes proved necessary to the same degree as complex electronic means. Proceeding from this, NATO air force specialists are now developing the idea of employing sprayable aerosols which possess the capability to scatter and absorb light.

No less attention is being devoted abroad to the development of means intended for the direct destruction of AD means. In particular, in the United States and other countries old antiradar missiles are being improved and new ones are being developed. For example, in France the AS-37 Martel guided missile is in series production. It is part of the armament set of the Jaguar tactical fighters of the French and British Air Forces. The missile is intended for launching with the supersonic speed of flight of the carrier aircraft from altitudes of from 15 meters or more (up to the service ceiling of the aircraft).

Thus, the foreign press reports, the experience of the wars in Vietnam and the Near East forced the NATO countries to undertake significant efforts to equip their air forces with means for the conduct of electronic warfare. Western military experts consider the following to be the most important conclusions from the lessons obtained by both sides:

—The reduction in losses of aircraft and crews depends on organized electronic reconnaissance and effective counteraction against the enemy's electronic systems (according to the statements of official representatives of the U.S. Department of Defense, losses to American aviation in Southeast Asia would have increased five-fold without the employment of EW means).

—A reduction in the detail of forces for dangerous fire suppression of AD means is possible through their neutralization by jamming, and the creation of decoy targets frees genuine airplanes from taking off for demonstration or distracting operations.

—Radioelectronic suppression of AD means, deception, and complication of the aerial situation contribute to the more successful penetration of strike groups to the target.

—Fire suppression of enemy radars, SAM complexes, and antiaircraft artillery by special or conventional weapons not only neutralizes his AD system, but also knocks out its equipment and personnel.

In touching on the tactics of electronic warfare, that is, on the ways and methods for using EW means, military specialists of the United States and its allies believe that they should be employed according to a thoroughly worked out plan, in combination, and with consideration of the tactical situation which has developed and the capabilities of the enemy and friendly forces. All these problems are worked out regularly in the course of the combat training of air units and subunits of the air forces of the bloc's member countries.*

As noted above, problems in the conduct of electronic warfare are illuminated regularly on the pages of the Western press. But typically, in the majority of cases the NATO military experts stress attention to the employment of EW means to support the breakthrough of the enemy AD by the strike aircraft of their aviation, that is, in the interests of offensive combat operations. This confirms convincingly once again the offensive, aggressive direction of the North Atlantic bloc's military preparations.

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* For greater detail on questions of employing on-board EW means in the U.S. Air Force, see ZARUBEZHNOYE VOYENNOYE OBOZRENIYE No 7, 1981, pp 43-47.--Ed.

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PERCEPTIONS, VIEWS, COMMENTS

COMMENTS ON NATO PERMANENT NAVAL FORCES

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 3, Mar 82 (signed to press 10 Mar 82) pp 59-62

[Article by Capt 2d Rank A. Frolov: "NATO's Permanent Naval Forces"]

[Text] The military-political leadership of the North Atlantic Alliance considers the navy as one of the most important tools for the realization of its aggressive plans and is devoting constant attention to raising its combat capabilities by putting new, contemporary ships into formation, improving the organizational structure, and conducting intensive combat training.

Under daily conditions the ships, aircraft, and units of the navies of the bloc's member countries are subordinate to their national commands. It is envisioned that they will be transferred to NATO's disposal in periods of the abrupt aggravation of the international situation or for the time of exercises. An exception are the NATO permanent forces (in the Atlantic and the mine-sweeping forces in the zone of the English Channel) which, already in peacetime, have their combat personnel available and, in essence, are the bloc's mobile naval forces.

The NATO permanent naval force was organized in 1968. Its formation was preceded by prolonged preparation.

Judging from materials in the foreign press, prior to 1965 combat training of the NATO countries' navies was conducted primarily in accordance with national plans. Joint operations of the ships of different countries were not sufficiently worked out. As a result, there were substantial differences in the levels of combat readiness of the ships and the training of the personnel. Such a situation did not satisfy the bloc's command and a special examination of this problem at a session of the NATO military committee which took place at the end of 1964 was required. At it, the decision was adopted to organize a number of experimental exercises (the duration of each six or seven months) under the code name "Match Maker" in which the largest possible number of ships of various classes from the navies of the NATO European countries, the United States, and Canada were to participate.

Three such exercises were conducted in 1965-1967. Worked out on them were tasks in joint cruising, combating submarines and all types of defense on the force's sea passage, and common tactical procedures for using various armaments. In the opinion of the bloc's naval specialists, as a result the overall level of combat readiness of the ships engaged in the exercises was raised noticeably.

The American Admiral Moorer who at that time was the Supreme Commander of the NATO Combined Armed Forces in the Atlantic, in considering the results of the experiment which had been conducted, proposed creating a permanent naval force in the Atlantic on a multinational basis. In December 1967, the bloc's military planning committee considered this proposal and adopted a positive decision.

The force was formed on 13 January 1968 at Portland Naval Base (Great Britain). Initially, it included an American destroyer and British, Norwegian, and Dutch frigates. An officer of the British Navy was appointed commander. It was soon joined by a Canadian, Danish, West German, and Portuguese ships and, from 1980--Belgian. The ceremony of the force's formation is conducted annually in January in one of the naval bases of the member countries. Five to 10 escort ships which are replaced by the corresponding ships of the indicated countries every 3-4 months are permanently in it. Thus, in April 1980 eight ships operated as part of the force: the guided missile frigate F806 "De Ruyter" (Netherlands)--the flagship, guided missile destroyer DDG5 "Claude V. Ricketts" (United States), guided missile frigates F173 "Arrow" (Great Britain), F352 "Peder Skram" (Denmark), F303 "Stavanger" (Norway), and F913 "Westhinder" (Belgium), and the frigates F234"Assiniboine" (Canada) and "Braunschweig" (FRG).

Submarines and auxiliary ships as well as land-based patrol aviation and antisubmarine warfare [ASW] helicopters are attached to the force for the time of the exercises or working out individual tasks.

According to data in the foreign press, ships allocated to the force are, as a rule, the most modern and combat ready. Their personnel have a sufficiently high level of sea training and master weapons and equipment well.

At the end of the year, the force is disbanded and the ships which comprise it are transferred to national subordination.

A representative of the navies of the United States, Great Britain, Norway, and the Netherlands, that is, an officer of one of the countries which initially allotted a ship to its composition, is appointed in turn as the commander of the force with its next formation. In 1981, a Dutch officer was appointed commander.

Overall leadership of the force is accomplished by the Supreme Commander of NATO Combined Armed Forces in the Atlantic (headquarters in Norfolk, the United States). It is operationally subordinate to the Commander, NATO Combined Armed Forces in the Western Atlantic (Norfolk) or the Eastern Atlantic (Northwood, Great Britain)--this depends on the area of its activity.

The foreign press reports that the staff of the force, consisting of 16 officers, noncommissioned officers, and seamen of various nationalities is headed by an officer in the rank of captain. Subordinate to him are officers who are specialists on problems of operational planning and combat training, intelligence, communications, antisubmarine defense, armaments and air defense, and material and technical support as well as a group of translators and press representatives. The staff is located on the flagship which is allocated by the country from which the commander is appointed.

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As was stressed in the foreign press, the creation of such a force was determined first of all by military-political goals--to demonstrate the readiness and resolve of the bloc's countries "to defend their collective interests" at sea by force of arms. Actually, this is nothing but a NATO "fire brigade" whose ships are in constant readiness to depart immediately for a region of a strained international situation to exert political pressure on individual countries, including those which are in the bloc. Thus, with the complication of the domestic political situation in Poland at the end of 1980, on the decision of the NATO Council the force was brought to a state of increased combat readiness. Despite the tradition which had evolved, it was not disbanded at the end of the year. Moreover the ships replenished supplies in accordance with wartime tables of equipment and were located at one of the British bases in constant readiness to depart for the sea.

Each year, the ships of the force visit up to 30 ports and naval bases of the 10 NATO countries to replenish necessary supplies and accomplish propaganda measures in the bloc's interests.

It is noted in the Western press that a daily task of the permanent force is raising the level of combat readiness of ships of various national affiliation which are in the NATO naval forces on the basis of many years' accumulated experience. This is attained through the conduct of independent combat training and participation in national exercises and in big maneuvers of the bloc's Combined Armed Forces. The ships spend more than 60 percent of the time at sea. On the exercises, the personnel drill systematically in the use of various types of weapons, master cruising areas within the limits of the entire NATO zone, and improve sea ability (Figure 1) [not reproduced]. In the opinion of foreign military specialists, the exchange of combat sections for familiarity with equipment, armaments, and organization of service as well as participation in practical firings on ships of another national affiliation is useful.

In the course of combat training new tactical procedures are worked out and studied in the search for submarines (with the use of sonar complexes which are arriving in the inventory) and combating enemy surface ships and aviation (independently or in cooperation with aviation). As was reported in the foreign press, the experience of combat training showed, in particular, that the force must include one or two ships with surface-to-air missiles. According to the estimate of Western military specialists, this substantially expands the capabilities of air defense. It is believed also that the permanent presence of a high-speed supply transport (tanker) in the force increases the cruising capacity significantly (Figure 2) [not reproduced].

On the basis of experience of daily activity and exercises which have been conducted, requirements are put forth concerning the expansion of standardization and unitization of the armaments of the ships allocated. The following fact is presented as an example: in March 1980 the force numbered six ships whose main artillery armament was of four calibers (127, 114, 100, and 76 millimeters), surface-to-air missiles--of three types (Seacat, Terrier, and Sea Sparrow), ASW--five (Limbo, Terne, ASROC, torpedo apparatuses, and the Bofors depth-charge launchers), and one ship was equipped with mine-laying equipment. Such a diversity of armaments, in the opinion of the NATO naval command, reduces its effectiveness and hampers its control. These requirements are now being studied by NATO working groups on standardization of naval armaments and proposals for their realization are being worked out.

Judging from materials in the foreign press, about 20 ships and up to 3,000 personnel of the navies of the bloc's 10 countries undergo combat training as part of the force each year. Altogether, during the 13-year period more than 40,000 men have undergone training in it. In 1981 alone the permanent NATO naval force in the Atlantic participated in more than 10 large measures on operational and combat training of the NATO combined naval forces, including the standard exercises "Lock Gate," "Joint Maritime Cause," and "Ocean Safari." In addition, it was involved in joint exercises with the navies of Great Britain, the United States, Canada, the FRG, Portugal, Norway, and France.

In the course of the exercises the permanent force, together with other forces, accomplished missions in combating "enemy" submarines, the defense of sea lines of communications, and the conduct of blockade operations in the straits. Common tactics in ASW operations and the organization of all types of ships' defense on a sea crossing were worked out as part of one or two hunter-killer groups.

As indicated in the foreign press, the military-political leadership of the North Atlantic Alliance plans to form a bigger multinational force of the bloc's navies on the basis of the permanent force in periods of intensified international tension. It can be assigned independent missions to combat enemy submarines, protect NATO transatlantic communications and, when necessary, to reinforce the flank groups of the bloc's combined armed forces in the European theater of operations. Its composition possibly will additionally include guided missile ships, nuclear and diesel torpedo submarines, missile boats, and auxiliary vessels. The working out of all these problems has been accomplished on NATO exercises since the end of the 1970's.

The permanent NATO mine-sweeping force in the zone of the English Channel is the second permanently operating multinational formation of the bloc's naval forces. It was created in accordance with the decision of the NATO military planning committee in May 1973. Since then, the exchange of command and the ceremony of the force's formation is conducted annually in the summer months in one of the zone's naval bases. An officer in the rank of captain is appointed commander in turn from the navies of Belgium, Great Britain, and the Netherlands. In the first half of 1981, he was a British officer.

Belgian, British, Dutch, and West German and Danish minesweepers are allocated to be part of the force. They are the most combat-ready ships whose crews, judging from reports in the foreign press, have a rather high level of naval ability and master well mine and antimine weapons and equipment. In addition, the periodic inclusion of American minesweepers in it is also envisioned. Each ship is replaced by another after 6-12 months, in which regard, by one of the same national affiliation.

The daily mission of the force is raising the level of combat readiness of the mine-sweeping forces This is attained by the systematic combat training of the ships and by participation in exercises jointly with national navies as well as in big maneuvers of the bloc's combined armed forces such as "Team Work," "Ocean Safari," "Joint Maritime Cause," "Norminex," and others. In the course of them the personnel drill in the use of mine-sweeping equipment, master cruising areas in the coastal waters of Western Europe and the zone of the Baltic Straits, and improve their naval ability. Useful, in the opinion of NATO military specialists, is the exchange of combat sections for familiarization with mine-sweeping weapons and

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equipment and the organization of service, and also participation in the practical laying and sweeping of mines on ships of another national affiliation. The force travels approximately 15,000-20,000 miles during the year. Up to 15 ships and more than 1,200 personnel are involved in training as part of it.

Overall leadership of the permanent mine-sweeping force is accomplished by the Commander, NATO Combined Armed Forces, in the zone of the English Channel (headquarters in Northwood, a suburb of London). When conducting combat training and exercises, the force commander is also operationally subordinate to the Commander, Combined Naval Forces, in the corresponding area of the zone (NOR, Plymouth, or Benelux).

As reported in the foreign press, in the period of sharp aggravation of the international situation, a bigger multinational mine-sweeping force may be formed on the basis of the force which has been considerably reinforced by minesweepers and other ships of the navies of the bloc's member countries in the zone of the English Channel.

In building up the pressure of the international situation in various regions of the world, the command of the aggressive NATO bloc continues to come forth for making military preparations more active. Judging from materials in the foreign press, it is nurturing plans for the creation of other permanent NATO naval forces in the Atlantic and the Baltic Sea and for the conversion of the NATO naval force, which exists in the Mediterranean Sea for "on call" operations, to a permanently operating force in order to ensure its "control and presence" various regions of the world ocean.

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PERCEPTIONS, VIEWS, COMMENTS

COMMENTS ON U.S. PLANNED USE OF AIRCRAFT CARRIERS

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 3, Mar 82 (signed to press 10 Mar 82) pp 63-68

[Article by N. Maskanov: "Aircraft Carriers in the Pentagon's Plans"]

[Text] General-purpose naval forces whose nucleus consists of carrier forces are an important means for accomplishing the expansionist plans of United States ruling circles. The role and significance of aircraft carriers are determined first of all by their mobility, broad range of fire capabilities, rather high combat stability, and considerable endurance. In the opinion of Western military specialists, they are the only universal weapons system at sea which is capable of operating effectively at any point of the world ocean and, employing conventional or nuclear weapons, destroying aerial, surface, or underwater targets and launching strikes against shore objectives.

Aircraft carriers are the main strike force at sea in conventional wars and a well-prepared reserve of strategic forces in nuclear war. The military-political leadership of the United States considers them as the primary tool for carrying out the concept of a "naval presence" and for the attainment of political goals in peacetime through a show of force, and it directs these ships wherever and whenever the American imperialist circles plan the accomplishment of aggressive actions.

The United States of America began the construction of aircraft carriers after the conclusion of World War I, being guided here by a program adopted by the Congress back in 1915 which envisioned the creation of a national fleet not inferior to the naval forces of any other power.

At the start of World War II, the American Navy contained five aircraft carriers ("Lexington," "Saratoga," "Ranger," "Yorktown," and "Enterprise") and two ("Wasp" and "Hornet") were under construction. As evidenced by the foreign press, the U.S. shipbuilding industry had already accumulated a certain experience in creating carriers in accordance with special plans and converting combat ships and transport vessels to them, and the capabilities of the aviation industry permitted providing them with carrier-based airplanes which were ideal for that time. It was also noted that conditions were prepared in the country for initiation of large-series construction of ships of this class.

Entering the war, the United States quickly began to build up its carrier forces. In the foreign press, it is stressed that priority in shipbuilding belonged namely to carriers whose share exceeded one-third the total displacement of combat ships of all classes constructed by the Americans in the war years.

Altogether, in the years 1939-1945 the United States completed the construction of 143 aircraft carriers: 28 heavy and light, and 115 escort (convoy) carriers. Of the number indicated, 38 escort carriers were transferred to Great Britain under lend-lease, and the remainder entered the U.S. Navy. Of the 99 American carriers which took part in combat operations, 11 were lost (5 heavy and light and 6 escort carriers).

By the end of World War II the American fleet numbered 99 carriers--28 heavy and light and 71 escort (convoy). In addition, 10 heavy, 2 light, and 9 escort carriers, whose construction was completed in the first postwar years, were in various stages of construction.

As was stressed in the Western press, the decision to establish three subclasses of carriers (heavy, light, and escort) was adopted by the command of the U.S. Navy in July 1943 on the basis of a study of practice in the use of British and Japanese carriers in combat operations at sea, its own experience acquired during the first months of the war, and in connection with the expected arrival, from industry, of a considerable number of different types of ships of this class which differed substantially in their combat characteristics and combat capabilities.

The heavy carriers began to include ships of the "Yorktown," "Essex," "Lexington," and "Midway" types with a standard displacement respectively of 19,800 tons, 27,100 tons, 33,000 tons, and 45,000 tons, with a speed of more than 30 knots, and with more than 80 airplanes on board.

Light aircraft carriers are ships of the "Independence" and "Saipan" types with a standard displacement of 11,000 tons and 14,500 tons with 45-50 airplanes on board. They had a maximum speed of about 32 knots and were intended primarily for accomplishment of air and antisubmarine defense of forces of ships at sea as well as for the conduct of reconnaissance and launching strikes against sea and land objectives.

Among the escort (convoy) carriers whose basic mission was antisubmarine and air defense of convoys, amphibious detachments, and the conduct of reconnaissance were ships with a standard displacement of 7,800-11,400 tons with a speed of 16-19 knots and capable of carrying 20-30 airplanes which had been converted from various transport vessels. In the Pacific Ocean, they were used primarily in the strike version to cover amphibious detachments and provide close air support to the assault landing forces.

This ordering of the carrier classification, in the opinion of American military specialists, furthered the clearer definition of the tasks facing them and a rise in the effectiveness of their combat employment, and it also simplified the buildup of operational carrier forces on subsequent stages of World War II.

In the postwar period, at the height of the escalation of the "cold war" and the unbridled anti-Soviet campaign, considering the advent of nuclear weapons, the swift

development of aviation equipment, and the arrival in the Navy's inventory of jet aircraft which put forth additional requirements of their compatibility with aircraft carriers, the Pentagon worked out a broad program for modernization of ships of this class.

In connection with the possibility which appeared to employ carrier aircraft as nuclear-weapons carriers and the assignment of a basically new mission to carriers--the launching of nuclear strikes--in 1952 all heavy carriers were reclassified as attack carriers. However, the increase in the role of submarines in combat operations at sea forced the command of the U.S. Navy to begin the reclassification of some of them as antisubmarine warfare (ASW) carriers already from the middle of 1953.

In this period, light or escort ships of this class were either sold to other countries or were converted to helicopter carriers for various purposes, auxiliary carriers, transports of airplanes and other aviation equipment, or else dropped from the fleet.

