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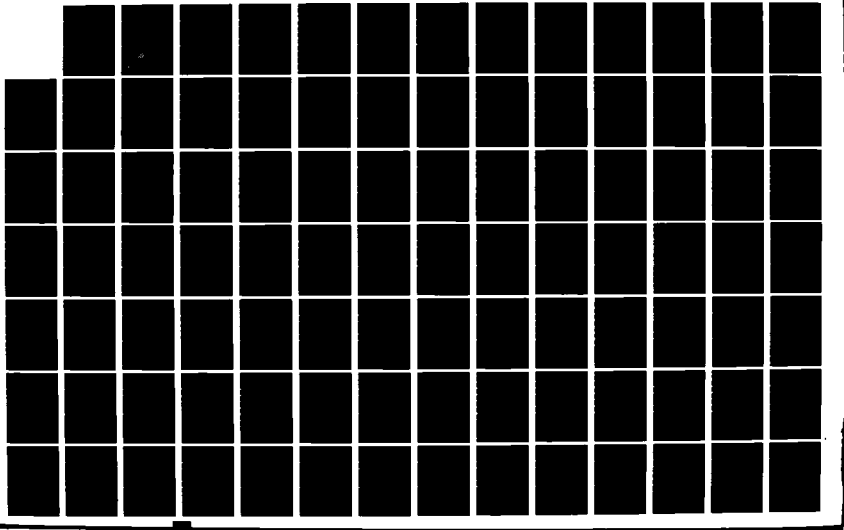

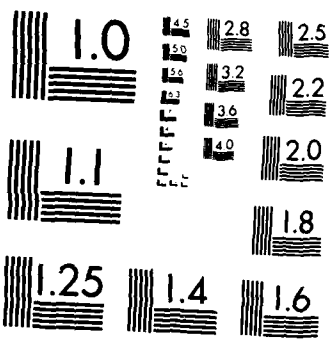

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THE SOVIET CRISIS RELOCATION PROGRAM

FINAL REPORT
MAY 1983

Prepared for:

Federal Emergency Management Agency
Washington, D.C. 20472

FEMA Contract No. EMW-C-0571
FEMA Work Unit No. 4212F

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This report describes and analyzes, on the basis of open Soviet source materials, Soviet civil defense concepts, plans, organization, priorities, training programs, and capabilities pertaining to crisis relocation of residents of high-risk urban areas and workers of significant economic installations. Soviet sources indicate not only that crisis relocation continues to be an important element of the Soviet civil defense program, but also that there is a requirement for the relocation of leadership

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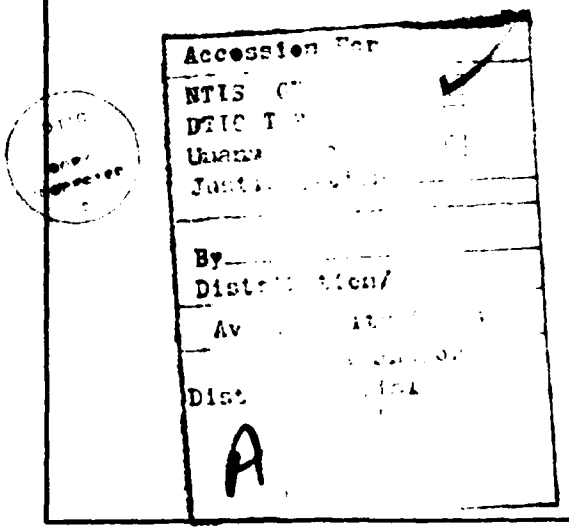
elements, essential workers, and urban civil defense forces regardless of the availability of shelters in the cities. Soviet civil defense has well developed, comprehensive plans for implementing a rapid relocation of the urban population to exurban areas in a highly organized and strictly controlled manner. Because of a requirement to maintain essential industries, utilities and services in continuous operation, Soviet plans distinguish between "dispersing" essential workers, who will commute to work from nearby host areas, and the "evacuation" of the rest of the residents who will remain in the host areas. The relocation will be carried out through work places for working persons and places of residence for non-working adults who are not members of families of workers, and will be managed by Evacuation Assembly Points in accordance with planned departure schedules, allocated transportation and routes, and dedicated host areas. The relocation can be selective or general. Movement will be by all available means of transportation as well as in organized groups on foot, with priority in the use of transportation given to essential workers, civil defense personnel, and persons unfit to leave on foot. Although a major portion of the urban population could probably leave the cities in two to three days, the completion of the relocation—including moving the evacuees who marched to intermediate evacuation points and then to their assigned host areas—is likely to take significantly longer. The host areas plan and organize the reception, housing, supply, medical services, and anti-fallout sheltering of the evacuees assigned to them. While small-scale evacuation exercises are conducted throughout the USSR, it is uncertain how well Soviet plans, organization, and procedures will perform in an actual large-scale relocation.



DETACHABLE SUMMARY

THE SOVIET CRISIS RELOCATION PROGRAM

By

Dr. Leon Goure´

MAY 1983

Prepared for:

FEDERAL EMERGENCY MANAGEMENT AGENCY
Washington, D.C. 20472

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DETACHABLE SUMMARY

Crisis relocation--i.e., the pre-attack evacuation of the inhabitants of high risk cities and of workers of potentially targeted economic installations--is an important, long-standing and integral element of Soviet civil defense plans and programs. Soviet civil defense leaders have and continue to believe that under appropriate conditions and with adequate organization, preparation and control, crisis relocation can be a highly effective method of protecting the mass of the urban population and essential workers from enemy nuclear strikes. Soviet crisis relocation concepts and plans, therefore, are well developed and quite comprehensive, and Soviet civil defense appears to be generally ready and able to implement the evacuation rapidly and with short warning. These concepts and plans reflect Soviet views on possible war initiation and for a sustained war effort and recovery, and post-strike civil defense rescue, damage-limiting and repair operations. They naturally also reflect the Soviet political-administrative, economic, population control, and value systems as well as the existing technical capabilities for implementing crisis relocation.

While prior to the late 1960s, crisis relocation was considered to be the "main" method of protecting the Soviet urban population, growing Soviet concern over the possibility of war initiation with little or insufficient strategic warning has resulted in official priority being given to the development of capabilities for sheltering the population in-place. However, while sheltering in-place is seen as an insurance against a worst-case or initiation scenario, crisis relocation continues to be regarded not only as a desirable option in other war initiation scenarios, but as preferable and even necessary regardless of existing shelters in the high risk areas. This stems from the Soviet view that the relocation of leadership and elite elements, essential workers and urban civil defense forces is critical for ensuring effective and continuous political, administrative and economic command and control, the ongoing operations of important industries, utilities and services in urban areas and the preservation of large civil defense capabilities for conducting post-strike rescue, damage-limiting and repair activities in areas of nuclear damage. In addition, at present and at least in the near term existing shelter capacities in urban areas are insufficient to protect all of their inhabitants. Soviet civil defense leaders, therefore do not question the utility and practicality of crisis relocation under all but the most unfavorable circumstances. Their primary concern is with finding ways and means of accelerating the rate of relocation so as to accomplish it in a "maximally compressed" time.

Crisis relocation will be ordered by the Soviet government when it decides that a threat of a possible attack on the Soviet Union exists. The ordered relocation can be selective, i.e., applying only to certain elements of the urban population or it can be general. Precisely what indicators would cause this decision to be taken are not known. Crisis relocation will apply to those cities and economic installations which are believed to be likely targets of enemy strikes. This appears to include the largest cities of the USSR. The relocation must be carefully planned, organized and prepared at all levels already in peacetime with the active involvement of all administrative-territorial,

economic, transportation, public service and civil defense organizations. The Soviet approach to crisis relocation is largely shaped by a value system which assigns priority to the protection of organizations and persons needed for system survival and preservation of control, sustained economic-logistic support of the armed forces and post-strike reconstitution and recovery. Consequently, there is a priority requirement to "disperse" essential workers of urban enterprises, utilities and services which will remain in continuous operation in such a manner as to allow workshifts to commute to work. Urban civil defense formations will also be "dispersed" so that they can rapidly reach the cities. The non-essential elements of the population will be "evacuated" to hosting areas which do not meet the "dispersal" requirements. As a result, the relocation must be tightly controlled and carried out through work places for employed persons and residential administrations for non-working people. The value system will also have a strong bearing on the allocation and priority use of transportation.

