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TRANSLATIONS ON USSR MILITARY AFFAIRS

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NAVAL TRAINING AND RELATED ACTIVITIES

ASW Training

Moscow KRASNAYA ZVEZDA in Russian 18 Oct 77 p 1

[Article by Capt-Lt N. Cherkashin: "ASW Men Attack"]

[Text] Two large ASW ships returned from a training battle and anchored. The engines had not yet cooled. Both crews are still alive with impressions of the one-on-one combat with the submarine.

This is what the commander of the ASW ship "Bditel'nyy," Capt 3d Rank N. Novozhilov, stated: "The sonar men discovered the 'enemy' submarine at the maximum distance. It then and there started to change depth and course, but without success. Even when the submariners employed hydroacoustic counter-measures, the electronics specialists, led by Capt-Lt V. Ivlevy, were able to maintain prolonged contact despite strong interference and unfavorable hydrology. Petty officers 2nd Class V. Druk and A. Starostin, the Anatoly borthers and Sergey Kocherginy worked excellently."

Now, on the eve of the 60th anniversary of October, the sailors-antisubmariners carry out their difficult service with particular responsibility and enthusiasm.

Naval Competitive Firing Conducted

Moscow KRASNAYA ZVEZDA in Russian 19 Oct 77 p 1

[Article by Sr Lt V. Burtovoy: "The 'Murmansk' Gunners Fire"]

[Text] RED BANNER NORTHERN FLEET. The cruiser "Murmansk" went to sea in order to complete competitive firing for the Navy prize. The subordinates of Capt-Lt V. Yarygin and V. Chebotarev, and Sr Lt A. Galanin acted with confidence and precision. The gunners quickly suppressed the "enemy" shore battery and repulsed the air raid, striking the target with a direct hit.

Success was achieved by the efforts of the entire crew. But those who were participating in the competitive firing for the first time had to work

especially hard. The commander of the forward control group, Lt V. Kiman, demonstrated especially high professional preparation. Other young officers also successfully accomplished their duties.

Tactical Competition of Naval Infantry

Moscow KRASNAYA ZVEZDA in Russian 21 Oct 77 p 1

[Article by Capt-Lt A. Shkurkin: "Daring Thrust"]

[Text] TWICE RED BANNER BALTIC FLEET. The cyclone which fell upon the shore was raging. Hard rain with hail was falling. But the bad weather and strong resistance from the defenders were not able to stop the daring attack of the outstanding naval infantry battalion commanded by Guards Capt N. Kat'ko.

The naval infantry were taking a serious examination in combat skill and physical and psychological tempering. They were competing in firing and specialist preparation for the Navy championship. The guardsmen of the outstanding company commanded by Guards Sr Lt V. Panchenko acted confidently. Platoon commander Guards Lt A. Utnasonov made a competent decision in a critical tactical situation. His subordinates successfully repulsed the enemy counterattack. Tactical training with combat firing was accomplished with excellent marks.

Demolition Training

Moscow KRASNAYA ZVEZDA in Russian 22 Oct 77 p 1

[Article by Sr Lt O. Prikhod'ko: "The Excelled in the Meditteranean"]

[Text] RED BANNER BLACK SEA FLEET. The large ASW ship "Deyatel'nyy" is now on a long voyage. In difficult stormy conditions the personnel of the ship are persistently preparing for ratings tests. For example, the training in the communications squad commanded by Capt-Lt A. Shmelev is ably organized.

Recently the demolition detachment excelled. The signalman noticed a small black object which flashed on the crest of a wave. It was a floating "mine." At the command of the watch officer a sloop lowered from the ship with the demolition detachment on board headed for the "mine." Lt A. Zaytsev and Warrent Officer V. Naydenov were in charge of the work of the minemen. The senior supervisor mentioned that the sailors acted together, exceeded the norms and deservedly received an excellent mark.

Torpedo Boat Attack Training

Moscow KRASNAYA ZVEZDA in Russian 25 Oct 77 p 1

[Article by Sr Lt S. Dorinin: "The Torpedo Boats Attack"]

[Text] RED BANNER PACIFIC FLEET. Having received information from intelligence on the course of the "enemy" convoy, which had already been subject

to strikes from naval aviation and guided missile patrol boats, the sailors of the torpedo boat detachment prepared to attack. In a short time radar operator Seaman V. Maslov detected the target grouping.

Using suddenness and high speed, the torpedo boats swiftly attacked the convoy and achieved success. The attack by the boat commanded by Capt-Lt V. Avramenko was especially successful. The subordinates of this officer, supporting the patriotic initiative of the workers of the Naro-Fominskiy rayon of the Moscow oblast, with stand watch [in keeping with the motto] "To the Jubilee training year--a rousing finish!"

ASW Competitive Training

Moscow KRASNAYA ZVEZDA in Russian 26 Oct 77 p 2

[Article by Capt Lt. E. Kononenko: "The 'Slavnyy' Attacks"]

[Text] TWICE RED BANNER BALTIC FLEET. The large ASW ship "Slavnyy" is participating these days in the competition for the Navy prize. The crew demonstrated a high level of training, accomplishing in an excellent manner search, tracking and attack on a submarine. The collation of the maneuver trace by submariners and ASW men confirmed the tactical skill of the commander of the "Slavnyy," Capt 3rd Rank G. Lyzhenkov, and the full-grown military maturity of the ship's navigator, Sr Lt G. Savrusov and many of the crew's other seamen.

Reenlistee Lauded

Moscow KRASNAYA ZVEZDA in Russian 27 Oct 77 p 2

[Article by Capt Lt P. Vakarov: "With the Fleet Forever"]

[Text] RED BANNER NORTHERN FLEET. (From our correspondent). The missile submarine was able to avoid encounter with the "enemy" search groups and arrived at the firing area unnoticed. The missilemen carried out all checks and preparatory operations with high quality in an abbreviated period. The command, "Fire" rang out. The missile departed for its target. An excellent mark became the submariners' reward for their efforts and skill.

The commander named Warrant Officer V. Bykov was among those who contributed most to the success of the collective. Bykov served his mandatory term of service on this submarine and was a specialist 1st class. When his time for release to reserve status approached, this first-rate sailor decided not to leave the fleet and asked to be sent to warrant officer school. Having excellently concluded his studies, V. Bykov returned to his home ship. He has been serving in the crew as a warrant officer for two years, has attained the rating of master of military matters and successfully fulfilled his obligations in honor of the 60th anniversary of the Great October.

Underway Replenishment

Moscow KRASNAYA ZVEZDA in Russian 29 Oct 77 p 2

[Article by Capt 3d Rank E. Kuznetsov: "In Defiance of the Elements"]

[Text] RED BANNER NORTHERN FLEET. The ocean was strongly hammering huge waves in the "corridor" formed by the sides of the tanker and the large ASW ship. For the sailors who were preparing to refuel the ASW ship while underway, it was not simple to carry out the operation in a storm, the more so because the young commander of the ASW ship, Capt 3d Rank V. Kazakov, had not previously done it even in good weather. But the officer calmly and precisely gave instructions.

The wind strengthened and changed direction. The list reached twenty degrees and more. The tanker captain requested that Kazakov change course. The commander of the ASW ship accomplished the complicated maneuver faultlessly. Refueling the ship was completed late at night. "Thanks for the good work," the tanker captain said to the ASW ship commander.

9069

CSO: 1801

COMPLAINTS AND FOLLOW-UP REPORTS

Housing Construction Deficiencies Corrected

Moscow KRASNAYA ZVEZDA in Russian 13 Nov 77 p 2

[Text] A critical letter from Lieutenant Colonel V. Bogdanovskiy, published on 2 August of this year, was titled: "How the 'Hoax' Was Born."

Engineer-Colonel Yu. Popov, chief of the construction directorate of the Transcaucasus Military District, and Colonel M. Ignat'yev, chief of the political section, have reported to the editors that the cases of low quality work in housing construction pointed out in the letter actually occurred.

The defective work has now been eliminated. The quality of construction and installation work has been reviewed at assemblies of directing personnel in the political department and party organizations of the construction directorate. Steps are being taken to improve construction quality.

Improvement of Labor Organization

Moscow KRASNAYA ZVEZDA in Russian 16 Nov 77 p 2

[Text] A letter from Engineer-Lieutenant Colonel I. Kulikov, published on 29 September under the heading, "Without Discounts for Downtime," complained of unsatisfactory organization of labor at one of the construction sites in the North Caucasus Military District.

S. Kosolapov, secretary of the party committee in the UNR [office of the work supervisor], has reported to the editors that the letter was discussed at a party meeting of the UNR. A plan has been compiled, aimed at preventing such downtime for equipment and workers at construction projects of the UNR and at the creation of normal living conditions for military construction workers at remote sites.

Handling of Servicemen's Papers Improved

Moscow KRASNAYA ZVEZDA in Russian 16 Nov 77 p 2

[Text] A letter from Engineer-Captain 2d Rank A. Kontiyevskiy was published on 14 September under the heading "Red Tape." It spoke of how Warrant Officer (Michman) (Reserve) N. Tkachenko was not awarded the medal "Veteran of the Armed Forces of the USSR" promptly, due to negligence in the handling of his papers by officials.

Colonel Yu. Shchigolev, military commissar of the Leninskiy Rayon Military Commissariat in the city of Sevastopol', has reported to the editors that the letter was discussed at a meeting of workers in the military commissariat.

Captain 1st Rank V. Chekanov reports that it has been recommended to the command of the unit (chast) through whose fault the red tape was created that it monitor more carefully the handling of documents for servicemen released into the reserve.

Recently, before a formation of personnel in the unit in which Warrant Officer (Reserve) N. Tkachenko served, he was awarded the medal "Veteran of the Armed Forces of the USSR."

Penalty for Delayed Repair of Equipment

Moscow KRASNAYA ZVEZDA in Russian 20 Nov 77 p 2

[Text] An article published on 15 Oct under the heading "'Self-Cancelled' Again" told of delays in the repair of motor transport equipment at the enterprise headed by Engineer-Captain O. Bersenev. Engineer-Colonel Khismatulin, the new enterprise director, has reported that the facts presented in the letter were confirmed. The units were repaired and were shipped to the client on 22 October. Dispatch engineer Comrade Kozak was issued a strict reprimand and deprived of 50 percent of his bonus for October for delaying shipment of the equipment and for nonfulfillment of promises previously made.

Penalties for Unwarranted Extension of Passes

Moscow KRASNAYA ZVEZDA in Russian 29 Nov 77 p 2

[Text] The commander of a military construction detachment wrote the editors that certain rayon military commissars in Orenburgskaya Oblast were extending passes for servicemen without justification. We sent the letter to the oblast military commissariat, which reported that the facts had been confirmed. The military commissars for Svetlinskiy and Grachevskiy Rayons have received disciplinary punishment.

Radio Repaired for Servicemen

Moscow KRASNAYA ZVEZDA in Russian 29 Nov 77 p 2

[Text] "The radio in our unit does not work. We cannot even listen to the latest news," Private G. Glazkov informed us in a letter. Political worker V. Serikov has reported in response to a request from the editors that the radio center has now been repaired and is operating according to the daily schedule.

Serviceman Belatedly Receives Papers

Moscow KRASNAYA ZVEZDA in Russian 29 Nov 77 p 2

[Text] Upon discharge into the reserve A. Kuleshov decided to enter the preparatory department at the Moscow Institute of Chemical Machine Building. He requested the required papers from the Kaliningrad Higher Engineering School of Engineer Troops imeni A.A. Zhdanov. He received no reply to his request, and the former soldier's family appealed to the editors. The chief of the school has reported to us that the case of indifferent handling of a request from a former serviceman has been carefully investigated. Strict warnings have been issued to the guilty parties. Comrade Kuleshov's papers have been sent.

Deceased Serviceman's Mother Receives Assistance

Moscow KRASNAYA ZVEZDA in Russian 29 Nov 77 p 2

[Text] M. Pasechnaya, mother of a deceased serviceman, told in her letter to the editors that she was not receiving necessary assistance from the kolkhoz. Her letter was forwarded to the Onufriyevskiy Rayon Committee of the Ukrainian Communist Party. Raykom secretary V. Ivanov reported to us that the facts had been confirmed. The kolkhoz is now helping M. Pasechnaya with the repair of her house and providing the required materials.

Elderly Given Greater Respect and Consideration

Moscow KRASNAYA ZVEZDA in Russian 29 Nov 77 p 2

[Text] "We elderly people do not like the crude treatment of workers at the gorpishchetorg [city trade organization for trade in food products] or standing in line." This complaint was received by the editors from disabled veterans of the Great Patriotic War N. Khrustalev, K. Merkulov and M. Lapin from Zlatoust. Their letter was forwarded to the Chelyabinskaya Oblast ispolkom. The deputy chairman of the oblispolkom reported to us that the facts described in the letter were confirmed. It was recommended that the store management improve the manners of the service staff, make home deliveries to disabled veterans of the Great Patriotic War, and be more attentive to their requests.

Veterans' Graves Receive Greater Attention

Moscow KRASNAYA ZVEZDA in Russian 29 Nov 77 p 2

[Text] "There is a neglected, vacant plot next to the mass grave of soldiers killed in action in the city of Sochi." The editors received this indignant report from Great Patriotic War veteran I. Zolotenin. Yu. Shklyayev, deputy chairman of the Sochi Gorispolkom replied to the request of the editors: "The area around the mass grave of Soviet fighting men has been put into proper order. A park of Eternal Glory will be laid out in this area, of which the mass grave will occupy an appropriate place."

Observance of Regulation Order Insured

Moscow KRASNAYA ZVEZDA in Russian 30 Nov 77 p 2

[Text] A letter was published in the newspaper on 11 October under the heading "Regulations Are Not Being Observed." It criticized violations of regulation order in the company commanded by Senior Lieutenant A. Poluyanov.

The unit commander reported to the editors that the facts presented in the letter had been confirmed. The letter was discussed at a meeting of unit officers and warrant officers (praporshchiki). Senior Lieutenant A. Poluyanov, company commander, Captain Lieutenant V. Budanov, his deputy for political affairs, and Lieutenant V. Gayday, deputy company commander, were pointed out the inadmissibility of violations of regulations and the need strictly to observe the schedule of the day.

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CSO:1801

COMMENTS ON U.S. MINE-CLEARING PROCEDURES

Moscow KRSNAYA ZVEZDA in Russian 30 Nov 77 p 3

[Article by Col V. Opilat, candidate of technical sciences: "Through the Mine Field"]

[Text] Mixed minefields, in the opinion of foreign military specialists, are at the present time acquiring ever greater significance, especially in the struggle against armored and mechanized troops. They are capable of inflicting substantial losses, restricting maneuver, and creating favorable conditions for the destruction of other combat resources by fire. Therefore, success in offensive combat greatly depends, in their opinion overseas, upon the effectiveness of the means for surmounting minefields. In addition, the advent of capabilities for surprise mining at a distance and placement of minefields at a great depth, given the high effectiveness of modern fire resources under the effects of which troops surmount minefields, led to the fact that traditional mine-clearing methods obviously are lagging behind combat requirements. Know-how from combat operations in the Middle East clearly confirmed this, as the foreign military press emphasizes.

That is why special attention overseas has been paid in recent years to the search for new methods and resources for, so to speak, neutralization of mixed minefields. Foreign specialists, in the USA for instance, are placing their greatest hopes on a method of surmounting minefields by constructing passages using explosive mine-clearing means. They are considering use of a munition with so-called volumetric detonation for this purpose. What does this entail?

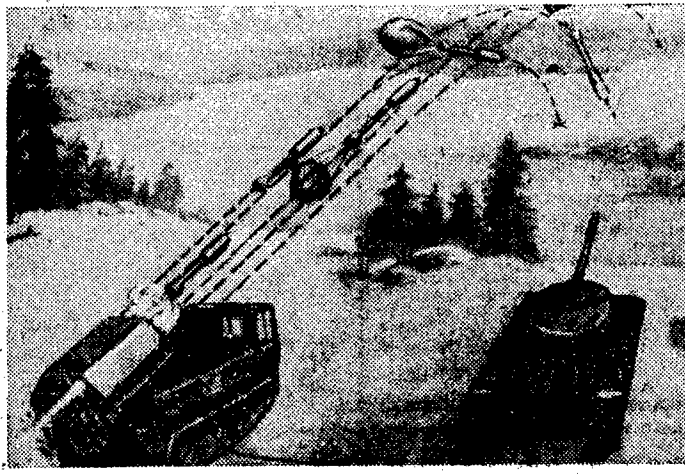
It should be stated that this type of munition initially appeared in the USA as multipurpose ammunition for destruction of personnel, combat equipment, and defensive structures. This in principle is a thin-walled vessel charged with a gaseous fuel usually in liquefied state. Mixtures of methylacetylene, propadiene, and propane with admixtures of butane were used as the gaseous fuels. They then converted to use of oxides of propylene or ethylene, which did not require that high pressure and a hermetic seal be formed in the munition.

After this type of munition is tossed to a certain altitude, the body is blown up and the gaseous mixture disperses. Mixing with the air, it forms an aerosol cloud in the surface layer. This cloud detonates after a split second due to the detonation of fulminating charges. The detonation wave here moves at a

speed of 1,800-2,000 meters per second and the pressure in front of it reaches 21 atmospheres. Many types of mines within the boundaries of the cloud are completely destroyed due to the effect of such a blast load.

The Americans began to use area weapons as early as the Vietnam War to clear terrain of mines and vegetation when preparing landing zones to take helicopters. Subsequent tests and numerous experiments, as the foreign press noted, confirmed the capability of using the volumetric detonation to destroy anti-tank and antipersonnel mines of varied types, including as well mines with proximity fuses and even mines placed in water to a depth of 0.4-2.5 meters.

As reported in the press, special mine-clearing systems are being developed overseas for the ground forces now and they are based upon volumetric detonation munitions [area weapons]. Thus, in the USA, a helicopter mine-clearing system using CBU-55B munitions has undergone testing. Two cassette-type bombs are mounted on an Army helicopter (see photo) [photo not reproduced]. The bomb is 2.4 meters long, 0.34 meters in diameter, weighs 227 kilograms, and consists of three canisters, each containing 33.7 kilograms of ethylene oxide-based liquefied gas. The canisters are equipped with contact fuses and brake chutes. One canister forms an aerosol cloud 15-16 meters in diameter and 2-3.7 meters high. A strip of terrain 8-10 meters wide and up to 100 meters in depth can be cleared in several minutes by dropping two CBU-55/B bombs.



However, as overseas specialists propose, a ground-based rocket mine-clearing system using volumetric detonation munitions should become the U.S. Army's basic means for neutralization of minefields (see the photo). The system's basic elements are a 30-tube rocket launcher, an M548 tracked tractor, rockets with volumetric detonation warheads, intervalometer, and control panel.