In the course of the United States' aggressive war against the Korean People's Democratic Republic, judging from the statements of Western military specialists, the high combat qualities of carriers were confirmed. This gave the Pentagon a basis for attaining a decision to renew the construction of strike carriers, the first of which (CV59 "Forrestal") was laid in 1952 and joined the fleet in 1955.

An important direction in the development of U.S. carrier forces in the postwar period was the creation and construction of nuclear carriers and nuclear escort ships. The introduction of nuclear power in the fleet, according to reports in the foreign press, substantially increases the combat capabilities of carrier forces and reduces expenditures on their maintenance and use.

As evidenced in the foreign press, on nuclear carriers one refuelling of the reactor cores is now intended for 13 years and permits travelling up to 1 million miles, and supplies of aviation fuel support intensive flight of airplanes (with two daily sorties of each aircraft) for 16 days. Under similar conditions, carriers with a conventional power plant can support the flights of airplanes for only eight days. In addition, there is 50 percent more ammunition for airplanes on nuclear carriers than on conventional carriers.

In 1958, the first nuclear carrier CVN65 "Enterprise" was laid (Figure 1) [not reproduced], and in 1961 it was turned over to the Navy. The experience of its operation and combat employment (it participated in the United States' aggressive war in Vietnam) demonstrated the advantages of equipping ships of this class with nuclear power plants, which permitted the Pentagon subsequently to obtain funds for the construction of nuclear carriers of the "Chester W. Nimitz" type.

The active participation of carriers in the U.S. war in Southeast Asia, as is noted in the foreign press, again showed their high combat capabilities. However, since they operated here (just as in the war in Korea) virtually without any opposition on the part of the victims of aggression their employment, exerting a certain influence on the development of the tactics and methods for the conduct of combat operations by carrier aircraft, did not introduce any new, substantial elements in the development of naval art.

Since 1972, strike carriers have begun gradually to be converted to multipurpose carriers which, depending on the assigned missions and the situation, can be employed in a strike, strike-ASW, and ASW versions. In the opinion of the fleet command, ASW carriers which do not correspond to contemporary requirements have begun to be withdrawn to the reserve.

Now, as stressed in the foreign press, the regular forces of the U.S. Navy numbers 13 multipurpose carriers: three nuclear (CVN65 "Enterprise," CVN68 "Chester W. Nimitz," and CVN69 "Dwight D. Eisenhower," Figure 2 [not reproduced]) and 10 with conventional power plants (4 of the "Kitty Hawk" type, 4 of the "Forrestal" type, and 2 of the "Midway" type. In addition, five ships are in the reserve: the multipurpose CV34 "Oriskany," strike CVA 31 "Bon Homme Richard," and the ASW carriers CVS38 "Shangri-La," CVS12 "Hornet," and CVS20 "Bennington." AVT16 "Lexington" (obsolete) is used as a training ship to train carrier-air pilots.

Construction of a fourth nuclear carrier--CVN70 "Carl Vinson"--is being completed and it should be turned over to the fleet this year. More than 2 billion dollars have been allocated for construction of the fifth (CVN71) which it has been decided to name "Theodore Roosevelt." It is expected that total expenditures for the creation of this ship, including equipment and armaments, will be 3 billion dollars by the time that it goes into service (approximately in 1988). The Pentagon leadership also plans to begin and in eight years complete the construction of the sixth nuclear carrier (CVN72). Its approximate cost, according to estimates of American experts, is 3.7 billion dollars.

Within the framework of the unprecedented buildup of the Navy's power the Reagan administration, in planning to bring the number of combat ships to 600 (of them 15 aircraft carriers), is speeding up not only the construction of new ships, but also the modernization of old ones. In particular, the question of allocating funds for the de-mothballing, reequipping, and putting carrier CV34 "Oriskany" into fleet service is being studied.

In addition, the United States has worked out a program for the modernization and expanded major overhaul of all carriers in order to prolong their period of service from 30 to 45-50 years. In accordance with this program, in October 1980 the carrier CV60 "Saratoga" was tied up for overhaul. Then CV59 "Forrestal," CV62 "Independence," and CV61 "Ranger" will be modernized. The question of reequipping CV 63 "Kitty Hawk," CV64 "Constellation" (Figure 3) [not reproduced], CVN65 "Enterprise," CV66 "America," and CV67 "John F. Kennedy" prior to the year 2000 and, after year 2005, nuclear carriers of the "Chester W. Nimitz" type is being considered.

All this is graphic evidence that the Pentagon leadership intends to raise systematically the power of the carrier forces and to maintain it at a level which would ensure the United States' attainment a correlation of forces advantageous for it in the corresponding regions of the world ocean and also the prolonged presence of carrier forces and other specially created naval forces. In its opinion carriers, which are mobile air bases and are sovereign territory of the country, should be involved more broadly in the accomplishment of missions which are traditional for the American fleet--support of the foreign-policy actions of U.S. expansionist circles in various regions of the world by a show of force, direct threats of its employment, and open armed intervention.

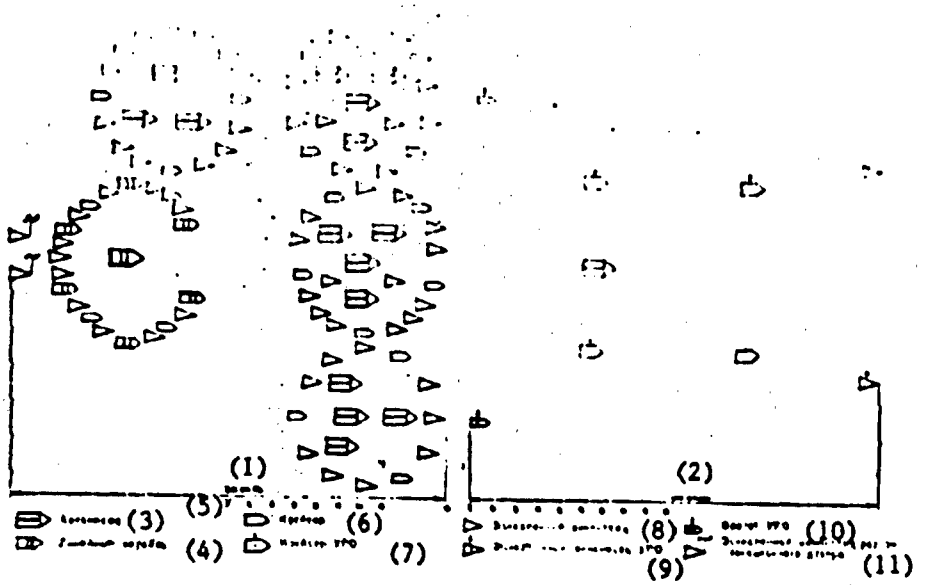

Figure 4. Cruising Formation of Task Force 58 of the Period of of World War II (on the left) and a Contemporary Carrier Group (on the right)

Key:

1. 20 miles
2. [number illegible] miles
3. Aircraft carrier
4. Battleship
5. Legend
6. Cruiser
7. Guided missile cruiser
8. Destroyer
9. Guided missile destroyer
10. Guided missile frigate
11. Radar picket destroyer

It is for this very reason that the present United States administration does not intend to be satisfied with the presence of 13 multipurpose carriers as part of the regular Navy and is seeing that there are 15. Representatives of the Pentagon stress that even such a number is only a peacetime level which permits, as they declare, a certain degree of risk. In planning the distribution of carrier forces between the Atlantic, Pacific, and Indian Oceans and other regions of the world which are abitrarily declared by the United States to be the sphere of its "vital interests," the country's militaristic circles are conducting a comprehensive study of probable ways for a rapid buildup of carrier forces as well as a search for alternate weapons systems which are superior to contemporary aircraft carriers or comparable with them.

In comparing the firepower of the present-day carrier group consisting of one carrier and eight escort ships (without considering the employment of nuclear weapons) and the 58th Carrier Task Force (112 ships including 7 heavy and 8 light carriers) which took part in the naval battle on the Philippine Sea on 19-20 June 1944, American specialists note that the combat capabilities of today's group are considerably

higher than those of Task Force 58. Here, it is stressed that the contemporary carrier group, disposed on approximately the same area of water surface can, with its means of observation of the air, surface, and underwater medium, ensure more effective control over a greater ocean water area and its airplanes can take off with almost the same bomb load as the airplanes of Task Force 58. The cruising formations of the forces mentioned above are presented in Figure 4.

Now, judging from materials in the Western press, the following basic missions will be assigned to multipurpose carriers: winning and maintaining sea and air supremacy in the area of combat operations; air cover of forces of combat ships, landing forces, and convoys during sea passage and giving close air support to amphibious forces and ground forces which are operating on maritime directions; launching mass air strikes with conventional or nuclear weapons against land and sea objectives; destruction of enemy communications and protection of friendly routes of communication; blockading straits and narrows to prevent enemy ships from reaching the open sea; conduct of reconnaissance.

The U.S. Naval Command believes that carriers, having on board mixed air wings[1], can conduct combat operations of various scales and types without additional retraining and additional armament. They are capable of moving a distance of 600 miles in a 24-hour day (about 1,100 kilometers) and of launching strikes against sea and shore targets within a radius of 1,300-1,800 kilometers. In noting their high combat effectiveness, at the same time foreign military specialists point to the vulnerability of ships of this class to various types of weapons (due to big dimensions) and to the high cost of their construction, maintenance, and operation.

In this connection, for the last 10 years in the United States they have been making a comprehensive study of the problems in creating more economical, smaller medium carriers and aircraft-carrying ships which could be not only a useful supplement to the carriers already in service and raise substantially the combat stability and operational-combat qualities of carrier forces, but also replace them in individual cases.

Up to the present, the United States has plans for a medium carrier CVV[2] and aircraft-carrying ships of the SCS[3] and VSS[4] types which are also called sea-control ships or mini-carriers and are intended for the basing of vertical [VTOL] or short take-off and landing [STOL] aircraft as well as helicopters. American experts note that the necessity and expediency for their construction were proven in the course of two-year tests (1972-1974) of the assault helicopter carrier "Guam" as an aircraft-carrying ship. As a result the conclusion was drawn concerning the possibility of the simultaneous of use of VTOL and STOL aircraft and helicopters from aircraft-carrying ships.

Judging from materials in the foreign press, it should be expected that the militaristic circles of the United States will attain the allocation of funds for the construction of such ships and will stimulate their allies in military-political blocs toward this.[5]

In the opinion of foreign specialists, the multipurpose carrier group of the 90's, which may include the contemporary carrier or else the future medium carrier of the CVV type, 2 arcraft-carrying ships of the VSS type (including some from the navies of the United States' allies), and 13 escort ships, will have a depth of formation which is several times deeper (Figure 5), increased combat stability, and improved

operational and combat capabilities in comparison with carrier group of our time. In substantiating the necessity to allocate funds for the construction of aircraft-carrying ships and justifying the arms race, they assert that in a future war (in contrast with the wars in Korea and Vietnam where the United States had no losses in combat ships of the basic classes) in the case of enemy counteraction the American fleet will suffer losses. Here, the main strike will be launched against the aircraft carrier, by the sinking of which the enemy will also destroy the aircraft located on it, as a result of which the carrier group will not be able to accomplish or will only partially accomplish its assigned mission. In a similar situation, the knocking-out of a carrier in a carrier group which also includes aircraft-carrying ships will not deprive it of the capability to continue accomplishment of the standing mission and some of the VTOL and STOL aircraft from the destroyed aircraft carrier will be able to fly to the aircraft-carrying ships and operate from them.

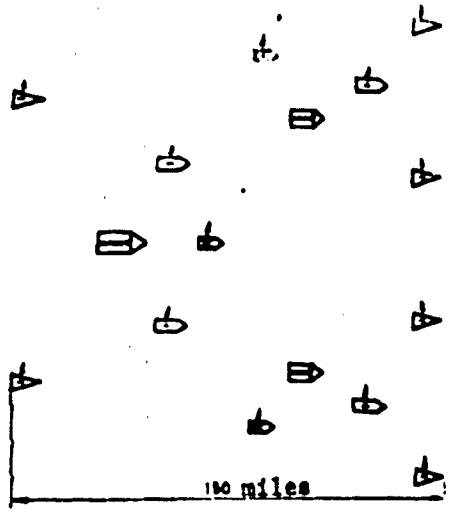

Figure 5. Presumed cruising formation of a carrier group of the 90's (aircraft-carrying ships have the same conventional symbol as aircraft carriers, but smaller)

In addition, the presence of medium carriers and aircraft-carrying ships in the U.S. Navy will permit accomplishing the intertheater maneuver of carrier forces through the Panama Canal in shorter times while, because of their sizes, contemporary carriers cannot utilize it and the voyage around South America takes much time.

At the same time, in noting the positive qualities of medium carriers and aircraft-carrying ships, advocates of the construction of big nuclear carriers assert that a reduction in the displacement of the carrier, which provides a relatively small reduction in cost, leads to a substantial reduction in its operational and combat capabilities as well as in its ability to conduct prolonged combat operations without the replenishment of supplies. It is namely for this reason that the command of the U.S. Navy presently gives preference to the building of nuclear carriers which have

large supplies of aircraft fuel and ammunition on board and can operate in regions of the world ocean which are distant from the American continent without the replenishment of supplies for a long time. At the same time, as evidenced in the foreign press, the Pentagon is counting on the possibility of using in its own interests aircraft-carrying ships being built in other NATO countries.

As the foreign press reports, the United States also has a program for converting ("in case of extreme circumstances") various transport vessels, in particular container carriers, to carriers of VTOL's or STOL's and helicopters.

In the long term, the creation of air-cushion carriers is possible. As the Western press reports, studies and critical planning analyses conducted by the American Navy showed that most expedient is the plan for a surface-effects [KVP] carrier with a weight of 8,000-10,000 tons carrying 12-17 VTOL or STOL aircraft and helicopters. It will be equipped with four aircraft elevators which will permit ensuring the takeoff of 12 aircraft in 21 minutes and their return reception in 15-16 minutes.

All this, in the opinion of the U.S. Naval Command, shows that under contemporary conditions when aircraft carriers are acquiring qualitatively new properties under the influence of the scientific and technical revolution, their significance and capabilities in combat at sea are increasing immeasurably.

FOOTNOTES

1. Concerning the typical composition of an air wing, see ZARUBEZHNOYE VOYENNOYE OBOZRENIYE No 5, 1980, p 61.--Ed.

2. Total displacement 59,000 tons, length 237 meters, speed 30 knots, armament--55 airplanes (VTOL or STOL) and helicopters.--Ed.

3. Total displacement 14,300 tons, length 195 meters, speed 26 knots, armament--3 airplanes (VTOL or STOL) and 16 helicopters.--Ed.

4. Total displacement 33,000 tons, length 237 meters, speed 26 knots, armament--up to 50 airplanes (VTOL or STOL) and helicopters.--Ed.

5. Now the construction of aircraft-carrying ships is already being conducted in Great Britain ("Invincible" already in service, "Illustrious" and "Ark Royal" under construction), Italy ("Giuseppe Garibaldi" under construction), and in Spain ("Canaris" under construction).--Ed.

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PERCEPTIONS, VIEWS, COMMENTS

COMMENTS ON U.S. NAVY'S USE OF SPACE EQUIPMENT

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 3, Mar 82 (signed to press 10 Mar 82) pp 69-73

[Article by Capt 1st Rank B. Tyul'pakov: "The Use of Space Equipment in the U.S. Navy"]

[Text] In pursuing obviously aggressive goals, the military-political leadership of the United States is initiating military preparations on unprecedented scales, also transferring them to space. Thus, from the end of the 1950's the United States has been intensively implementing plans for the militarization of outer space. For these purposes, the Navy is using satellites which have been developed in accordance with its own programs as well as in accordance with goal-oriented programs of the Department of Defense and government organizations engaged in space studies. Frantic militarization of space is being conducted by the Pentagon despite numerous proposals of the Soviet Union concerning the peaceful use of outer space.

On the basis of communication, navigation, and environmental observation satellites as well as of reconnaissance satellites the American naval command is trying to create create a global system for observation of the situation on sea and ocean theaters and to increase sharply the effectiveness of employment of sea-based nuclear missile weapons, antisubmarine warfare [ASW] operations, and efficiency of the control and information support of forces at sea.

Communication satellites. Until the middle of the 1970's, the development of satellite means of communication in the Navy proceeded comparatively slowly. The command controlled forces at sea using UHF, HF, and VLF [very low frequency] wave-band means of communication of shore-based centers located on the continent and territories of its allies in the aggressive NATO bloc.

In recent years, in the course of the reorganization of the structure for control of the armed forces, the Department of Defense adopted a number of programs for the modernization of the Navy's communication system which were accomplished simultaneously and in coordination with measures to improve control of nuclear missile forces and by the creation of an automated system for control of general-purpose naval forces, NCCS. These programs envisage the broad use of communication satellites. Now the naval forces are employing means of the satellite communication systems AFSATCOM, DSCS (Defense Satellite Communications System), MARISAT, and FLTSATCOM.

The AFSATCOM system, which is intended for the control of nuclear forces, was developed by Air Force specialists and put into operation in 1979. It uses repeaters of the decimeter band which are installed on satellites for various purposes including FLTSATCOM and SDS (Satellite Data System). The terminal equipment is used to equip various carriers of nuclear weapons as well as airborne command posts, SAC aircraft, including the RC-135, and repeater-aircraft of the TACAMO system for communication with SSBN's [nuclear ballistic missile submarines].

By the middle of the 1980's it is intended to create a second type of AFSATCOM. It is planned to inject the satellite into a fixed orbit and to use millimeter waves for communication. Its operation in the decimeter band is also envisioned in order to employ already existing satellite communication terminal equipment (frequency range 55-65 GHz) without ground-based repeaters. Using it, it will be possible to receive communications directly and not through the TACAMO repeater-aircraft as is done now. The launching of the first satellite is expected in 1986.

The naval command attaches primary significance to communications with submerged SSBN's using satellites. Communication equipment is now being developed which would permit submarines to accomplish reception located at a depth beyond 100 meters. In particular, a laser communication satellite system is being created. According to data in the foreign press, in 1980-1981 it is intended to expend about 25 million dollars for these purposes, and of them to allocate more than 30 percent to the Navy. Tests of the system's basic elements are planned for 1986. With favorable results, its further development will be assigned completely to the Navy which will conduct full-scale demonstration tests in 1990. It is reported that two technical solutions are being considered for laser communications: ground-based laser in combination with a passive satellite-repeater and space-based laser.

The DSCS system is used by the military-political leadership for communications with the naval command and headquarters in a theater of operations and with strike forces at sea. MARISAT and FLTSATCOM comprise the basis of naval radio communications and the automated Naval Command and Control System NCCS.

MARISAT was put into service in 1976. Three satellites which are in geostationary orbits above the Atlantic, Pacific, and Indian Oceans are used in it simultaneously. Its basic user is the Navy which leases the major portion of the communication channels in the decimeter waveband. According to reports in the foreign press, by the beginning of 1980 the Navy had reduced their number by 40 percent as a result of the orbiting of three FLTSATCOM satellites.

