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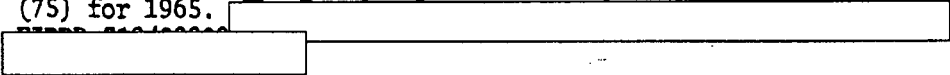


CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

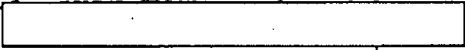
18 June 1976

MEMORANDUM FOR: The Director of Central Intelligence
FROM : William W. Wells
Deputy Director for Operations
SUBJECT : MILITARY THOUGHT (USSR): Civil Defense
in a Missile/Nuclear War

1. The enclosed Intelligence Information Special Report is part of a series now in preparation based on the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal 'Military Thought'. This article emphasizes the strategic role of civil defense in the mid-60's and describes its development from local air defense into nationwide civil defense parallel to the evolution of nuclear weapons. Since modern warfare makes it impossible to protect the entire population with shelters, the author makes a case for secret, protected evacuation and dispersal. The dispersal areas would be determined on the basis of the expected yield of the nuclear weapons targeted against cities of varying degrees of importance, and evacuation time based on transportation capabilities. New industrial enterprises being established should be located away from urban areas near sources of raw materials. This article appeared in Issue No. 2 (75) for 1965.



2. Because the source of this report is extremely sensitive, this document should be handled on a strict need-to-know basis within recipient agencies. For ease of reference, reports from this publication have been assigned



William W. Wells



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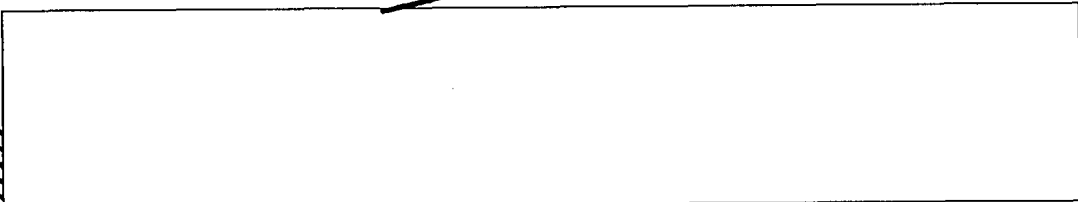
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Intelligence Information Special Report

Page 3 of 18 Pages

COUNTRY USSR



DATE OF INFO. Mid-1965

DATE 18 June 1976

SUBJECT

MILITARY THOUGHT (USSR): Civil Defense in a Missile/Nuclear War

SOURCE Documentary

Summary:

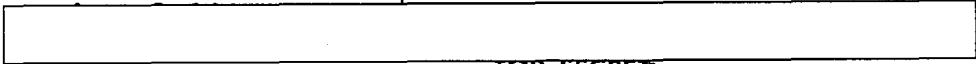
The following report is a translation from Russian of an article which appeared in Issue No. 2 (75) for 1965 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal 'Military Thought'. The author of this article is Marshal of the Soviet Union V. Chuykov. This article emphasizes the strategic role of civil defense in the mid-60's and describes its development from local air defense into nationwide civil defense parallel to the evolution of nuclear weapons and other means of mass destruction. Since modern warfare makes it impossible to protect the entire population with shelters, the author considers it preferable, during the two stages of the "special period", to undertake secret, protected evacuation and dispersal of those not working, leaving on-duty working shifts behind with shelters available to them in the cities. The dispersal areas would be determined on the basis of the expected yield of the nuclear weapons targeted against cities of varying degrees of importance, and evacuation time based on transportation capabilities. New industrial enterprises being established should be located away from urban areas near sources of raw materials. In conclusion, the author touches briefly upon the need for centralized control and cooperation between civil defense and military forces.