Primary responsibility for crisis relocation planning rests with the civil defense chiefs, their deputies for evacuation and staffs, and urban evacuation commissions and rural evacuation reception commissions at all levels. Identification and assignment of hosting areas and localities and elaboration of relocation plans is carried out downward from higher to lower organs and staffs while the coordination of plans is an upward process in the hierarchical civil defense structure. Planning is greatly facilitated by the system of centralized political and state authority, the state ownership of and control over the economy, the existence of a national, centrally-directed directed civil defense organization, the dependence of the population on non-private means of transportation and so on. The authorities have the ability, therefore, to prohibit and prevent all independent evacuation by the urban population, to determine who will be authorized to use transportation and who will leave the cities on foot, to assign travel routes and destinations to vehicles and marching groups, and to require residents in hosting areas to house all evacuees allotted to them in their homes. The hosting areas--knowing in advance which urban organization is assigned to them, how many evacuees will arrive, approximately when they will arrive and by what means--can prepare plans for their reception, housing, anti-radiation protection, supplying and servicing. The urban organizations in turn, being informed about the infrastructure in their assigned hosting areas, can assist in improving it.

The relocation of the population is carried out through Evacuation Assembly Points (SEPs) established at places of work and in residential areas. Essentially every urban resident (or family) will be assigned a specific SEP and given a time for reporting to it. Each SEP will register, organize for departure and supervise the boarding of transport or the formation of marching columns of up to 2,000 to 3,000 persons. Prior to 1975, control and registration was based on a system of evacuation passes issued to the population. At present, places of work and housing authorities maintain lists of employees (and members of their families) and residents who are assigned to each SEP. The latter will process the evacuees and organize their departure on the basis of these lists, which will also be used by rural evacuation reception points to register the arriving evacuees and determine that they are authorized to use a given hosting area. Problems may arise, however, because of the large number of SEPs, the populations'

confusion about which to go to and when to report, possible failures to keep evacuation lists fully current, the need to maintain urban transportaton systems in operation during thi phase of the relocation and the heavy crossflow of the residents reporting to the SEPs or to departure points of transportation and foot columns.

To move the population, use will be made of all available means of transportation, i.e., railroads, motor vehicles--including trucks, and river and sea-going vessels. There are, however, limitations on relocation transportation capabilities due to shortages of transport, and of all-weather roads, climatic restrictions on the use of rivers and roads, and priorities assigned to military rail and road movements. In order to accelerate the rate of evacuation, the concept of relocation by a "combined method" was introduced in the early 1870s which provides for a portion of the population, primarily younger, physically fit elements, to leave the cities in organized groups on foot. All movement will be along designated routes and preplanned schedules. Motor vehicles will travel only in convoys to designated destinations, usually located at such distances as to permit one or more round trips in a 12-hour period. Foot columns will usually move only one day's march from the cities to assigned Intermediate Evacuation Points (PPEs) from which the evacuees will be subsequently transported to their final destinations. Vehicle traffic will be controlled by dispatcher and traffic control posts and assisted by fixed and mobile fueling and repair units. Priority in the use of transport appears to be given to elite elements, essential workers, personnel of significant organizations which will relocate their operations to the exurban areas, civil defense formations and the elderly, invalids, pregnant women and women with young children. Primarily subject to relocation on foot will be students of higher and middle-level boarding institutions and physically fit workers and employees (and their family members) of enterprises, institutions and organizations which will cease operations.

Soviet planned rates of relocation, the size of the population to be relocated and the number of persons to be "dispersed" vs. those who will be "evacuated" are not known. It is not unlikely, however, that the Soviets plan to relocate some 100 to 120 million urban residents. The number of essential workers subject to being "dispersed" may be as large as 20 to 25 million. Also to be moved to the dispersal areas will be civil defense formations and where conditions permit, the families of the workers and civil defense personnel. At least in theory, therefore, some 50 to 70 million persons may be considered for relocation to "dispersal" hosting areas. Soviet plans, however anticipate that where conditions in the exurban areas do not permit this, the families will be sent to other hosting localities. Despite the limitations of the Soviet transportation system, it appears that the majority of the urban population could be evacuated in two to three days, although the rates will vary from city to city, and certainly all the "valuable" elements of the population could be relocated in such a period of time.

As far as possible, each city's hosting areas will be within the boundaries of the blast (province) or republic (in the case of small ones) where the city is located. "Dispersal" hosting areas must be located on or in close proximity of major transportation routes. In well developed exurban areas,

hosting rations will be on the average of two evacuees per local resident. In other areas, hosting ratios could be greater (the minimum floorspace per resident and evacuee being 2 m^2 or 21.5 $ft.^2$), or where there are no developed hosting areas, the evacuees would live in hastily built huts, dugouts, etc. The hosting areas' civil defense staffs and evacuation reception commissions will prepare to receive, house, protect, supply and support the evacuees. Included in these measures would be the building up of stocks of food, goods of basic necessity, medical supplies and building materials for the construction of anti-radiation shelters, the improvement of water supplies, food processing, preparation and catering capacities, the expansion of medical facilities and services. In the event of a crisis relocation, these hosting areas' capacities will also be expanded by relocated urban public feeding, trade, medical and various service organizations and the deployment where needed of mobile field kitchens. While preparation of basements and other existing underground structures in rural areas for use as anti-radiation shelters is carried out to varying degrees as a part of the peacetime civil defense program, it appears that generally the construction of supplemental simple anti-radiation shelters, which may be needed to protect all evacuees in the hosting areas, will not be initiated until a time of crisis and/or the start of crisis relocation. The time required for such construction must be added to the total duration of the crisis relocation before the evacuees can be considered to effectively be protected.

The precise role of Soviet armed forces, especially of the military civil defense troops, in assisting crisis relocation is not known. It may depend on whether the relocation coincides with the mobilization and deployment of the armed forces or takes place following their completion and also on the military leadership's perception of the immediacy of a threat of enemy nuclear strikes. There are indications, however, that under favorable circumstances the military may assist crisis relocation in various ways, such as: maintenance of order and traffic control, road maintenance and construction, contruction of shelters, water reservoirs, and protected facilities for stocks of food, fuel, medical supplies and other essential goods in hosting areas, assistance in communications, providing temporary power to hospitals, bakeries, communication centers, etc., giving medical aid and hospital care to civilian casualties, and flying food and other emergency supplies to localities temporarily isolated as a result of enemy strikes.

To ensure the population's orderly behavior and disciplined execution of orders in the course of crisis relocation, instruction in relocation procedures are included in the compulsory civil defense training program for the population. However, only one hour of instruction on this topic is included in the yearly course and its content is relatively simple, given that there is little requirement for the population to show initiative or take any independent actions in the relocation process. The instruction program is supplemented by various types of exercises. Most of these are command-staff exercises held by civil defense to examine and test plans and assumptions, but do not usually involve the population. Integrated exercises which are periodically held at smaller towns, urban and rural rayons and at industrial enterprises, educational institutions, collective and state farms, etc., do include an evacuation phase, which may involve the movement of off-duty workers and members of their families to

exurban areas or a one-day march from the cities by students and young workers. There is no evidence, however, of large-scale exercises having been held which introduces some uncertainty into the question of the realism and effectiveness of Soviet relocation plans and schedules. There again, essential workers are more likely to be better trained and exercised than other elements of the population.

While careful account must be taken of the many differences between the Soviet Union and the United States, the Soviet crisis relocation program may suggest some useful concepts and methods for any similar program in the U.S. Most noteworthy is the Soviet requirements for the relocation of significant elements of the urban population regardless of the availability of blast shelters in the cities, the preparation of hosting areas, the system of allocation of hosting areas and distribution of evacuees among them, the "dispersal" concept for essential workers, the organized use of public transportation, the control and support system for vehicle traffic, the concept of evacuation passes, and the content of public instruction. Finally, the U.S. cannot ignore the existence of a well-developed, planned and organized Soviet capability to carry out a rapid relocation of a large part of its urban population and to remain in this posture for protracted periods of time while maintaining essential economic activities.

Key Findings

- Despite the increased importance attributed by Soviet civil defense since the early 1970s to blast shelter construction in key urban areas and at significant economic installations as a measure to protect the population against an enemy surprise attack, crisis relocation of residents of high-risk cities continues to be an important element of the Soviet civil defense program.

- In its approach to crisis relocation--as in the case of its program in general--Soviet civil defense assigns priority not only to the protection of residents of high-risk areas and workers of important economic installations, but especially to the protection of those elements of the population which are believed to be of particular value to the continuity of the Soviet system and its control, the logistic support of the armed forces' operations, the sustainment of the war effort, and post-attack reconstitution and recovery.

- The Soviet authorities see a requirement for the pre-attack evacuation from risk areas of leadership elements, essential workers, and civil defense forces <u>regardless</u> of the availability of shelters in the cities.