Devoting considerable attention to the creation of the FLTSATCOM system, the Navy command notes that its going into service virtually excludes the Navy's dependence on shortwave radio communications and sharply reduces the use of shore-based centers located on the territory of other countries.

By the end of 1980, four FLTSATCOM satellites had been injected into a geostationary orbit along the equator. The launching of the fifth (and last) was accomplished at the end of 1981; it was given the role of back-up in orbit. Subsequently, it is intended to use LISAT satellites which have high resistance to jamming.

The on-board equipment of the FLTSATCOM satellites in the UHF band of 240-400 MHz provides communications over 10 channels (bands of 25 kHz each) with naval installations, over 12 narrow-band channels (5 kHz) with SAC aviation, and over 1 broadband channel which is used by the Air Force and the Department of Defense in the AFSATCOM system.

In accordance with their functional purpose, the communication channels of the naval FLTSATCOM satellite permit the accomplishment of group telegraph transmissions to forces at sea, two-way telegraph communications of fleet command centers with commanders of forces of ships, and two-way classified telephone communication. In addition, individual channels are allocated for land-based patrol aviation, tactical reconnaissance forces, and submarines, and also for the information support of forces at sea. Using equipment of the FLTSATCOM system, two-way traffic is conducted with alpha-numeric information with the use of punched- and magnetic tape as are the transmission of text without conversion to the teletype format and takeoff of data addressed only to a correspondent during reception. The rate of transmission of telegraph and classified speech information is 2,400 bits per second.

By means of programs for the development and improvement of naval satellite communications systems it is envisaged that their reliability, survivability, flexibility, resistance to jamming, and secrecy will be increased. Military specialists expect to accomplish these tasks by using satellites in orbits with an altitude of 200,000 kilometers or more, the creation of large antennas which are deployed in space and effective means for the modulation and encoding of signals, and the processing of information, high-power transformers, low-noise amplifiers using solid-state elements and travelling-wave tubes, and by mastering higher-frequency bands: 20-30 and 50-60 GHz.

To increase the survivability of communications the possibility is being envisaged to allot one launch tube on each SSBN of the "Ohio" type for the placement of a carrier rocket with a small communication satellite which should be injected into orbit under emergency conditions in case of damage to the primary satellite.

Navigation satellites. A special role is allotted to them in the realization of the concept of creating precision guidance weapons which was adopted several years ago. These satellites, in the opinion of foreign military specialists, are creating a real possibility to raise the effectiveness of employing strategic as well as tactical missiles.

The naval command, counting on a sea-based nuclear missile system, has initiated work on the creation of various navigation systems for SSBN's which permit employing nuclear missiles regardless of the submarines' patrol area. In addition to the existing systems (LORAN-C radio navigation system, inertial SINC, radio sextants, and systems for sonar navigation according to the relief of the bottom), the TRANSIT satellite navigation system was created (put into service in 1964) and received the name NNSS. It is under the authority of the Navy and recently, by special permission, it can be used by vessels of the U.S. merchant marine as as well as a number of foreign countries.

Over the entire period of operation, the system was improved primarily in the direction of increasing the accuracy characteristics which depend on the stability of

the orbit parameters. The characteristics of the refraction of radio waves in the atmosphere and troposphere which have a noticeable influence on the accuracy of the Doppler method of navigational measurements were also defined more accurately. To reduce errors in determining the Doppler frequency shift, more accurate means for determining the intrinsic speed of movement were installed on ships. Special attention was devoted to the protection of satellites from radiation, to increasing the power of the transmitter, and to redundancy of equipment.

In May 1981, an improved TRANSIT satellite was launched which received the name NOVA and which, according to a report in the Western press, is equipped with an autonomous system to compensate for perturbations in the orbit. As a result of improvements which were conducted, the error in determining the location of the SSBN's was reduced from 200 to 100 meters, and of objects which do not move much with repeated observations--from 30 to 10 meters.

As the leadership of the U.S. Department of Defense declares, for some characteristics the TRANSIT system does not meet contemporary requirements of the Navy itself as well as of other users. The low rate of navigation determinations and their discreetness of 90 minutes or more as well as the incomplete composition of the information obtained (the altitude and speed of movement of the object are not determined) do not ensure the navigation of ground (mobile), aerial, and space means and the accuracy of weapons delivery to the target.

In 1973, after several years of studies conducted in parallel by the Navy and the Air Force in the field of creating a promising navigation system, the Department of Defense adopted the decision to develop a single satellite navigation system for the armed forces, NAVSTAR. Also participating in the NIOKR [scientific research and experimental development work] which is being conducted under the direction of the Air Force are representatives of the U.S. Army, Navy, Marines, Coast Guard, and Mapping Agency.

In the opinion of foreign specialists, prospects for the further use of the TRANSIT system are connected with the creation of NAVSTAR. It is reported that after the complete putting of the latter into service, the former will function until the 1990's primarily in the interests of commercial vessels.

NAVSTAR is being developed in three stages. In 1987, it is expected that it will be turned over to various military and commercial users for operation. The range-finding method of navigational measurements with 18-24 satellites in spaced orbits permits determining the coordinates of a place and altitude and speed of movement on a time scale close to real time. According to reports in the foreign press, several versions of the equipment are being created: for ships, airplanes (helicopters), and ground users. On-board navigational sets are also being developed for SSBN's, aircraft carriers, and carrier-based aircraft as well as for the P-3C Orion land-based patrol aircraft. Delivery of the sets and their tests are planned for the years 1982-1983.

In 1978-1980, in accordance with the tasks of the first stage, the deployment of an experimental system consisting of six prototype-model satellites was completed. Modified navigational equipment and an additional payload--detectors for the discovery of nuclear explosions--were installed on the last two satellites. It is

expected that the creation of an operational NAVSTAR system will be begun from 1984. It is indicated that the root-mean-square error of navigational determinations of the system's military users will not exceed 10 meters, and of the true speed--0.03 meters per second.

Preliminary tests of the system using two navigation satellites and several ground radio navigation stations (for monitoring) confirmed the high accuracy of NAVSTAR. The error in determining the three coordinates of airplanes in the solution of various problems did not exceed 3-5 meters.

The naval leadership notes that now, for the duration of a large part of the time of their combat patrolling, submarines can determine their location with an accuracy of 15 meters using an improved inertial navigation system and using the TRANSIT satellite navigation system and the LORAN-C radio navigation system for its correction. NAVSTAR can ensure approximately the same navigation accuracy for the duration of the entire patrolling time and can also increase the accuracy of firing the Poseidon and Trident missiles by 30 percent in regions of the world ocean which are not navigationally improved. Some specialists believe that accuracy can be increased somewhat with the installation of NAVSTAR navigation equipment on ballistic and cruise missiles and even more if the navigation complexes are placed on maneuverable warheads. These problems are being investigated within the framework of the NAVSTAR and Minuteman programs. In accordance with the MAE (Missile Accuracy Evaluator) program, the accuracy characteristics of ballistic missiles, including Trident, are evaluated, for which special sets of NAVSTAR navigation equipment have been developed.

The Department of Defense is studying the problem of improving satellite navigation systems. The creation of a third-generation navigation system on the basis of satellites which are in geostationary orbits is envisaged. It is proposed using satellites for the transmission of exact time, the control of sea and air traffic, and monitoring it.

Environment observation satellites. Space equipment for the observation and collection of information on natural phenomena which occur in space and the Earth's atmosphere and hydrosphere have been used for military purposes for more than 20 years already.

It is noted in the foreign press that in contemporary combat operations the hydrometeorological situation, which is determined by the physical state and the interaction of the atmosphere and hydrosphere, is an important factor which exerts a noticeable influence on the form and methods of combat operations of the troops and the fleet at sea and on the employment of weapons. It is also reflected in the effectiveness of operation of radar, electron-optic, sonar, and other means for the detection of surface and underwater targets, communication, intelligence, and navigation. It is believed that in time of war space equipment will prove to be virtually the only means for obtaining hydrometeorological information from territories not controlled by U.S. armed forces and from the area of the world ocean.

Work on the development of weather satellites was begun at the end of the 1950's and was completed with the putting into operation of a commercial (1960) and military (1966) satellite weather systems (SMS). Now, NOAA satellites are being injected into polar sun-synchronous orbits with an altitude of 1,400 kilometers, and

the GOES (Geostationary Operational Environmental Satellite) is being injected into geostationary orbits.

In the middle of the 1970's, the capabilities of the commercial system for the collection of weather information was improved qualitatively thanks to the use of two types of satellites. Three GOES satellites spread in orbit (Figure 1) [not reproduced] accomplish constant observation of 90 percent of the Earth's surface. Their employment simplified the method of geographic tie-in of information. NOAA collects weather information from the entire surface of the Earth which is transmitted in the form of photos to land-based data processing centers over video channels at 30-minute intervals. Also installed on the satellites is equipment for the collection of hydrometeorological information from 1,500 sea, air, and ground autonomous observation platforms (sea radio buoys, balloon sondes, automatic weather stations, and others) and its relaying to weather centers.

During the time of the operation of the military SMS about 30 satellites of the "Block" series have been injected into a polar sun-synchronous orbit with an altitude of 750 kilometers ("Block-5, -5C, -5D-1, -5D-2"). It was developed in the interests of all the armed forces, but primarily for weather support of satellite photographic reconnaissance.

Weather information from the satellites is transmitted in real time as well as after preliminary recording. In the former case it is received by ground stations and ships during the period when the satellite is in the zone of their visibility. Aircraft carriers, including the "Constellation," "John F. Kennedy," "Forrestal," "Kitty Hawk," and headquarters ships are equipped with receiving equipment. The Navy has centers for the reception of weather information which are located in naval bases in Rota (Spain), Monterey (California, United States), and on the island of Guam and the Hawaiian Islands.

The latest complex for the reception of photos from the commercial and military satellite systems has been developed for the weather centers. It receives and automatically corrects images, ties them to the coordinate grid, and annotates and relays the information over special channels to the users. Ships' stations for the receipt of weather information permit obtaining initial data in the form of transparencies suitable for immediate use no later than two minutes after the satellite's departure.

Space equipment intended for oceanographic observations continued to develop in the middle of the 1970's. The foreign military press notes that in the long term oceanographic satellites will permit scanning 95 percent of the area of the oceans every 36 hours and accomplishing more measurements in one day than all the instruments on their surfaces taken together do in 10 days.

In 1978, the experimental oceanological satellite SEASAT-A (Figure 2) [not reproduced] created according to the NASA program was launched. On it, it is intended to work out, using the principles of radar location, radio-oceanological methods for remote measurements which permit obtaining data on the condition of the layer at the surface and the sea surface under any weather conditions. Most universal of the five instruments installed on the satellite was a side-looking radar with an antenna deployed in space which ensured obtaining surveillance information on the condition of the sea surface in any weather. This radar was supplemented by a radar altimeter

which served for determination of the characteristics of the ocean's surface layer. Information which is transmitted from the side-looking radar in real time, and from all the other instruments after preliminary recording,was received and processed in weather centers of NASA and the U.S. Navy.

With consideration of the use of SEASAT-A, a plan for a promising oceanological satellite system, NOSS (National Oceanic Satellite System) has been worked out. The U.S. military-political leadership compares the latter for importance with the weather systems in operation and believes that it will be able to supply commercial and military users with oceanological information effectively. It is planned to install more improved instruments on the NOSS satellites (Figure 3) [not reproduced], including a multichannel microwave radiometer with an antenna with a diameter of 15 meters which deploys in space and which permits measuring water temperature with a resolution of 10-20 kilometers, equipment to obtain color images of the ocean's surface, and a navigation complex to tie the information to a coordinate grid using the NAVSTAR system.

Reconnaissance satellites and space weapons. Space reconnaissance equipment has existed in the United States for about 20 years already. During this period, up to five generations of satellites have been placed in orbit. Low-orbit detailed-reconnaissance satellites (SAMOS), for surveillance and detailed photo reconnaissance (LASP), and for television (KN-11) and radio-technical reconnaissance (Ferret-type) are now being used.

Since 1971, the Navy has been using photographic reconnaissance satellites to observe the areas of the world ocean. Photos of surveillance photo reconnaissance are received directly on the ships over a television channel during the satellites' 10-minute stay in the zone of their visibility

The foreign press reports on the necessity to work out effective space reconnaissance systems which should support the planning of operations and the conduct of combat operations on sea and continental theaters of operations. It is pointed out that satellites intended for the accomplishment of strategic missions in principle can transmit such reconnaissance information; however, a number of organizational and operational problems arise here. Specialists include among the former the complexity of planning and the sequence of accomplishing strategic and tactical missions, regulating the operation of the satellites, and distribution of responsibility for their use among the commands, and among the latter--the dependence of photo reconnaissance satellites on the weather situation, cloud cover, and haziness of the atmosphere over the areas of combat operations. More effective under such conditions are reconnaissance means which operate in the IR [infrared] region of the spectrum. However, existing equipment is still not capable of functioning in real time. Foreign military specialists consider satellites with a radar on board to be promising means.

Since 1971, the Navy has been operating a satellite system for radio- and radio-technical reconnaissance, the NOSS-1 (Navy Oceanic Surveillance Satellite). Four series of satellites were placed in orbit, each of which includes a primary and three auxiliary satellites. They are injected into orbits close to a circle with an altitude of 1,100 kilometers, forming a high-precision direction-finding base. The interferometric method of direction finding used in the system permits determining the coordinates of ships and aircraft from the emissions of their electronic

equipment. As reported in the foreign press, radiometers have been installed on the satellites which operate in the IR or millimeter wavebands, as a result of which the capabilities of the system for the detection and identification of sea objects, including submarines, are supplemented.

From 1977, a satellite reconnaissance system with an active radar was created in accordance with the "Clipper Bow" program, thanks to which its operation did not have to depend on the emissions of the electronic equipment of the objects being scouted. The use of this system in the conventional and bistatic versions to illuminate sea targets in the interests of NOSS-1 was envisaged.

In 1980, the Navy announced a competition of companies to obtain a contract of 4 million dollars which envisions scientific research and experimental development work for the NTSS (Navy Tactical Surveillance System) for naval tactical radar reconnaissance. The decision to create its operational version, in the opinion of foreign military specialists, will be made sometime in the middle of the 1980's.

In working out fundamentally new types of armaments, political and military figures of the United States are trying to justify their militaristic preparations by statements that space weapons allegedly are necessary "to protect space objects which are important for the country's defense." However, actually even before the appearance of numerous statements in the press concerning the necessity to create such weapons space equipment already played a large role in the Pentagon's plans which are directed toward the attainment of military superiority over the USSR and the accomplishment of the aggressive intentions of the U.S. imperialists.

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PERCEPTIONS, VIEWS, COMMENTS

COMMENTS ON ORGANIZATION AND MISSION OF NATO MOBILE FORCES

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 6, Jun 82 (signed to press 8 Jun 82) pp 3-8

[Article by Maj Gen N. Ivlev: "NATO Mobile Forces"]

[Text] The international situation in the world has been sharply aggravated by the growing aggressiveness of the USA's and NATO's policy. The main efforts of militant circles in Western countries are now being concentrated on vast all-out military preparations under the cover of a fabricated "threat from the Soviet Union."

It should be recalled that from the very beginning of the creation of the aggressive North Atlantic Alliance (1949) the United States has actively pursued a course toward involving its European partners more closely in its plans for war preparations. By as early as 1950 it managed to railroad a decision through a NATO session creating the combined armed forces of Europe with a supreme command constantly headed by an American general, and somewhat later the combined nuclear forces, establishing the position of deputy supreme commander in chief of the NATO combined armed forces in Europe for nuclear weapons (also an American general).

The next step the USA took in the direction of increasing tension in Europe was in 1961, when it created the NATO mobile forces (often referred to in the Western press as the "fire brigade"), making it possible to immediately, and essentially automatically, involve most of the member countries in any possible military conflict. This was done under the noble excuse of "protecting the allies," especially on the flanks of the North Atlantic bloc.

The NATO mobile forces include units and subunits of the ground troops and air force. These troop contingents have been allocated by eight countries: USA, Great Britain, FRG, Canada, Italy, the Netherlands, Belgium and Luxembourg (Figure 1 [figure not reproduced]). Although there are no naval forces within the composition of the mobile forces, the bloc command foresees the use of warships to support their actions in maritime sectors. Typically the airplane fleet of the forces is outfitted with both conventional and nuclear weapons.

The commander of the mobile forces (he is also the commander of the mobile ground troops) is subordinated directly to the supreme commander in chief of

the NATO combined armed forces in Europe. The bloc's Military Planning Committee approves the decision to use the "fire brigade."

The mobile ground troops, notes the foreign press, are now headed by an American, Major General (Veyand). A combined staff (located in (Zekkengeym), 5 km southeast of Mannheim) deals with the planning, preparation and conduct of operations. It has a permanent planning group as its main working organ. The composition of the mobile ground troops includes seven battalions: one paratrooper battalion each from the USA, FRG and Belgium, one motorized infantry battalion each from Great Britain and Canada, an infantry battalion from Luxembourg and an Italian mountain battalion. The total strength of these troops is about 8,000 men. It should be emphasized that these are not simply conventional motorized infantry (infantry) battalions. Each of them is reinforced with artillery (a battery as a rule), army aviation and combat engineer, reconnaissance and rear subunits. The mobile ground troops are armed with modern tanks, armored personnel carriers, combat and transport helicopters, guns and mortars, antitank and antiaircraft resources and various communication apparatus.

These battalions and the reinforcing subunits are stationed together with their own formations (units) in peacetime, and they are kept constantly ready for transfer to regions of forthcoming activities. It was established in this case that they must arrive at their airfield of embarkation within 24 hours, the first echelon must be transferred within 48 hours, and the rest must be transferred within 5-6 days. Transfers are to be made by air, rail and motor transport and, when necessary, by sea.

It has been reported that the material reserves of the units can support combat activities for 7 days and, in an isolated region, for up to 30 days.

The composition of the mobile air forces includes one tactical air squadron each from the USA, Great Britain, Canada, the FRG, Belgium, the Netherlands and Italy (a total of more than 130 warplanes). In peacetime the air subunits are subordinated to the national air force commands, since they do not possess their own command and staff. In a crisis situation the squadrons are transferred to the region of operations, and when combat activities begin they are led by the commander of the mobile ground troops.

The requirements imposed on units and subunits of the NATO mobile forces in terms of combat readiness and combat training are higher than those imposed on other formations of the combined armed forces. The plans and subject matter of the training are invariably coordinated upon with the bloc's military-political leadership. They are implemented in such a way that the mobile forces would be capable of engaging in combat activities in any climatic conditions, using conventional, chemical, nuclear and even biological weapons. Special attention is turned to coordination with the national troops in the countries to which they are transferred, and with reinforcing formations provided by the armed forces of the member states. With this purpose special exercises are conducted each year (not less than two times), in which a "fire brigade" is actually transferred to Norway, and mainly into the northern part of this country, to the Baltic straits, northern Italy, Greece and regions of Turkey bordering on the USSR and Bulgaria. During these exercises the use of

modern weapons is practiced in its full volume. The NATO leadership tries to see that the maneuvers of the mobile forces would proceed on the background and with a consideration of the "growing Soviet military threat" and that they would maintain a clearly pronounced political character. For propaganda purposes the activities of the troops are advertised by radio and television and in newspapers and journals. Meetings of the unit personnel with the population of the host countries are also organized.