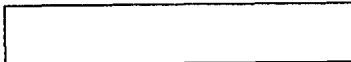
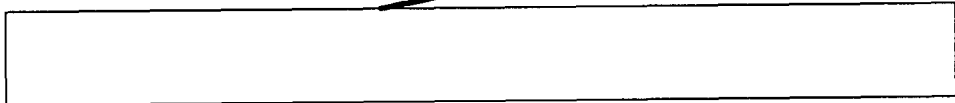
End of Summary



Comment:

Marshal of the Soviet Union Vasiliy Ivanovich Chuykov was Chief of Civil Defense of the USSR from 1961 to 1972. He also wrote "Cooperation Between the Armed Forces and Civil Defense in a Missile/Nuclear War" in Issue No. 1 (77) for 1966





Civil Defense in a Missile/Nuclear War
by
Marshal of the Soviet Union V. Chuykov

The intensive development of nuclear weapons and other means of mass destruction and of various types of missiles, the rapid qualitative improvement and quantitative increase of conventional types of armament and combat equipment, and the ever wider introduction into the armed forces of radio electronics and other of the most recent achievements of science and technology, have wrought fundamental changes in the nature of modern warfare, the methods of conducting it, and the ways in which a state prepares for war.

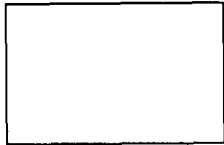
These changes have affected literally all the component elements that go into the concept of the "defense of a state".

When discussing the nature of missile/nuclear warfare and its strategy, we unfortunately sometimes confine ourselves solely to the armed forces. This in particular was the approach of the authors of the work The Strategy of Nuclear Warfare*, published in 1964.

But the concept "defense of a state" encompasses considerably more than merely the activity of the armed forces. Under modern conditions defensive measures involve, in addition to the armed forces, all aspects of the political and economic life of a state, and the entire adult population of the country united by a civil defense organization.

The actions of the armed forces represent the active defense of the state. But active defense is inseparable from the protection of the population of the country, its industry, and its agriculture against nuclear weapons and other means of mass destruction; i. e., it is inseparable from civil defense which is, in a way, passive. But the concept "passive", of course, is relative and purely arbitrary. The basis of civil defense must unquestionably be active actions designed to protect the population, industry, agricultural products and, in the last analysis, the entire wealth of the country.

* The Strategy of Nuclear Warfare. Edited by Marshal of the Soviet Union R. Ya. Malinovskiy. Military Publishing House, 1964.





Civil defense in its present form developed comparatively recently, and its theory, naturally, is still being developed as we seek the best ways to organize and implement it. It is therefore very important to define correctly the role and tasks of civil defense in a missile/nuclear war, and its place in the overall system of the defensive measures of the state.

* * *

Civil defense began as local air defense at a certain stage in the development of the means of armed combat and the methods of conducting it.

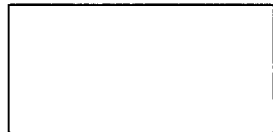
In wars of the past, including for all practical purposes even World War I, the depth at which the means of destruction could operate was not great. Aviation at that time, as we know, merely played an auxiliary role. It was used mainly for purposes of reconnaissance and occasionally for weak bombing strikes against troops.

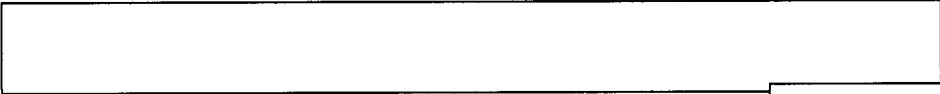
World War II brought the means of destruction to populations deep within the territory of the belligerent countries, as well as to industrial enterprises, railway junctions, and centers of energy supply. Aerial bombings caused extensive damage to the military-economic potential of the enemy and affected the morale of the population. In the course of the war, in addition to aviation, rocket troops began to be used for strikes at a considerable depth.

The carrying of strikes deep into the territory of the belligerent states made it necessary to organize the air defense of the country and to create a new branch of the armed forces -- the air defense forces. Thus, parallel to the development of the means of air attack, air defense means were also developed. But the experience of the war made it manifestly clear that no means existed that could ensure complete protection from air attack. Well known is the boastful statement by Goering that not a single bomb would fall on Germany -- a graphic example of idle boasting; as we know, many German cities were reduced to rubble.

To defend the population and the national economy, additional measures were required. In our country we created a local air defense. (In other countries it had a different name, but its purpose was more or less the same.)