- Because of the requirement to maintain essential industrial enterprises, utilities, and services in continuous operation--even in wartime, Soviet crisis relocation plans distinguish between the "dispersal" of essential

workers who will be required to commute to work from exurban host areas to the high-risk areas, and the "evacuation" of other residents who will remain in the host areas.

- o Crisis relocation planning is carried out at all levels of the Soviet civil defense organization, with the civil defense chiefs and staffs being assisted by special Evacuation Commissions in the urban areas and at large economic installations and by Evacuation Reception Commissions in the rural host areas and small towns.

- o Soviet crisis relocation plans provide for a highly organized and controlled evacuation, which precludes independent actions by the population and includes alternate procedures for warning the population, precise scheduling of departures, the allocation of transportation and movement routes, and the assignment of dedicated host areas in accordance with requirements for dispersal of essential workers, and the resettlement of other urban residents.

- o The Soviet crisis relocation system allows for a selective as well as a general evacuation of the urban population and, depending on circumstances, for beginning the relocation either with the evacuation of essential workers, or the non-essential elements of the population, or the simultaneous evacuation of both groups.

- o Relocation is planned and organized on the "territorial-production" principle--i.e., according to places of employment or residence, with working persons being evacuated by their places of employment, families going with the heads of households, and non-working adults being evacuated by their housing administrations.

- o The relocation is managed by Evacuation Assembly Points (SEPs) which are established at work places and in residential areas, each having from 1,500 to 3,000 workers or residents assigned to it for control and processing.

- o The workers and their families and non-working residents are required to report to their assigned SEPs at designated times, where they will be registered and checked against personnel lists prepared by the work places and housing administrations, organized into groups, and--according to plans--either taken to transportation boarding points or to points of departure of marching columns.

- o Warning of the population of the start of relocation allows for selective and concealed notification, especially of leadership elements, essential workers and civil defense forces, or it can be general with the use of radio, television and other mass communication means.

- o In order to accelerate the rate of departure of residents of high-risk areas, the relocation will be conducted by the "combined" method, i.e., the simultaneous use of all available means of transportation as well as the departure from the cities of a portion of the population in organized groups on foot.

- Priority in the use of transportation is given to essential workers and civil defense personnel, as well as pregnant women, women with children up to 10 years of age, the handicapped, sick and elderly.

- The primary means of transportation is considered to be the railroads; however, rail movement of evacuees will have to be coordinated with military rail traffic which will have priority.

- Transportation by motor vehicles--which will use all available vehicles, including privately owned cars--will operate according to pre-planned schedules along designated routes, and vehicles will only travel in convoys under strict control to assigned destinations.

- Along the routes, the flow of motor vehicle traffic will be controlled by dispatcher and traffic control posts and supported by mobile and fixed fueling, towing and repair units and facilities.

- To increase the frequency of round trips by motor vehicles, they will be primarily used to carry essential workers and civil defense personnel to dispersal areas close to the cities, or, in the case of evacuees destined to distant host areas, they will first be taken to intermediate evacuation points from which they will subsequently be transported to their final destinations.

- For transportation of evacuees, use will also be made, where appropriate, of river boats, barges, and sea-going vessels if climatic conditions permit.

- Evacuation on foot by able-bodied residents will be in organized and supervised columns of 500-1,000 persons, traveling along designated routes to intermediate evacuation points one day's march (12-25 miles) from the cities, where they will wait for transportation to their assigned host areas if these are at a significnt distance from these points.

- Although transportation capabilities vary from city to city and are constrained by climatic conditions and a relative shortage of motor vehicles and all-weather roads, it is estimated that a major portion of some 100-120 million urban residents, including all essential workers and civil defense personnel, could be moved from the cities by the "combined" method in two or three days.

- Although a relatively high rate of departure of residents of high-risk cities may be maintained, the completion of the relocation will require significantly more than two-three days in the case of the largest cities and those with poorly developed transportation routes and exurban areas, and in order to move evacuees from the intermediate evacuation points to their assigned host areas.

- Host areas will be assigned to the cities by oblast or republic civil defense staffs and, insofar as it is practical, will be within the boundaries of the oblasts in which the cities are located.

- Selection of localities for hosting dispersed essential workers is made on the basis of the following criteria: (1) they should be within 30 to 75 miles from the cities in order that not more than 4-5 hours is spent by the workshifts on round trips to their work places; (2) they should be within 3 miles of major highways or rail lines leading to the cities; and (3) they should make it possible for the enterprises to which they are allocated to keep their workforce together so as to facilitate control over the workers.

- Host areas for non-essential evacuees and relocated institutions, administrations, and organizations can be located at greater distances from major transportation routes or cities than dispersal areas.

- The civil defense staffs, Evacuation Reception Commissions, and local soviets (councils) of each host area plan, already in peacetime, the reception, housing, supply and sheltering of evacuees on the basis of information on the number of evacuees, their mode of travel, and approximate time of arrival, which is provided by the appropriate urban or industry civil defense staffs.

- Arriving evacuees will be received, registered, assigned housing, and moved to their places of residence by Evacuation Reception Points established by the rural civil defense staffs and Evacuation Reception Commissions at points of disembarkation of evacuees.

- Priority is given to housing evacuees in the homes of local residents--who must receive them on a compulsory basis and supply them with bedding, dishes, and other necessities which the evacuees could not bring with them (baggage for evacuees traveling by transport is limited to 50 kg per person, and for those who leave on foot, what they can carry on the march).

- Where practical, the preferred hosting ratio is one or two evacuees for every local resident, but in any case there should not be less than 2 m^2 (21.5 ft^2) of housing floorspace for every evacuee and resident.

- Additional housing for evacuees will be in public and communal buildings, storage facilities, pioneer camps and tourist facilities, summer cottages of urban residents, rest homes, etc.

- In the case of cities with sparsely inhabited exurban areas (primarily the northern regions and Eastern Siberia), the evacuees will live in dugouts and hastily erected cabins built by the civil defense forces and the evacuees themselves.

- The evacuees will use existing fallout shelters in the basements and cellars of their assigned housing, or, if these are insufficient, they will use simple shelters (dugouts, covered trenches, etc.) which will be built either by local residents in advance of the relocation or by the evacuees themselves using available mechanized earth-moving equipment and building materials already pre-stocked in peacetime in the host areas.

- Current Soviet practice indicates that the host areas do not maintain in readiness sufficient fallout shelters to protect all evacuees. Consequently, the time required for the construction of additional shelters may have to be added to the total time needed to complete the process of protecting the urban population by means of crisis relocation.

- Preparation of host areas to receive urban evacuees includes the stocking in protected facilities of food reserves and medical supplies and, where necessary, the expansion of water supply, food preparation and catering capacities, medical and hygiene facilities, etc.

- The infrastructure of the host areas may be improved in peacetime with the assistance of the urban organizations to whom they are dedicated, and it will be augmented in time of relocation by evacuated urban medical organizations, civil defense mobile field kitchens, Mobile Food Supply Stations, Clothing Supply Service units, and Engineering Service units, as well as by evacuated food, medical, and other supplies.

- In principle, the food reserves in the host areas and other state reserves should suffice to sustain the population during the period following an attack, although disruption of the transportation system may interfere with the distribution of the state reserves and other supplies located outside the host areas.

- The role of Soviet military civil defense and other units in crisis relocation is unclear and apparently will depend on circumstances. Military units may be used in maintaining communications, public order and traffic control; assisting in the construction of shelters, protected storage facilities, water reservoirs, and other essential structures in host areas; maintaining roads; operating mobile power equipment; and providing medical aid to evacuees.

- Instruction of the population in evacuation procedures is provided primarily by the compulsory civil defense instruction course for the general population which devotes one hour annually to this topic. Given that the Soviet urban population is required to show little initiative beyond reporting at designated times to assigned SEPs, this instruction may suffice to teach the public what to expect and how to act in a crisis relocation.

- While various types of evacuation exercises are held throughout the USSR, these are usually on a small scale and, therefore, may not provide an adequate test of the realism and effectiveness of Soviet plans and procedures in the event of a large-scale crisis relocation.

FINAL REPORT

THE SOVIET CRISIS RELOCATION PROGRAM

By

Dr. Leon Goure´

MAY 1983

Prepared for:

FEDERAL EMERGENCY MANAGEMENT AGENCY
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PREFACE

The following report was prepared for the Federal Emergency Management Agency under Contract No. EMW-C-0571 as a part of an ongoing research program of Soviet Civil Defense undertaken by Science Applications, Inc.

The objective of this study is to describe, analyze and assess, on the basis of Soviet open-source materials, Soviet civil defense rationale, concepts, plans, organization, methods and capabilities for the crisis evacuation of residents of high risk cities and workers of industrial installations.