As is noted in the foreign press, mobile forces can be used in their full composition on one of the flanks of the bloc, or on the northern and southern flanks simultaneously. At the same time the possibility of their use in other regions of Europe is not excluded either. And considering that the USA is getting its allies to expand NATO's zone of operations in the Near East, Africa and the Persian Gulf, they may appear in these regions as well.

Demonstration of forces on the bloc's southern flank has become more active in recent years in response to pressure from the USA. As the foreign press reports, in 1981 the mobile forces conducted exercises twice in the South European theater of war. At the end of April and in the first half of May of last year an exercise code-named "Andante Exchange-81" was conducted in northeastern Italy. Its main goal was to refine and elaborate upon the plans for using the "fire brigade" on the bloc's southern flank in response to arisal of an armed conflict, and to test its capebility for conducting combat operations in northeastern Italy in coordination with battalion ground troops and tactical aviation.

Five reinforced battalions of ground troops and five air squadrons of the USA, FRG, Great Britain, Belgium and Italy (more than 3,000 men) representing the mobile forces took part in this exercise. The personnel were ferried together with their weapons and combat equipment by military transport aircraft of these countries (except Italy), which flew up to 300 sorties. Heavy equipment was transferred by sea.

The main attention was devoted in the exercise to troop transfers in a crisis situation and to organization and maintenance of coordination between units from different countries and different arms and services, rear support and stable control in the course of combat activities.

Judging from reports in the Western press, this time the NATO leadership based the military-political situation and plan of the exercise on a stereotypic, provocative political situation pursuing the goal of reinforcing the noisy campaign of a "Soviet military threat" launched in the West.

As in the course of other exercises, the part of the "aggressor" was given to the armed forces of the Warsaw Pact countries which, according to the scenario, had created a large strike grouping in regions of Yugoslavia bordering on Italy. Then they "violated" the Italian state border and went over to the offensive. Under these conditions the bloc's armed forces conducted delaying actions and simultaneously transferred mobile forces to reinforce the Italian troops in short order, making it possible to repel the "enemy's" advance. Tactical airborne landings coordinated with tactical aviation were broadly employed in the course of the exercise.

Many highly placed officials of the bloc, including the supreme commander in chief of the NATO combined armed forces in Europe, the American General Rogers, attended the maneuvers.

Nor does the bloc's leadership neglect its northern flank , viewing it as a convenient springboard for implementing aggressive plans primarily against the Soviet Union. A partial NATO combined armed forces exercise code-named "Ember Express-81" was conducted with this purpose in September-October of last year within the framework of the "Autumn Forge" maneuvers in Denmark. The main role was given in this exercise to mobile forces operating together with English and Danish troops.

The following units of the mobile forces participated in the exercise: a British reinforced motorized infantry battalion, a Belgian "commando" parachute battalion reinforced by a battery of 105-mm howitzers, the Italian "Sousa" mountain battalion reinforced with a battery of 105-mm howitzers, an infantry battalion from Luxembourg, signal, combat engineer and medical subunits from the Bundeswehr and the American forces deployed in the FRG, and four air squadrons (from the USA, Great Britain, Belgium and the Netherlands) for a total strength of more than 5,000 men.

As was noted in the Western press, the bloc command foresaw participation of British mobile forces (the reinforced Sixth Field Group, an air squadron and a marine battalion for a total of about 12,000 men) and Danish troops (the 2d Sjaelland Motorized Infantry Brigade, a battalion from the 1st Sjaelland Motorized Infantry Brigade, service subunits and tactical air force units, for a total of more than 5,000 men).

A total of up to 22,000 personnel were involved in exercise "Ember Express". More than 6,000 units of combat equipment, over 160 airplanes and helicopters and up to 40 warships were used. Overall leadership was provided by the NATO combined armed forces commander for the Baltic straits, Lieutenant General O. K. Lind of Denmark.

As was emphasized in the foreign press, the goal of the exercise was to work out the problems of troop transfers on the bloc's northern flank and of conducting combat operations jointly with troops of Denmark and Great Britain. Special attention was devoted to reinforcing the groupings of the NATO combined armed forces in the Baltic straits, to organizing and conducting assault landing and antiassault landing operations, to mobilizing reservists, to command and control, and to troop logistical support.

Here as well the NATO command could not do without its perpetual slanderous stereotype: The armed forces of the Warsaw Pact countries ("Orange") were represented as the "aggressor," and NATO troops ("Blue") were forced to defend. The initial military-political situation foresaw sharp aggravation of the relations between Denmark and neighboring socialist countries. The Warsaw Pact armed forces supposedly activated their operations near the Danish borders, violating Denmark's territorial waters and airspace. In the evolved situation the Danish government turned to the NATO Council for assistance, and the bloc's leadership made a decision to transfer mobile forces there.

According to the scenario, "Orange" forces conducted an assault landing operation on the Danish islands in order to establish control over the Baltic straits, while "Blue" forces maintained antiassault landing defenses.

The "Orange" side was represented by a marine assault landing force--the British 42d Marine Battalion and and a motorized infantry battalion of the Danish 1st Sjaelland Motorized Infantry Brigade, and an airborne assault force--a Danish airborne company (represented by a paratrooper battalion). "Blue" was composed of the 2d Sjaelland Motorized Infantry Brigade, by NATO mobile ground troops and by English mobile forces (Figure 2).

Before the active phase of the exercise the units and subunits underwent tactical and special exercises. Staff training sessions were organized for officers. Much attention was devoted to preparing the umpire staff. Nor did the NATO command neglect organization of extensive propaganda measures among the public. It was slanderously emphasized in lectures and special films that the Warsaw Pact, and primarily the Soviet Union, was threatening Denmark.

The exercise proceeded in three phases. In the first (5-20 September) the problems of transferring and operationally deploying NATO mobile forces and English mobile troops in the Baltic straits were resolved. Moreover partial mobilization measures were implemented in Great Britain and Denmark; marine and airborne landing forces practiced landing operations as well. Units and subunits of the mobile ground troops were transferred to Denmark by air (from Great Britain, the USA and Luxembourg) and by rail (from the FRG, Italy and Belgium). A total of up to 500 sorties were flown and 15 special trains were run. Cargo ferry crossings were broadly employed as well. NATO mobile air forces (four squadrons) were transferred to three air bases ((Vandel'), Karup and (Ol'borg)). English mobile forces were conveyed mainly by marine transportation to the ports of Esbjerg and Korsor.

The active phase of the exercise occurred in the period from 21 to 25 September (the second phase). Problems associated with completing operational deployment of the troops and the conduct of combat activities in the coastal zone and deep in the island of Sjaelland in the presence of conventional and chemical weapons were worked out during this time.

Following fire preparation, on the morning of 22 September "Orange" landed a marine assault landing force in the vicinities of (B'yerge) (Yammerlann Bay) and Mullerup (Muskhol'm Bay) using West German assault landing boats and an English helicopter landing ship, the "Intrepid." Heavy armament and combat equipment was delivered aboard English tank landing ships. The marine landing was actively supported by tactical aviation and a ship detachment. "Orange" dropped a tactical airborne force in a region north of Kalundborg with the purpose of assisting the marine assault landing. By the end of the first day the marine assault force expanded its beachhead to a depth of up to 10 km.

"Blue" conducted active delaying actions on the shore and made several counterattacks in order to push the landing force back into the sea, but in view of insufficient fire support, it was unsuccessful.

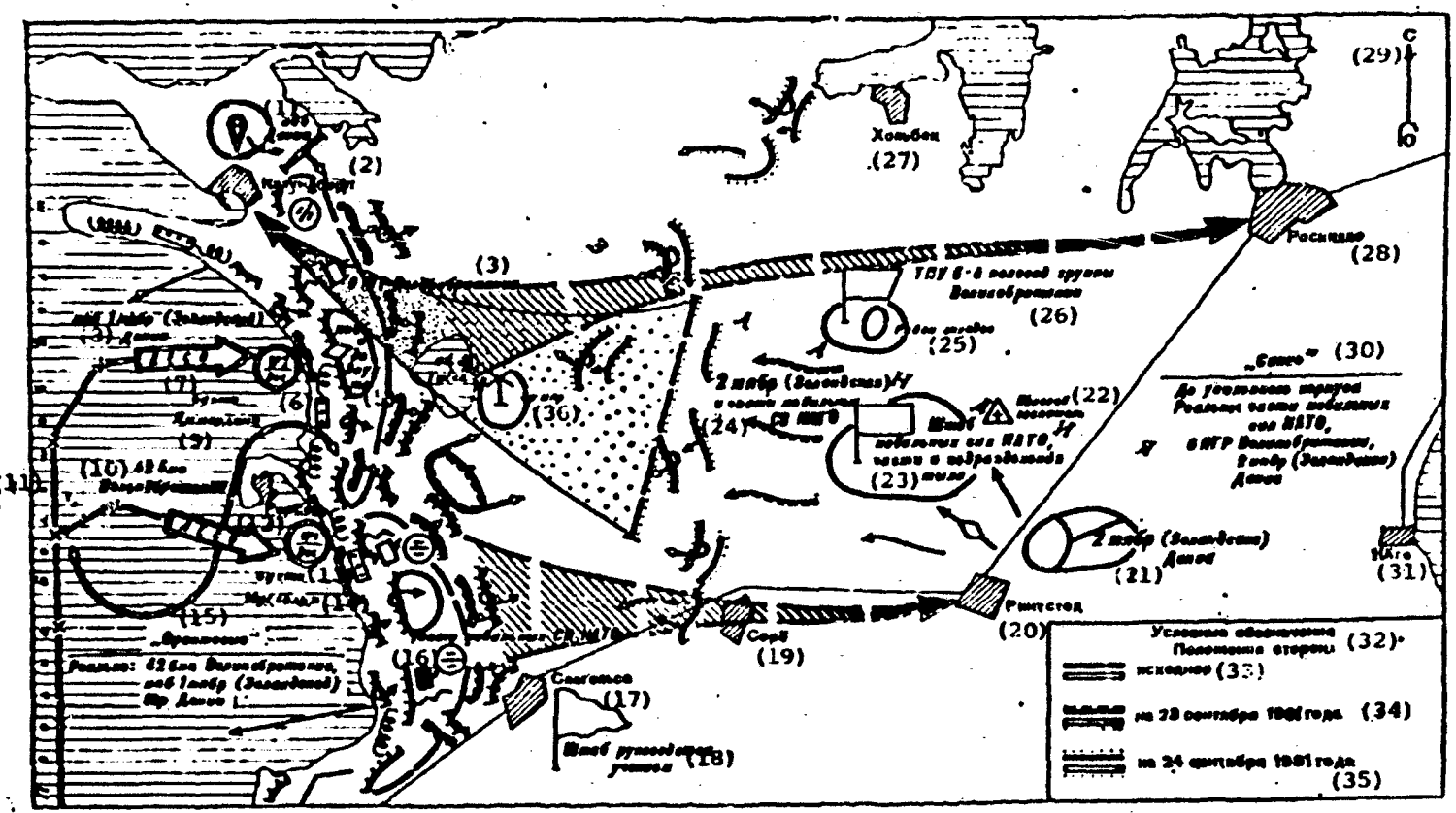

Figure 2. Plan of Exercise "Ember Express-81"

Key:

1. Danish paratrooper battalion
2. Kalundborg
3. British 6th Field Group
4. Lake Tisse
5. Motorized infantry battalion and up to two tank companies
6. Assault landing force No 2
7. Landing detachment
8. Danish motorized infantry battalion, 1st Motorized Infantry Brigade (Sjaelland)
9. Yammerlann Bay
10. British 42d Marine Battalion
11. Store Baelt
12. Korsø
13. Assault Landing Force No 1
14. Muskhol'm Bay
15. "Orange" represented by British 42d Marine Battalion, Danish marine battalion of the 1st Motorized Infantry Brigade (Sjaelland), Airborne Company

[Key continued on following page]

16. NATO mobile armed force units
17. Slagelse
18. Exercise headquarters
19. Soro
20. Ringsted
21. Danish 2d Motorized Infantry Brigade (Sjaelland)
22. Field hospital
23. Headquarters, NATO mobile forces, rear units and subunits
24. 2d Motorized Infantry Brigade (Sjaelland) and NATO armed force mobile units
25. Dump area
26. British 6th Field Group, rear services control point
27. Holbaek
28. Roskilde
29. North
30. "Blue", up to a reinforced corps, represented by units of the NATO mobile forces, British 6th Field Group, Danish 2d Motorized Infantry Brigade (Sjaelland)
31. Koge
32. Positions of sides, symbols
33. Initial
34. As of 23 September 1981
35. As of 24 September 1981
36. Up to a motorized infantry company

"Orange" continued its combat activities aimed at widening the beachhead during 23 September, concentrating its main efforts in the directions of Roskilde and Ringsted. It used chemical weapons to exploit the offensive. By the end of the second day it managed to advance 20-25 km.

Conducting stubborn delaying actions and making broad use of army aviation ("Lynx" combat helicopters armed with antitank guided missiles) and minefields, "Blue" tried to hold back the advance of "Orange," and it simultaneously moved the 2d Sjaelland Motorized Infantry Brigade forward for a counterattack.

On 24 September "Orange" troops attempted to resume the offensive, but they were unsuccessful because they were forced to engage in combat with the counterattacking 2d Motorized Infantry Brigade and "Blue" tactical airborne forces.

"Blue" troops operated actively during 25 September. They made a number of counterattacks, landed two tactical assault landing forces with "Puma" and "Chinook" helicopters, and in the end they went over to a general counter-offensive, pushing "Orange" back to the coast. At this point the war games came to an end.

Much attention was devoted during the exercise to organization, reconnaissance, interaction between units and subunits of different nationalities and to troop logistics. Medical support was also exercised according to an extensive plan. Thus a main military hospital with a capacity of 300 beds was deployed in the vicinity of Frederiksberg. It was intended to process 400-500 casualties and perform 60 operations per day. The parts of casualties were played by 300 servicemen. Wounds were simulated by special plastic overlays. The

"casualties" went through three stages: evacuation from the battlefield, the field hospital and the main hospital.

The NATO command, it was noted in the Western press, attached great significance to demonstrating the greater potentials of troop landing operations and of fire strikes made with combat helicopters interacting closely with tactical aviation.

The NATO mobile forces and reinforcements were returned to their permanent deployment stations in the third phase (from 26 September to 3 October). Transportation used in the first phase of the exercise was used at this time as well.

Presence of mobile forces in the composition of the NATO combined armed forces in Europe is one more indication of the aggressive aspirations of imperialism, and the demonstrations conducted according to the plans of the bloc's military-political leadership, near the borders of countries of the socialist fraternity, are clearly provocative in nature.

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PERCEPTIONS, VIEWS, COMMENTS

COMMENTS ON MISSIONS OF NATO SPECIAL FORCES

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 6, Jun 82 (signed to press 8 Jun 82) pp 9-14

[Article by Col A. Tsvetkov, doctor of military sciences: "'Special Purpose' Troops"]

[Text] Under the cover of the notorious myth of a "Soviet military threat" imperialist states are continuing to follow a dangerous course toward aggravation of international tension and confrontation with the Soviet Union and other countries of the socialist fraternity. To implement their aggressive designs, they have included in their arsenal for the struggle against communism--in addition to political campaigns and ideological sabotage--active subversive operations conducted by agents and by special reconnaissance and sabotage formations.

Imperialists are making a broad practice of such actions, called special operations in the West, in many regions of the world. Sending off cut-throats from "special purpose" units to suppress the liberation movement in El Salvador, U.S. President Reagan impudently declared that their mission had exceptionally important significance to "ensuring the security of the USA and other NATO countries."

Special operations, in the views of foreign specialists, involve reconnaissance and subversive actions, suppression of the partisan movement and so on. They may be conducted at an operational-tactical or a strategic scale. Combining these actions with "psychological warfare" operations is recommended as a means for raising their effectiveness.

So-called "special purpose" troops have been formed in capitalist states for the conduct of subversive actions. As is emphasized in the Western press, they are select, meticulously trained units of scouts and saboteurs. Such formations have now been created in the USA, FRG, Great Britain, France, Italy and some other Western countries.

The following basic missions are assigned to "special purpose" troops: acquisition of information on the enemy's most important objectives, and their annihilation; organization of sabotage and terror; creation of insurrectional detachments out of groups of the population dissatisfied with the existing

regime to one extent or another; conduct of ideological sabotage; participation in the suppression of national liberation and partisan movements in their rear and in dependent countries.

The United States of America, which has scouting and sabotage units in all branches of the armed forces, plays the leading role in organizing and training such troops. For example the ground troops have seven "special purpose" groups with a total strength of about 10,000 persons: three in the regular army (5th, 7th and 10th), two in the National Guard (19th and 20th) and two in the reserves (11th and 12th). They are all stationed in the continental USA, and each is prepared for actions in a particular region (Latin America, Africa, Near and Middle East, West Europe). The personnel wear green berets with a cockade bearing the image of a knife and crossed arrows, surrounded by the demagogical inscription: "To liberate from oppression."

According to foreign press reports the "special purpose" group is treated as the principal reconnaissance and sabotage unit of the American ground troops. It consists of a headquarters, a headquarters company, three "special purpose" battalions, a signal company and a service company (a total of over 1,200 persons). The "special purpose" battalion (about 250 persons) includes a headquarters, a headquarters company and three "special purpose" companies (each having an administrative section and five detachments of 14 men each).

The detachment is the main subunit of the "special purpose" troops. It includes two officers (a commander and his assistant) and 12 specialists (in combat and reconnaissance, in mine weapons and demolition, in radio communication, in logistics and medical service). If necessary, a detachment may be broken down into two subunits (of seven men each).

A total of up to 50 detachments of 14 men each or about 100 detachments of 7 men each may be created for scouting and sabotage activities in the enemy rear. They may be airlifted 350-3,000 km.

In addition to "special purpose" groups the U.S. Army has formed three separate "Ranger" battalions in recent years (the 1st, 2d and 3d). The personnel of these battalions wear black berets, and they carry a "Ranger" patch on their sleeves. They are stationed in the continental USA, and they are intended for reconnaissance and sabotage in the enemy rear in behalf of the field army (the army corps).

The battalion includes a headquarters, a headquarters company and three "Ranger" companies. It contains a total of 600 men.

A "Ranger" company includes an administration section, three infantry platoons and a weapon platoon.

Up to 70 detachments may be formed out of a "Ranger" battalion and dropped 75-450 km in the enemy rear. In some cases these detachments may operate as raiding and assault landing detachments.