The rocket warhead is a modified charge from a CBU-55/B cluster bomb. The shell weighs 87.2 kilograms and its warhead contains 38.5 kilograms of liquefied gas (propylene oxide) and 0.45 kilograms of fragmentation charge explosive. In addition, the shell is equipped with two detonators, an electronic fuse on the end of a 1.2-meter long bar, solid fuel rocket motor, stabilizer, and brake chute.

The intervalometer makes it possible to fire single rockets with an interval of from 1 up to 5 seconds or a 30-round volley to a range of from 300 up to 1,000 meters. Here, the firing is done in such a way that it guarantees an overlap of cleared area from each volumetric detonation. In this instance, one unit of fire (30 rockets), American specialists affirm, succeeds in setting up a passage 8-10 meters wide with a depth of up to 150-250 meters in the minefields. The launcher has a crew of four.

Attempts are underway in the USA to also create an area munitions-type mine-clearing system based upon a flame-thrower tank. In this case, instead of a liquefied mixture, the flame-throwing tank using a pulsating launcher throws a portion of gaseous mixture in the form of a stream to a range of several dozen meters in the surface layer. The aerosol cloud trace formed is detonated by special charges fired from the tank. It is reported that, during experimental detonations, M15 antitank mines were destroyed in a strip up to 26 meters in length and wide enough to accommodate a tank. The pulsating launcher is capable of one detonation per second.

Volumetric detonation aerial bombs are also considered advantageous for the neutralization of minefields. Along with these innovations, the search is underway overseas also for other ways to neutralize minefields. In particular, work continues to improve mine sweeps as individual means for tanks to use in surmounting minefields. A study is in progress on the possibility of neutralizing minefields by constructing passages through them that are covered with fast-hardening foam.

Judging from press reports, a portable instrument has been developed in the USA for construction of passages made of fast-hardening foam to be used by infantry to cross minefields. The instrument weighs 25 kilograms. Its containers hold the components of the fast-hardening foam in an amount sufficient for spraying up to 30-35 "small islands" 30-40 centimeters in diameter and up to 10 centimeters thick on the minefield. It is possible to safely walk across the minefield by walking on them.

Specialists from the U. S. Army Engineers are studying the possibility of using fast-hardening polyurethane foams for construction of passages for heavy combat vehicles through a minefield. It is considered possible to build a mobile launcher-sprayer for rapid placement of surfaces on minefields via which vehicles with a footprint of up to 0.7 kilograms/square centimeter would be able to safely move. Construction of foam generators with sprayers mounted on M60 combat tanks is planned. In this variant, the components of the foam-forming agents and the heating and pumping units are placed on a special trailer towed by the tank.

Stepped-up development in the NATO countries of new combat means intended for neutralization of minefields once more gives witness to the preparations by the troops of the aggressive bloc for active offensive operations.

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TOLUBKO ON MISSION AND READINESS OF STRATEGIC MISSILE FORCES

Moscow KOMMUNIST VOORUZHENNYKH SIL in Russian No 23, Dec 77 signed to press 22 Nov 77

/Article by Army General V. Tolubko, commander in chief of Strategic Missile Forces, deputy USSR Minister of Defense, Hero of Socialist Labor, in the section "The Coming 60th Anniversary of Soviet Armed Forces": "Always on Guard, Always on Alert"

/Text We Soviet people are rightly proud that the time in which we live has been brightened with such stirring historical events of worldwide importance as the adoption of the new USSR Constitution and the ceremonially observed jubilee of 60 years of Great October. These portentous events are as if crowning the great heights reached by the Soviet people under the leadership of the Communist Party.

The policy outlined by the 25th CPSU Congress assures continued strengthening and development of the economic and defensive might of the Soviet Union which has made greater advances in all directions of communistic creation.

Our people see the life-giving source of all the victories and new achievements of the land of the soviets in the all-embracing revolutionary and reorganizing activity of our Communist Party that is, as written in the USSR Constitution, the leading and directing force of Soviet society and the nucleus of its political system and state and social organizations.

Communist party leadership has been and remains the decisive source of the might and invincibility of the USSR Armed Forces whose sacred duty to the people is to reliably protect socialist society and to be on constant combat readiness, guaranteeing an immediate rebuff to any aggressor.

Just as all Soviet people, armed forces personnel too, with a sense of unbound joy, welcomed and heartily approved the decision of the October (1977) Plenum of the CC CPSU, the positions and conclusions of the report by Comrade L. I. Brezhnev, General Secretary of the CC CPSU and chairman of the USSR Supreme Soviet, at the extraordinary seventh session of the USSR Supreme Soviet, the Basic Law of the Soviet state, and materials of the joint ceremonial session of the CC CPSU, the USSR Supreme Soviet and the

RSFSR Supreme Soviet dedicated to the 60th anniversary of Great October. Multiplying their efforts in military labor and in socialist competition for a fitting welcome to the 60th anniversary of the Soviet Armed Forces, army and naval warriors are demonstrating, with new strength, their monolithic unity around the Communist Party and its Leninist Central Committee and unlimited support for the domestic and foreign policy of the party and government and all the measures taken to further strengthen the economic and defensive might of our motherland.

The Communist Party has never forgotten Lenin's words that any revolution is only worth something when it can protect itself. And now the CPSU is doing everything so that the glorious Armed Forces will in future also have all the necessary means to perform their primary mission--to be the guard of the peaceful labor of the Soviet people and the stronghold of universal peace. Our party takes into consideration that the reactionary class essence of imperialism remains unchanged. Enemies of international detente are trying to retard positive processes in relations between states of different social systems and to return mankind to "cold war" times.

Supporting in every possible way and charging up a dangerous situation in a number of regions of the world, influential circles of Western powers are continuously interfering in the domestic affairs of many states and increasing terror against democratic progressive forces. The present Chinese leadership is also acting jointly with the most reactionary and aggressive circles of imperialism. Feverishly militarizing the country and stirring up anti-Sovietism, it pursues a policy dangerous to its own people, a course directed against normalization of the international situation.

Aggressive imperialist circles strive to stir up the arms race and to increase even more the already high appropriations to build new even more refined means of mass destruction. For example, American military expenditures for fiscal year 1977 were 113 billion dollars. The military budgets of the FRG, England and other countries in the aggressive imperialist bloc of NATO are also growing. The U.S. has begun development of new types of weapons--cruise missiles, M-X intercontinental ballistic missiles, "Trident" submarines, neutron bomb and laser weapons.

Under these conditions, we are bound to always be on the alert and to tirelessly raise the combat readiness of the Soviet Armed Forces and the country's defensive capability. The Strategic Missile Forces have been charged with this mission along with our entire Army and Navy. Created by the decision of the Communist Party and the Soviet government, the Missile Forces have been turned into a formidable shield for the motherland. Their history can be traced from renowned artillery units and large units and the first batteries of the legendary "katyushka" rocket-truck. Successful development of native missile technology was preceded by many years of work by many prominent Russian and Soviet scientists: K. E. Tsiolovskiy, N. I. Kibal'chich, N. I. Tikhomirov, F. A. Tsander, B. S. Petropavlovskiy, G. E. Langemak, V. A. Artem'yev, I. G. Kleymenov, S. P. Korolev, M. K. Yangel', V. P. Glushko, G. N. Babakin and others.

The missile building was generally guided by the CC CPSU and the USSR Council of Ministers. Among the people invested with the high trust of the party and government who made a great contribution to solving major problems of building and developing native missiles were comrades D. F. Ustinov, G. K. Zhukov, R. Ya. Malinovskiy, N. N. Voronov and M. I. Nedelin.

The design bureau collective headed by prominent Soviet scientist and designer S. P. Korolev worked with great enthusiasm. Atomic scientists led by I. V. Kurchatov labored fruitfully. In a short time, the important task of the party and government was accomplished. The first post-war Soviet ballistic missile was launched in October 1947. In the 50's, several classes of missiles, including intercontinental, were placed in the inventory and thermonuclear weapon tests were successfully held.

The Strategic Missile Forces now have intercontinental and intermediate range missiles capable of inflicting accurate and inevitable strikes on an aggressor wherever he may threaten from.

The might of the Missile Forces is the most important factor deterring the aggressive aspirations of hostile forces. The combat readiness of our forces is maintained for humane purposes--so that destructive nuclear missiles will never be used by anyone.

Strategic missilemen, just as all army and naval warriors, are vigilantly guarding the sacred gains of our fatherland and the fraternal socialist countries. Together with all Soviet warriors they fittingly welcomed the 60th anniversary of Great October. This was first of all promoted by socialist competition spread in honor of the important jubilee, by the high political enthusiasm evoked by the national discussion of the draft USSR Constitution and then by its adoption at the extraordinary seventh session of the USSR Supreme Soviet, and by the materials of the ceremonial session of the CC CPSU, the USSR Supreme Soviet and the RSFSR Supreme Soviet dedicated to the 60th anniversary of Great October.

The purposeful, harmonious and coordinated work of the military collectives on the threshold of the October jubilee was completed with high results in combat and political training. Of the crews, 54 per cent became excellent and almost all warriors have a class rating--60 per cent of them are specialists in the high class while 26 per cent are masters of their combat skill. Every third warrior in our forces is now excellent in combat and political training.

The jubilee training year, the results of which were recently summed up, became for the missilemen a year of further growth in combat readiness, in raising the quality and effectiveness of combat training and in persistent assimilation of equipment and weapons. Notable successes were achieved by many of our units and large units which is yet another confirmation of the profound understanding by the warriors of their duty to the people and the responsibility to defend the motherland.

But it is in the traditions of strategic missilemen, just as of all Soviet people, to not only sum up the results of their labor and rejoice in their successes in the days of important jubilees, but also to not forget about the next business and to aim themselves at achievement of new, higher advances in perfecting combat readiness.

It is well known that under today's conditions in the age of nuclear missiles and other powerful means of armed conflict the requirements for combat readiness have grown immeasurably. It embraces all aspects of the multifaceted activity of the Armed Forces and is attained by tenacious, persistent daily work, intense training, continuous improvement in training command cadres and staffs, the work of the political organs and party organizations of the Soviet Army and Navy, and by perfection of the style of their activity. "Combat readiness," stresses Marshal of the Soviet Union D. F. Ustinov, CPSU CC Politburo member and USSR Defense Minister, "is the fusion of the technical equipping of the forces, their military skill, moral-political, psychological and physical training, self-discipline and the readiness of each Soviet warrior for a feat in the name of performing his military duty to the motherland."

We are proceeding exactly from that understanding of combat readiness, requiring of all Missile Force military cadres continual intensification of efforts in the work on raising the level of ideological-political education of personnel and their tactical, special and technical training and on strengthening discipline and organization in the units and subunits.

Successful accomplishment of these missions will be helped by the widespread use of experience gained in the jubilee training year and thorough analysis of unused reserves. After rendering the competition winners and right-flankers their due, it is important at the same time to fundamentally uncover the reasons for existing shortcomings and to help the laggards reach the level of the leaders. The forthcoming training year, the year of the 60th anniversary of the Soviet Armed Forces, must be distinguished by new achievements in military labor and by the missilemen's exemplary accomplishment of their sacred military duty.

Consolidating the high political enthusiasm of the personnel, evoked by adoption of the new USSR Constitution and celebration of the 60th anniversary of Great October, commanders, staffs, political organs, and the party and Komsomol organizations of the Missile Forces are constantly concerned that the activeness of the warriors may be embodied in concrete deeds and manifested in the struggle for further perfecting of combat skill, strengthening of discipline and raising vigilance.

Much in this area is being done in the unit commanded by Major A. Gribov. The commander, staff, political workers, party and Komsomol organizations are making a great effort aimed at educating the warriors with a sense of high responsibility for the unit's combat readiness. The methodological level of organizing and conducting activities, exercises and training

exercises has been substantially raised. The training-material base has come to be used with great effectiveness. In the vanguard of the struggle for further raising the quality of combat training and strengthening military discipline are communists such as Lieutenant Colonel Navrotskiy, Major Golovach, Captains Popov, Mikhalylov, Belen'kiy and others. The unit's missilemen invariably receive high ratings for standing combat duty. In the period of preparing to assume the combat duty, communists and Komsomol activists tell their colleagues about the most important events in the country and abroad and about the Soviet people's successes in fulfilling the tenth five-year plans, expose the intrigues of the aggressive imperialist circles and explain why high vigilance is required of the warriors. Constant attention is paid here to propaganda of the requirements of the military oath and regulations, and popularization of examples of mastery, fortitude and high self-discipline of missilemen on combat duty. The unit commander and political workers talk to the warriors assuming the combat duty and advise the crew commanders, and party and Komsomol group organizers on how to maintain high combat morale among the people and to ensure exemplary conduct of communists and Komsomol members in executing the important mission.

And high ratings of the collective are evident. For six years running, the unit has won the title of excellent. Of the subunits, 80 per cent are excellent; 33 per cent of personnel are masters in their combat skill (three years ago, only ten per cent were); over 60 per cent are 1st or 2d class specialists. Every third officer is a master of missile affairs. For results in the jubilee year, the unit was awarded the challenge Red Banner of the Military Council of the Strategic Missile Forces.

Many others of our units and large units also have the same intense, purposeful combat and political training. Warriors-missilemen are persistently improving their skill and achieving new higher ratings in military labor.

Heartily responding to the call of the Central Committee of the CPSU, the USSR Supreme Soviet and the USSR Council of Ministers "To the Soviet People," initiators of the pre-October socialist competition again appealed to personnel of all branches of the Armed Forces to continue the jubilee competition for high quality fulfillment of the training plans and programs and to celebrate the year of the 60th anniversary of the USSR Armed Forces with shock military labor. Personnel in the military unit mentioned above also addressed such an appeal to the warriors of the Strategic Missile Forces. It has now made high socialist pledges and among them is to welcome the 60th anniversary of the Soviet Army and Navy only with excellent accomplishment of training and combat missions.

Socialist competition organization experience gained in preparing for the 60th anniversary of Great October is being actively used by commanders, staffs, political organs, and party and Komsomol organizations in the struggle for a fitting welcome to the 60th anniversary of the Soviet Armed Forces. The struggle for the leading large unit is finding ever greater strength. Patriotic initiatives have been further developed: "The Expert

Trains the Expert," "An Excellent Result for Each Training Day," "Combat Mastery in Reduced Time," "There Must Be No Laggards Beside the Excellent," "An Exemplary Training-Material Base for Each Subunit," and "Each Crew--Masters of Missile Affairs."

The movement to transform military posts into model posts with high culture has acquired an even greater scope. The motto of this movement is "Study, Work and Live Like Lenin, Like a Communist!" In the course of it, order in the units has improved noticeably and the social-political activeness of servicemen and members of their families has grown. In future we shall also be looking for new opportunities to increase the effectiveness of this movement and to appraise its results by practical deeds and objective criteria--raising the level of conscientiousness of the people and their earnest attitude toward training and military labor.

The party and government display special concern for political maturity, military skill, party and practical qualities of our Armed Forces cadres including those of the Strategic Missile Forces. Our units and subunits are commanded by experienced and competent commanders boundlessly devoted to the party and the people. Comrades Arkhipov, Gribov, Yefimenko, Oleynik, Kryzhko, Klokun, Mazurenko, Slavitskiy, Subbotin and many others have distinguished themselves by their knowledge of the jobs entrusted to them and exemplary accomplishment of their duties.

Almost all commanders and political workers have a higher military and engineering education. Highly qualified specialists who are persistently mastering Marxist-Leninist theory and knowledge in the art of war, mathematics, mechanics, electronics, ballistics, nuclear physics and other exact sciences have become the basis of the Strategic Missile Forces officer corps.

The sergeants and rank and file have changed qualitatively. The overwhelming majority of warriors now come into our units and subunits with a higher or secondary education. This means an important foundation has been laid for the warriors to rapidly and perfectly assimilate today's combat equipment, excellently stand combat duty and act skillfully during training launches.

Automation of the missile preparation and launching processes has somewhat reduced the physical load on people operating the missile launchers. However, it has not reduced the demands on the moral-combat and psychological qualities of the warriors. That is why the main direction of educational work in the forces remains as before the molding in personnel of the ability to steadfastly endure any difficulty and deprivation and the most severe ordeals under the conditions of contemporary war.

The Military Council of the Strategic Missile Forces, commanders and political agencies, and party and Komsomol organizations are directing their efforts to training ideologically convinced, politically conscientious warriors who are boundlessly devoted to the socialist motherland. Officers, warrant officers, sergeants and soldiers are profoundly studying the works of V. I. Lenin, the decisions of the 25th CPSU Congress, the materials of

the May and October (1977) CPSU CC Plenums, the extraordinary seventh session of the USSR Supreme Soviet, the report and speech at it by Comrade L.I. Brezhnev, and the materials of the joint ceremonial session of the CPSU CC, USSR Supreme Soviet and RSFSR Supreme Soviet dedicated to the 60th anniversary of Great October and the USSR Constitution.

Missilemen, just as all Army and Navy warriors, felt especially proud that the constitution profoundly reflected Lenin's ideas on defense of the socialist fatherland and building the Armed Forces of the Soviet state. At our meetings of party activists on the results of the October (1977) CPSU CC Plenum and the extraordinary seventh session of the USSR Supreme Soviet, communists paid a great deal of attention to improving the style and methods of party organization work and stressed that their duty is to explain to the warriors the indissoluble link between our rights and duties and to strive to see that each missileman strictly collates all his thoughts and daily deeds with the constitutional requirements.

At the present time, the materials of the October (1977) CPSU CC Plenum and the extraordinary seventh session of the USSR Supreme Soviet, Comrade L. I. Brezhnev's report and speech, the new USSR Constitution, and the materials of the joint ceremonial session of the CPSU CC, USSR Supreme Soviet and RSFSR Supreme Soviet dedicated to the 60th anniversary of the Great October socialist revolution are being studied with keen interest in the system of political training of soldiers, sergeants and warrant officers, officers' Marxist-Leninist studies and party and Komsomol studies. Special attention is being paid to the profound revelation of the worldwide-historical importance of the achievements of the Soviet people, the socio-political significance of the realization of the articles of the USSR Constitution that meet the fundamental interests of the people, the great advantages of socialist democracy, and the role of the CPSU as the tested vanguard of the working class and all Soviet people in the struggle for communism.

And here we attach great importance to the composite approach to organizing all ideological work. Ensuring indissoluble unity of ideological-political, military and moral upbringing, we are striving to intensify even more the party's influence on all aspects of servicemen's activity. As the experience of the leading units and subunits shows, effectiveness of the composite approach is achieved by the active participation of all commanders, political workers, engineers and technicians without exception in ideological-educational work and by their persistent struggle to master the Leninist style of work.