In the Great Patriotic War our local air defense was on the whole successful in coping with its tasks and made a definite contribution to the





cause of victory. But at the present time the means of armed combat, the nature of war, and the methods of waging it have changed so much that the protection of the population and the national economy must be organized and carried out on a completely different basis and by different methods.

In the first place, in the last war we had no need to organize the protection of the population and the national economy on a nationwide scale. Local air defense was given this name because it was limited and local in nature. It was organized only in those cities and installations that were within range of enemy aviation.

Part of the population was evacuated from such cities -- as a rule, deep into the interior of the country -- but the majority remained. During air raids people took cover in bomb shelters set up in basements of buildings and in the subway. In the outskirts and suburbs people also used specially dug trenches for shelter, either open trenches or with an earth-and-timber covering. Since a great number of people remained in the cities, much of the efforts of local air defense were concentrated in protecting residential districts.

Industrial enterprises and facilities located in cities within the radius of operation of enemy aviation did not cease operations. Only individual installations and municipal districts were destroyed even during highly massed raids. Thus, there were usually sufficient forces and means available in the cities themselves, and even in the installations subjected to strikes, to carry out rescue and emergency restoration work. Under these conditions there was no need for centralized control of local air defense.

The depth of operation of the means of destruction, despite the sharp increase over World War I, was still limited. The most important economic areas, for example the Urals, Siberia, and Central Asia, were beyond the range of Hitler's aviation. And a country like the US experienced no threat of aerial attack whatsoever.

Thus, in World War II local air defense was limited in nature. The fate of the state was decided on the battlefields. At that time the question of the survival of the state in a war did not loom as large as it does now. The protection of the population and the national economy, therefore, was still relatively local in nature.

Under modern conditions the situation has changed radically: there is no place on earth that could not be subjected to a strike immediately at





the outset of war. The territory of any state is now exposed to attack, figuratively speaking, from end to end. And whereas before it was industrial and administrative centers that were destroyed, now, as a result of radioactive contamination that develops in the area of a nuclear burst or along the path of movement of a radioactive cloud that has formed during a nuclear burst, as well as the use of chemical and bacteriological weapons, it is the population, crops, and animals that will be destroyed over enormous areas and in rural regions.

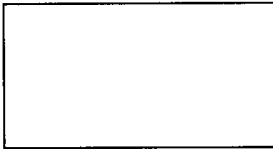
Nor is there any comparison between the yield of nuclear weapons and the ammunition used in the last war. The TNT equivalent of modern nuclear warheads runs as high as several tens of millions and even hundreds of millions of tons. Thus, the yield of even one nuclear warhead greatly exceeds that of all ammunition expended in World War II. In modern warfare the very first nuclear strike could wipe from the face of the earth the largest cities of the world and certain comparatively small countries; for example, the states of Western Europe could be reduced completely to ashes.

In World War I about 30 million people were killed or maimed, and in World War II about 70 million. If measures are not taken in advance to protect the population, in a modern missile/nuclear war hundreds of millions of people will be annihilated in the first nuclear strikes alone.

We can therefore no longer think in terms of some kind of local measures to protect the population and the national economy. In a missile/nuclear war the fate of states will be decided not only on the battlefields, but also deep within their territory, in the most important economic areas, and in industrial and administrative centers.

If these are destroyed, if much of the population is killed, then the question arises: what is to be gained from an offensive by armed forces into areas devastated by nuclear weapons? Obviously victory in a missile/nuclear war can be achieved only if the survival of the state is ensured.

Under modern conditions, therefore, the role of the air defense forces of the country increases greatly, as does their responsibility for securing the vitally important centers of the state against strikes by missiles, aviation, and space means. In recent years air defense means, and now antimissile defense means as well, have been developed significantly. However, as in the past, there does not exist, nor is there likely to exist, any means that can guarantee complete protection of the country





against strikes from the air or from space. Anyone who counts on such means commits an irreparable mistake. Therefore now, along with the continual improvement of antimissile, air, and anti-space defense, it is essential to organize a reliable civil defense of the country, without which it is impossible to ensure the survival of the country.

Civil defense has replaced local air defense. We are no longer speaking here of the local defense of individual cities and areas, but of the protection of the country as a whole, the entire population and national economy, with the participation of all citizens. It is nationwide and takes in everyone.