U.S. Army corps contain long-range reconnaissance companies (214 men) of the following composition: company administrative section, signal platoon, three long-range reconnaissance platoons (each contains seven detachments of five men--commander, assistant, specialist-scout and two radio operators). A company can provide a total of 24 detachments.

Reconnaissance and sabotage groups created out of mechanized (infantry) brigades are to be used, according to the foreign press, for actions at tactical depth in enemy positions. The groups are being trained under the guidance of "Ranger" instructors who had themselves undergone training in a special school at Fort Benning (Georgia).

As was noted in the American journal AIR FORCE MAGAZINE, "air force special forces" were created in the USA to support the actions of reconnaissance and sabotage formations in the enemy rear (transfer, supply, evacuation, cover) and for participation in antipartisan measures. These forces are air units armed with reconnaissance airplanes, ground-attack aircraft, transport airplanes and helicopters. For example during the time of the USA's aggression in Vietnam there were 30 squadrons (more than 700 airplanes) in these forces. Now the regular air forces contain three squadrons, and the reserve command possesses eight.

"Special purpose" subunits have also been formed in the U.S. Navy--these are the so-called "Scarlet Helmets" (underwater saboteurs). There is one reconnaissance and sabotage group in the Pacific fleet (based at Coronado) and one in the Atlantic fleet (Little Creek). As was noted in the Western press, each consists of a detachment of scout-saboteurs (up to 30 squads of 6 men each can be provided), two detachments of diver-demolition experts (of four man each), a detachment of support speedboats and other subunits. If necessary the scout-saboteur subunits may be attached to any operating fleet as well as to the Rapid Deployment Force.

Following in the footsteps of the Pentagon are its allies in the aggressive North Atlantic Bloc. Thus three separate reconnaissance-sabotage regiments have been formed in Great Britain for diversionary actions in the enemy rear: the 22d (full composition), 21st and 23d (both regular). Each consists of four to six reconnaissance-sabotage companies of four platoons (parachute, assault, amphibious and mountain), a signal company (four to six platoons), a rear support company and a personnel training center. The regiment contains more than 700 men. The personnel wear black berets and a wing patch above the right chest pocket.

From 48 to 72 groups of 10-12 men (100-150 groups of five men) can be formed out of the regiment. They can be dropped up to 150-300 km behind enemy lines.

The marine infantry of Great Britain, the foreign press indicates, is represented by four reconnaissance-sabotage platoons with the strength of 22 men each (one in each marine battalion), by a company of scouts-saboteurs (about 100 men) and a battalion of "special purpose" assault landing boats. The reconnaissance-sabotage company contains three groups, each of which includes an officer, 10-12 NCOs and 8-10 privates. A group contains seven to nine teams of two men each (an NCO and a private).

Moreover there are eight frogman detachments in the British navy intended for reconnaissance and sabotage at sea: three fleet detachments (two at home and one in Hong Kong), four base detachments (at the naval bases of Portsmouth, Davenport, (Fasleyn) and Port Edgar) and a training detachment (Portland). As was reported in the journal NAVY INTERNATIONAL, the total strength of frogman detachments is 36 officers and about 200 NCOs and privates.

Development of reconnaissance-sabotage formations is being encouraged by all available means in the FRG, where in keeping with the practice of other NATO countries they are included in the composition of the ground troops and the navy.

As is noted in the West German journal KAMPFTRUPPEN, "modern reconnaissance subunits must have the capability not only for revealing but also for annihilating discovered enemy objectives." On this basis every army corps in the FRG contains a deep reconnaissance company. The Bundeswehr contains a total of three (the 100th, 200th and 300th), deployed correspondingly in Braunschweig, Weingarten and (Fritslar). A company includes an administrative section, two reconnaissance platoons (of 48 men each), a signal platoon and a supply detachment (both containing 198 men). Twenty-four reconnaissance-sabotage groups (of four-five men each) may be formed out of their composition. These groups are capable of performing missions up to 150 km behind enemy lines. In addition formation of a separate deep reconnaissance platoon with a strength of 42 man (12 teams) is foreseen in each division in wartime.

The amphibious-transport group of the West German Navy contains a company of combat frogmen (Eckernforde). It includes three combat platoons and one training platoon, as well as support subunits. It contains a total of 70 men. The scout-saboteurs operate in small teams (four to six men) headed by an officer or an NCO, and more rarely in pairs or singly.

As is evident from the foreign press, "special-purpose" subunits of NATO ground troops are outfitted with personal infantry weapons (automatic rifles and pistols) and crew-operated weapons (machineguns, light mortars, recoilless guns) as well as knives, orientation resources, demolition devices (including nuclear and incendiary charges), chemical and biological sabotage resources, reconnaissance apparatus, shortwave and ultrashort-wave radio sets and transportation. They are dropped in the enemy rear by airplanes and helicopters, and they may move in on foot.

The gear and resources used to deliver combat frogmen are extremely diverse. Depending on the missions, they can include breathing apparatus, a diving suit, knife, mask, fins, an inflatable life vest, depth gage, underwater compass and watch, flashlight, hydroacoustic and underwater communication resources, special sabotage mines and blasting charges, and infantry weapons for action on shore. Combat frogmen are delivered to their areas of reconnaissance and sabotage by special speedboats (including air-cushion boats), helicopters, airplanes, submarines (including supersmall) and assault landing ships.

As a rule commanders are selected for "special purpose" troops from among regular officer in reconnaissance units, while privates and NCOs are basically volunteers up to 35 years old (up to 25 in combat frogman subunits), contracted to serve for not less than 3 years.

The reconnaissance-sabotage subunits contain many declasse elements who had fled their countries after committing political or criminal offenses. "In the operations which we are now waging against international communism," declared the American General W. Jackson, "we do not display any special scruples, and we are prepared to use any gangsters and cut-throats that we can find to achieve our end goal."

The saboteur training program i extremely intensive according to the foreign press. It includes brainwashing and generalized special training. The idea that the capitalist system is superior to the socialist system is constantly suggested to the personnel, and a savage hatred of communism, of the laborers of socialist countries and of peoples fighting for their national liberation is instilled. Creation of an atmosphere of suspiciousness, mutual shadowing, coarseness and brutality, advertisement of the horrors of the "communist prison" and simultaneous advancement of the myth that the "special purpose" troops are an elite make the overwhelming majority of the trainees capable of all crimes, even going as far as murder.

The whole training process is broken down into three phases lasting a total of 5-7 months.

In the first phase (which lasts 8 weeks) the main attention is turned to individual training of the saboteurs, which includes perfecting the habits of handling fire and silent weapons (Figure 1 [figures not reproduced]), studying demolition technique, working with radio sets, orientation and physical training (mainly mastering the techniques of boxing, judo and karate).

The second phase (up to 2 months) includes parachute landing training, assimilation of the techniques of scouting and diversionary actions, sabotage, subversive propaganda and so on.

In the third phase (up to 4 months) the "special purpose" subunits are trained to work together in conditions as close to real combat as possible. All lessons of this period are usually conducted away from the permanent training centers, and as a rule in regions similar to those in which the saboteurs are to be landed. For example according to the American newspaper ARMY TIMES, the "Green Berets" of the USA's 10th Special Forces Group use one of the training centers of the Norwegian army to provide training in actions in the Arctic (Figure 2). Here they take a course on survival in the Arctic, they learn to orient themselves in highly rough terrain and to build shelters from snow and ice, and they master the art of winter camouflage, concealment and deception. It was emphasized in the newspaper THE WASHINGTON POST that in April 1980 American saboteurs headed by a general added the African continent to their repertoire as well, having landed paratroopers in Liberia.

One unique feature in the training of underwater saboteurs, the foreign press indicates, is development of their physical endurance and acquisition of the

habits of remaining on water and beneath water for long periods of time, without sleep and food. Naval combat frogmen in some NATO countries are trained to swim with full gear for 10 km using fins, for 1 km with a SCUBA outfit and 40 km in power-driven vehicles, and to march up to 30 km carrying a load.

"Special purpose" troops are capable of creating an operational base on their territory for the purposes of planning, management and control, as well as for logistical support. When "special purpose" detachments are used within the sector of an army corps, their actions are accounted for in the plan of operations. Sometimes such detachments may be operationally subordinated to the staffs of these formations. In this case they are reinforced by military reconnaissance subunits, an army security service and a "psychological warfare" service.

Personnel of the "special purpose" troops regularly participate in various exercises of the ground troops and naval forces, and in so-called punitive actions in "hot spots" of the globe: For example they were involved in the attempt to liberate American hostages in Iran in April 1980, in the bloody raid of a group of "Green Berets" in Laos in early 1981, in the reprisals conducted by Pentagon cut-throats against the peaceful population of El Salvador and so on.

As was reported in the foreign press, "special purpose" troops operate according to a particular system: attainment of the enemy rear (on land or by air drop), travel to the region of operations, conduct of reconnaissance (neutralization of assigned targets), transmission of acquired information back to the center, and transfer to a new region of operations.

As far as performance of combat and special missions is concerned, the principal recommended tactics include diversion, raids, ambushes, sabotage, organization of "insurrectional" (bandit) formations and antiguerilla warfare, and conduct of subversive propaganda.

It is believed that diversion may be achieved by infiltration of agents to an objective, covert delivery of explosives and incendiary devices by various transportation resources (Figure 3) and demolition (mining) of unprotected and protected objectives.

Raids are recommended as a means for knocking out missile bases, headquarters, communication centers, supply dumps, power facilities and radar stations, and for capturing prisoners and important documents at such facilities. It is believed that a raid must be conducted (following careful reconnaissance of the objective) by several groups under the cover of fire from supporting subunits.

Ambushes are suggested as the main mode of action on lines of communication. The places for ambushes should be selected in such a way that combat equipment and transportation resources would be forced to reduce their speed or to stop (steep ascents, turns, sections of bad road and so on).

In the opinion of foreign military specialists organization of insurrectional formations in the enemy rear out of bandit and other criminal elements must occupy an important place in the activities of "special purpose" troops. This requires constant study of the mood of the population, careful selection of formation leaders and timely provision of weapons and materiel to them.

Organization of sabotage--that is, deliberate interruption of the work of important enterprises--is an effective method of influencing the enemy rear. Sabotage may be achieved by specially trained agents who cause workers to openly refuse to perform their responsibilities or deliberately keep the workers from doing so.

One of the main aspects of the subversive activities conducted by "special purpose" troops is ideological sabotage against the armed forces and population of the enemy. "Our 'partisans'--'special purpose' troops--will undermine the enemy's morale from the rear," teach the bosses of the Pentagon, "while the troop apparatus of subversive propaganda--'psychological warfare' organs and subunits of the theater of war--will actively influence the minds of enemy soldiers on the front."

Having lost all sense of reality, the ruling circles of the imperialist states, headed by the USA, are making increasingly more overt preparations for aggressive war against the Soviet Union and other countries of the socialist fraternity, in which they devote an important role to their "Black Guard"--the "special purpose" troops. Soviet soldiers must oppose the intrigues of NATO saboteurs by high revolutionary alertness, honed military proficiency and constant combat readiness.

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PERCEPTIONS, VIEWS, COMMENTS

COMMENTS ON COMBAT COOPERATION OF U.S. HELICOPTERS AND A-10 AIRCRAFT

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 6, Jun 82 (signed to press 8 Jun 82) pp 30-33

[Article by Col (Res) G. Osipov, candidate of military sciences, assistant professor: "Interaction of Army Helicopters and A-10 Aircraft"]

[Text] Preparing for an aggressive war against the Soviet Union and other countries of the socialist fraternity, the command of the U.S. Army and Navy is continuing to devote great attention to improving the effectiveness of the combat use of army helicopters and A-10 airplanes intended for close air support to ground troops. As was communicated in the Western press, the experience of exercises and combat training with such helicopters and A-10 attack aircraft showed that both have certain shortcomings restricting their use and reducing their combat effectiveness. It was found out for example that helicopters are highly vulnerable to enemy antiaircraft fire, they are limited in antiaircraft maneuvers when sighting, launching and guided a missile to a target and when in terrain-following and hovering flight at low altitude, and they reveal their presence by the Doppler effect of the main rotor, the noise they produce and the dust they raise from the ground.

The main shortcomings of the A-10 are, in the opinion of foreign military specialists: some difficulties in piloting at low and minimum altitude and in the accuracy of reaching a target; inability to operate in adverse weather and at night; overburdening of the pilot with piloting operations, which hinders target search and destruction.

Considering the above, American specialists took a number of steps in the last few years to raise the effectiveness of the combat use of helicopters and airplanes operating in behalf of the ground troops. In particular they developed the principles of their joint application on the battlefield, creating so-called mixed air strike groups. Judging from communications in the foreign press, practice in joint flying began at the end of 1977 and is continuing today. The reasoning behind the idea forming these groups was that as a result of such interaction, A-10 aircraft enjoy greater possibilities for striking enemy troops (especially armored units and subunits) on the march and in the regions of their concentration or deployment.

Experience accumulated in various exercises and test flights allowed American aviation specialists to determine the optimum composition of the group, its

purpose and missions, the tactics of joint actions by helicopters and airplanes, organization of their interaction, problems of command and control over them and so on.

As is reported in the foreign military press, mixed air strike groups are intended for fire support to ground units and subunits during their combat operations, for the annihilation of tanks, armored targets and other objectives, for observation of the battlefield and reconnaissance, for flank cover and so on. Such a group may contain, as required by the plan of the commander of the supported formation, five AH-1S "Hugh-Cobra" antitank helicopters, three or four OH-58A "Kiowa" reconnaissance helicopters (Figure 1 [figures not reproduced]) and four or five A-10 attack airplanes.

The command of the ground troops believes that missions in behalf of supported units and subunits may be completed with greater effectiveness using such a composition. In the course of combat, the reconnaissance helicopters must detect the positions of antiaircraft resources and the quantity and direction of movement of enemy tanks and other objectives. The intelligence is transmitted to the crews of antitank helicopters and attack aircraft as well as to artillery fire control points. These helicopters subsequently correct artillery fire, conduct final reconnaissance of individual targets, continue to observe the enemy in the direction of his advance and so on.

The main mission of antitank helicopters is to annihilate antiaircraft resources, tanks, infantry combat vehicles, armored personnel carriers and other targets. Attack aircraft have the mission of annihilating antiaircraft resources, tanks, armored transporters and infantry combat vehicles on the march or in concentration areas.

American specialists announced that a mixed air strike group made sufficiently effective strikes on a tank concentration area (containing 28 vehicles, two antiaircraft guns and two antiaircraft missile complexes) and against a marching column of a similar subunit 2-3 km long in experimental exercises (1978-1981). Much attention was also devoted to practicing the tactics of helicopters and airplanes.

During exercises and in the course of test flights, the mixed air group used various tactics depending on the evolving situation and the missions to be completed. Three basic methods of action were practiced: successive strikes against tanks and antiaircraft resources in lengthy raids on the "enemy," simultaneous strikes by helicopters, artillery and airplanes against the same target, or simultaneous strikes by them against different targets. Helicopters and airplanes usually flew at minimum altitude. To surmount air defenses they employed maneuver and onboard electronic warfare resources.

For successive strikes against targets, the group assumed a combat formation of three echelons. Reconnaissance helicopters usually operated in the first, scouting the "enemy" objectives and performing target indication functions. In a number of cases one or two antitank helicopters were included with them in order to annihilate discovered targets with the "Tow" missiles they carried.

The second echelon included antitank helicopters which approached their targets taking advantage of the concealment provided by the terrain. They made their first strike against detected objectives from a range of 3,300 meters and an altitude of 8-20 meters. To surmount enemy air defense resources, combat helicopters employed diversionary actions for a short time in order to mislead the crews of the "enemy" air defense resources.

A-10 airplanes operated inthe third echelon. Their combat formation consisted of two or three pairs (Figure 2) which attacked "enemy" tanks, combat vehicles and armored personnel carriers from an altitude of 90-200 meters. In this case each pair made several passes, and the airplanes approached the target at bearings 20-30° relative to each other.

Antitank helicopter and airplane subunits making a simultaneous strike against one target attacked the rear and flanks of the air defense resources as they approached the target. By their diversionary actions, helicopters attracted the attention of antiaircraft gun crews while the attack aircraft struck them with missiles and cannon fire. After suppressing air defense resources the helicopters and airplanes struck "enemy" tanks, armored personnel carriers, infantry combat vehicles and artillery jointly with artillery. In this case the helicopters maneuvered continually, varying the combat formations and the bearings of their approaches to the target. As A-10 airplanes left the target on expending their ammunition, the helicopters and artillery continued to strike the "enemy" until such time that a cease-fire order was transmitted.

As a rule when strikes were made simultaneously against different targets, the helicopters operated primarily against air defense resources while 8-10 airplanes attacked tanks. The attack was started by attack helicopters contained within the composition of the reconnaissance subunit. Then artillery and the rest of the helicopters joined in, followed by the A-10s (Figure 3). After the attack aircraft finished their attack, the helicopters continued to make their strikes in an attempt to annihilate remaining targets. During exercises the helicopters operated against the "enemy" for 44 minutes while attack aircraft operated for 27 minutes.

American military specialists believe that well organized interaction between helicopters and airplanes as well as with supported troops is a guarantee of successful actions by a mixed air strike group. As is reported in the foreign military press, interaction is organized by the commander of the formation in behalf of which the group is to operate with the purpose of providing fire support to him in his action against the opposing troop grouping.

Helicopters and airplanes communicated by radio with the command posts of the supported formations and units in the course of these exercises. Command posts provided the appropriate instructions on the order of striking the targets, reported additional information on the "enemy," elaborated upon the objectives and targets to be struck and so on. In order to raise the effectiveness of the group, especially of its suppression of "enemy" air defense resources, extensive use was made of artillery, which fired shells at the targets in order to mark their locations for the attacking helicopters and airplanes. In turn, reconnaissance helicopters transmitted target information to artillery and corrected its fire.

Direct interaction between helicopters and airplanes was organized in such a way that dependable communication would be ensured between all flight crews and between the latter and the control organs. Following are examples of some problems worked out in the exercises: target reconnaissance and transmission of the corresponding information to command posts of the formation or unit or to the helicopter and attack airplane flight control posts; elaboration upon the mission of crews (on the basis of the received data) on the ground or in the air; guidance of airplanes to the target, and others. In the last case helicopters assumed a position 3,300 meters away from the target, and by their actions ("frog-leaping") they indicated to the A-10 pilots the moment at which they were to begin their maneuver preparatory to missile launch or cannon fire (Figure 4).

Foreign experts note that coordination of helicopters and airplanes on the battlefield also depends on how clearly control is maintained over them in the course of combat activities.

As is reported by the foreign military press, coordination is organized by the commander of the supported formation, and it is maintained directly through an air force liaison officer who manages the actions of the mixed air strike group depending on the evolving situation and the orders he receives. Communication between him, the formation commander, the helicopters and the airplanes is maintained by radio.