In 1972, the author conducted a brief study of Soviet urban evacuation concepts and organization which was reported in Soviet Civil Defense—Urban Evacuation and Dispersal [Center for Advanced International Studies, University of Miami, Final Report, May 1972, (44 pp.), prepared for the Defense Civil Preparedness Agency under Contract No. DAHC-20-70-C-0309]. The present report provides an updated and much more expanded and detailed description and analysis of crisis evacuation in Soviet civil defense plans and programs. Other relevant studies to the subject of this report prepared by the author include Soviet Civil Defense Concepts, Programs and Measures for the Protection of Industry in Nuclear War Conditions [Advanced International Studies Institute, Final Report, June 1981, prepared for the Federal Emergency Management Agency under Contract No. EMW-C-0384] and Soviet Post-Strike Civil Defense Rescue, Damage-Limiting, Repair and Restoration Operations [Science Applications, Inc., Final Report, August 1982, undertaken for the Federal Emergency Management Agency under Contract No. EMW-C-0571].

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Section 1

INTRODUCTION

October 4, 1982, marked the official 50th anniversary of USSR Civil Defense. Although during this half-century its organization, scope, character and even name have undergone a number of changes, a primary aim of the program has been and remains the wartime protection of the population and the mitigation of losses among it. One method of such protection is the evacuation of the population from high risk areas.

Historically, evacuation from areas of military operations has been a long-standing method for protecting non-combatants. More often than not such evacuation was largely spontaneous and unplanned. The deliberate planning and organization of large-scale evacuation in times of a threat of war by local, regional or national authorities is primarily a modern phenomenon. It is the consequence of a combination of factors. Among these factors are the rapid urbanization of societies and the growth of cities; the increasing fire power and range of armaments; the growing role of the economy and population in sustaining the war effort and consequently becoming significant strategic targets for attack; and a markedly greater sense of responsibility by governments for the fate of their citizens.

No doubt fire power and range of armaments have been a critical factor. Until World War II, evacuation was limited to the zones of actual ground combat operations and to cities threatened by siege. The Second World War, however, saw the appearance of massive bombardment by opposing air forces of cities far behind the front lines. Expectation of such attacks and their subsequent implementation in the course of the war led to the organized partial evacuation of such large cities as London and Berlin. Total evacuation of the civilian population from cities, however, was rare and was mostly associated with intense, prolonged ground combat, as in the case of Stalingrad, for example. On

the whole, strategic bombardment capabilities in World War II were still quite limited in their effectiveness. While the evacuation of children and other non-working urban residents from high risk cities was considered desirable, basements and other underground structures (subways, for example) as well as trenches were generally believed to provide adequate protection against conventional bombs and shells.

The appearance of nuclear weapons and intercontinental missile delivery systems now poses a qualitatively different and far greater threat to the population in general and urban residents in particular. Potential losses among the population now may be so high as to place the survival of a country subjected to nuclear strikes in jeopardy. In particular, large urban and industrial centers become potential targets for sudden, devastating nuclear attack. Consequently, the protection of the population in general—and of the residents of large urban areas in particular—from the effects of such attacks becomes a matter not only of humanitarian but of strategic importance.

In the nuclear age, the basic passive methods of protecting the population against enemy attack have not changed from those employed during World War I. They still consist of sheltering and/or evacuation. Sheltering against all the prompt and secondary effects of nuclear detonations, however, requires far more elaborate, effective and consequently also more expensive protective facilities than those used during World War II. The high cost of modern shelters and the long lead times needed to build large numbers of them have made the alternative of pre-attack evacuation of the population from high risk areas appear particularly attractive. This is so because evacuation reduces the problem of protection of the population to that needed only against radioactive fallout and because peacetime planning of and preparation for evacuation are relatively low cost and less time consuming when compared with large-scale blast shelter construction.

For all of its attractiveness, evacuation of high risk urban areas poses large and complex problems. This is so because of a number

of factors. First, there is the enormous scope of the evacuation which, in the case of the U.S. and USSR, may exceed 100 million persons. Second, there is the requirement to accomplish the evacuation as rapidly and in as orderly a manner as possible. Third, there is the problem of not only ensuring the smooth movement of evacuees to hosting areas, but also of achieving an appropriate distribution of evacuees among hosting areas. Finally, there is the requirement for the preparation of the necessary infrastructure in the hosting areas and for effective protection of evacuees and local residents against fallout. Thus, evacuation requires not only careful planning and organization, as well as coordinated actions among authorities at various levels, but also effective instruction of the population and the maintenance of discipline among it.

At present few countries have extensive, well-advanced evacuation (or crisis relocation) programs. Most of those that do are communist countries. Among the latter, the Soviet Union in particular appears to have well-developed plans and organization for large-scale pre-attack urban evacuation as an element of its long-standing, large and comprehensive civil defense program.

It must be pointed out that information on the Soviet civil defense program is uneven. Information on the general principles guiding the program, basic plans, organization and measures as well as technical requirements for implementing them are described in considerable detail in Soviet publications. The Soviet Union, however, maintains secrecy on specific civil defense capabilities and the present state of readiness of various elements of the program. Thus, in the matter of crisis relocation, Soviet open sources provide no information on the number of cities and urban residents which will be subject to evacuation or the number of essential workers who will be dispersed, the planned rate of evacuation, the location of hosting areas, the expected length of time required to prepare the hosting areas to receive and protect the evacuees, the amounts of supplies to be stored in hosting areas to sustain the evacuees and local residents, and so on. There is also no data on the degree of confidence the Soviet leadership and civil defense officials have in the

ability of the system to implement the relocation plans in a limited period of time. Finally, there is relatively little information on the role of the military in Soviet crisis relocation plans or on the lessons learned from evacuation exercises.

The present study is based entirely on open source materials, primarily those published in the Soviet Union. As was noted, there exists a large body of Soviet civil defense publications consisting of manuals, books and pamphlets, as well as numerous journal and newspaper articles and radio and television broadcasts. A significant portion of these materials include discussions of Soviet views on and plans and preparations for crisis relocation. Of course, given Soviet secrecy, it will not be possible to treat all aspects of the Soviet evacuation program with equal thoroughness and specificity. Insofar as available open sources permit, however, attempts will be made to provide some gross estimates of Soviet capabilities.

Analysis of Soviet crisis relocation plans raises useful issues and has potentially significant implications for U.S. security interests and specifically for U.S. civil defense planning. First, it offers insights into Soviet views on war initiation, the possible length of strategic warning and on likely enemy targeting priorities. Second, it provides indications of Soviet views on the importance of crisis relocation as a necessary measure for the protection of select elements of the Soviet society as well as the general population. Third, the likelihood that the Soviets would initiate urban evacuation in the event of a threat of war and estimates of the probable length of time required for its implementation are highly relevant for possible U.S. initiation of similar evacuation and for planning its rate. Finally, while allowing for all the differences between the U.S. and the Soviet Union, U.S. crisis relocation planners nonetheless may draw useful ideas and lessons from Soviet planning, organization and practical measures for urban evacuation.

Section 2

THE EVOLUTION OF SOVIET VIEWS ON THE ROLE AND UTILITY OF CRISIS RELOCATION

During the past fifty years Soviet views on the role and utility of crisis relocation as an element of the Soviet civil defense program have undergone considerable changes. These views appear to have been influenced by contradictory considerations and factors. Thus, on the one hand it was recognized that crisis relocation is a complex measure, difficult to organize and implement and, more importantly, that it greatly disrupts economic and urgent military activities. On the other hand, however, the Soviet leadership has had to progressively face up to the growing threat to the survival of the civilian population and to changing assessments of the feasibility of providing the population with alternate methods of protection, such as shelters.

Prior to World War II, even though bombing raids on cities had been anticipated, no country had planned for large-scale crisis relocation of the civilian population. In the Soviet Union, civil defense—or as it was then called 'Local Anti-Air Defense' (MPVO)—was focused primarily on the cities near the Soviet Union's borders. Prior to the German invasion, the Soviet Union had acquired new buffer areas between its Western cities and the potential German enemy as a result of the acquision of the Baltic States, parts of Poland, and Finland. Furthermore, the Stalinist regime viewed any discussion of a possible German penetration of Soviet territory or of a real German air threat to cities in European Russia as defeatist. Consequently, even though evacuation of children and other non-working urban residents from cities was briefly discussed in Soviet publications,[1/] this concept was not adopted by Soviet civil defense officials as a general program prior to the German attack on the USSR. A small number of children were actually evacuated from Leningrad and Moscow at the beginning of the attack, but otherwise the population was expected to find adequate protection in simple shelters, i.e., basements, slit trenches, etc.