Thus, civil defense assumes the character of a unique nationwide volunteer corps, but still more all-embracing than in past wars and, of course, on a different technical basis.

Civil defense is a system of nationwide defensive measures carried out in advance, in peacetime for the purpose of protecting the population and the national economy against nuclear, chemical, bacteriological, and other types of weapons, as well as for the purpose of conducting rescue and urgent emergency restoration operations in centers of destruction after the enemy has delivered strikes with nuclear weapons and other means. Civil defense is unquestionably becoming a factor of strategic significance.

The extremely important role of civil defense as a factor of strategic significance is now recognized in the largest capitalist states. US Secretary of Defense McNamara emphasized in one of his speeches that, in certain wartime situations, a judicious program of civil defense could do more to save lives than many measures of active defense.

In another statement he asserted that antimissile defense is not feasible in the absence of civil defense, since enemy missiles can be used against those areas not protected by antimissile defense means.

In countries like the US, Great Britain, France, West Germany, Canada and Sweden, a great deal of organizational work has been done in recent years in order to improve civil defense. Special organs have been created to direct it, and the evacuation of the population has been planned. A great deal of work is being done to find available buildings and structures that could be used as shelters, especially against radioactive fallout; new shelters are being built; the population is being instructed in civil defense measures; various contingents are being readied for rescue and restoration work, etc. Overall direction, as a rule, is exercised by heads





of states and governments, and immediate direction is by high-ranking government officials.

As is clear from the data cited in the table, significant sums are being spent for civil defense.

Country	Fiscal year			
	1961/62	1962/63	1963/64	1964/65
US (in millions of dollars)	504.6	367.0	150.0	385.0
UK (millions of pounds sterling)	18.6	19.3	23.0	24.1
West Germany (millions of marks)	786.0	817	800.0	630.0
Canada (millions of dollars)	39.0	--	32.9	33.0

The table shows only expenditures at the national level. In addition, other funds are expended for civil defense from the local budgets of provinces, counties, etc.

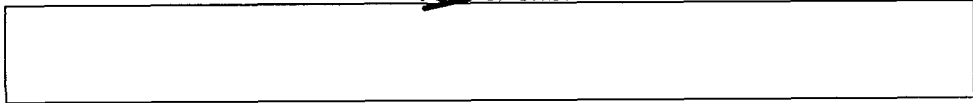
The US is planning an extensive program to further develop civil defense, for which it expects to spend about 3.5 billion dollars by 1970. According to a statement by McNamara, the implementation of this program will make it possible in the 1970's to guarantee the safety of tens of millions of Americans in the event of nuclear strikes.

West Germany plans to allocate 21.7 billion marks for the development of civil defense in the next five years.

Even in small countries such as Sweden, Norway, and Belgium extensive preparations for civil defense are being made, and considerable monetary and material means are being spent.

But we have also done a lot to improve our own civil defense in recent years. A number of important organizational measures have been taken: the Central Committee of the CPSU and the Council of Ministers of the USSR have approved the "Basic Principles for Protecting the Population of the Country Against Weapons of Mass Destruction", in accordance with which work is now being carried out locally; training of the population in protection under





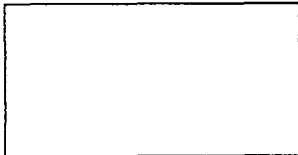
conditions of nuclear war has been expanded; and the organizational forms of troops and civil defense contingents are being improved, along with the methods of using them for rescue and urgent emergency restoration work. Considerable attention is being given to the development of the scientific bases of modern civil defense.

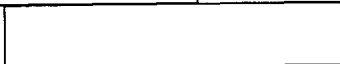
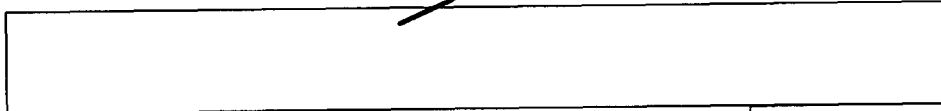
In the years 1962-1965 a number of large civil defense command-staff exercises were held, some of which were combined with the operational exercises of military districts.