The Leninist style of work is one of the main indicators of an officer's political maturity. This style, as the 25th CPSU Congress stressed, presupposes high exactingness on self and others, excludes self-satisfaction, and stands opposed to any manifestation of bureaucratism or formalism. Creative, alien to subjectivism, imbued with the scientific approach to all social processes, it serves as the most important condition of success for each officer in performing the duties entrusted to him and in carrying out the primary missions facing the military collective.

An officer's communist ideology realized in personal convictions becomes the life-giving source of his creative forces, inspiration and selflessness, and his guide to action in intense military labor. The higher the ideology of the officer, the more significant are the successes in combat training of the forces and political hardiness of the warriors, and the stronger the combat readiness of the Armed Forces.

Experience shows that the interests of combat readiness persistently require complex resolution of the combat and political training tasks. Complexity means a profoundly well thought out, scientific approach to a matter permeating all spheres of the training-educational process. Proceeding from this, our commanders, political workers, staff officers and all communists are striving in every possible way to improve the work with subordinates, using methods of scientific organization of training periods, drills and exercises. We judge the methodological mastery of the officer-leader first of all by the degree of military training and level of ideological maturity of his subordinates and their actual capability to execute missions in a complex combat situation under conditions as close as possible to combat.

The entire system of combat and political training in our forces is aimed at forming and developing in the missilemen high political activeness, tactical and technical competence, and purposefulness in studies with rational use of the very strict limit of time.

The motherland highly appreciates the warriors' military labor. The best units and missilemen who have distinguished themselves in service have been awarded orders and medals and have also been inscribed in the Book of Honor of the Military Council of the Missile Forces. Display of the party's concern for warriors-missilemen is varied. Party and government leaders visit our garrisons, are interested in the warriors' service and everyday life, and attend practical training missile launches. Each such visit evokes a fresh upsurge of creative forces in the hearts of the warriors and increases the aspiration to wage the struggle for further growth of successes in socialist competition even more actively.

Service in the Missile Forces is inconceivable without crystal-clear honesty, conscientiousness, industriousness, and the strictest discipline of each person. Never before has the question of the standard of training and cooperation of personnel as well as of their standard of discipline been so acute. The revolution in military affairs and the widespread introduction of the achievements of native science and technology has not only advanced the development of the material means of armed conflict, but has also lifted the human role and the importance of his skill to new heights and has enlarged the very concept of military discipline. Such terms as "discipline of combat duty," "discipline of time," and "technical discipline" have emerged which are efficiently and strictly observed by all warriors-missilemen.

The military labor of the soldiers, sergeants, warrant officers, officers and generals of the Missile Forces has now been illuminated by the light of the new Basic Law which as Comrade L. I. Brezhnev, CPSU CC General Secretary and chairman of the Presidium of the USSR Supreme Soviet, speaking at the extraordinary seventh session of the USSR Supreme Soviet, said "correctly reflects our gains, our aspirations and hopes and correctly defines our rights and obligations. Consolidating what has been achieved, it opens the prospects for further development of communist construction."

Striving to bring to the consciousness of each warrior the theses and conclusions of Comrade Leonid Il'ich Brezhnev's report and his speeches at the session, the constitutional requirements, and the materials of the joint ceremonial session of the CPSU CC, the USSR Supreme Soviet and the RSFSR Supreme Soviet dedicated to the 60th anniversary of the Great October Socialist Revolution, the Military Council, commanders, political organs, and party and Komsomol organizations of the Missile Forces are steadily trying to see that all this exceptionally important work takes place under the sign of further perfecting of combat and political training, strengthening military discipline and fully and qualitatively meeting the socialist pledges undertaken in honor of the 60th anniversary of the Soviet Army and Navy. The warriors of the Missile Forces, just as of the other branches of the glorious Soviet Armed Forces, clearly understand their whole responsibility for protecting the peaceful creative labor of their people and for the security of the motherland of Great October. They are going to meet the national holiday--the 60th anniversary of the Soviet Armed Forces--with new success in military labor.

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GENERAL SHKADOV ON ARMED FORCES MISSION AND READINESS

Moscow KOMMUNIST VOORUZHENNYKH SIL in Russian No 23, Dec 77 signed to press
22 Nov 77

[Article by Army General I. Shkadov, chief of the Main Directorate of
Cadres of the Ministry of Defense of the USSR: "Sacred Duty"]

[Text] I shall never forget the historical days of the work of the extra-ordinary seventh session of the USSR Supreme Soviet of the ninth convocation which adopted the new USSR Constitution. We, the people's deputies, listened with great interest and attention to the report of comrade L. I. Brezhnev, the CPSU CC General Secretary, chairman of the Presidium of the USSR Supreme Soviet and chairman of the Constitutional Commission. The Basic Law of the country, which was our fortune to adopt, affirms with each of its lines the great revolutionary gains of the Soviet people. This is a political document of truly worldwide significance which opens further prospects for the building of communism.

All the achievements of our people, all their victories and progress are inseparably linked to the great Leninist party. "The CPSU exists for the people and serves the people"--these words of the USSR Constitution evoked in millions of Soviet people a sense of legitimate pride in the party of Lenin, the militant vanguard of the Soviet people, its guiding and directing force. Our country's workers have perceived with hearty approval that central among the most important provisions of the USSR Constitution is the definition of the place of the Communist Party of the Soviet Union in Soviet society and the state. Being the nucleus of the political system of developed socialism, it guides all spheres of life of society and its organizations and institutions within the framework of the USSR Constitution. Comrade L. I. Brezhnev very truly said that just as the heart cannot be pitted against all the rest of the human organism, our party and people cannot be pitted against each other as is done by imperialist ideologists.

The developed definition of the leading and directing role of the Communist Party of the Soviet Union in the new constitution also has important significance for the military organization of our state. Determining the general prospects for development of society, the USSR's domestic and foreign policy, and exercising leadership of the great creative activity of

the Soviet people, the party also fully exercises leadership of all aspects of defense of the fatherland. The CPSU directs and coordinates the activity of all state organs and institutions, mass public organizations and all workers in comprehensively ensuring the reliable defense and security of the country.

An important place in the mechanism of state control of the Armed Forces is held by the USSR Defense Council. All Soviet people are especially satisfied that the chairman of the USSR Defense Council is Marshal of the Soviet Union Comrade L. I. Brezhnev, General Secretary of the CC CPSU and chairman of the Presidium of the USSR Supreme Soviet. This fact reflects the increased role of the CPSU in Soviet military development and the great international significance of the defense of the socialist fatherland, the gains of Great October and the cause of building socialism and communism.

The Soviet Armed Forces are the creation of V. I. Lenin and the Communist Party. They were created in the fire of fierce battles with the enemies of the new Soviet republic. Guided by the Communist Party, our Armed Forces accomplished their historical mission with honor locked in mortal combat with fascism. Having won the historical victory of worldwide importance in the Great Patriotic War over fascist Germany and militaristic Japan, the Soviet people not only held their socialist gains, but also, true to their international duty, made a decisive contribution to the cause of saving European and world civilization from destruction by the fascist barbarians.

The feats of the fighters of the revolution, the heroes of the Civil and Great Patriotic Wars and the glorious traditions of the Army and the Navy are a well of inspiration for Soviet warriors, the worthy successors of the combat glory of older generations. Their loyalty to revolutionary ideals and to their sacred duty to the Soviet motherland is manifested in selfless military labor, in the persistent struggle to raise the combat readiness of subunits, units and vessels, in unremitting vigilance, strong discipline and organization. Servicemen are also committed to this by the new USSR Constitution which says that defense of the socialist fatherland is the sacred duty of every USSR citizen.

Awareness of the importance of their military duty to the motherland engenders in the personnel great political and labor enthusiasm and the aspiration to master military affairs as well as possible and to perform all their service duties and assigned tasks with honor. An indicator of the patriotic aspiration of Soviet warriors is their active participation in the All-Army Socialist Competition during the course of which numerous initiatives and undertakings arise and the best features and moral qualities of the defenders of the motherland are revealed. Army and naval warriors participated with special enthusiasm in the socialist competition for a fitting welcome to the 60th anniversary of Great October. The national discussion of the draft USSR Basic Law and then also the adoption of the new Constitution of the Union of Soviet Socialist Republics inspired them to new success in perfecting combat mastery. In the process of discussing the draft constitution

in the Army and the Navy, quite a few suggestions were made aimed at developing socialist competition and improving the activity of military cadres and party and Komsomol organizations. They are under attentive study to realize everything that could serve to further improve the training process and the growth of its quality and effectiveness.

The overwhelming majority of servicemen and military collectives met their socialist pledges for the jubilee year with honor. The final activities showed an increased level of field, air and naval personnel training and high combat readiness of subunits, units and ships. The warriors' achievements in military labor is a fitting response to the concern of the Communist Party of the Soviet Union for our valiant Armed Forces who are performing the important mission assigned to them by the 25th CPSU Congress--to be the guard of the peaceful labor of the Soviet people and the bulwark of universal peace. As is well known, the 25th congress of the party paid serious attention to questions of further strengthening the defensive capability of the Soviet state and the development and comprehensive perfection of our Armed Forces. "We can report to the congress," Comrade L. I. Brezhnev said in the summary report of the CC CPSU, "that we have done quite a lot in this area. Equipping the Armed Forces with modern weapons and combat equipment has been improved, and the quality of personnel combat training and ideological hardening has been raised. On the whole, comrades, the Soviet people may be assured that the fruits of their creative labor are being reliably protected."

Lenin's ideas on defense of the socialist fatherland also inspired the provisions of chapter five of the new USSR Constitution. Defining defense of the socialist fatherland as the most important function of the state and a cause of all the people, it proclaims: the USSR Armed Forces have been formed and universal military service has been prescribed to defend socialist gains, the peaceful labor of the Soviet people and the sovereignty and territorial integrity of the state. The duty of the USSR Armed Forces to the people is to reliably defend the socialist fatherland and to be in constant combat readiness, guaranteeing an immediate rebuff to any aggressor.

The chapter, "Defense of the Socialist Fatherland," has been included in the Basic Law of the Union of Soviet Socialist Republics for the first time. Reflected in it is the concern of the Communist Party and the Soviet state for the security of the socialist motherland, our Soviet motherland which is building communism. The constitutional requirements on the Armed Forces impose on Soviet warriors a special responsibility and impel them to even more persistently perfect combat mastery and to raise the combat readiness of subunits, units and ships.

The necessity for constant combat readiness of Soviet Armed Forces personnel is caused by the complexity of today's international situation, the build up in military preparations by aggressive imperialist circles and by their overt direction against the USSR and other socialist countries. Bad enough as it is, the enormous military budgets of both the individual capitalist states and the imperialist military coalitions are being boosted. Many

countries of the world are enmeshed in a dense network of imperialist military bases. They number several thousand. By the mid 70's, the USA alone had about 300 major and over 2000 small military bases in over 30 countries. They contain about 600,000 American soldiers and officers.

While building up their military preparations, imperialist aggressive circles cry about the so-called "Soviet military threat" and the "danger from the East."

The Communist Party of the Soviet Union and the fraternal parties of the other socialist countries have repeatedly rejected these slanderous fabrications and have convincingly shown them to be unfounded and false inasmuch as in fact no "Soviet threat" exists whatsoever.

In contrast to the militaristic course of the imperialist states, the CPSU and the Soviet government is undertaking everything possible for further normalization of international relations so that the threat of a new world war may be eliminated and peace may be made lasting and inviolable.

Taking into account the complexity and contradictory nature of today's international situation, the presence of imperialism as the main source of wars, the increase in military preparations by it, and the activation of hostile actions against the USSR and other socialist countries, the CC CPSU and the Soviet government combine in their policy a firm will towards peace and a constant readiness for a decisive rebuff to any aggressor. This Communist Party course stems from V. I. Lenin's instructions that "when we display the most steady and peaceful attitude, we are at the same time ready in a military sense."

Under today's conditions, in the age of nuclear missiles and other powerful means of armed conflict, the requirements for combat readiness have grown immeasurably. It embraces all aspects of the multifaceted activity of the Armed Forces and is attained by tenacious, persistent, everyday labor, intensive combat training and constant perfection of the style of activity of command cadres and staffs and the political organs and party organizations of the Army and Navy.

The social-political development of Soviet society is also having a positive impact on the qualitative condition of officer cadres. Their ideological-political level, education, culture and professional training are steadily growing. Today, more than 90 per cent of Army and Navy officers are communists or Komsomol members, and over 50 per cent have a higher military or specialized military education. On the whole throughout the Armed Forces, almost 100 per cent of Soviet warriors have not less than an eighth-grade education, and about 80 per cent of the servicemen have a higher or secondary education whereas on the eve of the Great Patriotic War only 12 per cent had. A higher education is held by almost all large unit commanders, over 90 per cent of regimental commanders, all captains of ships of 1st or 2d rank, all chiefs of political organs and four-fifths of the political workers at the regimental level.

The improvement in the qualitative strength of the officer corp and the growth in its qualifications promote a rise in the effectiveness of the entire training and educational process, the unity of military collectives and the successful accomplishment of training plans and programs and the missions of operational, combat and political training. The maintenance of the combat readiness of subunits, units and ships at the proper level depends first and foremost precisely upon skillful organization by officers of personnel training and education and ensuring an efficient and intense rhythm of work in exercises and range practices, missile launches, field and ocean campaigns and when standing combat duty.

In this connection, I would like to cite some examples. For six years running now, the battalion of the Guards Motorized Infantry Tamanskaya Division imeni M. I. Kalinin which is commanded by Major Yu. Koslov has attained the title of excellent. This officer serves as an example for his subordinates in everything and skillfully relies on the party organization. One could also name Lieutenant Colonel G. Kasperovich of the Group of Soviet Forces in Germany, Lieutenant Colonel V. Voloshchenko of the Red Banner Kiev Military District and many other officers who are skillful organizers of the training process, working in close contact with party organizations, capable of noticing the new and advanced and of actively struggling for their approval.

An important role in raising the combat readiness of subunits, military units and ships is played by Army and Navy party organizations. Actively and with skill getting into all aspects of the training process and the life and activity of the troops, they render effective help to commanders in personnel training and education and in carrying out all assigned missions. Heading the party collectives are ideologically hardened people, excellently trained in both the political and military sense, experienced leaders and senior comrades of the warriors. In the arsenal of numerous means of influencing personnel, they have the tried and proven means--personal example. This year, several local party organization secretaries were decorated for successes in combat and political training and mastering new techniques: Captain G. Kurchenko was awarded the Order of the Red Star; Major A. Korba, Captain M. Pilipenko and many other comrades were awarded the decoration "For Service to the Motherland in the Armed Forces of the USSR," Third Class.

A combination of ideological conviction, commander's will, high and reasonable exactingness on self and subordinates, organizer's capabilities, general culture, developed operational-tactical thinking and a military-technical outlook--these are the most important distinguishing features of Soviet officer cadres.

The party and government has raised high the role of the officer, entrusted the training and education of Soviet warriors to him and granted the right to command subordinates, to conduct them in battle and to send them to accomplish the most complex and difficult missions. And the personnel unquestioningly and with a high sense of awareness of their military duty follow their officers, ready, if required, to sacrifice their life for the cause of the party and the people.

High moral-political qualities and traits of true patriots and internationalists have been cultivated in Soviet warriors by the Communist Party, our entire socialist system and the Soviet way of life. "The main asset of our Army," noted Marshal of the Soviet Union D. F. Ustinov, member of the Politburo of the CC CPSU and USSR defense minister, at a Kremlin reception in honor of military academy graduates, "is the outstanding personnel who are boundlessly devoted to the cause of the party and the people. Therefore, the first mission is to persistently and purposefully, sparing neither time nor effort, educate and train subordinates, be concerned about them like a father, and try to grasp their needs and requirements."

Service in the USSR Armed Forces is a great honor for the Soviet citizen. Military labor and service is respected by all of us in the country. Soviet people rightly see in a serviceman not a narrow military specialist, but a person of high moral-political and combat qualities, invested with the great trust of the people and called upon with weapon in hand to protect the holy of holies--the freedom and independence of our motherland.

Soviet warriors, carrying out the sacred duty of patriots and internationalists in the ranks of the Armed Forces, are at the same time exercising in practice the honorable right of a USSR citizen which was won with the victory of October--the right to defend the socialist fatherland. The honorable duty of a Soviet citizen--military service in the ranks of the USSR Armed Forces--is one of the forms of his social-political activity for the welfare of society and is in the interests of all the people. Warriors draw energy and inspiration in recognizing that their selfless efforts in high quality execution of the combat and political training missions, mastery of modern weapons and combat equipment, and in maintaining high vigilance and combat readiness merge together with all the people's labor and promote further prosperity and strengthening of the might of the beloved motherland.

Our Army and Navy have always been and remain a school of ideological and civic maturing for millions of youth. This important idea was emphasized by Comrade L. I. Brezhnev at the 25th CPSU Congress: "Speaking of educational work, comrades, one must dwell on the great role played by the Soviet Army in this cause. Youth come into the soldier's family without the school of life. But they then return from the army as people who have gone through the school of endurance and discipline and received technical and vocational skills and political training."

The Soviet Armed Forces are an integral part of our people--a new historical community of people formed in the USSR during the years of building socialism and communism. Educated by the Communist Party and hardened in battles, they are the personification of the remarkable traits, features and qualities inherent in a mature socialist society.

Soviet warriors are competent citizens of their country. In contrast to bourgeois army servicemen, they are endowed with all the social-economic and political rights and freedoms. Equally with all USSR citizens, they

participate in forming organs of state power and in governing the state; many of them are deputies of soviets. At present, more than 13,000 servicemen are deputies of the USSR Supreme Soviet, the supreme soviets of the union and autonomous republics or local soviets.

Soviet warriors widely enjoy all the political rights and freedoms granted to a citizen by the USSR Constitution and all the blessings of the socialist democracy. The most conscientious, active and progressive warriors equally with other USSR citizens join The Communist Party of the Soviet Union and the ranks of the VLKSM [Komsomol]. Army and Navy personnel live a vigorous, saturated spiritual life. Servicemen participate in the activity of creative unions and are engaged in technical circles and sports sections. The scale of rationalizing and inventive work in the subunits, units, on ships and in military-educational institutions is huge.

Our Armed Forces have no equal in the world in the general educational and cultural level of personnel. Just as all Soviet people, the warriors have the right to a free education, all-round enhancement of cultural level and to obtain specialized skills. Soviet legislation for servicemen provides a number of privileges--preference when entering educational institutions, allotment of state support for the period of study in military educational institutions, grant of supplemental leaves to correspondence-course students and others. Military service itself, being an outstanding school of endurance and discipline, gives the warriors very much.

Just as all Soviet citizens, Army and Navy warriors enjoy the right to rest in full measure. This right is assured by our socialist system and is guaranteed in the conditions of the Armed Forces by firm regulation procedure and the entire structure of military life. All servicemen are granted days of weekly rest; generals, admirals, officers, warrant officers and servicemen on extended service are granted annual paid leave. The network of cultural and educational and health improvement establishments is steadily expanding and the conditions for rest of the warriors at the place of service and for rational, cultural and useful use of free time are steadily being perfected.