The experience of the exercises shows that organization of closer interaction between helicopters and airplanes in the region of their combat use requires commanders of army air reconnaissance subunits to fly aboard OH-58 helicopters as forward air controllers. Their mission, American military specialists note, included coordinating the fire of attack airplanes with the actions of the reconnaissance and antitank helicopters. This raised the combat effectiveness of the group as a whole.

Evaluating the results of the exercises and the test flights, the command of the ground troops came to the conclusion that the mixed air strike group provides a positive advantage, raising the effectiveness of its actions by two to four times and reducing losses by 50 percent in comparison with separate use of helicopters and airplanes. Some negative factors were revealed as well, to include: insufficient training of both forward air controllers in the control of the group's actions and of the crews of helicopter subunits in the provision of close air support and organization of interaction with A-10 airplanes; unstable communication of helicopters and airplanes with ground command posts in actions at low altitude. Moreover the crews of the helicopters did not always have a full understanding of the tactics of the A-10 airplanes, making it difficult for them to perform their missions and causing great losses of time in coordinating interaction with attack aircraft in joint strikes.

Judging from the latest communications in the foreign press, much work is being done today in the ground troops and air force with regard for these findings in order to raise the combat effectiveness of groups created for the time of combat. In particular, a manual has been written on the tactics of joint actions of army aviation helicopters and A-10 airplanes (similar instructions

have been published for airplane pilots), a program for training the crews of helicopter subunits to strike targets on the battlefield has been drawn up, and preparations are being made to work out the tactics of joint actions by such a group at night.

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PERCEPTIONS, VIEWS, COMMENTS

COMMENTS ON U.S. ARMY AVIATION RADIOELECTRONIC WARFARE EQUIPMENT

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 6, Jun 82 (signed to press 8 Jun 82) pp 36-41

[Article by Engr-Col V. Afinov: "Radioelectronic Warfare Equipment of Army Aviation"]

[Excerpts] In order to support the actions of army aviation in the face of strong enemy air defenses, the American command has assumed the course of furnishing all of its airplanes and helicopters with resources intended for their individual protection from weapons using radar and infrared homing systems.*. In the opinion of American military specialists this measure should significantly raise the viability of this relatively vulnerable form of aviation.

The solution to this problem is found in onboard radioelectronic warfare resources, which include, according to foreign specialists, all equipment used for individual protection of aircraft. Electronic warfare resources offering group protection are installed aboard special airplanes in the American air force and navy. By jamming enemy communication and radar, they provide cover to attacking airplanes. But the USA's army aviation does not possess such resources. Figure 1 [figure not reproduced] provides data on individual protective resources which, according to information in the foreign press, are to be supplied to army aviation in the 1980s. They are distinguished by greater size and weight, they cover the radio and optical wave bands, they work in active and passive mode, and as a rule they represent simplified variants of the radioelectronic warfare equipment created for tactical and naval aviation.

Detection systems are a mandatory element of every onboard outfit of radioelectronic warfare resources providing individual protection to army aviation. They warn the crew that the helicopter (airplane) is being irradiated by radar stations supporting enemy surface-to-air missile complexes or antiaircraft artillery. This makes it possible for the pilot to perform an antiaircraft evasion maneuver or avoid a dangerous zone. Moreover these resources can be

*This article is a continuation of the article "U.S. Army Aviation Radioelectronic Resources"; see ZARUBEZHNOYE VOYENNOYE OBOZRENIYE, No 5, 1982, pp 31-36.--*Editor.*

used to control the jamming of enemy troop air defenses when the necessity for surmounting them arises.

There are plans for supplying American army aviation with four types of radar emission detecting receivers. The table [not reproduced], compiled on the basis of material in the American press, shows the types of helicopters and airplanes aboard which they are installed, and the number of receivers now available or on order.

A limited number of types of radioelectronic suppression resources are contained in outfits of individual protection resources provided to American army aviation. They include stations that jam the infrared homing warheads of surface-to-air guided missiles and the fire control radar of surface-to-air missile complexes and antiaircraft artillery. They also include systems that automatically eject radar reflectors and infrared decoys.

To raise the viability of American aviation, its airplanes and helicopters are outfitted with special devices (two types) for suppressing thermal emissions from their aircraft engines, in addition to the radioelectronic warfare resources.

Moreover American specialists are conducting an intensive search for ways to reduce the reflecting surface of army aviation resources in the radar and optical wave bands. Thus according to reports in the Western press all aircraft deployed outside the continental USA are supposedly painted with a compound that reflects only 7 percent of the incident light rays, while conventional paints reflect 60 percent of all solar radiation. It has also been reported that in accordance with the "Stealth" program for creating an "invisible" airplane, a laboratory of Applied Technology is studying the possibility of reducing the effective reflecting surface area of UH-1S helicopters by eliminating their "bright" points, the main one of which is the main rotor.

The command of the U.S. Army is exerting pressure to find a swift solution to the problem of providing individual protection to army airplanes and helicopters through radioelectronic warfare resources. Just in fiscal year 1981 more than $50 million were to be spent on acquisition of infrared jamming units, devices suppressing thermal radiation from aircraft engines, automatic passive interference systems and onboard rocket detectors.

Thus it follows from the above that American army aviation must perform a sizeable volume of missions associated with radioelectronic warfare in the theater of war. For these purposes the American troops are being outfitted with special radioelectronic warfare airplanes and helicopters. To raise their viability, they are being outfitted with onboard radioelectronic warfare resources providing individual protection against enemy guided antiaircraft weapons. The main technical and organizational measures associated with expanding the possibilities of American army aviation's radioelectronic warfare are expected to be completed by the mid-1980s.

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PERCEPTIONS, VIEWS, COMMENTS

COMMENTS ON AIR RECONNAISSANCE OF CAMOUFLAGED TARGETS

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 6, Jun 82 (signed to press 8 Jun 82) pp 43-49

[Article by Col A. Krasnov, doctor of military sciences, professor: "Air Reconnaissance of Camouflaged Objectives"]

[Text] Viewing reconnaissance and camouflage, concealment and deception [maskirovka] as two opposites perpetually in conflict with one another, and analyzing their interrelationship, military theorists abroad note that this duel began immediately after the birth of air reconnaissance. As a confirmation of this they cite the experience of past wars in which--following the advent of captive balloons--the troops of the opposing sides began deploying in dense forests, formations moved mainly at night, dummy artillery positions were built, and real artillery positions were camouflaged and concealed in order to mislead the enemy concerning the composition and disposition of friendly groupings.

As the resources and methods of air reconnaissance developed, the concept itself of camouflaged and concealed objectives experienced continuous changes, becoming increasingly more complex. Initially the techniques of camouflage, concealment and deception were limited only to concealment of objectives from visual observation and air photography.

Foreign military experts still believe visual observation to be the most universal and reliable method of air reconnaissance, one within the means of all crews. It permits inspection of large areas in a short time, and it is irreplaceable in searching for and reconnoitering small and mobile objectives. Data may be transmitted by radio immediately after target detection. The weak sides of this method include the decrease in possibilities of visual observation as the altitude and speed of reconnaissance airplanes rise and as the complexity of the objectives increases, and the subjective nature of the information. Concerning the latter, the foreign press notes that different crews often disagree considerably in their evaluation of the same objective.

Aerial photography is always objective and conclusive in the opinion of Western specialists. It permits the recording of the most complex objectives on film, acquisition of rather complete data on the nature of enemy defenses and combat formations, large railroad junctions, airfields and troop groupings, and detection

of even the most insignificant changes in such large objectives. However, as is equally true of visual observation, the results of aerial photography depend on weather and time of day.

The strong and weak sides of these methods of air reconnaissance have long been accounted for in the enactment of camouflage, concealment and deception measures. To conceal the composition and disposition of forces from reconnaissance and to create a false idea of forthcoming actions, an entire complex of camouflage, concealment and deception resources have been employed (camouflage paint and nets, smoke and aerosols, mock-ups and dummy equipment). Darkness, cloud cover, terrain features, forests and brush continued to be used often to conceal shipments and troop concentrations, false movements were conducted and so on.

Great significance is still attached today to concealment of objectives from visual observation and aerial photography abroad. For example in order to make airfields less noticeable, roads and fields are simulated on them, and the landing strip, taxiways and various airfield structures are painted to match the background. In particular, the Western press reports, about 400,000 square meters of surface are covered with camouflage paint at the American Air Force base at Hahn (FRG). Airplanes at airfields and landing sites are dispersed. They are camouflaged to match the terrain, they are hidden beneath tree crowns, and they are covered with special camouflage netting (figures 1 and 2 [figures not reproduced]). Very serious attention is devoted to this issue in the ground troops of the NATO bloc countries. Thus command posts, combat equipment and personnel are located in camouflaged shelters, and other measures are implemented as well.

Foreign military specialists note that as camouflage, concealment and deception became more and more meticulous in the troops, it became impossible to see real objects with the human eye and identify them on photographs, and it became difficult to distinguish dummy structures and mock-ups from real ones. In other words when the resources of camouflage, concealment and deception were used correctly, the possibilities of air reconnaissance methods such as visual observation and aerial photography were sharply reduced. In this connection many capitalist countries began an effort to create fundamentally new forms of reconnaissance apparatus, to include infrared (IR), radar and radiotechnical.

Infrared apparatus attracted the attention of Western specialists by its great potentials for revealing objectives on the basis of their thermal contrast with the surrounding terrain. Images obtained by IR reconnaissance apparatus look like conventional aerial photographs, but they are essentially graphical representations of the thermal radiation produced by the observed object. They can reveal manmade structures and various targets concealed from optical observation, and even targets sheltered beneath the ground.

In the opinion of NATO military experts use of IR apparatus has made it possible to detect objectives meticulously camouflaged or concealed by camouflage netting (including tanks, artillery weapons, motor vehicles, airplanes and other small objects) and to distinguish dummy targets from real ones on the basis of differences in the intensity of their emissions. This equipment can be used to

conduct reconnaissance at night without artificial illumination of targets, and covertly, inasmuch as objectives are detected and recognized on the basis of their own emissions, and this significantly raises the effectiveness of reconnaissance. Moreover it is believed that clues such as the heat produced by engines and exhausts escaping from working engines can be used not only to identify but also determine the readiness of combat equipment for action, which can be done with neither aerial photography or visual observation.

At the same time it is noted in the foreign press that some shortcomings are inherent to IR apparatus as well. In particular the possibilities for detecting objectives depends to a significant extent on the background radiation of the terrain and the weather conditions. But even in the presence of precipitation, fog and dense smoke, in the estimation of foreign specialists the range of infrared apparatus exceeds by several times the range of visual observation under the same conditions.

Radar apparatus: According to reports in the Western press onboard radar sets began to be used from the very beginning for the purposes of air reconnaissance, in addition to navigation and sighting. However, in view of low resolution they could not be used to detect small targets--that is, radar screens were photographed mainly to acquire radar images of the terrain and of large objects located on it. These data were then used mainly for navigation.

Further development of science and technology made it possible to create special reconnaissance radar sets in the late 1950s, particularly side-looking radar, which had a rather high resolution for the relatively small geometric dimensions of the antennas. Using them, reconnaissance airplanes could seek objectives concealed from optical and IR observation without entering a region occupied by the enemy, and reveal the radar characteristics of reference points near them and on the flight routes of friendly aviation.

In the opinion of Western military specialists these radar sets have a number of shortcomings (presence of interference from objects on the terrain, the large amount of time required to transmit and process the information and so on). But at the same time they make observation of the enemy possible at any time of the day, and they have a practically all-weather capability. The latter somewhat compensates for the shortcomings inherent to the methods of reconnaissance discussed above (visual, aerial photography, IR).

Radiotechnical reconnaissance apparatus has enjoyed extensive application in connection with the large quantity of various electronic equipment furnished to the troops. As is noted in the foreign press, the idea of using such apparatus for the purposes of air reconnaissance is not new. Primitive reconnaissance receivers intended to detect the operation of enemy radar were mounted aboard airplanes during World War II. However, as the possibilities of camouflage, concealment and deception increased and as electronic resources for control of troops and weapon systems were introduced into the armed forces, radiotechnical reconnaissance apparatus enjoyed swift development.

The emissions from every different type of electronic device are unique, states the Western military press. Therefore after electromagnetic emissions from

radio and radar stations are recorded by the onboard radiotechnical reconnaissance apparatus of reconnaissance airplanes, the intercepted signals can be analyzed: Their frequency, form of modulation, antenna characteristics and the bearing to the signal source can be established, and some other data may be obtained.

Evaluating radiotechnical reconnaissance apparatus, foreign specialists note that it makes it possible to acquire a great deal of important information about the enemy, including about objectives concealed from optical, IR and radar observation by camouflage, concealment and deception resources. What sort of information are they talking about?

Using data on electromagnetic emissions obtained by means of radiotechnical air reconnaissance, we can constantly monitor the work of enemy electronic resources, determine the strength, composition and disposition of his men and equipment, and reveal radar stations, radio communication resources, fire control systems and other objectives. Analysis of information obtained by radiotechnical reconnaissance apparatus makes it possible to reveal the location of command posts, antiaircraft resources and enemy troop groupings (both day and night) deep within their combat formations. This last advantage has extremely important significance in the opinion of foreign experts, since it makes it possible for reconnaissance airplanes to conduct reconnaissance without getting in range of antiaircraft resources in wartime and without crossing state borders when conducting reconnaissance of countries in peacetime.

Moreover it is believed that if radiotechnical reconnaissance is conducted constantly over a long period of time, carefully concealed objectives can not only be revealed, but also the general nature of the activities of troops of the opposing side can be established. In particular it is noted that growth in the volume and intensity of operation of enemy electronic devices could be evidence of exercises or other more "threatening measures" of the enemy, while changes in the location of radiotechnical resources may be an indication of a regrouping of the enemy's troops. In this case if signals come from a new region, one from which they had not come before, this is believed to be an indication of the location of a new base or objective.

As development occurred in diverse reconnaissance apparatus operating on the basis of different principles of target detection, engineering facilities, tanks, weapons, radar stations, airplanes and other combat equipment protected by resources offering concealment from visual and optical observation were once again found to be "visible" to air reconnaissance, and the traditional and once the sole means of instrumental reconnaissance--aerial photography--swiftly lost its former monopoly, in the opinion of many foreign specialists. Neither the darkness of night nor a continuous cloud cover could hinder observation any longer. Photographs taken with IR and radar apparatus could almost not be distinguished from conventional small-scale photographs, and in some aspects they were superior to them. This is why, the foreign press reported, it became significantly more difficult to conceal from air reconnaissance all of the various objectives and especially the troop formations which possess hundreds of units of combat and special equipment emitting and reflecting different form of energy.

Discussing this problem, the journal INTERAVIA wrote that the relationship between the possibilities of camouflage, concealment and deception on the one hand and the methods of air reconnaissance on the other seemed to be leaning in favor of the latter. Some NATO military theorists felt that the time was coming when concealment of terrestrial objects from air reconnaissance would become generally impossible. But this opinion did not hold for long. Provision of diverse apparatus to reconnaissance airplanes in turn accelerated creation of new resources of camouflage, concealment and deception, to include: camouflage netting that changes not only the shape of combat equipment but also the characteristics of reflected radar rays, and camouflage paints containing special additives that reduce the level of IR emissions produced by objects coated by them. According to a report in the journal NATIONAL DEFENSE, such paints have been used on more than 200 types of different military equipment in the NATO armed forces. Aerosols that protect objectives not only from visual observation but also from detection by IR apparatus are also included in the new generation of camouflage, concealment and deception resources abroad. Special resources that distort the characteristics of real objects are being created, and dummy targets possessing almost all of the characteristics of real ones are being built.

According to reports in the Western press concealment from radiotechnical reconnaissance resources is also enjoying further development: Improved electronic devices with antennas having a variable polar diagram, high-speed coding devices and other articles are being developed. The techniques of deception are becoming increasingly more sophisticated: Their application, in the opinion of some foreign specialists, would significantly encumber or generally make it impossible for reconnaissance to reveal the strength, resources and intentions of the opposing sides.

Considering the growth in the possibilities of camouflage, concealment and deception, NATO military experts have developed new requirements on the methods and resources of air reconnaissance; according to them, the latter must be capable of revealing and determining the necessary characteristics of the most meticulously camouflaged objects.

Analyzing the possible ways of satisfying these requirements, foreign specialists came to the conclusion that one of them is to create qualitatively new observation resources. This is why the principal capitalist states are developing highly sensitive reconnaissance apparatus intended for search and detection of ultralow-contrast objectives on the basis of the different forms of energy they reflect or emit both during the day and at night.

It has been reported in the foreign press that the NATO countries are making an effort to create a number of reconnaissance systems of the next generation, to include: side-looking radar with active phased antenna arrays and with moving target detection capabilities (these stations will have a higher resolution and greater resistance to interference); an integrated multifrequency radar system operating in the centimeter wave band and intended for detection of objects concealed by vegetation or by a thin layer of dirt; a laser system, and data processing and transmission apparatus making it possible to reproduce images of concealed objectives, acquired by a reconnaissance airplane, at ground information collection points; a radiotechnical reconnaissance system

making it possible to simultaneously monitor many sources of radiation operating for short periods of time, to determine their locations and to reveal the most important among them with a high probability (its data acquisition and processing is automated).

Foreign specialists believe that laser and holographic apparatus will enjoy extensive use in air reconnaissance in the future. In their opinion future laser photographic apparatus and direct observation systems will have a very high resolution. Moreover if they are built according to the principle of fast scanning by a laser beam within large scanning angles, the zone of observation would be about the same as with aerial photography using wide-angle aerial cameras. Holography, which was born at the intersection of photography and laser technology, provides the possibility for obtaining three-dimensional images that are difficult to distinguish from the real objects. According to the estimates of foreign specialists such highly effective reconnaissance apparatus will make it possible to reveal the most diverse carefully camouflaged objects.

At the same time despite the growing role of new technical resources, aerial photography is not losing its significance either. As is noted in the journal INTERNATIONAL DEFENSE REVIEW, this method of reconnaissance, which has no equals in terms of the volume and quality of information contained in aerial photographs, is also developing in the struggle against camouflage, concealment and deception. Its main advantage is its high resolution. For example cameras installed aboard French "Mirage-4A" airplanes can detect objects less than 50 cm in size from a distance of about 18 km.

Reconnaissance airplanes and helicopters of NATO military aviation are now outfitted with a large quantity of the most diverse aerial cameras. As a rule there may be several aerial cameras aboard a single aircraft. Their selection depends on the mission and the conditions under which it must be completed. They may be permanently mounted (secured to special frames and other mechanical devices, Figure 3) and hand-operated (for manual photography, Figure 4).

New forms of aerial photography, spectral photography in particular, have been developed to reveal camouflaged targets. This method entails taking simultaneous photographs in several zones of the visible spectrum, resulting in information that is qualitatively new in comparison with that obtained by conventional photography.