But all of this is only the beginning of the great amount of work that remains to be done in order for our civil defense to fully meet modern requirements.

In accordance with the role now played by civil defense, its tasks are extremely diverse, large in size, and complex in content. They include:

- compulsory universal instruction of the population of the country in methods of protection against missile/nuclear, chemical, and bacteriological weapons, and in actions to eliminate the aftereffects of an enemy attack;
- development of plans for the evacuation of children and people unable to work from the large cities, as well as of plans for the dispersal into a non-urban zone of the manual and office workers of enterprises and facilities which continue to operate during the "special period";
- provision of shelters and various means of protection for the population;
- organization of a system of warning and communications;
- organization and implementation of measures designed to increase the stability of the operation of industrial enterprises, the power supply, transport, and communications during the "special period";
- establishment and training of civil defense forces in the cities, rural areas, and installations of the national economy;
- organization and carrying out of rescue and urgent emergency restoration work in the centers of destruction, and the rendering of assistance to the stricken population;
- the taking of steps to provide protection for animals, plants, provisions, agricultural products, water and fodder against bacteriological, radioactive and chemical contamination, as well as measures to eliminate the aftereffects of contamination;
- organization of the development and introduction of new technical means of civil defense.





From this list it is easy to see that the principal task of civil defense is the protection of the population. We shall therefore dwell on this subject in greater detail.

We should note at the outset that protection of the population is the most important factor in ensuring the survival of the state as a whole.

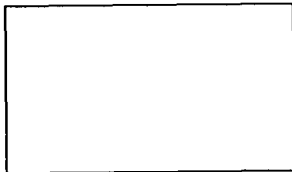
In modern warfare the winning side will be the one best able to preserve its productive forces, the basis of which are people. V. I. Lenin in his time put it very well when he said: "The primary productive force of all mankind is the worker, the laboring man. If he survives we shall save and rebuild everything ... , but we shall perish if we are unable to save him..." (Complete Collected Works, Vol. 38, p. 359).

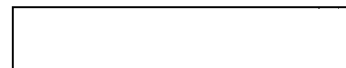
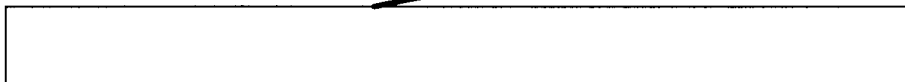
This Leninist thesis fully applies to modern conditions as well.

There are two basic ways of protecting the population. The first consists of preparing a sufficient number of shelters capable of protecting people against the effect of the various elements of modern means of destruction: shock wave, thermal radiation, radioactive contamination, and the effects of toxic agents and bacteriological means.

In the last war, when the means of destruction did not have such a variety of casualty-producing elements, the basic method of protecting the population was providing cover in shelters and various structures capable of fulfilling the same function. But now the construction of a sufficient number of shelters to provide protection against all the casualty-producing elements of a nuclear burst is a practical impossibility for economic reasons. The depth of the crater formed from a nuclear warhead with a yield equivalent to one million tons of TNT can be as much as 55 meters, with a diameter of 350 meters; and from one of 1.5 to two million tons, 70 and 450 meters, respectively. It is not hard to imagine the kind of shelter that would be needed to provide protection against this kind of burst, even if it were not a direct hit and the burst occurred some distance away.

On the basis of an analysis of the specific conditions of nuclear warfare, we have become convinced that at present, in contrast to the past, it is impossible to provide protection for the population through the use of shelters. Countries with a vast expanse of territory will get much better results if they efficiently organize the timely evacuation and dispersal of the population.





The essence of this method of protection consists of the following. During a certain interval of time prior to the beginning of a war (sometimes called the period of threat; we call it the "special period"), that part of the population not directly involved in production (people unable to work, children, students, etc.) are removed from those cities against which the enemy will probably deliver strikes with nuclear weapons and other means of mass destruction. Enterprises and facilities whose work may be interrupted for a certain amount of time without detriment to the defensive capability of the country cease operations, and manual and office workers employed in them are also removed to a safe non-urban zone.