The advances of the German armies into the Soviet Union resulted in a massive civilian evacuation which was partly spontaneous and partly organized by the government. The latter appears to have been primarily concerned with the organized relocation of vital industrial enterprises and essential workers, as well as elements of the party and elite, to safe areas. Much of the organized relocation, therefore, involved movements over great distances in order to place the evacuated enterprises and personnel far beyond possible German ground advances or the range of German aircraft. In all, the Soviets claim to have evacuated elements of 1,523 significant industrial enterprises to the eastern regions of the country.[2/] Along with this, a total of about 25 million Soviet citizens were evacuated in the course of the war, 17 million of them during the first six months.[3/] There was considerable uncontrolled evacuation in the rural areas and small towns threatened by the advancing German forces and combat operations. Many of these evacuees were overrun by the German advance and found themselves in German occupied areas. In the case of many of the large cities such as Moscow and Leningrad, evacuation was organized and controlled by the authorities, and self-evacuation was largely prohibited.[4/]

Despite its war experience, following World War II Soviet civil defense initially persisted with its disinterest in crisis relocation. Primary emphasis in measures to protect the population was on shelters. Indeed, nuclear war was ignored in Soviet civil defense manuals until 1954—that is, until after Stalin's death.

In 1956 a review of the role and mission of Soviet civil defense was carried out which resulted in a new interest in crisis relocation. Speaking at the 20th CPSU Congress in 1956, the USSR Minister of Defense, Marshal of the Soviet Union G. K. Zhukov, noted the growing threat to the population posed by nuclear weapons and modern delivery systems.[5/] In accordance with this view, the mission of civil defense was expanded to include among others "the development of plans for the evacuation of children and the unfit-for-work population."[6/] Even so, civil defense

manuals for instruction of the population published in 1957 made no mention of pre-attack crisis relocation.[7/]

In 1958, however, crisis relocation began to be mentioned in Soviet civil defense manuals. The creation of a Civil Defense Transportation Service was announced that year, whose mission was to transport evacuees from the cities to safe areas.[8/] Soviet manuals stated explicitly that "the timely evacuation of people, especially from large cities, will significantly reduce the number of casualties."[9/] It was also said that in the event of a threat of war, the rural areas would organize the reception, housing and employment of the evacuated urban population.[10/] Nevertheless, Soviet publications made clear that crisis relocation applied only or primarily to childrens' institutions, i.e., nurseries, childrens' homes and orphanages, kindergartens and schools, and elements of the urban population unfit for work. Furthermore, until 1960 no specific discussion of evacuation was included in the civil defense instruction program for the general population.[11/]

By 1960 it became apparent that crisis relocation was going to be a major civil defense measure. There appears to have been two reasons for this. The first was the recognition that it was impractical to rapidly build a sufficient number of blast shelters to protect the entire population of high risk cities.[12/] Another reason appears to have been a debate about the utility of shelters given the possibility that the enemy may deploy nuclear weapons with yields of 20 to 100 megatons.[13/] Although the controversy did not end Soviet interest in the construction of additional blast shelters, it underscored the importance of alternative methods of protecting the population.

A new civil defense instruction program for the adult population was introduced in 1960. For the first time, the program included a discussion of evacuation, albeit only fifteen minutes.[14/] Nevertheless, crisis relocation was characterized as "one of the most important measures" for the protection of the population. Priority continued to be given, however, to the evacuation of children, the elderly and invalids.[15/] In

addition, it was specified that "citizens have the right to independent self-evacuation to any area they choose," but presumably only if they were released from work or other duties.[16/] It was also made clear that a large part or even the majority of the urban population would remain in the cities.

The 1960 publications indicate that the basic organizational elements of crisis relocation had been defined. One interesting feature of the relocation plan, which undoubtedly was dictated by shortages of transportation means, was the concept of transporting the evacuees first to intermediary—i.e., temporary—evacuation areas beyond the zones of possible destruction. Later, as transportation became available, they were to be moved to their final resettlement locations.[17/] It was also assumed that in the event of an enemy attack on the Soviet Union the evacuation would continue from those cities which were not struck. Of course, at that time the number of nuclear weapons in the U.S. as well as the Soviet arsenals was small, and neither side was expected to engage in a protracted nuclear exchange.

In 1961 major changes were made in Soviet civil defense. Its name was changed from Local Anti-Air Defense (MPVO) to Civil Defense (Grazhdanskaya Oborona), and control over it was shifted from the Ministry of Internal Affairs (MVD) to the Ministry of Defense, thus placing it under military leadership. Furthermore, the scope of the civil defense program was expanded to cover the entire USSR, and the implementation of and investments in the various elements of the program were stepped up. Even so, it took some time before concepts and plans for crisis relocation became fully developed and publicized.

According to a review of the history of Soviet civil defense published in 1975, it is asserted that in 1961 the "most effective methods of protection [of the population] were considered to be the dispersal of workers and employees of installations of the national economy and the evacuation of the population from large cities and the more important industrial centers to zones outside the cities, and the

protection of people in shelters. The primary method of protection was considered to be the evacuation and dispersal of the population of large cities."[18] Similarly, Soviet civil defense manuals published in 1962 also mentioned the pre-attack dispersal of workers and employees and the evacuation of residents of large cities as an "effective" measure for significantly reducing population losses.[19] The concept of "dispersal of workers and employees" represented a major expansion of the scope of crisis relocation which previously had been largely limited to the non-working element of the urban population. Even so, the manuals still specified that children and people unfit for work would have priority in the evacuation and that the evacuees would first be moved to intermediate areas outside the cities before proceeding to their assigned resettlement locations.[20]

The manuals also gave little specific information on the organization and management of crisis relocation. Indeed, a new 19-hour civil defense instruction program for the general population introduced in 1963 did not discuss evacuation and dispersal in the section devoted to methods of protection of the population and only mentioned it in passing as a possible option in a section dealing with "The Duties of the Population in the Event of a Threat of Attack" and "In Response to Civil Defense Signals."[21]

In succeeding years, however, Soviet publications reflected an increasing focus of civil defense on the results of more careful planning of crisis relocation. In 1964, the new chief of USSR Civil Defense, Marshal of the Soviet Union V. I. Chuykov, characterized crisis relocation of residents of large cities "which are the probable targets of enemy missile-nuclear strikes" as the "main method" of assuring their protection.[22] He also specified that dispersal would include the off-duty shifts of industrial, transportation, power and communications workers. The characterization of dispersal and evacuation as the "main" or "most effective" method of protecting the population of high risk cities persisted in Soviet civil defense publications through the 1960's.

By 1965 plans to disperse essential workers separately from their families appear to have been scrapped in favor of evacuating the families together with the workers and employees.[23] The manuals continued to mention, however, that first priority would be given to the evacuation of essential workers, childrens' institutions and people unfit for work, and that intermediate evacuation areas would be used where transportation means were insufficient to move the evacuees at once to their assigned resettlement locations.[24] For the first time, some Soviet publications also mentioned the possibility that in the event of a shortage of transportation and given the need to expedite the relocation, a portion of the urban population may be evacuated on foot.[25]

The focus on crisis relocation as the "main method of protecting the population" became clearly evident with the introduction in 1967 of a new 21-hour civil defense instruction program for the general population.[26] In this program, two hours of instruction were devoted to the subject of crisis relocation. The manuals outlining the contents of the instruction program provided considerable details on the organization and plans for the dispersal and evacuation, the use of means of transportation, control methods, and the organization of the reception, quartering, supplying and protection of the evacuees in the hosting areas. It was noted that dispersal and evacuation applied not only to residents of high risk cities but also to the residents in their suburbs to a radius of 8-10 km from the city limits, as well as workers and employees of large installations located outside cities.[27] It is noteworthy that the instruction program made no mention of possible evacuation on foot, nor of use of intermediate evacuation areas. Furthermore, no mention was made of the earlier priority assigned to the evacuation of childrens' institutions and of people unfit for work. It continued to be emphasized, however, that while the entire population of high risk cities would be subject to crisis relocation, one work shift would be present at all times at essential industrial, power, utilities, communication and other important installations which will remain in operation in the cities.[28]

The focus on crisis relocation was justified in Soviet civil defense publications on the ground that it was not possible for economic reasons to provide the entire population of high risk areas with blast shelters.[29] It was claimed, therefore, that

> *Calculations show that in the event of a missile-nuclear strike, losses among the population of a large unprotected city may reach about 90 percent of its total, while under conditions of timely and full execution of measures for the dispersal and evacuation of the population, its losses may be reduced to a few percent of the total inhabitants.*[30]

Yet, even while crisis relocation appeared to have become the centerpiece of the Soviet civil defense program for protection of the population, and even while it was explained that there was no alternative to it, it became once again a subject of debate and review by the leadership. Not surprisingly, Soviet civil defense literature lagged behind decisions which introduced new directions in the program. The apparent issue was the question of the possibility of an enemy surprise attack coupled with concern over the implications for civil defense of the growing number of warheads in the U.S. strategic forces. Furthermore, crisis relocation was not compatible with the requirements of the Soviet pre-emptive counterforce strike strategy because execution of crisis relocation was likely to provide the enemy with strategic warning of a Soviet attack. Finally, there was the possibility that the enemy would strike while the crisis relocation was in progress.