The equality of rights of Army and Navy warriors is clearly reflected in the principles of Soviet military development and personnel training and education, in the organization of internal order and way of life of servicemen, and in the mutual relations among them imbued with a deep respect for the personality, honor and dignity of the warrior and with the mutual understanding and comradely cooperation of seniors and juniors in military rank, position held, and terms of service of the servicemen in the name of fulfilling the common, to all, military duty of defending the socialist motherland and the gains of socialism.

Every Soviet warrior is a person reared in a free and just society and in the noble principles of the moral code of building communism. He has absorbed in himself all the outstanding traits of Soviet man formed during

the six post-October decades. It is precisely these traits that characterize the honor and dignity of the Soviet warrior as a citizen of a great socialist power and his attitude toward the sacred duty of defending the motherland and toward the honorable duty of military service in the ranks of the USSR Armed Forces.

Soviet warriors-patriots and internationalists recognize that the rights and freedoms granted them are inseparable from the high responsibility for irreproachable fulfillment of the duties of a USSR citizen. They deeply understand that the main guarantee of their rights is the might and prosperity of the Soviet motherland.

Armed Forces warriors take an active part in all public-political measures undertaken in the country, in carrying out major national economic tasks and in the work of various public organizations. They participated most actively in discussing the draft of the new USSR Constitution. I read with pride the emotional letters of soldiers and sailors, sergeants and petty officers, warrant officers, officers and generals which were published in the military press during the period of the discussion of the draft of the new Basic Law of the country. I saw their authors behind them--the warriors of the '70's. These are the worthy heirs of the valor and glory of the front-line soldiers, living by one thought with all Soviet people. Just in the Army and the Navy at party, trade union and Komsomol meetings and at general meetings of servicemen, tens of thousands of people spoke who together with all the people unanimously approved the draft Basic Law of the Soviet state. With an enormous political upsurge and enthusiasm, Soviet warriors welcomed the adoption of the new constitution, unanimously approve of it, and fully support the Leninist course of the Communist Party and the indefatigable and fruitful activity of its Central Committee and the Politburo of the CC. At rallies and meetings dedicated to the extraordinary seventh session of the USSR Supreme Soviet and at meetings with people's deputies which took place in military units and on ships and in military educational institutions, the warriors assured the party and its Central Committee that they will also in future be selflessly serving their people and tirelessly strengthening the defensive capability of their great socialist motherland.

The warriors' words of special thanks and sincere gratitude were addressed to Comrade Leonid Il'ich Brezhnev, General Secretary of the CC CPSU, chairman of the Presidium of the USSR Supreme Soviet and chairman of the Constitutional Commission, for his outstanding contribution to the development of the new Constitution of the land of the soviets and the substantiation of each of its articles.

In the subunits, military units and on ships, a many-sided effort has been developed in profound interpretation and study of the materials of the extraordinary seventh session of the USSR Supreme Soviet and the new USSR Constitution and the materials associated with the celebration of the 60th anniversary of Great October. Based on the ideas of Marxism-Leninism and

on party decisions of the past years, these documents are a most rich source of social-political, public and philosophical thought. The exceptionally important political work underway on their study in the forces is taking place under the badge of further perfection of combat and political training, strengthening of military discipline and successful meeting of socialist pledges made in honor of the 60th anniversary of our valiant Armed Forces.

It is in the traditions of all Soviet people and Army and Navy warriors in the days of remarkable events and jubilees to not only sum up the results of their labor and rejoice in their achievements, but also to not forget about the next matters and to aim themselves to make new advances in strengthening the defensive might of the motherland. Our military cadres understand well that further perfection of combat readiness requires persistent work from them in raising the level of ideological-political education of personnel, improving the quality of their field, air and naval training and strengthening discipline and organization in the subunits, units and ships.

Successful accomplishment of these primary missions will be helped by the widespread use of the positive experience gained in the jubilee training year and a thorough analysis of both the achievements of the warriors and the causes of still existing shortcomings in their training and education and still unused reserves. Commanders, political organs and party organizations of the Army and Navy are evaluating their activity in a principled and efficient manner, persistently putting the Leninist principles of socialist competition into everyday practice, and combining high exactingness on the servicemen with constant concern for each of them raising persistently their military mastership.

The Soviet Armed Forces--the reliable guard of the gains of October and the building of socialism and communism--have been developing along with the Soviet state for almost 60 years. Each degree of ascent of our society to new advances has also meant a new step in strengthening its defensive capability and in developing and perfecting the Armed Forces. And today the Soviet people proudly recognize that the increased material and spiritual possibilities of our country make it possible to reliably guarantee the security of the USSR and the entire socialist community and to reliably stand guard over peace on earth.

In his address at the joint ceremonial session of the Central Committee of the CPSU, the USSR Supreme Soviet and the RSFSR Supreme Soviet dedicated to the 60th anniversary of the Great October Socialist Revolution, Comrade L. I. Brezhnev, General Secretary of the CC CPSU, and chairman of the Presidium of the USSR Supreme Soviet, said: "Never before has our country had such enormous economic and scientific-technical potential. Never before has its defensive capability been so strong and so reliable."

Having heartily responded to the Appeal of the Central Committee of the CPSU, the USSR Supreme Soviet and the USSR Council of Ministers "To the Soviet People," who have been called upon to raise the banner of national socialist competition even higher, the warriors of progressive units and nuclear submarines--initiators of the pre-October socialist competition-- have planned new advances in combat perfecting. They have decided to appeal to the personnel of all branches of the Armed Forces to continue the jubilee competition for high quality fulfillment of the training plans and programs and to celebrate the 60th anniversary year of the USSR Armed Forces by shock military labor. There is no doubt that soldiers and sailors, sergeants and petty officers, warrant officers, generals and admirals will mark the new training year--the year of the glorious jubilee of the Soviet Army and Navy-- with fresh achievements in strengthening the defensive might of our great fatherland.

Wholeheartedly devoted to the Leninist party, the Soviet government and our heroic people and faithful to their sacred constitutional duty, Soviet warriors will also in future be selflessly laboring to strengthen the security of our beloved motherland and reliably protecting the peaceful constructive labor of the Soviet people--the builders of communism.

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WARTIME SHIPBUILDING ACCOMPLISHMENTS DISCUSSED

Moscow VOYENNO-ISTORICHESKIY ZHURNAL in Russian No 12, Dec 77 signed to press 29 Nov 77 pp 35-42

[Article by Capt 1st Rank V. Vorob'yev: "Shipbuilding During the War Years"
Published under the heading: "The Great Patriotic War and the Postwar Period"]

[Text] The Communist Party and the Soviet government always placed and are placing great attention on construction of the Navy. It began with submarines. The keels for the Dekabrist-class submarines were laid in 1927. Series production of Shch- and S-class submarines and Uragan-class escort ships was accomplished in the 1930's. The keel for the destroyer leader "Leningrad" was laid in 1932.

Taking the growing military threat into account, the party envisioned creation of a powerful sea and ocean fleet during the Third Five-Year Plan. In accordance with the decisions of the 18th CPSU Congress, it called for construction of battleships and cruisers superior to the newest ships of these classes in the capitalist countries. The keels for Sovetskiy Soyuz-class battleships, Kronshtadt- and Chapayev-class cruisers, and destroyers were laid. The total VMF [Navy] tonnage from the beginning of 1939 to 1941 rose to 108,000 tons for surface ships and to 50,000 tons for submarines. For 11 months of 1940 alone, 100 different combat vessels--destroyers, submarines, torpedo patrol boats, and mine-sweepers--entered the fleet.¹

The keels for 533 combat vessels were laid at Soviet wharfs in all from the late 1920's to the start of the Great Patriotic War. Of this number, 312 of them with a total displacement 243,200 tons were built and delivered to the VMF.² This latter number included 206 submarines, four cruisers, seven leaders, 30 destroyers, 18 escorts, 38 mine-sweepers, one mine-layer, and eight river monitors.³ At the start of the war, 219 vessels with a total tonnage of about 550,000 tons were under construction.⁴

¹"Velikaya Otechestvennaya vojna Sovetskogo Soyuz 1941-1945. Kratkaya istoriya." [The Great Patriotic War of the Soviet Union 1941-1945. A Short History]. Voenizdat, 1970, p 43.

²TsVMA [Central Naval Archives] Branch, fund 403, file 40304, sheet 4.

³VOYENNO-ISTORICHESKIY ZHURNAL, 1971, No 6, p 36.

⁴TsVMA Branch, fund 403, file 40304, sheets 6, 9.

Talented scientists and ship builders N. Ye. Kochin, A. N. Krylov, P. F. Pankovich, V. L. Pozdyunin, Yu. A. Shimanskiy, and others made a great contribution to construction of the fleet.

Combat vessels created by Soviet ship builders did not take a back seat to foreign ships as far as tactical characteristics and specifications, especially armament, were concerned. Thus, Kirov-class cruisers, being the fastest ships of this class, also had the heaviest armament (nine 180-mm guns). Leaders and destroyers, being very fast, had powerful artillery and torpedoes.

The duration of prewar ship construction was quite long. Thus, construction of a leader required 48-72 months, that of a destroyer 27-74, escort 27-67, and large submarine 30-68 months.

The Great Patriotic War caused a fundamental reexamination not only of these periods, but a reorganization of all the work done by the shipbuilding industry, making it responsive to the Navy's combat requirements so as to simultaneously build new ships and also produce weapons not only for the Navy but for the Soviet Army as well. The well-organized past system of cooperation among industrial enterprises was destroyed and plants had to organize their own production of equipment formerly supplied by contracting parties.

Taking the changing situation in mid-1941 into consideration, military shipbuilding oriented itself to construction in shorter periods of destroyers, mine-sweepers, submarines, but primarily to patrol boats. As a result of the measures taken by the party and the government, the shipbuilding industry from 22 June through 31 December 1941 provided the fleet with more ships compared to the first 6 months of the year and with the prewar years. Thus, if up until 22 June 1941, 13 combat vessels, 37 combat patrol boats, and 98 auxiliaries were supplied, the totals for the 22 June-31 December period were 44, 121, and 382, respectively.⁵

Between the time the war started and 1 January 1945, our industry provided the fleet with 20 destroyers and escorts. In addition, it carried out capital and emergency restoration repairs on 25 leaders and destroyers and 11 escorts, plus routine warranty repairs on 18 leaders and destroyers and four escorts.⁶

The plants in Leningrad occupy a worthy place in the chronicles of Soviet shipbuilding. Under the conditions of the blockade, cold, famine, and continuous artillery shelling, Leningraders worked selflessly. They put forth their utmost to maintain the ships of the KBF [Red Banner Baltic Fleet] in combat readiness and to manufacture more new combat units, ammunition, and weapons for the fleet. In addition, shipbuilders manufactured components for reinforced concrete pillboxes and for gas-proof shelters, repaired public utilities, and did other work.

Black Sea shipbuilders played a great rôle in providing for the needs of the active fleet. For example, the Sevastopol' Naval Plant (M. N. Surguchev director)

⁵TsVMA Branch, fund 403, file 40304, sheet 21.

⁶Ibid, sheets 20, 23, 32.

was the only basic enterprise in the fleet which did large-scale and complex operations and did so in direct proximity to the front lines, initially in Sevastopol' and then in Tuapse. The plant built several combat units during the war years, including two L-class submarines. Even back in Sevastopol' it was able fit out the destroyers "Svobodnyy" and "Sovershennyy." As is known, destroyers were all-purpose ships. Possessing good weapons, they accomplished a wide variety of missions. The following example will serve as proof of this.

The colors were hoisted on the destroyer "Soobrazitel'nyy" on 24 June 1941 (maximum speed 36 kts, armament four 130-mm guns, two 76.2-mm guns, seven 37-mm, eight 12.7-mm machineguns, two 3-tube 533-mm torpedo mounts, two bomb throwers, and four paravane trawl units). The ship could accommodate on board 58 KB moored contact mines, plus 10 large and 20 small depth charges. It carried a crew of 271. During the war, the ship carried out 218 combat missions, travelling 63,750 miles and remaining at sea more than 3,500 underway hours without major overhaul. It had 55 artillery firings to its credit. It suppressed more than 10 artillery and mortar batteries and destroyed up to 30 tanks and vehicles. The ship participated 33 times in convoying transport vessels, accompanying 59 transports without a loss, participated four times in landing operations, nine times in raiding operations, and provided replenishment and evacuated wounded troops and the inhabitants from Odessa, Sevastopol', and Novorossiysk 37 times. The destroyer moved more than 14,000 persons and about 1,000 tons of ammunition, weapons, and other military cargo. The ship's crew repulsed 100 air attacks and shot down five torpedo planes and bombers. By order of the People's Commissar of the Navy dated 1 March 1943, "Soobrazitel'nyy" was given the Guards designation for high military discipline, combat successes, and the heroism demonstrated by its personnel. During the war years, all members of the crew were given governmental awards and Senior Seaman V. Khodyrev was awarded the title Hero of the Soviet Union.

During the war years, the leading destroyer "Ognevoy" was fitted out on the Black Sea and, in 1944, joined the Black Sea Fleet to participate in combat operations. This was a ship new in principle. In accordance with the design, the main guns and the antiaircraft cannon were grouped in turrets. The ship could make 36 knots and was armed with four 130-mm, two 85-mm and six 37-mm guns and two 3-tube 533-mm torpedo mounts.

The party and the government placed great attention on submarine construction. During the war years, industry provided the Navy with 54 submarines, 23 of them between 22 June and 31 December 1941, 13 in 1942, 11 in 1943, 5 in 1944⁷ and two in 1945.⁸

Designers and engineers continually perfected submarine weapons. One of the trends in submarine weapons development was increasing the weight of the charge and employment of more powerful explosives, as well as increasing the speed and the range of the torpedoes. A new gas-steam torpedo having a range in three modes of operation of 4, 8, and 10 kilometers came into the inventory in July of 1941. It was the world's fastest torpedo--51 knots in the first operating

⁷ TsVMA Branch, fund 403, file 40304, sheets 20, 23.

⁸ VOYENNO-ISTORICHESKIY ZHURNAL, 1975, No 12, p 74.

mode. The ET-80 was received in September of 1942 and successfully employed by the fleets. The design collective led by chief designer N. N. Shamarin was awarded the State Prize for creation of the electric torpedo. The fleets got torpedoes with proximity fuses in 1943.

Electric torpedoes and torpedoes with proximity fuses increased the concealment and effectiveness of submarine operations.

Considerable success was achieved in creating mine weapons. Submarines effectively employed PLT-G and EP mines during combat operations. During the war years, they carried out 92 active mine-laying operations aimed at destroying enemy communications at the approaches to enemy bases and ports and in choke points, laying more than 1,700 mines in the process. In all, more than 1,000 combat ships and vessels were destroyed and damaged as a result of naval forces actively employing mine and torpedo weapons.

Engineers and designers elaborated blueprints for "Sprut" instruments which allowed boats to maintain assigned depth without moving. Such stabilizers were installed on a majority of submarines.

A gyroscopic instrument came into the inventory in 1943 and made it possible to introduce an angle setting into torpedo control surfaces. This made it possible to convert to volley firing "with a spread" and overcome possible errors in determination of target data. Maximum firing results could then be achieved. Movable radio antennas began to be mounted in late 1943 in the upper portion of the antiaircraft periscope on the boats. They permitted reception and transmission of radio messages while the submarine was submerged at periscope depth, which increased their coordination with other branches of forces.

During the war years, sonar gear and radio equipment aboard submarines was improved, devices to extend the life of storage batteries were installed, air regeneration was improved, and measures were taken to increase fresh water reserves. Devices intended for submerged diesel operation (RDP) [snorkels] were also developed.

Sailors received first-class submarines equipped with the latest weapons, instruments, and mechanisms as a result of the party's enormous concern for the VMF. Submariners fulfilled this trust and successfully routed the fascist occupiers. During the war years, thousands of sailors, petty officers, and officers were awarded orders and medals and 21 were awarded the title of Hero of the Soviet Union. Twelve submarines were awarded the Guards title and 23 were awarded the Order of the Red Banner.

During the war, combat patrol boats were built in large numbers. Between 22 June 1941 and 1 January 1945, industry provided the fleet more than 550 submarine chasers, torpedo patrol boats and armored patrol boats and 320 mine-sweeping boats.⁹

⁹ TsVMA Branch, fund 403, file 40304, sheets 20, 23.

Our boats accomplished an enormous volume of combat operations. They performed reconnaissance, they patrolled, dropped off landing parties, placed mines on enemy communications, destroyed surface vessels with torpedoes and submarines with depth charges, swept mine fields, convoyed ships and transports, and broke through into ports occupied by the Hitlerites and destroyed personnel and combat equipment. MO-IV small submarine hunter-killers (also called submarine chasers) enjoyed great success in the fleets. They displaced 56 tons and had three engines that could make 25 knots. Their armament consisted of two 45-mm cannon, two 12.7-mm machineguns, eight large, and 24 small depth charges. They were to be found in each fleet. Many submarine chaser subunits [podrazdeleniye] were awarded orders, the Guards title, and honorary designations. Therefore, great attention was placed on construction of small hunter-killers. For example, designers formulated the design of a new hunter-killer built in a metal and a wood variant, both having identical sized hulls. A design for a duralumin short-range torpedo boat was elaborated. It surpassed its predecessor--the G-5 primarily in speed, since it could make 50 knots. Several designs for armored sea boats, mine-sweeping boats, and others appeared during the war also.

In addition, earlier designs were perfected and ships' armament improved. For example, the large hunter-killer mounted a 76-mm gun. The old design was corrected at the Central Design Bureau (TsKB) and the new large hunter-killer mounted an 85-mm gun, two 37-mm automatic weapons, and two depth chargers. But, increasing the weaponry had a debilitating effect on stability and sea worthiness. Therefore, the TsKB also reworked this design and, on the basis of sea worthiness tests, changed the hull form and increased the length and beam.

Here is another example. Armored river boats were built in our plants even up to the start of the Great Patriotic War. Taking knowhow acquired from their combat employment, new designs were drawn up and were approved in April 1944 by the People's Commissariat for the Navy. Their distinguishing feature was that 85-mm multi-purpose turret guns were mounted in place of the 76-mm guns, tank diesels replaced the gasoline engines, and the armor protection was significantly increased.