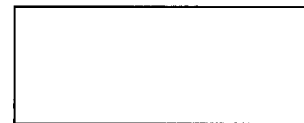
Manual and office workers of enterprises that have not ceased operations are dispersed to a non-urban area when their shifts are off duty. Thus, in those cities against which it is most probable that weapons of mass destruction will be used, the only manual and office workers remaining will be those whose shifts are on duty in enterprises that have not suspended operations. In the event of danger they will have to be sheltered in special protective structures, or structures adapted for this purpose, as well as in extremely simple protective shelters.

Since the number of manual and office workers remaining in the city is limited, they can be provided with shelters without great additional capital investments. In those cities that have a subway, it is used for this purpose.

Occasionally one hears objections to the idea of evacuation and dispersal of the population. The basic objection is to the effect that measures taken on such a large scale, involving in effect the entire state, cannot be concealed from the enemy and may cause him to launch a surprise attack.

In a cursory examination of the problem these objections may seem valid. The element of surprise under modern conditions unquestionably plays an enormous role, and it must be taken into consideration. But at the same time we must not turn surprise into some kind of mystical force which completely paralyzes our endeavors to protect the population.

Since providing the people with reliable shelters which would enable them to remain in the cities is not possible either now, in the near future, and possibly not even in the distant future, to reject the idea of dispersal and not make use of the vast territory of our country means in effect to leave the population defenseless against the threat of annihilation by nuclear weapons and other means of mass destruction. And



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this would place the very existence of our state in jeopardy.

In order to prevent such a situation we should strive for maximum secrecy in evacuation and dispersal by carrying it out under the guise of exercises and not revealing the true scope of all the measures taken. Does anyone really pay particular attention if in summertime, when it is hot, about one and a half million people leave Moscow for the country?

The enemy can, of course, learn of the evacuation and dispersal of the population, but this certainly does not mean that he would immediately be able to determine its purpose and scope. Furthermore, as was shown in the crisis in the Caribbean Sea area in the fall of 1962, and in other aggravations of the international situation, a political crisis of the type that threatens to lead to a world war does not develop suddenly and is not resolved immediately. It builds up over a certain span of time, during which both sides seek ways to resolve the crisis. But if the enemy decides to launch a surprise strike he can do so, and no shelters built for the entire population will help, since during the 10 to 15, or even 30, minutes that it takes a missile to reach its target, few people would manage to take cover. But this calls for a separate discussion.

We are convinced that when a war is preceded by a period of threat, evacuation and dispersal of the population are essential.

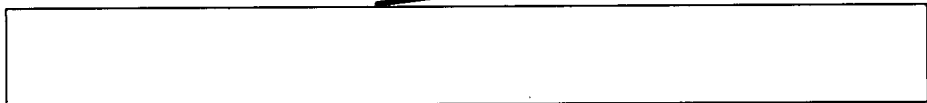
For purposes of a more orderly and effective implementation of these measures, we shall divide the "special period" into two stages.

The first stage must be declared by a decision of the government, while it is still believed possible to avoid a war, but at the same time readiness for it must be increased. This stage consists basically of evacuating from designated cities (those considered the most likely targets of enemy strikes) that part of the population not involved in production.

The second stage is introduced by the government when it reaches the conclusion that war cannot be avoided. This period consists basically of the dispersal into a non-urban zone of the manual and office workers of enterprises and facilities that have ceased operations, as well as of shifts that are off duty from enterprises that continue in operation.

During the "special period" we must also bring up to full combat readiness all the forces and means of civil defense designated for rescue and urgent emergency restoration work.

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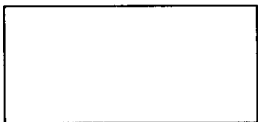
In certain cases, where the crisis builds up especially rapidly, the stages of the "special period" may be combined. As a result it will be necessary to alter somewhat the procedure for both evacuation and dispersal. The leadership of civil defense must be ready to fulfil any instructions of the government.