Already in 1969, the chief of USSR Civil Defense appeared to reflect some of these misgivings when he wrote:

> *Thus, along with dispersal and evacuation, of great significance in the protection of the population will be providing it with shelters and cover. Their role will be especially great in the event that it will not be possible to carry out all evacuation measures. For this reason, the construction in the cities of the necessary number of protective structures is a very important task.*[31]

The following year, a prominant military theoretician and commentator wrote:

> *The organization and implementation of large-scale evacuation measures are quite complex and require considerable time. It is difficult to expect that there will be sufficient time [to carry them out] before the war.*[32]

The author noted, however that "serious attention" was being given to ways to reduce the time required to implement the evacuation.

Following the appointment in 1972 of a new chief of USSR Civil Defense, Colonel General A. T. Altunin who replaced the aging Chuykov, it became evident that the review of the civil defense program resulted in a shift in emphasis. Thus, Altunin wrote in 1973 that:

> *Decisive changes have taken place with regard to making maximum use of all available shelters in the interest of protecting the population. At the same time, the search continues for the best and most efficient methods for evacuating and dispersing the population.*[33]

In 1974, Altunin called for USSR Civil Defense "to be constantly prepared to shelter the entire population in protective structures,"[34] and specifically the residents of high risk cities, and characterized this as being the "main task" of civil defense.[35] He asserted that:

> *Under present conditions, when the accuracy of delivery of nuclear warheads to their targets has sharply increased while their yields have enormously grown, Civil Defense will seek to provide the entire population of cities and installations which will be the more likely targets of nuclear weapons with such shelters.*[36]

The new focus on shelters was explained by other Soviet writers on civil defense as a response to the growing threat of an enemy surprise or pre-emptive attack, which would leave insufficient time to carry out the crisis relocation of the urban population. For example, it was said that:

> *Now, when there has been further development and improvement of nuclear missiles and strategic aviation, in the event that a war breaks out the aggressor may attempt to deliver a pre-emptive nuclear attack.... Under these conditions, the time for performing protective civil defense measures may be extremely limited, especially those for carrying out dispersal and evacuation. Consequently, today a plan for sheltering the population in protective structures has been brought to the fore as the most reliable one for saving the lives of people from nuclear missiles.*[37]

Subsequently, Altunin explained that the earlier primary reliance on crisis relocation was necessitated by a shortage of blast shelters. He implied that over the year, a sufficient number of shelters have been built to make it practical to pursue the goal of providing shelters for the entire population of high risk cities.[38] One should note that in 1982 Altunin reported that the creation of the "necessary inventory of shelters" was still ongoing.[39]

Although as a result of this shift in emphasis in the Soviet civil defense program crisis relocation ceased to be characterized as the "main" method for protecting the urban population, it remains an "important" element in the program. As Altunin pointed out in 1974, despite the new objective of providing all residents of high risk cities with shelters, "evacuation and dispersal measures will remain as hitherto among the important measures for the protection of the population."[40] Given that it is "essential" at the start of military operations to decongest the cities to a "maximum extent," Altunin asserted that evacuation and dispersal "will always remain an integral part of the complex of tasks for the protection of the population."[41] However, the diminished status of crisis relocation in the Soviet civil defense program was reflected in the fact that the new 20-hour training program for the general population introduced in 1973 and still in effect today allocates only one hour of instruction time to dispersal and evacuation.[42]

As Altunin had indicated in 1973, Soviet civil defense leaders have been greatly concerned with finding ways to expedite crisis relocation, or as they put it, to be able to carry it out in a "maximally compressed time period." One change, announced by Altunin in 1973, to expedite the rate of crisis relocation was the adoption of a decision to move people by a "combined method" which provided for a simultaneous use of all means of transportation as well as marches on foot.[43] This method remains in effect to the present day. Undoubtedly, the potential speed of the evacuation of urban residents has also increased as a result of the growth of the Soviet transportation capabilities and the construction of new rail lines and roads.

It is evident that, in the Soviet view, crisis relocation remains an important and valuable method of protecting the population of high risk cities and industrial centers. At the same time, the Soviets are dissatisfied with crisis relocation as the sole or main civil defense option for this purpose because its implementation depends on a relatively optimistic war initiation scenario. According to Altunin, however, the mission of civil defense is to "raise to a maximum the reliability of the protection of the population from the first hours of a war and under any conditions of its initiation."[44] It is not surprising therefore that the Soviets, when considering various possible war scenarios, look to alternate methods of protecting the population in high risk areas, such as sheltering it in place. Crisis relocation thus remains an important option in Soviet civil defense measures and, given the long lead time needed for the construction of sufficient shelters, it appears to be at present still the main Soviet option for the protection of the mass of the urban population. This is reflected in recent Soviet civil defense manuals. For example, according to a 1980 manual edited by Altunin and reissued in 1981, the population continues to be told that:

> *Dispersal and evacuation will reduce many fold the density of the population in the cities and, consequently, the losses among the population can also be reduced many fold.*[45]

Section 2

FOOTNOTES

1. Vestnik Protivovozdushnoy Oborony (Herald of Anti-Air Defense), No. 1, January 1939, p. 48.

2. G.S. Kravchenko, Ekonomika SSSR v Gody Velikoy Otechestvennoy Voyny (The Economy of the USSR During the Years of the Great Fatherland War), (Moscow: Ekonomika, 1970), p. 113; Ya.E. Chadayev, Ekonomika SSSR v Period Velikoy Otechestvennoy Voyny (The Economy of the USSR During the Period of the Great Fatherland War), (Moscow: Mysl', 1965), p. 75; G. Kosyachenko, "The Creation of the War Economy of the USSR in 1941-1945," Planovoye Khozyaystvo (Planned Economy), No. 5, May 1975, pp. 66-67.

3. Sh.M. Munchayev, "The Evacuation of the Population in the Years of the Great Fatherland War," Istoriya SSSR (History of the USSR), No. 3, May-June 1975, pp. 135-138.

4. L. Goure, The Siege of Leningrad, (Stanford, CA: Stanford University Press, 1962), passim; and with H.S. Dinerstein, "Moscow in Crisis," in Two Studies in Soviet Control, (Glencoe, IL: The Free Press, 1955), pp. 145-225.

5. K.G. Kotlukov, K.S. Ogloblin and A.I. Sgilevskiy, Grazhdanskaya Oborona Vchera i Segodnya (Civil Defense Yesterday and Today), 2nd edition, (Moscow: Atomizdat, 1975), p. 58.

6. Ibid.

7. V.D. Moskalev, V.P. Sinitsyn and A.S. Tertychnyy, editors, Uchebnoye Posobiye po MPVO (Instruction Manual on Civil Defense), (Moscow: DOSAAF, 1957). See also M.E. Levin, G.A. Malinin, M.N. Mandrazhitskiy, V.P. Sinitsyn and V.I. Fedorov, Zashchita ot Sredstv Massovogo Porazheniya (Protection Against Means of Mass Destruction), (Moscow: Uchpredgiz, 1958).

8. M. Gvozdev and V. Yakovkin, Atomnoye Oruzhiye i Protivoatomnaya Zashchita (Atomic Weapons and Anti-Atomic Defense), 2nd edition, (Moscow: DOSAAF, 1958), p. 159.

9. J.P. Miroshnikov and G.N. Zapolskiy, Zashchita Naseleniya ot Sovremennykh Sredstv Porazheniya (Protection of the Population Against Means of Destruction), (Moscow: DOSAAF, 1958), p. 83.

10. Voyennyye Znaniya (Military Knowledge), No. 9, September 1958, p. 30.

11. Uchebno-Metodicheskoye Posobiye po Provedeniyu Trenirovok i Privemu Norm "Gotov K PVO" 1-i Stupeni (Instruction-Methodological Manual for Training and Passing the Norm "Ready for Anti-Air Defense" 1st Stage), (Moscow: DOSAAF, 1959), passim.

12. See Army General A. Altunin, "Principal Stages," Voyenno-Istoricheskiy Zhurnal (Military-Historical Journal), No. 11, November 1976, pp. 43-44.

13. See L. Goure', The Resolution of the Soviet Controversy Over Civil Defense, RM-3223-PR, (Santa Monica, CA: The RAND Corporation, June 1962).