Accomplishment of numerous missions, plus combat losses suffered by the boats, required their numbers to be increased. Design bureaus supplied plants with the requisite designs and blueprints. The boat construction cycle was reduced by a factor of 2-3. Designers Yu. Derevyanko, V. Mudrov, A. Sokolov, and others elaborated a number of new designs. They designed widely known tenders--the self-propelled dry cargo flat-bottomed barges. Thanks to a shallow draft (50-60 centimeters for an empty vessel), they could come directly up to the shore. They could make 6 knots (11 km/hr) and had a cargo capacity of 15-25 tons. Several of the tenders were joined by a special bridging, which made it possible to load up to four 76-mm guns or four motor vehicles on them.

Wide employment of magnetic mines called for new sweeping equipment. Pre-war mine-sweepers did not have electromagnetic trawls. Therefore, based on tasking from the People's Commissariat of the Navy, designers and engineers elaborated a design for a powerful electromagnetic trawl fed from storage (shipboard) batteries which were used by diesel mine-sweepers.

Commissioning of new combat vessels was facilitated by the fact that the VMF Shipbuilding Directorate (Vice Admiral-Engineer N. V. Isachenkov, chief) had

done a great deal of work to call up, store, and use the reserve of prewar stock in general and conservation of vessels in particular. This made it possible during the war to provide the fleet with a great number of vessels, including two cruisers and an escort to the TOF [Pacific Ocean Fleet], the destroyer "Ognevoy" to the ChF [Black Sea Fleet], and the escort "Yastreb" and the fast mine-sweepers "Polukhin" and "Gromov" to the KBF.

Great attention was placed on design of auxiliaries for the Navy, along with the combat vessels. Thus, based on a People's Commissariat of the Navy task, designers created a design for a landing boat with a normal capacity of up to 43 troops with small arms weapons. This resulted in construction of a large number of landing boats used in the Novorossiysk (9-16 December 1943) and the Kerch'-El'tigensiy (31 October-11 December 1943) landing operations and during other Black Sea Fleet combat operations. A design for a floating battery was also elaborated and involved installation of 100-mm guns on paired landing boats. Such floating batteries actively participated in offensive combat operations of, for instance, the Dnepr Flotilla. Based upon comments from combined-arms commanders, these batteries provided material assistance to infantry units [chast'] in the rout of the enemy in the Belorussian and other operations.

A refueling boat for seaplanes was very convenient to operate. Sea-going dry cargo barges with a displacement of 150 and 260 tons and oil barges with a displacement of 100, 250, and 400 tons were built for the naval bases.

Vessels previously constructed and belonging to civilian departments were being overhauled and rearmed for inclusion in the VMF inventory during the war at the same time new auxiliaries were being designed. Thus, the floating fish plant became a submarine tender and was subordinated to the SF [Northern Fleet], the oceanographic ship "Okean" was converted into a mine-layer in the TOF, in 1942 the overhaul of an icebreaker detachment (9 units) for the SF was fully complete. A large number of ships was converted to mine-sweepers and gunboats and many transports were armed.

Upgrading the weapons on surface vessels was one of the most important shipbuilding trends. A number of examples to back this up follow. The situation at Stalingrad in 1942 required urgent replenishment of the ships of the Volga Military Flotilla and an upgrading of their armament. To these ends, torpedo boats were converted so that they could be employed on the river. The torpedo mounts were removed and M-8-M 82-mm 24-tube rocket launchers (Katyusha) were installed. Eight boats in all were converted in this way in 1942 for the flotilla. Also, three 500-ton barges were converted to floating batteries on which were mounted two each 152-mm howitzers. Twelve towed ferries were armed with two 85-mm multi-purpose cannon each. M-8-M rocket launchers, 12.7-mm DShK machineguns in a turret, and 12.7-mm machineguns on a pedestal were installed on 10 YaK-5 messenger boats. BKM-P boats were armed with an M-13-M 16-shot rocket launcher, a 37-mm automatic weapon, and a twin 12.7-mm machinegun. Other boats mounted 82-mm mortars and ATO-41 tank-mounted flame throwers.

The VMF Shipbuilding Directorate developed new types of shipboard armament. This work resulted in M-13 and M-8 launchers being adapted to shipboard conditions. Based on its tasking, one plant elaborated engineering projects for

for naval mounts for a 16-shot 132-mm and a 24-shot 82-mm launcher, as well as blueprints and test mounts.

Knowhow in combat employment of the M-8-M and M-13-M in the fleets and flotillas confirmed the sharp necessity for modernizing these launchers and changes were made to them. The new 16-M-13 and 24-M-8 rocket launchers were the result. In accordance with requirements levied by the Main Naval Staff, 40 M-8-M and 20 M-13-M systems were ordered from industry to arm the boats. The 1944 order was 60 M-8-M and 50 M-16-M systems and was 72 16-M-13 systems in 1945.¹⁰

Rocket launchers were widely employed on ships of many classes and types and in all theaters of military operations. They were a powerful means for providing fire support for the ground forces and landings and for destruction of individual pockets of resistance and reinforced-concrete pillboxes.

Knowhow acquired from fleet combat operations demonstrated that shipboard anti-aircraft artillery (AAA) was unable to accomplish the air defense mission. The People's Commissar of the VMF Admiral N. G. Kuznetsov in a 25 February 1942 order required an increase in shipboard AAA and an improvement in its quality. This mission was in the main successfully accomplished. Thus, the AAA weapons on all ships in the KBF were upgraded.

Scientists, engineers, and designers placed a great deal of attention on elaboration of instruments for underwater observation. During the war years, 285 "Tamir" sonar stations were installed on ships. Designers continually improved these instruments by building the Tamir-8, Tamir-9, and Tamir-5 (for large ships) and the Tamir-5L (for submarines). Academician A. I. Berg was involved in the elaboration and creation of radar equipment. Academicians Yu. B. Kobzarev, A. N. Shchukin, V. A. Fok, and others participated in this vital work. RUS-1, RUS-2, Redut, Pegmatit, SON-1, SON-2, and SON-3 radars were installed on ships in growing numbers during the war.

During the war years, the ships were equipped with communications gear that was modern for that time and guaranteed the requisite level of command and control for fleet forces under varied operating conditions. Radio communications were continually improved and augmented by new devices. A. I. Berg did a great deal in this regard.

One of the most important trends in the work done by our scientists, designers, and engineers involved the search for ways to handle the danger from mines. It was a question of the fact that, from the very first days of the attack on the Soviet Union, Fascist Germany began to employ mine laying in an attempt to close off the bases of the Red Banner Baltic and the Black Sea Fleets with proximity mines. A great deal of work was done in the fleets to find ways and means to cope with proximity mines. Soviet scientists I. V. Kurchatov and A. P. Aleksandrov were in the collective of specialists attempting to solve this problem. The bases for sweeping acoustical mines were elaborated under the guidance of N. N. Andreyev, corresponding member of the USSR Academy of Sciences. Acoustic sweeps came into the inventory and had been installed on 40 ships by May of 1942.

¹⁰TsVMA Branch, fund 403, file 40304, sheet 63.

Demagnetizing of ships became one measure employed to reduce the danger of being blown up by mines. This was achieved by installing compensating coils through which an electric current passed on the ship. Such devices began to appear on combat vessels in July and August 1941 and coilless demagnetizing began to be used by the end of that year. In all, 237 ships were equipped with demagnetizing devices during the war, including 134 in the KBF, 45 in the ChF, 20 in the TOF, 18 in the SF, 14 in the White Sea Flotilla, five in the Red Banner Amur Flotilla, 22 in the Ladoga Flotilla, and eight in the Caspian Flotilla. There were 43 active and under construction coilless demagnetizing stations in the fleets, including 37 that were self-propelled and six that were fixed.¹¹

Great significance was also attached to repair. During the war years, three battleships, seven cruisers, 15 escorts, 164 submarines, 20 mine-sweepers, and 344 auxiliaries and combat boats underwent capital, emergency restoration, and current warranty repair. They acquired somewhat of a second life at shipbuilding and ship repair plants and then went back on line.

It should be emphasized that the emergency restoration and current warranty repair was carried out in periods that were significantly shorter than during the prewar period. Renovation of the cruiser "Maksim Gor'kiy", which struck a mine during the night of 22 June 1941, at a plant in Leningrad will serve as an example. Its bow had to be rebuilt. A total of 43 days was expended on this labor-intensive work, a period which even in wartime was considered to be a record. This is not an isolated instance. Thus, one plant was tasked with modernizing 26 torpedo boats, including replacement of the planking and framing (frames, stringers, and other components). This was all accomplished in 2 weeks. This would require at least 75 days in peacetime.¹²

During the war years, the collectives at shipbuilding and ship repair plants demonstrated examples of courageous and original solution of engineering problems. Thus, a destroyer which had exploded and which had lost the forward end to frame 44 and had a sagging after end arrived at the Sevastopol' Naval Plant. The complex repair problem was handled in the following way. The bow from a destroyer of the same class that had been raised by EPRON [Expedition for Special Underwater Operations] was used for the end up to frame 18, the end portion from frame 18 to frame 44 was manufactured anew, and the stringer and external planking were replaced in the area of frames 44-46. In order to repair the crack in the stern, it was cut off the center portion, aligned, and again attached to the hull without disassembling the shaft line. The plant completed all dock work in 20 days.

Ship's personnel always participated in the repair and overhaul and a large portion of them where required was transferred to assist the plants.

Thus, thanks to the concern of the Communist Party and Soviet government, to the heroic efforts of the people, the VMF like the Armed Forces as a whole was provided with everything required, especially ships and combat equipment, which qualitatively surpassed enemy ships, weapons, and equipment during the years of the Great Patriotic War. It was replenished with submarines, surface vessels,

¹¹TsVMA Branch, fund 403, file 40304, sheet 51.

¹²Ibid, sheet 32.

and especially with boats for which there was a considerable requirement. Industry even supplied the fleet with a number of ships while Leningrad was being blockaded.

A great deal was done during the war years in the area of refinement and further development of various types of weapons (especially mines, artillery, and rocket launchers). Urgent measures were taken during the first days and weeks of the war to create proximity sweeps, better sonar and radio equipment, and other types of combat equipment.

A great role in shipbuilding development fell to the VMF Shipbuilding Directorate which coordinated the work of the design bureaus and plants on construction of ships and creation of new types of weapons and equipment and, through its representatives, provided them with direct assistance.

The surface vessels and submarines built in our plants during the war years demonstrated their superiority over enemy ships in weapons, survivability, and operational reliability. In the skillful hands of our sailors, they were an important means for achieving victory over the enemy.

An important role in the matter of developing shipbuilding and creating new types of ships, weapons, and instruments fell to our scientists, engineers, and designers. Workers in shipbuilding plants, involved in the All-Union Socialist Competition, did everything possible for the most rapid construction of new combat ships.

The Great Patriotic War vividly demonstrated the enormous, truly inexhaustible capabilities of the socialist system and its superiority over the capitalist system.

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IMPROVING SUBUNIT COMBAT READINESS UNDER CONTEMPORARY CONDITIONS

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[Article by Col S. Alferov: "Improvement of Subunit Combat Readiness During the Postwar Period" published under the heading: "The Great Patriotic War and the Postwar Period"]

[Text] The Communist Party and the Soviet government continually concern themselves about whether the combat readiness of our army and navy is on a level which will insure the decisive rout of any aggressor that attempts to unleash war against our country. ". . . On the combat readiness of the troops," points out L. I. Brezhnev, "like in a focus are concentrated the enormous efforts and material expenditures of the people for equipping the army, consciousness, the combat training and discipline of all servicemen, the art of the command element in troop command and control, and much more. This, in the final analysis, is the crown of combat mastery in peacetime and the key to victory in war."¹ As is evident from what was said, the constant readiness of every military collective to come to the defense of the socialist motherland is the main criterion of its entire life and activity.

The requirement to raise the combat readiness of the troops during the postwar period results from the fact that after World War II imperialism did not alter its anti-Soviet policy. Militaristic forces in the main capitalist states directed all achievements in science and technology in preparation for a new war primarily against the USSR and the countries of socialist cooperation. They continually refined extant and elaborated new means for the armed struggle. These circumstances forced us to always be prepared to repulse possible aggression by the enemy with his employment of any type of weapon.

An attempt is made in this article to bring to light basic ways to improve the combat readiness of subunits [podrazdeleniye] that tie in with weapons and equipment development during the postwar years.

F. Engels underscored that new equipment always "imparts a completely different character and different course to the clash. . . ." ² During the postwar period,

¹L. I. Brezhnev. "Leninskim kursom" [Following Lenin's Course]. Vol 2, Moscow, Politizdat, 1970, p 49.

²K. Marx and F. Engels. Works, Vol 22, p 394.

the level of training of our troops continually increased depending upon the development of weapons and of military art as a whole.

It is known that prior to 1954 conventional means of destruction formed the basis for the might of our army and navy. Therefore, subunit training during that period was in the main based on the experience of the Great Patriotic War. Main attention was placed on increasing the striking and fire power and on the high maneuverability of the troops, that is, on those factors which determined success directly on the field of battle. The highest combat readiness in those years was necessary primarily for the ground forces along the border, aviation units [chast'], and naval forces which might be subjected to the effects of enemy weapons at the very start of a war, if an aggressor unleashes one. They must be the first to absorb his strike and, in so doing, insure the preparation of and movement to the area of combat operations by the requisite resources from deep within the country. This all was explained by the insignificant range of the enemy's land-based means of attack. Prior to arrival in the area where these means could be brought to bear, our troops were threatened only by strikes carried out by enemy aviation.

However, along with accumulation of conventional weapons, several imperialist powers began broad-scale production of nuclear ammunition and means with which to deliver it during the postwar period. The ballistic missiles in their inventory could cover enormous distances in 25-30 minutes and missiles launched from nuclear submarines or aircraft could also reach targets hundreds of kilometers away in just minutes.

In response to preparations by aggressive forces for war, the Soviet Union took the necessary measures to insure the security of its borders. In early 1954, personnel of the Soviet Army and Navy set about studying nuclear weapons and methods of combat operations under conditions whereby they are employed. Prior to that time, the Armed Forces already possessed nuclear weapons of varied yield, including hydrogen bombs, as well as experimental data on the destructive force of the new weapons.³ Nuclear weapons in the form of aerial bombs entered the inventory. Conversion of the Soviet Armed Forces to nuclear missile weapons was completed after 1960.⁴

Missiles are practically invincible due to their great speed, altitude, and range, as well as their high degree of maneuverability. This introduced the capability of conducting combat operations both at the front as well as deep in the rear area. Requirements for combat readiness on the part of every subunit rose sharply in this connection.

The probability of the enemy inflicting nuclear strikes against any installation and at any range dictated a requirement to train the troops to accomplish many newly generated combat missions. In particular, they had to be trained

³"50 let Vooruzhennykh Sil SSSR [50 Years of the Soviet Armed Forces]. Voenizdat, 1968, p 502.

⁴"Istoriya voyn i voyennogo iskusstva [The History of Wars and Military Art]. Voenizdat, 1970, p 466.

to disperse in the shortest possible time to escape from the effects of mass destruction weapons, to rapidly eliminate the consequences of a nuclear attack, to reestablish their combat efficiency, and so on.

It is known that the high technical capabilities of missiles make it possible to inflict nuclear strikes suddenly. Consequently, military operations can begin at any time of the year and day in the event of aggression on the part of our probable enemies. This circumstance generated the requirement to maintain the troops in continual and high combat readiness, that is, reduce to the minimum the seasonality of their training, which was permissible prior to the appearance of nuclear missiles.

Combat operations in a modern war are characterized by special new features and primarily by the rapidity in which events occur. Wars which took place in the past decade demonstrated that the armed forces of any country deployed and brought to combat readiness in short periods of time achieved significant success in the struggle with the enemy. Along with this, a delay in bringing the troops to combat readiness led to huge defeats.

Periods for accomplishment of combat missions are also reduced in a modern war. If during World War I artillery preparation lasted, for example, 6-7 days, then during World War II it was reduced to several hours. It now can last even a shorter time since the combat capabilities of artillery are continually being improved and methods for its employment are being refined. Also, nuclear weapons undoubtedly will permit tempos of combat operations to be significantly increased.

Thus, the factor of time during preparation for combat operations and while subunits are accomplishing their combat missions acquires an enormous significance which cannot be compared with past wars. That is why personnel are required daily to increase their combat readiness, their ability to commence combat operations in an organized manner within the established time period, and the ability to successfully accomplish assigned missions under any type of conditions.

Analysis shows that subunit combat readiness during the postwar period was continually refined and acquired a number of characteristic traits. First, its state began to be evaluated not only based upon the ability of the troops to rapidly muster at the alert and depart within the established time from the disposition points to the assigned areas in readiness for immediate operations, but also based upon the quality of combat mission accomplishment. Combat readiness began to include within it the elements of combat capability of the subunit (the skill of the soldiers, sergeants, and officers to excellently assimilate the weapons and equipment and the drills on conducting modern combat under the most varied conditions).

Secondly, constant vigilance on the part of servicemen, especially those who stand alert, is becoming an ever more important element of combat readiness. For it is these very forces on combat alert that must detect any intrigues on the part of an aggressor in time and insure that the requisite measures are taken. Continual high vigilance is also required to insure that the enemy does not receive information on the state of our combat readiness, disposition,

and weapons. In this connection, it is useful to mention the well-known saying that "bravery takes cities, but vigilance saves them."

Thirdly, an improved material and technical foundation for the training process facilitated improvement in the combat readiness of subunit personnel. Complex combat equipment cannot be studied without simulator models, equipment mock-ups, training displays, special classrooms, and so on.

Good training facilities have been set up in every subunit during the postwar years due to the efforts of commanders, party, and Komsomol organizations. Putting them to reasoned use, troops with varied specialties strived to fully assimilate modern weapons and equipment. They knew that weapons have mainly come to be collective weapons. As a result, this increased the responsibility of every member of a crew or team to efficiently carry out his functional tasks, since mission accomplishment by the entire subunit began to hinge upon the actions of a single person. Thus, errors on the part of a member of a rocket launcher crew in combat can lead to serious consequences. That is why questions concerning raising the mastery of each individual and insuring the coordination of each subunit have become more and more germane. Problems of interchangeability in teams, crews, and sections have come to the forefront. Soldiers, sergeants, and officers have assimilated related specialities so that they can replace a comrade in combat at any moment.

Just as before, the decisive role in refining combat readiness during the postwar period belonged and belongs to subunit commanders and political workers. The conditions of a nuclear war require them to possess exceptionally high moral and combat qualities, a high degree of military and technical culture, organization, and an excellent grasp of their business. Only through having these qualities are they able to train their subordinates well in peacetime and carry out their assigned missions in a combat situation. Lieutenant Colonel B. Pshenichnikov, missile subunit commander, is just such a person. A first-class specialist, he skillfully organizes and conducts lessons with his subordinates. This officer has done everything to insure that his subunit at any time of the year or day is able to complete a march under complex conditions, reach the assigned area in full combat readiness, and accomplish the assigned missions in a model manner.