It is quite obvious that the enemy will determine the yield of the nuclear warheads to be used on the basis of the political and economic importance of each city against which nuclear strikes are targeted. Thus, we must determine in each case the distance from the city of the areas of evacuation and dispersal. Calculations and experience from exercises show that, in view of the yield of modern nuclear warheads, in the case of such cities as Moscow, Leningrad, Kiev and the like, manual and office workers being dispersed must be moved no less than 40 to 50 kilometers from the city. Manual and office workers of enterprises that continue in operation should, when being dispersed, be placed in a zone between 40 - 50 to 100 kilometers from the city. A dispersal zone at this distance would, on the one hand, provide a certain amount of safety for people, and, on the other, would not require too much time to travel to and from work. Otherwise these manual and office workers would have practically no chance to rest. For smaller and less important cities this distance may be less.

It is advisable to move the population being evacuated to a distance more than 100 kilometers from the cities.

The success of evacuation and dispersal depends to a very great extent on the time required to carry it out. We must therefore strive to reduce it to a minimum. The specific time required should be determined for each city individually, based on the size of the population and the transportation capabilities. A check of the evacuation and dispersal plans developed in each place and the experience of exercises held recently show that there are considerable opportunities for reducing the time required. As an example, we might cite the exercise held in Sverdlovsk Oblast in January 1965. The original plan assumed that the population could be evacuated from Sverdlovsk in 47 hours. It turned out that such a long period was caused by incomplete utilization of rail transport capabilities.

Evacuation and dispersal will require the use of all types of transport (rail, automobile, and, where available, river and sea transport). But our main emphasis is on rail transport. This is because it is the best organized in peacetime and possesses great capabilities for the mass transportation of people in a short period of time. Furthermore, life in the cities does not, after all, come to a halt when evacuation





begins, and to maintain it will require a considerable amount of motor transport.

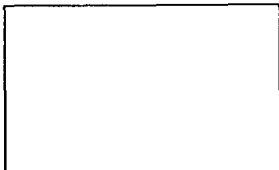
The Americans are following a somewhat different course in solving these same problems. They are also planning to evacuate the population (moving them even to Canada is planned). But they are placing the main emphasis on motor transport. This is perfectly understandable in view of the number of motor vehicles they have available and the developed network for technical servicing of them.

The main orientation toward rail transport does not mean at all that we are leaving motor vehicles out of consideration. They will play a significant role, especially in those places where rail transport capabilities are limited, and also in speeding up the dispersal of manual and office workers, delivering off-duty shifts to work and back, delivering civil defense contingents to the centers of destruction, etc. Besides the motor transport to be used by the armed forces, a certain amount will be allocated for the needs of civil defense. It is very important in peacetime to correctly plan their utilization, so that in the "special period" it will be possible to quickly and efficiently assemble convoys of motor vehicles and ensure efficient control of them.

In order to reduce the time required for evacuation and dispersal, the linking of municipal transport lines (subway, streetcar, trolley) to railroads, as well as the use of intra-factory routes, are of great significance in reducing the time spent assembling people and loading or transferring them from municipal transport onto railway trains.

The problem of protecting the population being evacuated and dispersed is by no means confined to its removal from the cities. It involves a great number of diverse and complex problems: accommodating the population after removal, organizing food distribution and medical services, providing protection against radiation, chemical, and bacteriological contamination, providing work for evacuees, etc. In this matter nothing is trivial.

The greatest danger to the population in a non-urban zone is that of radioactive, chemical, and bacteriological contamination. All evacuees, therefore, must be provided with individual means of protection, and the simplest types of structures found everywhere in rural areas, such as cellars, potato and silo pits, etc., must be used as shelters. If not enough are available, then additional extremely simple shelters with earth-and-timber coverings will have to be built.



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Evacuation and dispersal is unquestionably a measure we are forced to take because of conditions which have already developed where there is an exceptionally high concentration of population and industry in the cities. In view of the nature of modern warfare it would undoubtedly be preferable not to allow this to happen in the future.

With this in mind we must not, in our view, build new enterprises either in already existing large cities or in those which, because of such construction, will have to be designated as likely targets of the enemy. New enterprises should be located as close as possible to the sources of their raw materials, and more evenly distributed over the entire territory of the country.

In addition, it is advisable to relieve already existing cities as much as possible of various educational institutions, scientific institutions, hospitals for extended treatment of patients, children's facilities, etc. The cost of doing this would more than pay for itself in the event of war.