14. Uchebno-Metodicheskoye Posobiye po Prakticheskoy Podgotovke Vzroslogo Naseleniya k Deystviyam po Likvidatsii Posledstviy Napadeniya s Vozdukha (Normy "Gotov K PVO" 2-i Stupeni) (Instruction-Methodological Manual for the Practical Training of the Adult Population for Actions to Liquidate the Consequences of Air Attack. Norms for "Ready for Anti-Air Defense" 2nd Stage), (Moscow: DOSAAF, 1960), pp. 22, 24.

15. Ibid, p. 24.

16. Ibid, p. 26; M. Korablev, "Dispersal and Evacuation of the Population," Voyennyye Znaniya, No. 7, July 1960, pp. 33-34.

17. Uchebno-Metodicheskoye Posobiye po Prakticheskoy Podgotovke...., p. 25; Korablev, op. cit., p. 34; M. Korablev, Okhrana Obshchestvennogo Poryadka i Bezopastnosti v Usloviyakh PVO (Maintenance of Public Order and Safety Under Conditions of Anti-Air Defense), (Moscow: DOSAAF, 1960), p. 7.

18. Kotlukov et. al., op. cit., p. 69.

19. I.S. Varennikov and L.V. Vinogradov, Zashchita Naseleniya ot Sovremennykh Sredstv Porazheniya (Protection of the Population Against Modern Means of Destruction), (Moscow: DOSAAF, 1962), pp. 67-78; P.T. Egorov, I.A. Shlyakhov, T.V. Dolbnin and V.S. Mordvinov, Grazhdanskaya Oborona (Civil Defense), (Moscow: Vysshaya Shkola, 1962), pp. 117-133.

20. Egorov et. al., op. cit., pp. 133-134.

21. N.S. Pokrovskiy, editor, Sposoby Zashchity ot Yadernogo, Khimicheskogo i Bakteriologicheskogo Oruzhiya (Methods of Protection Against Nuclear, Chemical and Bacteriological Weapons), 2nd edition, (Moscow: DOSAAF, 1965).

22. Marshal of the Soviet Union, V.I. Chuykov, "Protection of the Population is the Main Task of Civil Defense," Voyennyye Znaniya, No. 1, January 1964, p. 3-4.

23. For example, see N.P. Krechetnikov, V.T. Morozov and N.P. Olovyanishnikov, Grazhdanskaya Oborona na Mashinostroitel'nykh Predpriyatiyakh (Civil Defense at Machine-Building Enterprises), (Moscow: Mashinostroyeniye, 1965), p. 66; P.T. Egorov, I.A. Shlyakhov, V.S. Mordvinov, I.V. Simonenko and Yu.A. Sipaylov, Grazhdanskaya Oborona, (Moscow: Vysshaya Shkola, 1966), p. 9.

24. Yu. Pavliy, "A Reliable Protection Measure," Voyennyye Znaniya, No. 7, July 1965, p. 23; P.G. Yakubovskiy, Uchebnoye Posobiye dlya Professional'no-Tekhnicheskikh Uchilishch (Instruction Manual for Professional-Technical Schools), (Moscow: Vysshaya Shkola, 1966), p. 63.

25. Yakubovskiy, op. cit., p. 64; Yu. Pavliy and M. Tsivilev, Evakuatsiya Naseleniya Gorodov—Sposob Zashchity ot Yadernogo Oruzhiya (Evacuation of the Population of Cities—A Method of Protection Against Nuclear Weapons), (Moscow: DOSAAF, 1965), pp. 4, 8, 13.

26. Civil Defense Staff of the Lithuanian SSR, Uchebno-Methodicheskoye Posobiye dlya Podgotovke Naseleniya k Grazhdanskoy Oborone (Instruction-Methodological Manual for Training the Population in Civil Defense), (Vilnus: Mintis, 1967), pp. 64-76; I. Apostolov, "Methods of Protection: Evacuation and Dispersal," Voyennyye Znaniya, No. 4, April 1967, p. 14.

27. Civil Defense Staff of the Lithuanian SSR, op. cit., p. 70.

28. Ibid.; Marshal of the Soviet Union V.I. Chuykov, Grazhdanskaya Oborona v Raketno-Yadernoy Voyne (Civil Defense in a Missile-Nuclear War), (Moscow: Atomizdat, 1968), p. 16.

29. For example, see Colonel General V.A. Belyavskiy, Grazhdanskaya Oborona SSSR—Vsenarodnoye Delo (USSR Civil Defense is the Business of the Entire People), (Moscow: Atomizdat, 1968), p. 9; M.V. Kachulin, Beseda s Naseleniyem o Grazhdanskoy Oborony (A Talk with the Population About Civil Defense), (Moscow: Atomizdat, 1970), pp. 32-33; F. Kurbatov, "For Protective Purposes," Voyennyye Znaniya, No. 4, April 1971, p. 20.

30. P.T. Egorov, I.A. Shlyakhov and N.I. Alabin, Grazhdanskaya Oborona, 2nd edition, (Moscow: Vysshaya Shkola, 1970), pp. 112-114.

31. Marshal of the Soviet Union V.I. Chuykov, Grazhdanskaya Oborona v Raketno-Yadernoy Voyne (Civil Defense in a Missile-Nuclear War), 2nd edition, (Moscow: Atomizdat, 1969), p. 24.

32. Major General L. Korzun, "The Time Factor," Voyennyye Znaniya, No. 7, July 1970, p. 14.

33. Colonel General A.T. Altunin, "Principal Aspect—Practical Training," Sovetskiy Patriot (Soviet Patriot), November 21, 1973.

34. Colonel General A.T. Altunin, "An Important Aspect of Training," Uchitel'skaya Gazeta (Teacher's Gazette), August 22, 1974.

35. Colonel General A.T. Altunin, "Civil Defense Today," in Lyudi i Dela Grazhdanskoy Oborony (Peoples and Affairs of Civil Defense), (Moscow: Voyenizdat, 1974), p. 9.

36. Ibid., p. 8.

37. Kotlukov et. al., op. cit., p. 90, emphasis added. See also Major General S. Akhundzhanov, "Each of Us Must Know How and Be Able To," Pravda Vostoka (Pravda of the East), February 21, 1975; A. Momedov, "To Learn to Lead," Voyennyye Znaniya, No. 8, August 1974, p. 22; Major General S. Stalauskas, Radio Vilnus, November 26, 1976.

38. Colonel General A.T. Altunin, "Principal Stages and Direction of Development of USSR Civil Defense," Voyenno-Istoricheskiy Zhurnal, No. 11, November 1976, p. 45.

39. Army General A.T. Altunin, "Always in Readiness," Krasnaya Zvezda (Red Star), October 3, 1982.

40. Altunin, "Civil Defense Today," op. cit., p. 9. See also, "Dispersal and Evacuation," Voyennyye Znaniya, No. 4, April 1983, p. 16.

41. Ibid.

42. "Dispersal and Evacuation," op. cit.

43. Colonel General A.T. Altunin, "The Main Direction," Voyennyye Znaniya, No. 12, December 1973, p. 5.

44. Altunin, "Civil Defense Today," op. cit., p. 8, emphasis added.

45. Army General A.T. Altunin, editor, Grazhdanskaya Oborona, (Moscow: Voyenizdat, 1980), and second edition (Moscow: Voyenizdat, 1981), p. 43.

Section 3

SOVIET STRATEGIC RATIONALE FOR CRISIS RELOCATION

Soviet spokesmen, including Brezhnev, have and continue to insist that the aims of Soviet civil defense are entirely humanitarian in the sense that its primary mission is to protect the population against an enemy attack with "weapons of mass destruction."[1/] Undoubtedly reduction of losses among the population is a fundamental mission of Soviet civil defense. Even so, Soviet views on the role and utility of crisis relocation are said to be of a strategic character and include Soviet perceptions of the more probable war initiation scenarios, the likely enemy targeting strategy, the importance attributed to the wartime operations of critical elements of the economy in support of a sustained Soviet war effort, and the requirements for post-strike civil defense rescue, damage-limiting, repair and restoration operations.

3.1 SOVIET VIEWS ON WAR INITIATION

According to Soviet public discussions of possible war initiation scenarios, a war which would result in enemy nuclear strikes against targets on the territory of the Soviet Union could come about in several ways. It could be the consequence of an escalating conventional or limited nuclear war initially fought on the territory of third countries. It could be initiated by limited nuclear strikes against the Soviet Union from the territory of U.S. allies. Finally, such a war may be initiated by the U.S. and begin with a first nuclear strike against the Soviet Union. For obvious reasons, Soviet spokesmen do not discuss the case of Soviet initiation of a nuclear war against the U.S., but they do discuss a Soviet pre-emptive attack on the U.S. Indeed, the execution of a first surprise counterforce strike is a fundamental principle of Soviet strategy. In principle, all of the above war initiation scenarios allow for the possibility of such a Soviet strike.