The demands made on a commander grow with each passing year. He must be able to organize combat in which many subunits from different branches of troops participate. Combat has always been a comprehensive examination of a leader's maturity and mastery. And, these qualities are acquired in field lessons and exercises conducted in a situation which approximates combat. Captain I. Boyko, motorized rifle battalion commander and participant in Exercise "Karpaty" [Carpathians], notes that "the exercise again convinced us of the correctness of the approach we are maintaining in commander's training. The ability to get from the weapons and equipment everything they have to give, to efficiently coordinate with attached subunits, to employ air strikes without delay--this, in my opinion, is the foundation of an officer's tactical maturity."⁵

⁵KRASNAYA ZVEZDA, 1977, 17 July.

The threat of employment of nuclear missiles in war immeasurably increased the significance of servicemen's moral-political indoctrination. Experience from the Soviet Union's Great Patriotic War and from local wars shows that only people capable of overcoming incredible difficulties and prepared to make any sacrifices can count on victory. Commanders, party, and Komsomol organizations continually took this into consideration in their work. They trained personnel for operations under conditions where new types of weapons were employed and taught them not to lose self-control in unexpected situations. In his memoirs, Marshal of the Soviet Union A. I. Yeremenko writes about the enormous effect the employment, for instance, of a new weapon has on a soldier. During the first time our "katyushas" were employed in July 1941 near Orsha, the air was rent by the unusual roar of mines. "Like red-tailed comets, the mines flew forward. Repeated and mighty explosions destroyed hearing and sight due to the mighty thunder and blinding flash. The effect of the simultaneous detonation of 320 mines in a 20-second period exceeded all expectations. The enemy soldiers ran off panic stricken. Our soldiers located on the forward edge in proximity to the explosions also backed off."⁶

Timely training of personnel for the severe tests of war became a vital task in improving troop combat readiness during the postwar period. Appearance of nuclear missiles meant that no longer could one count on the troops receiving moral tempering during combat, as was previously the case. The great range of missiles created a threat of troops being destroyed by enemy nuclear weapons at any point on the globe. Therefore, demonstration and study of the combat capabilities of the new weapons types and ways to defend against them acquired ever greater significance in subunit training. Commanders strived in every lesson to create a situation which would facilitate increasing the moral tempering of personnel and their ability to operate under conditions in which any means of destruction are employed.

Missile launches, field firing of guns and tanks, and application of bombing strikes in direct proximity to the troops were widely practiced during tactical exercises. Lessons on driving tanks under water and on ice, parachute jumps, overcoming contaminated zones, areas of destruction, mine fields, and a fire-assault course were conducted regularly. During exercises, various situations were created in which people were impelled to rapidly analyze a situation and react to it. They required high exertion of spiritual and physical efforts and a quest for new, more effective methods of accomplishing assigned tasks. The operations of Captain R. Rallo's engineer subunit are one of many examples of the complexity of mission accomplishment at exercises. As the equipment for crossing a water barrier was being prepared, it was learned that not one of the highway bridge designs on hand could be used on this river. However, subunit personnel with great enthusiasm and maximum exertion of effort were able under field conditions to elaborate and adapt to the terrain a new bridge design and install it, with a resultant 25 percent improvement in norm completion time.

An important link in improvement of high combat readiness during the postwar period was the firm military discipline of subunit personnel, without which successes in peacetime combat and political training are unthinkable and victory in combat is impossible. Knowhow in leading subunits confirmed that combat readiness is found to be at the requisite level in those places where they

⁶KOMMUNIST VOORUZHENNYKH SIL, 1971, No 21, p 24.

do not approach the problem of strengthening military discipline formally, but look upon it systematically and in a goal-oriented manner, where they do not overlook a single fact of deviation from statutes found in the oath and in regulations. Universal maintenance of internal order in a subunit and efficient accomplishment of regulation requirements on standing combat alert and guard duty significantly facilitated an increase in subunit combat readiness.

Socialist competition greatly facilitated improvement in troop combat readiness. During the postwar period it was broadly unfurled in all units and subunits, became the norm of their life, and acquired a mass character. Competition was conducted on the basis of our party's requirements for its organization and on the instructions of V. I. Lenin. "Socialism," noted V. I. Lenin, "not only does not diminish competition, but, on the contrary, for the first time creates the possibility to employ it really widely, really on a mass scale, to actually draw a majority of the workers into the arena of such work where they can come to the fore, employ their abilities, and discover the talents which are present in the people--an untapped spring. . . ."7

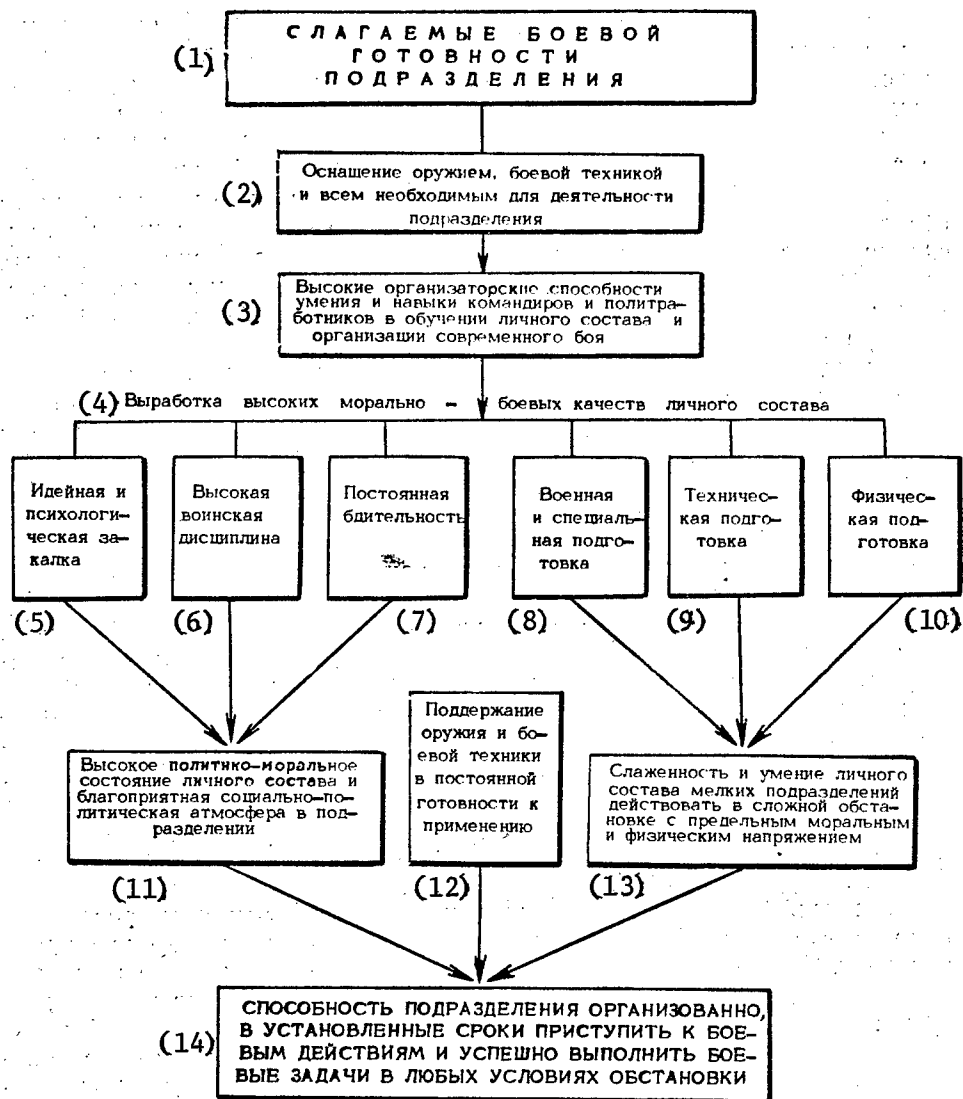
Skillfully organized competition makes it possible to raise the quality of combat and political training of personnel, improve the training process, vitalize the activities of every troop, and bring his capabilities to light. Competition makes it possible to create in the subunit a business-like atmosphere in which soldiers, sergeants, and officers can demonstrate creativity and initiative.

Competition on the eve of the 60th anniversary of the Soviet Army and Navy has taken on a broad scope. This is clearly evinced by the example of Major Yu. Shaposhnikov's aviation squadron. Having made high pledges, subunit personnel are successfully accomplishing them and are achieving new successes in combat and political training. All pilots now already possess a high class rating. The squadron commander skillfully organizes and guides the competition and directs it towards accomplishment of the vital missions with which the collective is tasked. He considers that individual work with each person is most important and studies all of the individual's capabilities and how best to employ them to get maximum effectiveness. The major places special attention to generalization and implementation of leading knowhow, which permits achieving a high level of subordinates' training.

Socialist competition continues to serve as a powerful means for the communist indoctrination of the troops and their mobilization for achievement of new heights in combat and political training and for a further strengthening of the might of our Armed Forces.

Thus, troop combat readiness encompasses all aspects of the multifaceted activities of every subunit and includes the results of the unity of military training and the moral-political and moral indoctrination of the troops. Additionally, fulfillment of the principle of the unity of subunit training and simultaneous maintenance of them in the requisite combat readiness has now acquired invaluable significance. Its basic components are shown in the diagram. It is

⁷V. I. Lenin. Complete Collected Works, Vol 35, p 195.



KEY:

- (1) Components of subunit combat readiness
- (2) Equipping with weapons, combat equipment, and everything required for subunit operations
- (3) High organizational capabilities, abilities, and skills of commanders and political workers in training personnel and organizing modern combat
- (4) Development of high moral and combat qualities in personnel
- (5) Ideological and psychological tempering
- (6) High military discipline
- (7) Constant vigilance
- (8) Military and special training
- (9) Technical training
- (10) Physical training

[Key continued on following page]

- (11) High political-moral state of the personnel and favorable sociopolitical atmosphere in the subunit
- (12) Maintenance of weapons and combat equipment in constant readiness for employment
- (13) Coordination and ability of personnel in small subunits to operate in a complex situation with maximum moral and physical stress
- (14) Capability of a subunit to initiate combat operations in an organized manner within the established periods and successfully accomplish combat missions under any conditions of the situation

evident from the diagram that all the components of combat readiness are interconnected and consequently must be accomplished as a complex. No element of combat readiness can be examined individually without touching upon the other elements. Each plays its own special role and, without it, it is impossible to fully accomplish the overall mission of subunit training so that subunits "possess a high degree of organization and discipline, accomplish in a model manner the missions assigned to them by the party, the government, and the people, and are prepared at any moment to give a crushing rebuff to imperialist aggressors."⁸

It should be noted in conclusion that during the postwar period an increase in combat readiness was the main goal in the life and activities of all military collectives. It was accomplished by the stubborn and intense training of all personnel and by a continual improvement in commander's training and in the work of subunit party and Komsomol organizations.

As a result of many years of experience, distinct trends in the training of the troops in subunits and criteria for evaluation of their combat readiness were continually developed. One of the basic elements for increasing combat readiness was training personnel to be able to always maintain equipment and weapons in good repair and to skillfully employ them in war. In connection with the fact that conducting combat continues to get more complex, personnel were trained for operations in a dynamic, varied, and rapidly-changing situation which requires high moral spirit and great psychological tempering. This factor has become especially necessary under combat conditions where nuclear weapons are employed. High field (flying, naval) training of every serviceman in particular and of the subunit as a whole became exceptionally important in further increasing combat readiness. Main attention here is placed on training troops for skillful operations on the field of battle with full exertion of spiritual and physical efforts. Experience also showed that maintenance of firm military discipline and proper procedures, as well as organization of viable socialist competition in subunits were important components of their combat readiness.

In their activities involving improvement in combat readiness, commanders, political workers, party and Komsomol organizations, and all personnel in every subunit unswervingly fulfilled V. I. Lenin's requirements that "we must preserve military readiness in any case. Not relying on strikes already inflicted on imperialism, we must at all cost maintain our Red Army in full combat readiness. . . ."⁹

⁸"Programma KPSS" [CPSU Program]. Moscow, Politizdat, 1976, p 111.

⁹V. I. Lenin. Complete Collected Works, Vol 42, p 130.

The troops of our army and navy, carrying out the tasks of the 25th CPSU Congress and of the CC CPSU Plenums, at the present time are unswervingly improving the combat might of our subunits, vigilantly monitor the intrigues of the enemy, and are prepared at any moment to give a crushing rebuff to an aggressor, wherever he may appear.

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AVIATION SCHOOL EMPHASIZES PROBLEM-SOLVING AS TRAINING METHOD

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 12, Dec 77 signed to press
31 Oct 77 p 22

[Article by Engr-Maj Ye. Abrashin, candidate of technical sciences: "The Cadets Solve the Problems"]

[Text] More and more developed and competent youth are arriving in our schools with each passing year. Of course, the tasks in training flight personnel under contemporary conditions are also becoming more complicated. The requirements for aerial ability and the moral-political and psychological tempering of the flyers are increasing. And this, in turn, forces the improvement of the training and educational process.

One of the directions in improving its quality and increasing its effectiveness is problem instruction. As practice has shown, it serves as a reliable means for the development of mental forces, independence, and creative thinking by the cadets. We are speaking about the training process in the course of which the trainee is drawn into the solution of problems. In other words, he masters the knowledge obtained as a result of the creation and solution of problem situations creatively. The teacher does not impart the sum of knowledge in ready form but assigns a task to the trainees, stimulates their interest, and induces them to seek ways and means for its solution.

The high rates of scientific-technical progress and the constantly increasing flow of information have made information instruction in which the main thing is the accumulation of a certain volume of knowledge, abilities, and skills relatively ineffective. The situation is improving somewhat with the introduction of programmed instruction. However, even this is not correcting the serious flaw in informational instruction which consists of the fact that the activity of the trainees is not always attained in its process, conditions are not created for the creative mastery of knowledge, and independence in thought and actions is not instilled. But you see, it is these very qualities which are so necessary for the future pilots and which should be developed in them while they are still within the walls of the school.

As is known, problem instruction is realized in the form of problem presentation, selective search activity, and independent research work. Let us examine each of the three forms.

Problem presentation is a lecture which should arouse thought. In the course of it the cadet does not simply record formulas, drawings, and graphs, but he also maintains synopses of the lecture, answers the lecturer's questions, asks questions, participates in the discussion, and formulates independent conclusions.

From a passive teaching element, the lecture becomes active. How? The lecture includes certain historical information and how important theoretical generalizations are made from many experiments is shown. At the end of the lecture, the teacher assigns problem questions which cause interest in the next lecture.

The teachers of our department of aviation and electronic equipment include in their lectures brief dialogues with the cadets. This increases the activity of the students and forces them to participate in the solution of problems, creating a creative atmosphere in the audience.

Thus, for example, in the presentation of the principle of automatic regulation of aircraft generator voltage the cadets, together with the teacher, investigate ways to maintain generator voltage with its various operating modes. The clear relation between the generator voltage and the parameters which influence its value was not given. This problem was solved with the aid of successive questions: "What is the result, let us assume, of connecting in a large load? Is the equilibrium of forces which act on a carbon column disrupted? If yes, then why? What is the result of an increase in the resistance of the carbon column?"--and so forth. As a result, the cadets themselves came to the conclusion that the generator voltage is increased to the stabilization level.

In presenting programmed material, it is sometimes useful to call the attention of the cadets to some of the debatable aspects and have them select one position or another. Here, as a rule, interesting discussions flare up. I recall the question of the expediency of using an alternating current as the basic current on a fighter aircraft and how it caused hot disputes. Rather mature considerations were expressed in them.

Of course, the teacher is required to have a good methodological style and he must present the material or part of it in the form of problem questions and tasks whose solution will contribute to the creative assimilation of knowledge. Not ready-made truths, rules, and formulas, but the movement of thought from the problem to the solution through obstacles of every possible type--this, it is believed, should be the content of contemporary lectures.

Selective-search activity of the cadets is accomplished in the course of practical, group, and laboratory lessons. Inevitably, some of the independent work here is reproductive, but it provides the opportunity to work out a specific procedure and acquire skills and abilities. The other part of the

lessons has a creative nature. In preparing for them, the teacher plans questions with the aid of which the student can be forced to ponder over the essence of concepts and the physics of phenomena and processes. Elements which further independent thinking are introduced into the traditional scheme of such lessons. In our opinion, it is not necessary to pose questions the answer to which may prompt only the cadet's memory but not his understanding of the essence. From the viewpoint of problem instruction, it is more correct to bring him up to a conclusion himself, posing a chain of questions.

Great possibilities for the development of creativity are contained in laboratory work. However, they often are relatively ineffective. And here is why. In using instructions, the cadet mechanically accomplishes the necessary manipulations, repeating the actions accomplished before him, the result of which is known ahead of time and predetermined. The trainee simply finds himself in the role of a checker. We, however, see that each laboratory lesson becomes an experiment for the cadets in the course of which the interconnection between theory and practice would be clearly caught and that the work is keenly felt, realized, and purposeful. Naturally, questions should be selected in such a manner that the answer to them comes gradually.

Programmed instruction possesses great possibilities for selective-search work. However, they are disclosed only in the case where the questions and answers do not have the nature of a statement but precede the information which the cadet should study. Experience in the use of problem-programmed instruction shows that it contributes to the development of the cadets' independence and has a favorable influence on the creative assimilation of knowledge. And what they find themselves remains in the memory for a long time.

Research activity presumes a problem and the sequential accomplishment of all investigative actions which are necessary for its solution. It can be accomplished during an experiment in the laboratory, when working out a report, when accomplishing a course assignment, or when studying some problem in a military-science society. Where possible, the teachers assign research tasks to the cadets in the solution of which they obtain both new knowledge and results having practical scientific significance. Most often, the cadets participate in a problem being worked out by the department in that portion which they can accomplish. Of course, the teachers are required to disclose problem tasks in time which are within the capabilities of the cadets for independent investigations and to select the subject matter for reports in a well thought out manner. It is important to attach a realistic, practical direction to scientific work which, unquestionably, will increase the effectiveness of instruction.

Despite the fact that problem instruction attains its goal with maximum independence of the trainee, this does not mean that the teacher remains aloof. The success of the instruction depends on him, and primarily on him. He must find the problem and create a problem situation, know or find the most effective method for its solution, assist the cadet in the analysis of the conditions, consult with him in the course of adopting a decision, analyze mistakes, and organize collective discussion of the problem. The main thing here is a

clear idea of what training material must be mastered as a result of the resolution of the problem situation.

The problem path for transmitting knowledge requires greater expenditures of time than the imparting of ready-made information. Therefore, the judicious combination of the forms and methods of instruction which have been tested by life with the problem method can provide a good result. However, it should always be remembered that the lessons can be well equipped technically, but if debatable questions are not discussed on them and if incorrect answers are rejected but not refuted in the course of argument, the ability to seek proof and find answers to difficult tasks independently is hardly molded. The birth of an ideologically tempered, deeply thinking, creatively active personality in the course of cadet training is the call of the times.