However, although it does significantly increase the possibilities of reconnaissance, independent use of one type of new reconnaissance apparatus or another does not ensure, in the opinion of Western experts, high reliability of data and of target identification when different camouflage, concealment and deception procedures are employed. This is why they believe integrated use of the existing resources to be another means of raising the effectiveness of aerial reconnaissance of camouflaged targets. In this case information is collected simultaneously by several sensors based on different principles of data acquisition.

On this basis complexes of reconnaissance apparatus, resources for transmitting data by radio channels and so on are installed aboard the reconnaissance airplanes of the NATO air forces. For example in addition to aerial cameras, the American RF-4C "Phantom-2" reconnaissance airplane may carry side-looking radar, IR apparatus, a radiotechnical reconnaissance system, and a "Pave Tack" automati

laser target detection and illumination system. Specialists of the U.S. Air Force feel that such complexes can permit a single reconnaissance airplane to conduct reconnaissance in all weather, at any time of the day and in all terrain illumination conditions.

At the same time the English journal FLIGHT notes that as the specialization and assortment of reconnaissance apparatus expands, another tendency is revealing itself: It is recommended that a reconnaissance airplane should carry only that expensive equipment which would be most suited to the missions it must perform in concrete conditions. This is why new specialized complexes housed in suspended containers or inside airplanes have been created and are continuing in their development, and why a possibility for quickly changing the composition of equipment carried by reconnaissance airplanes is also foreseen.

Another way of raising the effectiveness of reconnaissance of concealed objects that is no less important in the opinion of Western military experts is that of improving the tactical training of flight crews participating in such missions. It is emphasized in the foreign press that the new more sophisticated reconnaissance apparatus and its sensible use create only the potentials for acquiring diverse and reliable information on the enemy. The need for raising these potentials has posed a number of new problems before the tactics of air reconnaissance. After all, the new apparatus can be used in different ways: stereotypically and incompetently, or creatively. The question as to how the tactics of reconnaissance airplanes are developing in response to introduction of new reconnaissance resources is often discussed in the foreign press.

NATO military theorists note that reconnaissance apparatus aboard airplanes varying in resolution, effective range, angle of view and methods of terrain observation in different weather conditions and times of the day and also depending on the nature of the camouflage and concealment of reconnoitered objectives imposes unique features upon the choice of maneuver, optimum altitude, flight parameters and measures to ensure covertness and surprise in the actions of reconnaissance airplanes.

As an example maneuver above an object of reconnaissance by manned aircraft carrying infrared, lasar and other apparatus characterized by a small angle of view and limited in terms of the altitude at which it can be used is acquiring new characteristics. A typical feature of tactics employed in such a case is the conduct of air reconnaissance during horizontal flight with extremely limited maneuver in altitude and course. Covertness may be achieved by approaching objectives at maximum speed, at minimum altitude and from a direction unexpected by the enemy. In the opinion of Western specialists the situation is totally different when side-looking radar and radiotechnical reconnaissance apparatus is employed, since the reconnaissance airplanes are several dozen kilometers away from their objectives. The main advantage in this case is believed to be freedom of maneuver of the crews of reconnaissance airplanes.

In general, the foreign press notes, selection of the most suitable routes, altitudes and speeds ensuring observation of the widest area of reconnoitered terrain (that is, realization of all of the possibilities of equipment) and the safety of the reconnaissance airplane are at the basis of the tactics used

in air reconnaissance of objectives, to include camouflaged and concealed ones. Examining the tactics of using the entire complex of apparatus, foreign specialists come to the conclusion that the more sophisticated this apparatus becomes, the more difficult it is to make full use of its potentials and the greater the diversity of the tactics employed could be. They emphasize in this case that as in the past, the tactics of reconnaissance airplanes are based on swift and resourceful actions and on the preparedness to use whatever means of reconnaissance required by the situation, including those not foreseen in the preflight preparations.

In this connection, the foreign press emphasizes, reconnaissance by means of visual observation is not to be neglected. Despite saturation of reconnaissance airplanes with "all-seeing" apparatus, as it is called in the West, the command of the NATO air forces is devoting great attention to developing the skills and forms of maneuver associated with visual search and identification of poorly noticeable, camouflaged and concealed objectives. Airplanes and helicopters are being outfitted with optical instruments (including binoculars) in order to increase the possibilities of this method of air reconnaissance. Such instruments expand the possibilities of the human eye in the search and detection of camouflaged and concealed objectives. Aircraft are also being outfitted with more-sophisticated systems for determining the aircraft's coordinates at any moment in time, since the accuracy with which the aircraft's location can be determined depends upon this.

As follows from the above, the NATO air forces are improving the resources and methods of reconnaissance, they are developing new tactics, and the crews of reconnaissance airplanes are carefully preparing to execute missions in different modern situations of searching for and detecting objectives (with a consideration for development of the resources of their camouflage and concealment). In the opinion of Western experts all of these measures should provide the NATO military leadership with all of the information it needs on the enemy, and in the final analysis they are aimed at implementing the aggressive plans of the war machine of the North Atlantic bloc.

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COMMENTS ON CRUISE MISSILES OF U. S. STRATEGIC AIR COMMAND

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 6, Jun 82 (signed to press 8 Jun 82) pp 53-55

[Article by Engr-Col V. Kirsanov: "Cruise Missiles Provided to the U.S. Air Force Strategic Air Command"]

[Text] Having assumed a course toward aggravation of the international situation and having openly declared its intention of achieving military superiority over the Soviet Union, the military-political leadership of the USA initiated the introduction of a new form of nuclear weapon into strategic air units--air-based cruise missiles--with the purpose of implementing its aggressive designs.

In August 1981 a B-52G bomber landed at Griffiss Air Force Base (New York) belonging to the U.S. Air Force's Strategic Air Command (SAC), having flown here from the Boeing plant airfield in Wichita (Kansas), where it was reequipped as a cruise missile carrier (see figure [figure not reproduced]). In the course of its modernization the airplane was furnished with special onboard control and launching apparatus and two new wing pylons, from each of which six missiles could be suspended. On 15 September 1981 this bomber completed a 9-hour flight with 12 AGM-86B cruise missiles mounted externally and eight SRAM [not further identified] guided missiles on a launcher contained within the fuselage. According to reports in the American press this flight demonstrated the airplane's readiness for performing the missions assigned to crews of alert strategic air forces, after which the first bomber to carry cruise missiles, the B-52G, was officially included in SAC's 416th Heavy Bomber Wing.

Nevertheless the SAC command did not intend to place this airplane into the composition of the alert forces immediately, since it believes it to be more suitable to use it for the training of flight crews and ground technicians. According to AVIATION WEEK AND SPACE TECHNOLOGY the first reequipped bomber began to be used for the training of personnel and for integrated exercises almost immediately after it was transferred to the 416th Heavy Bomber Wing.

Judging from reports in the Western press the Pentagon's plans foresee having one air squadron of 16 B-52G airplanes reequipped as cruise missile carriers in the 416th Heavy Bomber Wing by December 1982. By this time the wing will have the necessary quantity of trained crews, ground specialists and the appropriate stockpile of missiles which, according to the calculations of American

military specialists, should make it possible to include the combat ready bombers in the composition of SAC's alert forces.

Simultaneously with reequipping B-52G airplanes, the United States started series production of AGM-86B cruise missiles. The foreign press notes that in November 1981 the first series of the missile left the conveyer of a specialized production complex built by Boeing in the city of Kent (Washington). Construction of this plant was started in 1980, and it was basically completed a year later, after which the company began installing the equipment. A total of $26 million were allocated to erection of the production buildings, and about another $20 million were spent to purchase and install the production equipment. About 900 laborers and white collar workers participated directly in series production.

The plant manufactured two missiles in November 1981, five in December and seven in January 1982. The American press reports that by fall of this year the rate of production of cruise missiles will reach its planned level--40 missiles per month. By the end of the current decade more than 3,400 missiles are to be produced for B-52G bombers, with the total outlays in the program being estimated at not less than $5.8 billion. However, in October 1981 the U.S. president decided to expand the program of outfitting strategic aviation with cruise missiles and to include B-52H airplanes in the program, in addition to the B-52G bombers. In this connection the Pentagon increased its planned purchases of cruise missiles in the 1980s to 3,800 units. According to a statement in the American press this would require allocation of an additional sum of more than $550 million in fiscal years 1983-1986. Boeing has already received an order for the manufacture of 705 missiles, for which $308 million have been allocated.

Discussing the plans for the immediate future, AVIATION WEEK AND SPACE TECHNOLOGY wrote that although it has just barely started series production, Boeing is making an effort to improve the AGM-86B missiles. Thus in 1982 it plans to test a cruise missile with an improved version of the F107 turbofan engine produced by Williams Research. While possessing the same size and weight characteristics, it will have greater thrust and lower fuel consumption. This, in the estimation of American experts, will make it possible to increase the missile's range by about 10 percent.

It has also been reported that in 1983, after bombers carrying cruise missiles begin serving combat duty, tests on the cruise missile will be continued in the troops. In particular there are plans for making one real launch each month in the course of combat training flights, for which purpose one missile will be selected at random from the total quantity stored at base dumps. In its final phase of flight, the cruise missile will be caught while still in the air by a special rescue helicopter, and after inspection and the necessary repairs, it will be returned to storage. Moreover some of the missiles will undergo planned inspection aboard an airborne carrier aircraft, without being launched.

The air force's Strategic Air Command foresees broad use of new specialized trainers to raise the training level of the flight crews. The first of them, which fully simulates the work of all onboard systems of the B-52 bomber and

which permits joint integrated training of all crewmembers, was turned over to the command of the U.S. Air Force in September 1981. A total of 18 trainers are to be manufactured, of which 10 will be used in the training of B-52G crews and the rest will be used with B-52H crews.

Judging from reports in the Western press, cruise missile bombers will be deployed at other air bases in addition to Griffiss, particularly at Wurtsmith (Michigan), Grand Forks (North Dakota), Blytheville (Arkansas), Carswell (Texas) and Fairchild (Washington). One air wing consisting of a bomber and a fueling squadron is to be located at each air base. Moreover special buildings are to be erected for the storage and technical maintenance of cruise missiles, and separate dumps are to be built for nuclear warheads. These facilities will be completed at the air bases as cruise missiles and modernized B-52 bombers are delivered to the air force.

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COMMENTS ON NEW LIFE SUPPORT SYSTEMS IN NATO AIRCRAFT

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 6, Jun 82 (signed to press 8 Jun 82) pp 55-58

[Article by Lt-Col K. Vladimirov, candidate of medical sciences: "New Respiration Support Systems for Aircraft Crews"]

[Text] Judging from reports in the foreign press, pilot life support systems aboard the overwhelming majority of the warplanes of the USA and other NATO countries use liquid oxygen. These systems deliver oxygen at a pressure of 2-5 kg/cm^2. However, foreign specialists believe that these systems no longer satisfy requirements imposed on the equipment of aircraft of the future. Their opinion is based on changes in the tactical-technical characteristics of aircraft, the conditions under which they are based and the nature of their combat use, and on the shortcomings of the liquid oxygen systems themselves.

It is believed in particular that in the future the crew will have to wait several hours in the cockpit of a sheltered airplane in anticipation of takeoff, using all of the life support systems. In this case the possibilities for replacing equipment and for refilling and replenishing all reserves would be minimized. It is also anticipated that as a rule the altitude ceiling for future aircraft would be not more than 17,000 meters, and that the time during which this ceiling is exceeded would not be more than several minutes. Considering the high maneuverability of airplanes of the 1980s, prolonged exposure (many seconds) of the crew to high positive accelerations (8-9 g) will be typical of piloting maneuvers. Under these conditions the flight crew would have to be provided a breathing mixture at higher pressure in order to prevent loss of battleworthiness owing to disturbance of the body's respiratory function.

Thus foreign experts believe the following to be the principal shortcomings of modern onboard systems: high rate of consumption of the oxygen reserve, disturbance of the normal breathing of pilots when experiencing prolonged positive accelerations, and the need for having a special system aboard the aircraft to support breathing in the event of the use of mass destruction weapons. Moreover liquid oxygen itself possesses qualities that make its production, transportation and use dangerous and economically disadvantageous. After being obtained industrially, it is transported to places of storage and use in large airtight containers. Up to 80 percent of all of the oxygen produced is expended to keep the temperature of these tanks low during transportation. A significant

proportion of the remaining 20 percent is lost during the filling and use of the onboard systems.

During production and other operations with liquid oxygen, steps must be taken to prevent its contamination by hydrocarbon and halogen-derivative chemical compounds which are toxic to the human body. Finally, there is the constant danger of fires and explosions, and the apparatus used to monitor the work of onboard systems using liquid oxygen has become extremely complex, requiring special maintenance.

Most warplanes use pressurized oxygen gas systems as emergency life support systems. However, they are also used as the main systems aboard some types of training airplanes and, in the air forces of Great Britain, aboard some models of combat aircraft (oxygen is stored at a pressure of up to 125 kg/cm^2). Onboard tanks must be filled by large, heavy ground equipment capable of creating a pressure of up to 250 kg/cm^2. The weight of an onboard oxygen gas system is 2-2.5 times greater than that of a liquid oxygen system, given equal possibilities for life support.

Nevertheless English specialists have recently shown a renewed interest in using oxygen gas in warplane life support systems. This is connected primarily with development of steel spherical containers withstanding a pressure of up to 400 kg/cm^2. It is believed that their use is safe, and that the operating weight of a liquid oxygen onboard system would be the same as that of a system furnished with such a spherical tank containing an equal volume of oxygen gas. It is noted concurrently that such tanks may be replenished only at permanent ground facilities.

The Western press notes that creation of the breathing mixture right aboard the aircraft is believed to be the most promising method today, inasmuch as this eliminates the problems of transporting, storing and transferring the oxygen, and all of the associated limitations this imposes upon the use of aircraft. Thus it is reported that in the last 10-12 years the USA has developed and tested several types of such systems. The main requirements imposed on their design included the possibility for generating 100-percent oxygen at a maximum delivery rate of 26 liters per minute (at normal pressure and temperature), creation of an onboard oxygen reserve of not less than 300 liters at a pressure of 60-125 kg/cm^2, and prolonged effective operation of the main working parts.

An onboard water electrolysis system was the first to be developed. However, its high energy consumption and the need for periodically replenishing this system on the ground with water exhibiting a high degree of chemical purity (so that the effectiveness of the working parts could be kept high) led to the rejection of its use aboard warplanes.

Another system was based on barium oxide oxidation-reduction reactions. Barium oxide is known to transform into a dioxide when heated to 540°C. As the temperature is raised further to 900°C, the dioxide is reduced back to the oxide, liberating molecular oxygen:

$$2BaO + O_2 \underset{900°C}{\overset{540°C}{\rightleftharpoons}} 2BaO_2.$$

Employing the so-called Brin process, the onboard system works with a mixture of barium oxide and dioxide kept at a temperature of 760°C. At higher temperature it absorbs oxygen, while at lower temperature it liberates it.

The onboard system contained two layers of the mixture, through which air taken up by the engine was alternately passed at a pressure of about 5 kg/cm^2. Oxygen was extracted successively from each layer, for which purpose they were alternately rarefied (absolute pressure was reduced to 0.14 kg/cm^2). Then the oxygen was pumped into an accumulating tank at a pressure of about 125 kg/cm^2, created by means of a compressor.

In the opinion of American specialists this process could proceed cyclically without reducing absorbency, given appropriate preparation of the working mixture. Carbon dioxide and oil and water vapors must be purified from the air entering the system in order to maintain its operating effectiveness. In this case energy is expended mainly to create and maintain the mixture's temperature conditions and to operate the oxygen compressor and the apparatus responsible for maintaining the cyclic nature of the process. It is believed however that given the present level of scientific research and experimental design work, such a system is technically complex, its rate of electric power consumption is high, and moreover it must frequently undergo planned preventive inspections and repairs.

One of the experimental flight crew life support systems uses an electrochemical concentrator operating according to the ion-exchange principle. The main working element of the concentrator is a cell containing electrodes and a sulfonated condensed polymer--an electrolyte. Oxygen is extracted from an air current passed through the electrolyte. The oxygen molecules bind at the cathode with hydrogen ions contained in the electrolyte. This forms water molecules, which migrate the anode, where they are subjected to electrolysis. Oxygen is extracted in pure form, and the hydrogen ions are returned to the electrolyte:

$$O_2 + 4H^+ + 4e^- \longrightarrow 2H_2O$$

$$2H_2O \longrightarrow 4H^+ + 4e^- + O_2.$$

It is believed that the operating effectiveness of cells with condensed electrolytes can be increased if both sides ("air" and "oxygen") of the membranes within these cells are profusely wetted with water. A typical electrochemical plate contains 100 cells. The air current passed through such a plate is first warmed

in the engine, and water vapor is extracted from the oxygen gas as it is cooled in a heat exchanger. The oxygen working pressure created by the concentrator may be 28 kg/cm^2. The rate of the process is regulated by varying the amount of electric power supplied to the working element. Judging from reports in the foreign press, experimental models of this system operated satisfactorily during tests.

Another system presently under development is based on reactions between molecular oxygen and a chelated cobalt compound--fluomine. When air passes through a layer of fluomine, oxygen is absorbed by the latter. When the fluomine layer is subsequently heated to about 110°C and pressure is reduced to 0.5 kg/cm^2, first it releases residual air, and then it begins to liberate oxygen, the pressure of which is raised to 8.5 kg/cm^2 by a compressor. Two layers of fluomine are used in an onboard system: One absorbs oxygen while the other desorbs it. In this case the operating conditions of the layers are switched automatically. However, tests led specialists to the conclusion that this system would not fully satisfy the requirements. They believe that the main difficulty lies in production of fluomine capable of absorbing oxygen for a long period of time.

At the present level of scientific research and experimental design work, foreign experts believe, that "molecular sieve" system satisfies the requirements most fully. Such a "sieve" has already been used for many years on the ground as a means for raising the concentration of atmospheric oxygen through selective absorption of nitrogen. The main factor delaying the use of such sieves aboard aircraft was the inability of the first models of the system to produce a breathing mixture having a high oxygen concentration (close to 100 percent). According to the Western press systems that can produce a gas mixture containing up to 95 percent oxygen have been developed on the basis of this principle. These systems use a "molecular sieve" manufactured from crystalline aluminosilicate (zeolite). It has a porous structure with insignificant variation in pore diameter. Zeolite selectively absorbs nitrogen from air, leaving behind an enriched mixture of oxygen and argon. Nitrogen molecules are held in the "sieve" by van der Waals forces, and they are liberated from it when the pressure is lowered or the temperature is raised.