Following the delivery of nuclear and other strikes by the enemy, the main task of civil defense is rescuing those people in the centers of destruction who have survived the strikes. Rescue operations and the urgent emergency restoration work essential for their implementation will be carried out by units and subunits of civil defense troops, civil defense contingents, as well as those units of the armed forces and the KGB who may be in these areas.

The fact is that troops of interior military districts may find themselves in a situation where, as a result of nuclear strikes against large cities that are transportation centers, they will be unable to use rail transport, while traveling by their own means will be impossible because of the great distance. What is more, a certain number of army military units, medical facilities, and educational institutions will remain in place.

* * *

In this article we have examined ways of solving the problem of protecting the population in a missile/nuclear war. The question naturally arises: suppose a war should be waged without the use of nuclear weapons. Would it not be preferable to revert from the present system of civil defense to the old local air defense system?

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In our view the answer to this question can only be in the negative, since the old local air defense system has completely outlived itself. The modern level of development of aviation and missile technology ensures that strikes can be delivered against any area of any state in the world, and modern means of destruction, especially those such as chemical and bacteriological means, are enormously effective. Conventional ammunition has also become much more powerful than it was in the last war.

Therefore, even in the event of nuclear disarmament and the establishment of an effective system of verification, the basic principles of modern civil defense still apply although, of course, the methods for accomplishing individual tasks will have to be refined to a certain degree.

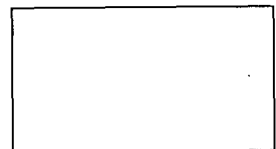
The limited scope of this article makes it impossible to examine the entire complex of civil defense tasks in a missile/nuclear war and the methods of accomplishing them. But in concluding it is still essential, however briefly, to dwell upon one further question. That is the interrelationship between civil defense and the armed forces. Certain aspects of this question have already been discussed in this article, in particular our comments on the need for close coordination of all the defensive measures of the state, the new role under modern conditions of air defense and civil defense troops, and the help provided by the armed forces in carrying out rescue operations.

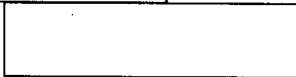
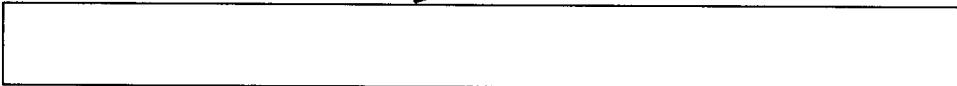
In the US extensive use is made of the armed forces in assisting civil defense. For example, the army engineer corps has done a great deal of work in determining and marking those structures that might be used as shelters from radioactive contamination.

In Great Britain, West Germany, and other NATO countries great significance is also attached to the allocation of the armed forces, especially the ground forces, for accomplishing the tasks of civil defense.

If allocation of the armed forces is kept within reasonable limits, without preventing the fulfilment of their basic task, then it can unquestionably be considered advisable.

The successful implementation of civil defense measures will in turn be exceptionally helpful to the armed forces in accomplishing their tasks. For the military units of civil defense are, after all, a reserve of the armed forces and they are ready to fulfil combat tasks as well.





Thus, it is obvious that the preparation of a state for war is not confined solely to strengthening the armed forces. It embraces all aspects of the life of a country and, first and foremost, its economy. The preservation of the economic base of a state and the preservation of its main productive force -- the workers in the population -- in a modern war depends on civil defense to a decisive degree.

Therefore, problems involving the strengthening of the defensive capability of the country, such as preparing the economy, the armed forces and civil defense, which at first glance appear to have no connection with one another, in fact cannot be solved separately, without the closest coordination and the taking of a number of joint measures both in peacetime and during a war.

This is why centralized control is required; it would make it possible to carry out the tasks of defending the country as a whole, rather than to separately carry out the tasks of the economy, the armed forces, and civil defense. We must achieve close coordination of all forces and means, all ministries and agencies, and all the people, in order to ensure the survival of the state in a future nuclear war. This is a requirement of the times, brought about by the nature of modern warfare.