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TRAINING OF AVIATION MAINTENANCE PERSONNEL DESCRIBED

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 12, Dec 77 signed to press
31 Oct 77 pp 30-31

[Article by Engr-Col B. Zhukov: "Mobile Group"]

[Text] The new training year began. The men of the TECh [technical maintenance unit] where the chief is Engineer-Major L. Martynenko, just as all specialists of the IAS [Engineer Aviation Service] of the regiment, have been improving their work methods from the first days of the competition. Here, they are widely utilizing the experience accumulated in the year of the 60th anniversary of the Great October.

Even in the last training year, network schedules were successfully employed in this unit by groups for servicing the squadrons' REO [electronic equipment] and technological schedules were successfully employed by the group which performs prescribed maintenance, and the coordination of the specialists at the work sites was clearly organized by place, times, and purpose.

However, our engineers continued to look for reserves to increase effectiveness and quality. They noted that the load of the specialists differs even under the most optimum conditions. In some measure, this increased the probability of the appearance of errors in the actions of those men who work most intensely.

And what happened when a defect was discovered? Because of it, the network (technological) schedule was disrupted at times. This means that certain preconditions were created for an increase in the times to prepare aviation equipment for flights and for a decrease in the quality of equipment checks and preventive measures. Sometimes the observance of the schedule was affected by an unexpectedly arising requirement to accomplish a large volume of rather complex and important operations in one system or another.

The supervisors of the unit's IAS timed the work of the REO specialists and came to the conclusion concerning the expediency of establishing an ad hoc repair group. Its composition included those who are not connected with the strict cyclic nature of preventive measures on electronic equipment.

The engineers reasoned correctly. When it is necessary, let us say, to eliminate a complex malfunction in a system quickly, the technicians and mechanics of the groups for servicing and prescribed maintenance work continue to be engaged according to their plans. They know that the repair group will be able to do this themselves and the quality will not suffer while the times for checks and preventive maintenance will not be increased.

But it was also obvious that the repair of radar equipment can be entrusted only to men who are experienced in this regard. The ad hoc group was made up of the best specialists. It included Senior Lieutenant of Technical Service A. Osinin, Warrant Officer [praporshchik] A. Bondarenko, and Privates V. Kur'yanov and V. Sarin. And the repairmen were headed first by officer A. Korablev (he completed the higher engineer-aviation school by correspondence and was transferred to a new place of service) and then by the military master technician, officer L. Leont'yev, a demanding chief.

Naturally, the question was posed at once: to whom should the new group be subordinate? They decided--to the chief of the technical maintenance unit, Engineer-Major Martynenko. But overall supervision of the repair group's work was assigned to the unit engineer for radio-engineering equipment for execution.

Everything was approved by the commander's order. The activity of the new collective was attentively followed in the unit. Each success was noticed, and any failure (and, of course, there were some at first) was analyzed in detail. Operations were timed, the quality of labor was checked, and the most acceptable version for use of the ad hoc group's specialists was sought.

A comprehensive analysis of accumulated experience showed that specialization of the officer-technicians and mechanics provides the opportunity to utilize them not only for their direct purpose, but also to involve them in the accomplishment of other most labor-intensive operations to include special-purpose checks and inspections of the aircraft radio equipment on the parking places of the squadrons.

The repairmen are also rendering tangible assistance to the group for prescribed maintenance. They accomplish labor-intensive assembly and disassembly operations and the most difficult checks of such parameters as the sensitivity of receivers, the matching of the radar sight's operation with other equipment on the fighter, and so forth.

A special vehicle was allotted to the ad hoc repair group whose composition includes an APA [airport starter unit] and the necessary checking instruments and meters. Consequently, the repairmen could work both in the laboratory of the technical maintenance unit and directly on the missile carrier in a tent which is set up especially for this purpose. Thus, the flexibility and mobility in using the specialists is increased and, under certain conditions, this has decisive significance in the successful accomplishment of missions.

The activity of the ad hoc repair group is organized, as a rule, on the basis of a monthly plan and the comments of the flight and technical personnel. The chief receives the mission for the day the day before (at the same time, it is given to the deputy squadron commander for IAS and this subunit's chief of the servicing group). It should be noted that all work on preventive maintenance and repair is always accomplished only with the personal permission of the deputy regimental commander for engineer aviation service.

Usually, all personnel of the group learn about the assignment in the morning. The necessary instruments and equipment are prepared, after which the specialists travel out to the location. They inspect the equipment, check the functioning of the systems under current, analyze the data from the means for objective checking, and talk with the pilots, technicians, and mechanics. On the basis of all this information, they decide how to operate and in what sequence.

A unit which has been removed is delivered to the special vehicle or directly to the laboratory of the TECh. Here, the malfunction is eliminated and the unit is again emplaced. After this, the correctness of assembly, fastening, and crimping of the connecting cables is thoroughly checked and the necessary adjustments under current are accomplished.

The ad hoc repair group conducts the special-purpose inspections and checks of the condition of the most complex equipment, being guided by the planning schedule approved by the unit commander. Its points are implemented in the times which are usually the result of missions facing the regiment. Once, for example, the men worked on this assignment for 2 months but, in return, not one of the pilots complained about the functioning of the checked systems in the air.

A strict check of the specialists' activity is implemented. Here, the unit engineer for radio-engineering equipment simultaneously consults with the technicians and mechanics on procedures to look for and eliminate defects. If necessary, he joins in the work himself and, in the course of the work, he explains the physical essence of the processes which are taking place in the circuits and units. Thus, checking is combined with training.

Thematic drills are conducted with the personnel of the group to increase knowledge and improve skills. First, the supervisor tells and shows how one operation or another is accomplished. Then all the men accomplish it independently. Thus, on one of the drills the engineer explained how the signals for one-time commands are converted in various stages, after which he showed on the scope of the oscillograph the shape of the signals and their parameters at different check points of the circuit. The chief of the group, technicians, and mechanics determined them and adjusted them independently.

In the ad hoc group, great attention is devoted to the maintenance of the corresponding documentation. And this also, in a certain measure, contributes to improving the quality of the equipment's servicing and repair. For example,

the log of malfunctions served as a good aid for work here. It is mandatory that the following be recorded in it: when the malfunction was discovered, the reason for its appearance, external signs and the nature of its manifestation, the method of elimination, and the date when this was done. Labor expenditures and the name of the specialist who did the work are indicated. The log is kept by airplane so that it is easier to analyze the functioning of electronic equipment. The engineer regularly sees to it that the external signs of defects' appearance and their causes are recorded in as much detail as possible. And it is not by chance that the analysis of these data permit working out effective measures to prevent malfunctions and to plan the necessary special-purpose checks of the electronic equipment ahead of time. On finding some deviation, the group's specialists inspect the record first: was there something similar earlier? This helps to reduce the time for putting aviation equipment into service.

Several accessories and devices have been created and introduced in the harmonious collective of repairmen which permitted reducing labor expenditures in restoring the working capacity of electronic equipment or in the course of its special-purpose checks. For example, officer Osinin and Warrant Officer Bondarenko created an accessory for the repair and adjustment of the transmitting unit.

In order to improve the quality of preventive maintenance, the aviators have prepared special displays. These show vividly the nature of errors of the flight personnel in operating the aircraft's REO. They contain drawings and photographs of incorrect and correct actions by the specialists of the servicing or prescribed maintenance groups, and they provide descriptions of the reasons for defects and their external signs, possible consequences, and methods to eliminate them as well as measures to prevent such phenomena. These aids are a good help for putting young specialists into formation.

Several changes have now taken place in the repair group. Privates Kur'yanov and Sarin have been released to the reserve and other servicemen have taken their place. The newcomers must be trained. The search for the most effective methods and procedures in working to maintain the aviation equipment in constant combat readiness is also continuing.

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AIR BASE MAINTENANCE IN WINTER DESCRIBED

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 12, Dec 77 signed to press
31 Oct 77 p 32

[Article by Engr-Col V. Stepanov: "A Snowstorm Occurred At Night"]

[Text] The preparation of airfields for flights at any time of the year is a difficult and many-faceted process. Men of various specialties take part in it. Especially great attention is required by care of the flying fields under winter conditions. If timely measures are not adopted, then temperature drops, precipitation in the form of snow and sleet, and formations of glaze ice may have an adverse effect on the operational condition of the runways, taxi strips, and hardstands and may even put them out of operation for a long time.

For the correct estimate of the situation which has developed and for the adoption and implementation of the most expedient decisions for the maintenance of the airfields in constant readiness for flights, it is necessary to have good knowledge of the nature of synoptic factors affecting the labor intensity of operations in the winter period. During these months, the climatic conditions of the Soviet Union's territory are rather varied. The thickness of the snow may differ on the very same terrain. Thus, for example, on the air strips which have a smooth surface the basic mass of the snow is blown from the runways with strong air currents which are stable in direction and is concentrated in the zones of airplane (helicopter) parking areas.

For the correct distribution of machine resources of the airfield clearing equipment, it is useful to know how long the snow periods are. The number of days with a stable snow cover in various regions of our country fluctuates extremely greatly. In the north, they number up to 260 days or more, in the central zone--up to 200 days, and in the southern regions--only up to 40 days. Observations over many years have established that the snow in the northern part of the USSR lays firmly on the average on 1 October, in the central regions--on 21 November, and in the south, on 21 December and even later. (And the times for its disappearance fluctuates from 11 February in the southern latitudes to 1 July in the northern latitudes).

The icing of concrete surfaces is especially dangerous in the winter. Glaze ice is formed most often at temperatures from 0 to $\pm 2^{\circ}\text{C}$. The mean recurrence of glaze-ice situations in the European part of the USSR is up to 35 days per year. Their repetition frequency constantly decreases from the southwest toward the northeast and east. Glaze ice is observed more than six times per year in the southern European part of the country. However, in these very regions individual places are subjected to icing up to 18 times per year.

It should be stressed that the recurrence of glaze ice also depends on the altitude of the terrain where the airfield is located. Its great frequency is noted in regions located at altitudes of 250 meters and higher above sea level. In the Asiatic part of the USSR such phenomena are rarer, and in individual areas of Eastern Siberia, no more frequent than 2 days per year.

These and other climatic data are utilized in the determination and creation of required reserves of fuel and materials and in the planning and conduct of priority operations for the maintenance of flying fields in an operational condition during the entire winter period.

In the subunit commanded by officer A. Tarabanov, a specially created brigade repaired individual slabs on the runways and taxi strips, drainage systems, airfield buildings, and objects. And in the subunit commanded by officer V. Shantarenkov, the major overhaul of airfield-maintenance machines was planned ahead of time. Equipment which had exhausted its established service life was sent to the plant. It was returned from the plant in complete readiness by the first snowfalls. Local repairs also took place. Several snow scrapers and heat engines were repaired by Privates I. Borodun and V. Zhurat. And Private Ye. Groshev conducted prescribed and preventive maintenance and prepared the emergency braking unit for winter operation. The brushes of the combined street sprinkling and washing machines were restored here on a bench made by the skilled workers.

In another collective, Junior Sergeant N. Bogomolov and Private S. Ivanov prepared the heat engines expertly, and the rotary-worm snow-removing machine and the KPM-64 sprinkling and washing machine were expertly prepared by Privates V. Zotov and Yu. Ryzhikh.

In accordance with the plan for the winter maintenance of the airfield and on the basis of consideration of the area's climatic data for many years, several schemes for organizing the work were created in the subunit unit commanded by Yu. Turovtsev. They include calculations of the necessary quantity of mechanized equipment to prepare the airfield after snowfalls of various thicknesses and the icing of the artificial surfaces. Each of them was given a practical test ahead of time on special lessons. And this provided a perfect result.

During one of the snowfalls, the depth of the snow reached 12 centimeters while the density was 0.2 grams per cubic meter. The wind blew across the strips with a velocity of 6 meters per second. In accordance with the standard scheme for preparing the runways, the necessary number of KPM machines and rotary-screw snow-removal machines were allocated. The KPM began the removal

of the snow with circular passes from a longitudinal axis which had been displaced counter to the wind. Then the rotary-worm snow-removing machines went into action. All work was completed at the established time.

To prevent glaze ice, it is very important to prevent the accumulation of water and wet snow on the runways, especially with a drop in the air temperature. And for this, there is a necessity for constant communication with the weather service which will warn the airfield subunit in good time concerning changes in synoptic conditions.

But if, nevertheless, preventive measures did not succeed in preventing the icing of artificial surfaces, the heat engines join in the work. A refuelling truck and airport starter unit are located not far from the place of their work. This increases the efficiency of refuelling and starting the engines.

It should be seen that the drivers of the heat engines have properly mastered the rules for working on them when removing ice from the runways and safety measures. Depending on the thickness of the ice and the air temperature, the speed of the column of heat engines should not exceed 1-2 kilometers per hour. And with temperatures close to 0°C, it is increased to 3-5 kilometers per hour or more. But it should always be remembered that they must not stop with the operating engine close to the seams of the surfaces. This can lead to their melting and being blown out.

It is also necessary to envision the men's organization of the work. Special premises should be equipped in the subunits for the personnel to rest in and, first of all, the drivers. The oil and water heater and other auxiliary equipment which facilitates the operation of the equipment should be operating. It is important to provide the men with warm clothing and additional food.

In the subunit where officer N. Chekunov serves as well as in many others, a special chemical reagent has been employed successfully for several years already to prevent glaze ice and combat it. This was preceded by important preparatory work. Here, they were concerned ahead of time about mechanized equipment for pulverizing the reagent, loading it, and scattering it over the runways. They set up a good warehouse and trained the personnel in methods for working with the reagent and equipment. For example, prior to each use trailer spreaders were adjusted depending on the thickness of the ice and the air temperature so that the quantity of the reagent to be distributed corresponds precisely to the norm. Thanks to the high effectiveness in employing the chemical reagent, the time to eliminate the icing of the runways was considerably reduced and the consumption of motor potential of the heat engines was reduced. The readiness of the airfield for flights and their safety were increased.

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AIRCRAFT MAINTENANCE FOR WINTER OPERATIONS DISCUSSED

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 12, Dec 77 signed to press
31 Oct 77 p 33

[Article by Engr-Col L. Kudryashov: "Ice on the Skin"]

[Text] Winter is one of the most difficult periods for the operation of aviation equipment. At low temperatures, icing is especially dangerous for aircraft. In the air, it may lead to destruction of the airplane's (helicopter's) streamline, a reduction in speed, an increase in drag, a drop in the revolutions and thrust of the power plant, engine self-cutoff, damage to the compressor blades, an increase in the temperature of the gases.... These phenomena and failures can be prevented only in the case where the specialists of the engineer aviation service are exceptionally attentive to the performance of their duties in preparing the airplanes or helicopters for flights, precisely observe all the requirements set forth in the appropriate documents, and competently maintain systems intended for the protection of aviation equipment against the effects of the environment.

What should receive attention in checking the condition, for example, of the liquid de-icing system?

First of all, the check should be conducted with the tank completely filled. The system is put into the operating state for 1-1.5 seconds. During this time, the fluid should appear in all the openings of the header. If this does not occur on some section, it is necessary to clean out all the dry exits of the system with a copper wire.

The next stage in preparing the system is checking the air-tightness of the piping joints and the absence of moisture in the main air line. This is best done with an air pressure of three kilograms per square centimeter. It is recommended that the fullness of the tank be checked again, in the course of preflight preparation.

Maintenance of the air de-icing system also has its special features. Just as in the liquid system, it is necessary constantly to follow the air-tightness of the piping. In the winter, special significance is acquired by observing

prescribed periods for inspecting the mechanisms which control the mainline flaps, outlet tips, and blow-out channels.

The electrical wiring and its fastening require additional checking. The check valves and stopcocks are thoroughly checked--all this can freeze at low temperatures in case water gets into them.

In the winter, special care is also required by the surface of the aircraft for the formation of ice may occur not only in the air, but also on the ground. Strict observance of existing rules for covering aviation equipment with covers ensures the effective protection of the skin against freezing over.

But if, despite the measures which have been adopted, ice formed nevertheless, it is removed using heat engines or special heaters of the MP-85 and MP-300 type.

The use of water which is inert to lacquers and paints is not excluded either to clean the ice from the airplane. After heating to 50-60°C, the water is fed under a pressure of 1.5-2 atmospheres to the surface of the fuselage which is coated with ice, and then to the wings and stabilizer. Next, the specialists take dry rags and remove the moisture thoroughly. However, it must be kept in mind that with an air temperature below -5°C, especially in windy weather, water crystallizes quickly. This is dangerous if it lands in the joints of the elevator suspension, ailerons, and so forth.

The employment of solutions of fluids which are stable to low temperatures provides the greatest effect in cleaning ice from the skin. Among them are ethyl and isopropyl alcohol, ethylene glycol, glycerine, and others. But they must first be heated to a temperature of 50-60°C.

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CIVIL DEFENSE TRAINING ACTIVITIES

Publicizing CD Training

Moscow VOYENNYYE ZNANIYA in Russian No 12, Dec 77 signed to press 9 Nov 77
pp 20-21

[Article by Col V. Kondrashin, deputy CD chief of staff of Moscow Oblast for political affairs: "In Contact with the Cultural Institutions"]

[Text] Establishing in the awareness of the workers, and primarily of the younger generation, the ideas of Soviet patriotism and proletarian internationalism, pride for the homeland of October and a readiness to come to the defense of the victories of socialism has been and remains one of the most important tasks of the party.

In being guided by the decisions of the 25th CPSU Congress and the subsequent Plenums of the CPSU Central Committee and by the provisions of the new USSR Constitution, the cultural and educational institutions of Moscow Oblast, under the leadership of the party organizations and in close contact with the CD staffs, the trade unions, the Komsomol, the DOSAAF and other public organizations, are doing significant work in the area of military patriotic indoctrination and propagandizing CD among the population.

The annual plan for party political work and the propagandizing of CD among the population is approved by the first secretary of the CPSU obkom and by the chairman of the executive committee of the Moscow Oblast Soviet. On the basis of it the cultural administration draws up its own work plan for propagandizing CD. During the year of the 60th anniversary of Great October, the main attention of the cultural institutions was focused on improving the quality and effectiveness of CD propaganda, and the greatest possible providing of help to the CD bodies in the practical instruction of the population and the indoctrinating of high moral-political and psychological strength.

But plans, certainly, are merely a guide to action. In order that they be carried out on a high ideological level, fully and at the established time, the oblast CD staff and the cultural administration organized effective control. One of the forms of control was joint comprehensive checks, trips to

the national economic installations and to the cultural institutions of the towns and rayons, and the listening to reports by leaders of cultural institutions at city (rayon) meetings (seminars) held by the cultural departments. The state of CD propaganda in the cultural institutions of a town (rayon) was also examined periodically at sessions of the board of the cultural administration and to which they also invited representatives of the oblast CD staff.