The onboard system includes two working layers of zeolite* through which air is alternately sucked from the engine at a pressure of 4.5 kg/cm^2. A breathing mixture consisting of 95 percent oxygen and 5 percent argon is obtained at the outlet. After a certain amount of time the air current is switched to the other layer, pressure in the first layer drops, and oxygen is desorbed by being vented into the atmosphere. To raise the effectiveness of desorption, part of the oxygen-argon mixture generated in one layer is passed through the other layer at this time. It has been reported in particular that the system operates normally when consumption of the oxygen mixture does not exceed 20-26 liters of oxygen per minute and when the air pressure at the inlet is not less than 2.8 kg/cm^2. When air pressure is very low or when oxygen consumption is too high, a nitrogen "breakthrough" may occur--that is, nitrogen may not be completely

*One layer of the "molecular sieve" in a system intended to support the breathing of a crew of two persons must contain 5 kg of zeolite, according to the estimates of foreign specialists.

extracted from the air sucked through the layer. In this case the breathing mixture would contain oxygen, argon and nitrogen. Presence of even 5 percent argon [sic] in the mixture is believed to be undesirable, since this increases the risk of decompression sickness in the pilot in response to abrupt pressure changes.

Chemical and biological warfare agents are removed from the system by filters containing activated charcoal. It is believed that the chemical and biological ingredients would not influence the operating effectiveness of zeolite, and therefore the protective filters are located after the "molecular sieve" with the purpose of reducing the volume of air to be filtered.

On the whole, the foreign press notes, the results of tests on experimental models of this system showed its operation to be simple and reliable, and its power consumption to be low. However, in the opinion of foreign specialists the question as to its adoption may be conclusively resolved only after a complete program of flight tests.

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COMMENTS ON PLANNED EMPLOYMENT OF U.S. NAVY

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[Article by Rear Adm A. Rumyantsev, candidate of military sciences: "The Navy in the Plans of the Pentagon's 'New' Military Strategy"]

[Text] The aspiration of the United States to establish undivided supremacy in the world and to hinder the struggle of peoples for national liberation has led to sharp aggravation of the situation on the Asian and African continents and in the Pacific Ocean, Persian Gulf and Mediterranean Sea.

Making the assumption that America has the "right" to interfere in the affairs of sovereign states, Washington has assumed the road of using military force in international relations, of open anti-Sovietism and of the rebirth of the cold war against the Soviet Union. Reliance upon force in solving international problems and the desire to expand American military presence in different regions of the globe have led to a new upward spiral in the arms race aimed at creating a militaristic machine which would surpass the military possibilities of all potential opponents of the USA, and primarily the USSR.

In order to conceal the aggressive essence of its policy and its expansionistic and hegemonistic orientation, the United States is spreading false and slanderous assertions of a "Soviet threat" and conducting systematic campaigns of misinformation and falsification. Speculations on the myth of a "threat from the East" have been elevated to the rank of state policy in the USA. Now that the Reagan administration has come to power, the aggressive and militaristic orientation of American policy has become even stronger.

In October 1981 the new boss of the White House announced his "universal strategic program." In the words of U.S. Secretary of Defense C. Weinberger, Reagan's "new" military strategy is a strategy of "direct confrontation" between the USA and the Soviet Union on both a global and a regional scale. It presupposes forced preparation of the U.S. Armed Forces for war of varying nature, scale and intensity in any region of the globe, and primarily against the USSR and other countries of the socialist fraternity. The "new" military strategy has the goal of achieving U.S. superiority over the Soviet Union primarily in strategic nuclear forces, which are to be used to make both unlimited massed and "limited" nuclear strikes (against certain "select" objectives). The main

reliance is made in this case on nuclear war involving limited use of nuclear weapons against military objectives, key sectors of industry, transportation and communications, organs of political, state and military control and large administrative centers of the Soviet Union. The plans for "limited" use of strategic nuclear forces call for different versions of nuclear strikes. It is emphasized that this will depend on the number and nature of objectives located on the territory of the USSR and other countries of the socialist fraternity and in regions of the USA's so-called "vital interests."

As was confirmed in October 1981 by President Reagan, the military political leadership of the USA intends to conduct "limited nuclear war" in regions remote from the USA, primarily in Europe, using medium-range missiles located in European countries belonging to the NATO bloc, so as to avoid the destructive consequences of a retaliatory nuclear strike. The strategy of "direct confrontation" additionally presupposes initiation and conduct of war with conventional weapons in a limited area, "geographic escalation" of the conflict into other theaters of war and, in the end, conduct of a universal war simultaneously in several theaters. Such a war, in the Pentagon's plans, may embrace not only Europe but also the Near, Middle and Far East and all marine and oceanic theaters.

In light of Reagan's "new" military strategy, the aggressive plans of the White House are giving a significant role to the navy, which is believed to be the most universal and mobile armed force, one possessing great striking power and capable of executing a broad range of missions both in a universal nuclear war and in a war involving conventional weapons.

Throughout all of the history of the navy's development its command constantly defended its positions in the struggle for a leading place among the other armed forces. In accordance with the system of viewpoints on the role of the navy in war, it has invariably represented a powerful and effective means of executing the missions declared in the USA's military strategy.

The "new" military strategy imposes the following missions upon the navy: nuclear missile strikes against important objectives on enemy territory; annihilation of the enemy's navy at sea and at bases; support to ground troops operating on maritime territory; marine assault landing operations; transfer of troops, armament and logistical supplies; protection of oceanic lines of communication; defense of the North American continent from the sea.

Atomic nuclear missile submarines capable of annihilating the enemy's strategic forces, destroying industrial and administrative centers, disorganizing the war economy and control, undermining the morale of the population and thus ensuring attainment of the goals of war in coordination with other armed forces are given the main role in practical implementation of the basic provisions of Reagan's "new" military strategy.

It is noted in the foreign press that nuclear missile submarines are characterized by the greatest covertness and invulnerability among all nuclear weapon carriers. Maneuvering in remote regions of the World Ocean, they are constantly in full readiness to use their missiles, and in the case of a conflict they may operate independently for a long period of time.

In the little more than two decades that submarine nuclear missile systems have been in existence, the USA has created five generations of missiles (Polaris-A1, Polaris-A2, Polaris-A3, Poseidon-C3, Trident-1) and four missile carriers ("George Washington," "Ethen Allen" and "Laffayette" (Figure 1 [figures not reproduced]) and "Ohio" class nuclear missile submarines). It is emphasized in the Western press that the American navy now possesses 40 nuclear missile submarines, of which eight (five "Ethen Allen" class and three "George Washington" class*) are outfitted with Polaris-A3 missiles, 19 ("Laffayette" class) are armed with Poseidon-C3 missiles, and 13 (the pilot submarine of 9 "Ohio" class submarines now under construction and 12 "Laffayette" class submarines, the reoutfitting of which should be completed this year) carry the Trident-1. When the next "Ohio" class nuclear missile submarines are placed into operation, the Pentagon intends to remove "Ethen Allen" and "George Washington" class submarines from the strategic offensive forces and strip them of their missiles; however, the submarines themselves (at least most of them) will remain in the navy, to be used for some time as multipurpose submarines.

The Trident-1 ballistic missile (range, 7,400 km) is the main element of the new sea-based Trident nuclear missile system being developed in the USA. According to testimony in the foreign press this system permits nuclear missile submarines outfitted with it to conduct combat patrols in the West Atlantic (in 1981 submarines carrying the Poseidon-C3 patrolled the North Atlantic and the Norwegian and Mediterranean seas, while submarines equipped with the Polaris-A3 patrolled in the West Pacific). This will raise the viability of the system in general (in view of the difficulties involved in the enemy's use of antisubmarine forces in this area), and it will simplify control of nuclear missile submarines. In the late 1980s "Ohio" class nuclear missile submarines are to be outfitted with the Trident-2 missile, which has a range of 11,000 km.

In addition to increasing the power of sea-based strategic nuclear missile forces, the "new" strategy also foresees swift development of the general-purpose navy, which is an important means of reaching the hegemonistic goals of American imperialism. The growing significance of the navy in local conflicts was confirmed by the war in Vietnam and later on by the events of recent years in the Near and Middle East.

Thus American aggression against the Vietnamese people demonstrated the important role of general-purpose naval forces in wars involving conventional weapons, and it forced the Nixon administration to return to the idea of building a superpowerful fleet. Former President Nixon declared many times in relation to its development: "We are a great sea power, and we must maintain our naval might.... I believe in a strong nonnuclear fleet, I believe that it will help us play the role of protector of the peace." In fact, however, such demagogical statements by the chief of the White House are only an attempt to justify forced growth of the navy's power and play down the

*Some foreign military specialists do not include "George Washington" class submarines among the nuclear missile submarines, considering that the command of the U.S. Navy has declared their reclassification as torpedo submarines.--*Editor.*

real purpose--that of implementing the aggressive plans of the country's ruling circles. In the opinion of American military specialists the main mission of the general-purpose forces will remain "control of the seas" in the immediate future. Jones, the chairman of the U.S. Armed Forces Committee of the Joint Chiefs of Staffs, said the following in January 1981 in this regard: "The situation that is evolving in the world requires that the United States not only possess everything it needs for strategic nuclear deterrence, but also that it maintain general-purpose forces which would ensure protection of American interests in any conflict (one of a scale less than global)."

A number of programs for the construction and modernization of the navy's ships were adopted in the USA with the purpose of bringing the general-purpose navy into correspondence with the requirements of the "realistic deterrent" strategy and later on with the "direct confrontation" strategy. These programs foresee: enlargement of the number of ships with nuclear propulsion units; growth in the striking power of carrier formations and other groupings of surface ships operating independently in remote regions of the World Ocean by arming them with new types of airplanes, helicopters and missile, torpedo and artillery armament; reinforcement of ship defenses against "ship-ship" and "air-ship" class cruise missiles; improvement of the effectiveness of submarine detection and destruction resources; growth in the efficiency of military shipments and in the delivery of troops and combat equipment to unprepared coasts in overseas theaters of war.

In the opinion of American military experts implementation of these programs will make it possible to raise the number of ships in the navy to 600 units in the near future.

Surface ships occupy a significant place in the general-purpose navy. There are different viewpoints on their future, but most foreign military specialists give the surface fleet a serious role in executing offensive missions both independently and in coordination with major formations and formations of other armed forces. Its main striking power is aircraft carriers, which can execute a broad range of missions because they carry nuclear and conventional weapons and airplanes and helicopters of different purposes, because they are highly maneuverable and because they possess strong antisubmarine and antiaircraft defenses.

As is emphasized in the foreign press, they may annihilate enemy naval forces at sea and at bases, they can provide support to ground troops, they can cover the most important transoceanic lines of communication used for the transfer of troops and cargo, they can support the landing of marine assault forces and their operations on shore, and they can lay mines in ports, straits and narrow passages. Deck-landing attack and antisubmarine aircraft and escort ships are armed with Harpoon antiship missiles in order to raise the combat potentials of aircraft carriers in relation to enemy groupings of surface ships. More than 100 surface ships, 30 nuclear submarines and 40 Orion patrol aircraft have now been outfitted with the missiles. By modernizing and overhauling existing aircraft carriers and building new ones, the military-political leadership of the USA intends to raise their number in the regular fleet to 15 units, and to keep them at this level.

The Pentagon believes that in today's conditions it would be suitable to use multipurpose nuclear aircraft carrier groups containing ships with nuclear propulsion units (Figure 2) for the purposes of efficiently increasing the power of forward groupings and demonstrating naval strength in certain regions of the World Ocean. Each group will consist of a nuclear aircraft carrier, four to six nuclear guided missile cruisers and one or two nuclear submarines. It is noted in the Western press that after the fourth nuclear aircraft carrier "Karl Vinson" is placed into operation, four such groups will be created, two on the Atlantic and two on the Pacific.

One of the main missions posed to the navy by the country's military-political leadership is to attain superiority in certain regions. For this purpose a NATO strike fleet is to be formed in the Northeast Atlantic, based on four or five American aircraft carriers organized either into carrier groups or carrier formations (with two or three groups in a formation).

As is evident from the experience of numerous exercises conducted by the combined NATO naval forces ("Northern Wedding-78," "Team Work-80," "Ocean Venture-81," "Magic Sword-81," "Ocean Safari-81" and others), aircraft groups are conducting combat maneuvers in the Norwegian and Mediterranean seas, in the northern part of the North Sea and in Biscay and Bristol bays. It has been reported that from these carriers, deck-landing aviation can strike ships and coastal objectives of the Soviet Union and other Warsaw Pact countries and support friendly troops in the European theater of war.

In addition to using aircraft carriers in their strike variant, they can also be used to protect large ocean convoys, provide cover to assault landing forces crossing the sea, and search and destroy enemy submarines in especially important regions of the ocean or along convoy routes.

According to statements in the Western press use of aircraft carriers in European waters must support attainment of superiority in the Mediterranean Sea, blockades on a line extending between Greenland, Iceland and Great Britain and annihilation of enemy naval groupings in the Atlantic and beyond it.

Considering the remoteness of the USA from regions of inexpensive sources of strategic raw materials and the economy's demand for them, which is growing with every year, the Pentagon is devoting significant attention to protecting oceanic lines of communication and, in this connection, to developing escort ships (cruisers, destroyers, frigates). Foreign military specialists believe that because of the armament they carry, they can effectively fight the surface, subsurface and airborne enemy both independently and within the composition of escort forces, warship detachments and hunter-killer groups.

According to materials in the foreign press the American navy possesses 27 guided missile cruisers (9 of them being atomic), 41 guided missile destroyers, 52 destroyers (including 9 ships in the emergency reserve), 21 guided missile frigates and 59 frigates (4 in the emergency reserve). It is noted that 3 guided missile cruisers (of the "Ticonderoga" class) a destroyer ("(Spruyuens)") and 27 guided missile frigates ("Oliver H. Perry") are in different stages of construction. Mention is also made of the intention of

the naval command to have 55 "Oliver H. Perry" class guided missile frigates operational by the late 1980s, and 28 "Ticonderoga" class guided missile cruisers operational by the mid-1990s. In addition there are plans for building four nuclear guided missile cruisers and a new class of guided missile destroyers--DDGX.

It is believed that achieving superiority at sea would be unimaginable without developing the forces and resources of "submarine warfare," the foundation of which is represented by nuclear multipurpose submarines. They are characterized by high speed, significant independence, low noise level and a capability for submerging to depths of more than 400 meters, and they possess sophisticated sonar observation systems and powerful strike resources (the Harpoon antiship missile, the SABROC antisubmarine guided missile, torpedoes, mines and, as of 1984, Tomahawk cruise missiles). All of this significantly hinders their detection by antisubmarine forces and makes them a menacing weapon in the war at sea. The U.S. Navy now has a fighting strength of 80 nuclear multipurpose submarines, by 1985 their number will reach 90 units, and by 1990 there will be 100 of them.

In the opinion of foreign military specialists these submarines will have the following missions: combatting enemy submarines, primarily missile submarines, in combat patrol areas and during sea crossings; annihilation of enemy surface ships and vessels at sea and on their emergence from bases, straits and narrow passages; antisubmarine defense of carrier groups and formations and of assault landing detachments and convoys; laying minefields; conducting reconnaissance. American nuclear multipurpose submarines are now being introduced into Arctic regions, including the Barents, Greenland and Norwegian seas, with the purpose of fighting missile and torpedo submarines. Special attention is being devoted to working out the problems of fighting enemy submarines on the antisubmarine line extending from Greenland to Iceland and the coast of Norway, where antisubmarine exercises are conducted each year by combined NATO naval forces with the participation of American nuclear submarines.

The adherents of the "new" strategy have also developed recommendations for the use of marines in the event of direct armed interference of the USA in conflicts. In their opinion the marines have shown their "better side" in efforts to suppress national liberation movements in certain countries, in supporting reactionary pro-American regimes and in defending Washington's predatory interests. Participation in aggressive wars in Korea and Vietnam and in the suppression of demonstrations by democratic forces in Lebanon, the Dominican Republic, Panama, Colombia and Venezuela represents far from a complete list of their "glorious" deeds.

The marines are viewed by the country's military-political leadership as the backbone of the assault echelon of invasionary forces in major marine assault landing operations, and as the most combat ready branch of the navy, prepared for operations in military conflicts of limited scale. In peacetime they maintain a high level of combat readiness, and they can be quickly transferred to overseas theaters of war both by sea and by air. Marine units are to be attached to "Rapid Deployment Forces" intended to interfere in the internal affairs of other states and to ensure, through the use of military power, the supremacy of the United States in the "Third World."

According to statements in the Western press expeditionary divisions and brigades of marine infantry are to be created for action within the composition of such forces. In order to increase the possibilities for transporting them and to improve their ability to conduct lengthy combat operations, the command of the U.S. Navy is creating a system of floating warehouses of heavy weapons and combat equipment in regions of probable arisal of military conflicts. The navy intends to increase the number of such groups of supply ships in the Indian Ocean from 7 to 13 units this year. Moreover it plans to build 14 such vessels on the basis of a special plan prior to 1987.

The basic practical measures of the Pentagon to accelerate growth in the power of the navy described above are a clear confirmation of the importance of the role given to them in the plans of Reagan's "new" military strategy aimed at achieving the hegemonistic designs of U.S. imperialism.

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COMMENTS ON NATO SMALL ASW TORPEDOES

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[Article by Engr-Capt 1st Rank V. Dorodnykh, candidate of technical sciences, assistant professor, and Capt 1st Rank V. Gusev, candidate of military sciences: "Small Antisubmarine Torpedoes of NATO Navies"]

[Excerpts] Small antisubmarine torpedoes have become widespread in the navies of the NATO countries and other capitalist states. In the opinion of Western specialists they will become one of the most effective means of combatting submarines in the foreseeable future. Such torpedoes can be launched by surface ships and antisubmarine airplanes and helicopters, and they may be employed as the warheads of antisubmarine guided missiles and mines.

The most widespread models of small antisubmarine torpedoes possessed by NATO naval forces are various modifications of the American Mk44 and Mk46 torpedoes, which are correspondingly representatives of first and second generation torpedoes.

Torpedoes of the first generation, which were created in the 1950s and early 1960s, are characterized by depth, range and speed permitting their use against submarines traveling at a depth of not more than 300 meters and a speed of up to 20 knots.

Torpedoes of the second generation (which include, besides the American Mk46, the Italian A244) can hit submarines located at depths of more than 400 meters traveling at a speed of up to 30 knots.

Presently the NATO countries are designing third generation small antisubmarine torpedoes. It is believed that while preserving their former weight and size characteristics, they will be characterized by significantly higher tactical and technical characteristics. This will make it possible to use them against submarines of the future operating at maximum depths and speeds which, in the estimation of Western specialists, will attain 900 meters and 40-45 knots respectively. The promising small antisubmarine torpedo ALWT, now being developed in the USA, should satisfy these requirements to the greatest degree.

Simultaneously the USA and other NATO countries are modernizing existing torpedoes. The main aim of this measure is to create more-effective propulsion units and control systems, maximally increase their traveling depth, range and speed and raise the interference resistance and guidance accuracy of the torpedoes by using new materials to manufacture their structural parts. This will permit their use until a sufficient number of new models of the third generation are delivered.

The basic tactical and technical characteristics of small antisubmarine torpedoes possessed by the navies of the USA, Great Britain and Italy are shown in the table [table not preproduced].

It follows from this that the naval commands of states in the aggressive NATO bloc are continuing to develop and improve torpedo weapons, which are believed to be the most effective in so-called "antisubmarine warfare" for which the NATO leaders are preparing.

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