The propagandizing of civil defense picked up noticeably with the review competition approved by the party obkom, the oblast executive committee and the oblast trade union council for the best organization of work in the area of military patriotic indoctrination of the workers and the propagandizing of CD in the cultural and educational institutions of the oblast in honor of the 60th anniversary of Great October and the 60th anniversary of the Soviet Armed Forces. The contest conditions were approved, an oblast commission was formed to sum up its results, and money was allocated to commend the winners.

For example, here are how things are organized in the town of Khimki. There they have set up a special commission for summing up the results of the competition. The cultural and educational institutions of the town conduct extensive and skilled propagandizing of the decisions of the 25th CPSU Congress aimed at further strengthening the economic and defense might of the USSR, and the greatest possible improvement in the military patriotic indoctrination in the glorious traditions of the Soviet Armed Forces and USSR Civil Defense. The town libraries, the Rodina Palace of Culture, the Park of Culture and Rest imeni Tolstoy, the House of Culture, the clubs and vacation homes of Khimkinskiy Rayon participated in the competition. In propagandizing CD they use diverse forms of oral and visual agitation, including: Lectures, reports, talks, special subject evenings, film festivals, and so forth. During Civil Defense Day the Park of Culture and Rest imeni Tolstoy held a pass in review of the formations, competitions of the medical teams and rescue groups were held, and special exhibits, meetings with veterans and outstanding persons in CD, and an exhibit sale of CD books were organized. Stands were made for "Everyone Should Know and Be Able to Do This." Book exhibits were located in the park library.

In the summer in the town Ogonek Pioneer Camp which operated on the territory of the same park, talks, contests and competitions in CD were held regularly. Meetings were organized with veterans and outstanding men in CD.

Recently a seminar was conducted in an interesting and instructive manner for the library workers of Khimkinskiy Rayon where they thoroughly discussed the questions of propagandizing CD. At the seminar consultation was given on the subject: "The Library and Civil Defense." The libraries regularly organize special exhibits on "USSR Civil Defense," and each month there are reviews of the journal VOYENNYE ZNANIYA [Military Knowledge].

The cultural and educational institutions of Zagorsk are working equally fruitfully. We should particularly note the coworkers of the Palace of

Culture imeni Yu. A. Gagarin. This year they conducted a special evening, a film festival, an oral journal and contest for CD, a question and answer evening, and a meeting with the veterans and outstanding persons in CD; they also organized a photographic exhibit on CD.

However, as practice shows, skilled propagandizing of CD by the cultural institutions depends largely upon how competent the workers of these institutions are on these questions. For this reason, in addition to the exercises in the 20-hour program, on the basis of the oblast or city CD courses, we periodically hold 2- or 3-day courses with the directors of the city and rayon houses, palaces and parks of culture.

The workers have been provided great help on the spot by the recommendations for propagandizing CD among the population as prepared by the USSR Ministry of Culture, the Department for the Propagandizing of USSR CD and the Military Department of the USSR State Library imeni V. I. Lenin.

The cultural and educational institutions have taken an active part in the civil defense week held in the oblast. Everywhere there have been film festivals of CD films, reader conferences and special evenings. In the parks and palaces of culture in Kaliningrad, Kolomna, Lyubertsy, Podol'sk, Serpukhov, Shatura, Khimki and in other towns, evenings have been held devoted to civil defense. In this period alone, lecturers from the Znaniye [Knowledge] Society gave and conducted more than 2,000 lectures and talks on CD in the cultural institutions.

Film lectures have become an effective means for CD propaganda. At present around 250 of them are found in the oblast. For example, a film lecture series is operating successfully under the educational office of the Lyubertsy Palace of Culture under the motto "Civil Defense--A National Concern." In Pavlovo-Posadskiy Rayon, such film lecture series have been organized at many rural clubs, and in Zagorskiy Rayon they are active in 18 rural palaces of culture.

According to the plans of the cultural department and the movie network directorate of Ruzskiy Rayon, each movie point (rural club and school) has a quota for the showing of CD films. Film festivals are held under the motto "Each Person Should Know and Be Able To Do This." At the Istra House of Culture, there is the Prometey [Prometheus] young soldier's club in which the inductees are given lectures on civil defense.

The Podol'sk Oktyabr' Palace of Culture (director N. Fomochkin) has acquired valuable propaganda experience. In it they systematically show films on CD, lectures and reports are given, and special CD evenings and contests are held. There also is an automatic information system which provides answers to 50 CD questions.

Certainly, each library, depending upon departmental affiliation and the make-up of the readers, has its own specific features both in terms of the

content of CD propaganda as well as in its methods and forms. In Moscow Oblast there are approximately 2,000 libraries. In many of them, significant attention is given to the individual forms and methods of propaganda. These include consultations, talks, recommendations as well as help in selecting literature, and so forth. Along with this reader conferences, question and answer evenings, special evenings, oral journals, reader meetings with the authors of books and CD veterans are also held. Such work is well carried out by the town library No 1 of Kolomna (head L. Bunina), the Serpukhov Town Library imeni A. P. Chekhov (head M. Solov'yeva). They skillfully propagandize as well literature and other materials on CD in the central and local press.

The CD staffs are given significant help by the motor clubs under the departments of culture of the town and rayon soviets. Under the motor clubs of Podol'sk Rayon, for example, they have organized a CD movie lecture series. Before the showings lecturers from the Znaniye Society give CD lectures and talks on trips to the kolkhozes, Pioneer camps, and student construction detachments. On the basis of these motor clubs, mobile propaganda points have been created of the party gorkoms (raykoms), and these have proven effective in the comprehensive CD exercises. Judging from experience, the creation of such points is within the capacity of many national economic installations. In our view, they can be successfully employed in eliminating the consequences of natural calamities.

But, unfortunately, these propaganda means are still not used fully everywhere. It is our primary task to eliminate the existing shortcomings and to make the advanced experience in CD propaganda available for everyone.

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Military CD Unit: Personnel and Activities

Moscow VOYENNYE ZNANIYA in Russian No 12, Dec 77 signed to press 9 Nov 77
pp 20-21

[Article by Maj A. Sutulov: "A Calling"]

[Text] The forest was on fire. Smoke clouded everything. Sparks from the raging top fire flew in all directions like fireworks. Red tongues of flame literally licked the tops of the trees.

The CD subunit under the command of officer Yu. Strezhnev was the first to enter the fray against the calamity. The fire threatened not only the forest but also a village. Each second counted.

Having assessed the situation, the officer took the decision of creating a dependable barrier on the path of the fire in the form of a mineralized strip. And this meant quickly cutting a break 15-20 m wide, plowing it up with bulldozers, and setting up a water curtain in front of the rapidly advancing "top fire."

The soldiers and sergeants worked hard to carry out this mission. There was a moment when two firefighting machines were surrounded by fire. But their crews held out, driving back the flames with jets of water and supporting the work of their comrades in creating the mineralized zone.

Finally the fire was contained conquered by the brave men. The residents of the village sincerely thanked the men. For unstinting action Capt Strezhnev and his outstanding subordinates were awarded medals "for valor in a fire."

I have given just this one line in the references of the officer. Incidentally, soon thereafter he was given the rank of major. As for the biography of Strezhnev, it in many ways is reminiscent of the career of his fellow officers.

Yuriy grew up in the Kuban', he went to school and soon went to work. Then came regular service in the regular Armed Forces where he was a tank commander.

"In the army I fell in love with the equipment," he said.

After military service, Strezhnev entered an institute, he completed it with honors, and worked as an instructor in a technical school. But he longed for the army. Obviously, that was his calling. He went to the military commissariat and announced: "I want to sign up."

He was sent to a CD unit. And he did not regret it. Precisely here he found the comrades who helped him acquire a military profession. Officers P. Kmet', M. Yakunin and V. Vasin became his mentors.

Not everything went smoothly immediately, as Strezhnev did not have a special education. He had to start all over again. Yuriy took to this job earnestly. He studied military-technical literature and turned to the specialists for help. For example, Engr-Col N. Tarakanov, a candidate of technical sciences and a worker of the national CD staff helped him master the procedures in using engineering equipment in a nuclear strike area.

Initially Yuriy was involved in Komsomol work in the unit. Later on he was the assistant for supply and the deputy commander for technical affairs in the battalion. All these years passed in intense military work. For endeavor and industry Gen Arm A. T. Altunin, chief of USSR Civil Defense and deputy USSR minister of defense awarded Strezhnev the chest insignia "Outstanding Man in USSR Civil Defense." And when the question arose of filling the position of deputy commander for technical affairs, the choice fell precisely on Yuriy Nikolayevich.

...A tactical exercise. Having completed a long march, the CD units began to eliminate the consequences of an "enemy nuclear attack." The powerful engines roared. The artillery tractor-dozers and bulldozers cut passageways through the rubble. The jackhammers of the compressor stations chattered. Sixteen-ton cranes pulled away twisted elements and excavators cleared the

entrances to the protective shelters. All this equipment under the control of well-trained drivers worked smoothly together. The senior chief noted the skillful actions of the personnel. And the fact that the equipment did not fail was largely due to the technical service headed by Maj Strezhnev.

The chief of the repair shop, WO ["praporshchik"] Ye. Stenishchev under the leadership of the deputy commander for technical affairs reequipped the technical maintenance point, and installed a unit for the cold and hot breaking in of the engine, and a device for installing and removing transmissions in large vehicles. To enter the shop is a joy to behold. Here everything is clean and everything is painted.

And the assistants of Yuriy Nikolayevich--Capt G. Losev, Sr Lt A. Zverev, WO A. Gonchar and others! They all value their mentor for his knowledge and for his ability to find the proper approach to people. The communists have elected him the secretary of the party organization, the chairman of the party commission and a member of the officer court of honor.

How much there still is to do! The training and indoctrination of driver personnel and the improving of the training facilities. The entries are crowded in the personal work plan of Maj Strezhnev.

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Material for Local Radio Broadcasts

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p 22

[Unattributed article: "In the Strike Area"]

[Text] Today we are talking about one of the most important missions carried out by USSR CD, rescue work in a strike area and in areas of natural calamities. This work is carried out for the sake of rescuing people and for providing medical first aid to casualties.

Of what necessary actions is the concept of "rescue work" formed? This involves reconnoitering the strike areas; localizing and eliminating fires; the opening of buried shelters, the pulling down and clearing away of rubble; gaining access to persons who have been buried in protective shelters and under destroyed buildings; medical first aid to casualties and evacuation of them from the strike areas or regions of natural calamities; personal cleansing of the persons and decontamination of clothing. Let us examine these actions in more detail.

The work in the strike areas must be carried out continuously, night and day, on two and more shifts, with a great intensity and working at a high pace.

The duration of work for each shift depends upon the situation. Here it is essential to consider the very difficult conditions of the mass destruction and rubble, the solid fires and radioactive contamination.

The large scope of work and the extremely complex conditions for carrying them out necessitate the involving of a significant number of persons, equipment and various tools.

The primary task of the rescuers is to quickly locate the injured persons in destroyed shelters or under rubble and provide them with first aid. If it is impossible to get into a buried shelter, then contact with the persons inside must be established immediately, using telephone, radio, air intake pipes, various openings or by tapping on the uprights. Let us assume that it has become known that the shelter is without air. Immediately concern must be shown for supplying it using a compressor through the openings cut or the air ducts which are immediately cleared out.

The methods of digging out and opening up the buried shelters vary, and they depend upon the nature of the overlying rubble, the design of the structure, the condition of the individual elements, and, of course, upon the supply of the working formations with equipment and tools.

Here is what all rescue formations should be able to do.

Quickly remove the rubble over the basic entrance (in the ladder pit) in order to open the safety door or cut an opening into it. Clear away the head or hatch of the emergency exit.

Remove the rubble along the outside wall of a building over the pit of the emergency exit or dig a pit into the ground and then cut an opening into the shelter wall in order to bring out the people. It is also possible to cut an opening from an adjacent surviving room or in the roof.

When the personnel of the nonmilitarized formations study and master these procedures, in opening the protective shelters they can be used also.

It is also possible that it may be necessary before digging out a buried shelter to localize the emergencies on the utility and power networks which threaten those inside as well as the workers themselves. Nearby water line, sewage and heating supply systems are shut down. Nearby fire areas are extinguished.

In a gas-filled shelter, it is essential first of all to prevent the intake of the gas and then by using compressors and fans to air the inside. Water is pumped out of a flooded shelter. The personnel of the rescue formations are taught all of this at special tactical exercises and studies.

The clearing of passageways comprises a special group of work. It is essential to know in what sequence this must be done. Initially using truck cranes and winches, the collapsed stairwells are cleared of heavy structural elements, and then small fragments are removed by hand. After this the door is opened or an opening is cut into it at least 80 x 80 cm using a kerosene torch.

Over the head or hatch of the emergency exit the rubble is cleared away by hand or with equipment. The exit opening covered by a grid is cleared, or using an excavator a pit is dug in the rubble in order to gain access to the exit.

Openings in walls are usually cut where there is no emergency exit for too much time is needed to clear it.

In all instances when the disassembly and clearing away of rubble do not provide safety for the personnel, the work is done by hand.

The rescuers must also know the procedures for digging out a casualty. First the head and chest are cleared, and then by hand everything is removed which might impede pulling him out such as small fragments, rock and dirt.

Stretcher-sleds of boards, plywood or canvas are used to carry the casualty out the passageway.

In carrying out rescue work particular attention is given to the observance of safety measures. For example, a passageway must not be cut through rubble when one is not certain that it is secure. One must walk through the rubble carefully, work quickly but accurately in order to protect oneself and not cause additional injury to the casualties. If the terrain around the shelter is contaminated with radioactive substances, special rules of conduct must be observed. Any work near the area of a fire is started only after the fire has been extinguished or contained. At night the areas of rescue work are illuminated. Pits or other dangerous areas are marked by colored signals or well visible markers.

Of decisive significance for protecting the life of people is promptly started and organized rescue work, the energetic and skillful carrying out of this work, and the quick rendering of medical aid to the casualties.

For this reason the patriotic duty of all able bodied citizens is to conscientiously study and know how to use the diverse procedures and methods of rescue work.

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Description of Children's Gas Masks

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[Unattributed article: "PDF-D and PDF-Sh Children's Gas Masks"]

[Text] These gas masks are a reliable modern means of protecting juveniles and children against the contaminating of respiratory organs, the face and eyes with toxins, radioactive dust and bacterial aerosols. The PDF-D is a children's filtering gas mask for preschoolers from 1.5 to 7 years. The PDF-Sh is a school gas mask designed for children from 7 to 17 years.

The PDF-D comes with a GP-5 gas mask canister; the MD-3 facepiece (sizes 1, 2, 3 and 4) the PDF bag which is carried on the chest, and a special KPZO pencil (for the first size) and NPN-38 nonfogging films (for the remaining sizes) a means against the sweating and freezing of the eyepieces, the NMU-2 insulating covers (for the facepiece of sizes 2, 3 and 4).

The gas mask weighs around 700 gm.

What are the particular features of the design of the MD-3 facepiece? In the first place, a number of metal parts has been replaced by plastic ones. Secondly, the preparation and holding of the required position has been facilitated by a cap in the form of a thin rubber sheet with five straps with numbered notches.

In the masks of sizes 2, 3 and 4 there are snap and spring rings for holding the nonfogging films to the glasses. The set of the gas masks of the given sizes also includes removable insulating covers.

For selecting the required size of the facepiece, the height and width of the child's face are measured.

If the results of the measurements do not coincide with the data of the table, then the required size is chosen from the face.

The fitting of the facepiece starts with the following position of the strap figures of the cap by the clasp: 6 (forehead) 8 (temporal) and 9 (neck).

The gas mask is put on the children by adults in the following sequence: The child is placed between one's knees with his back "to you" in such a manner that his head resting against the adult; the mask is taken in both hands by the forehead and neck straps (here the thumbs are inside the chin portion); the mask is slipped over the face, the cap is straightened on the back of the head and the straps are fastened.

The gas masks are transported in wooden boxes with 36 in each box (7 size 1, 11 size 2, 8 size 3, and 10 size 4).

The set of the PDF-Sh includes: The GP-5 gas mask canister; the MD-3 facepiece (sizes 3 and 4) or the ShM-62U (sizes 0, 1, 2 and 3); the PDF-Sh bag or the GP-5 bag; nonfogging films; insulating covers.

With the MD-3 facepiece the gas mask weighs around 700 gm and with the ShM-62U facepiece, 750 gm.

Each box contains 40 gas masks. The composition is: with the MD-3 facepiece (1 size 3, 8 size 4); with the ShM-62U facepiece (12 of size 0, 10 size 1, 7 size 2, and 2 size 3).

The MD-3 facepiece is selected as was described above. For school children whose faces are larger than 103 mm, the ShM-62U facepiece is used. For this it is essential to measure the length of the circle running around the chin, cheeks and top of the head.

If the vertical girth of the child's head is more than 705 mm, then it is essential to use size 4 of the ShM-62U facepiece of the GP-5 civilian gas mask.

On small school children (grades 1-2), the gas mask is put on by adults. For older children, they put them on themselves.

It must be remembered that the gas mask must fit the face snugly (but not be too tight!). The eyepieces should be located in front of the child's eyes. If the mask does not fit the face snugly, then contaminated air enters the organism in bypassing the canister. And, conversely, a too tight mask will press on the face and cause pain. Such a gas mask cannot be worn for the required time.

In order that the protective properties of a gas mask are not lost, it must not be left about or placed in a wet place or near a stove or radiator. It must not be sat on, used as a pillow, hit, thrown or dirtied. Only a correctly fitted and properly working gas mask will perform its function.

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AVIATION MAINTENANCE TEST STANDS--By the start of the new training year, the men had prepared many original test stands which are simple in construction and reliable in operation. For example, first-class specialist Warrant Officer [praporshchik] V. Dibrov made a test stand intended for forecasting the condition of electric-vacuum and semiconductor instruments (Fig. 1) [not reproduced]. It is a compact, transportable unit which can be used under both fixed as well as field conditions. This increases considerably the mobility of the technical maintenance unit. Warrant Officer V. Dibrov, technician of the group for prescribed maintenance work on electronic equipment officer V. Golovin, and Soviet Army serviceman V. Dzhalagiya made a general-purpose cart for the combined checking of electronic equipment (Fig. 2) [not reproduced]. It is used in performing prescribed maintenance on an aircraft and for the transportation of spare units under fixed and field conditions. Employment of the cart permitted a substantial reduction in the times for the accomplishment of prescribed maintenance. [Text] [Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 12, Dec 77 signed to press 31 Oct 77 p 33] 6367

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