From the viewpoint of civil defense—and especially crisis relocation, sufficient warning time prior to an attack is needed to implement all the necessary measures. Presumably such warning could be available in the case of a slowly-escalating limited war or Soviet initiation of an attack on the U.S. or NATO. In the case of a Soviet initiation of war, crisis relocation prior to the launching of the attack may interfere with Soviet requirements for achieving surprise. However, this need not necessarily be the case because Soviet deception and concealment and interference with U.S. surveillance and warning capabilities may mislead the U.S. about Soviet intentions.[2/] At present, the Soviets publicly complain that the deployment of new U.S. intermediate range nuclear weapons (Pershing II and Ground-Launched Cruise Missiles) to Western Europe would pose a threat of a limited U.S. surprise strike against Soviet military targets. They allege that this represents an attempt by the U.S. to avoid Soviet retaliatory nuclear strikes against U.S. territory. Such a hypothetical attack, however, would be likely to provide the Soviet Union with strategic warning of the threat of a larger nuclear exchange. Indeed, if the U.S. objective was to keep such a conflict limited, it would be up to Moscow to decide whether and, if so, how and when to escalate the war.

The worst scenario for Soviet civil defense—and specifically for crisis relocation—would be the initiation of a massive nuclear surprise attack against the Soviet Union. Concern about this probability has been a persistent theme in Soviet military and civil defense publications for many years. The Soviets mention several reasons for this. First, modern nuclear armed missiles are especially suitable for a surprise strike. Second, damage-limitation to one's own country depends in a large measure on the maximum destruction of enemy nuclear strategic weapons before they are launched. Third, such a strike can achieve "decisive" strategic results by allowing the attacker to gain superiority and possibly even cause the collapse of the opponent. Given that a surprise first strike is optimal strategy for waging nuclear war, the Soviets

do not discount the possibility that the U.S. may adopt such a strategy or resort to such an attack.[3/]

Discussion of the alleged adoption by the U.S. of a "first strike" strategy has become noticeably pronounced in Soviet public statements following U.S. adoption of the "countervailing strategy" and especially in view of its plans to deploy a counterforce capability (primarily MX missiles and Trident II or D-5 missiles).[4/]

As was noted in Section 2, Soviet civil defense planners have come to believe that Soviet civil defense must be capable of providing protection in the event of a surprise attack or an attack which is preceded by relatively short strategic warning. It is said that,

> *Wars with the use of nuclear weapons may begin with a surprise nuclear strike. It is precisely for this scenario of initiation of aggression against the Soviet state that civil defense must prepare especially carefully, actively, and purposefully because this scenario is the most dangerous one and poses a threat of large losses among the peaceful population.*[5/]

Along with this, it is observed that,

> *Under conditions of an enemy surprise attack, the time necessary to carry out evacuation and dispersal may be insufficient. In this case, the protection of the population can be ensured only by means of it taking cover in shelters.*[6/]

Hence, the already-noted shift in emphasis in the Soviet civil defense program to providing shelters for the "entire" population of high risk cities.

Despite this shift in emphasis, it is uncertain whether the Soviet leadership rates the probability of a U.S. surprise attack particularly high. In their public declarations the Soviets insist that a "disarming" first strike cannot succeed and that the aggressor is certain to suffer retaliatory strikes on a massive scale. Given the vulnerability of the U.S. to Soviet retaliatory strikes, the U.S. is

probably seen as having little incentive to initiate such an attack. It is also unlikely that Soviet leaders believe that the U.S. would launch an attack "out of the blue," with no prior crisis, indications of sharply intensifying hostility to the Soviet Union, evidence of a great deal of military, economic and political preparation, and so on. In other words, the U.S. is likely to provide a great deal of early indications of a growing threat to the Soviet Union. The Soviets speak, therefore, of the need to seek "timely revelations of the aggressive plans of probable enemies," and "to watch especially carefully the military preparations of the enemy to ascertain his intentions in time."[7/] It is up to the Soviet political leadership to determine on the basis of all indicators the existence of a threat of attack on the Soviet Union and to order appropriate actions.

Therefore, it appears most likely that when the Soviets speak of the possibility of a U.S. surprise attack, they actually envisage not so much a situation in which the Soviet Union would be caught unawares by the enemy attack, than of a situation in which strategic warning of the attack will be relatively short. Soviet military leaders speak of the necessity for the Soviet Union to carry out its military and economic mobilization as well as civil defense preparations—including crisis relocation—in a "short" or "extremely short time."[8/]

In summary, Soviet military and civil defense planners are undoubtedly concerned about a possible "worst case" scenario in which the warning time prior to the initiation of a large nuclear strike on the Soviet Union may be too short to permit the implementation of crisis relocation or, what is more likely, its completion. Soviet war initiation scenarios, however, also allow for the possibility that there will be sufficient strategic warning to carry out the crisis relocation of residents of high risk cities as well as other civil defense measures. In order to improve the prospects for successful implementation of crisis relocation, Soviet civil defense planners seek ways and means of shortening the time required to carry it through to completion.

3.2 SOVIET VIEWS ON THE CHARACTER OF THE THREAT AND LIKELY ENEMY TARGETING

The Soviets believe that in principle modern strategic forces provide both superpowers with the capability of rapidly achieving "decisive" results, including the possible defeat of the opponent. They point out that,

> *Today's weapons make it possible to achieve strategic objectives very quickly. The very first nuclear strike on the enemy may inflict such immense casualties and produce such vast destruction that his economic, morale-political and military capabilities will collapse, making it impossible for him to continue the struggle and presenting him with the fact of defeat.*[9]

Consequently, damage-limitation and reduction of population losses is essential if the country is to avoid defeat at the start of a nuclear war. As one Soviet military writer put it, "it is a question of the survival of the state during war, without which even successful combat actions [by the Soviet Union] may lose their importance."[10] Given, therefore, that the "fate of states" will be decided not only on the battle fields but also "in the depth of their territory," it follows that the "protection of the homeland" against enemy strikes "is becoming one of the main tasks in a war."[11]

Soviet leaders and analysts have been well aware of the U.S. "assured destruction" deterrence threat. They have also mentioned at various times U.S. declarations threatening the possible destruction of some 200 of the Soviet Union's largest cities along with a major part of the Soviet economy.[12] There is no evidence, however, that the Soviets believed or now expect the U.S. to engage in a "city-busting" retaliatory strategy per se. Instead, Soviet military and civil defense writers suggest that they have all along expected the U.S. to adopt a targeting strategy whose aim would be to achieve meaningful military or warfighting objectives. Indeed, it can be argued that Soviet descriptions of the U.S. targeting strategy have tended to mirror the Soviet Union's own.

As was noted, the Soviets argue that "in a missile-nuclear war, of greatest significance will be the destruction of means of retaliation [i.e., the enemy's strategic forces], the undermining of the military-economic potential of the state, and depressing the morale of its population."[13/] Consequently, a primary mission of U.S. strategic forces is expected to be counterforce, which would pursue the twin aims of destroying Soviet military—especially strategic—capabilities and the weakening of Soviet strikes against U.S. territory. Beyond this, the U.S. is expected to target Soviet economic war support capabilities—that is, defense related industries and transportation and also administrative and political control centers. The Commander-in-Chief of the Soviet Navy, Admiral of the Fleet S. G. Gorshkov, noted in 1975 that,

> *Only experimental tests made it possible to draw the conclusion that strategic missiles would have a decisive role in modern warfare and that the primary object of military action in a nuclear war would not just be the enemy's armed forces, but also his economy, power systems, defense industries and administrative center.*[14/]

Soviet civil defense manuals usually list similar likely targets. Some add communication centers to the list.[15/] The announcement in 1979 of the adoption by the U.S. of the countervailing strategy which provides for the possibility of city-avoidance or at least the withholding of strikes on cities and escalation controls has not significantly altered Soviet public descriptions of the U.S. targeting strategy. Thus, Soviet publications assert that U.S. targets for strategic nuclear strikes include the Soviet "military potential, organs of political, state and military leadership, the most important installations of key sectors of industry, transportation and communications, and also large administrative centers of the USSR."[16/] The Soviets are undoubtedly aware, however, that former Secretary of Defense Dr. Harold Brown envisaged the political, governmental and military command and control targets as being located primarily in command shelters outside the cities.

Soviet discussions of the U.S. countervailing strategy claim that its aim is to inflict a pre-emptive disarming first strike on the Soviet Union and to hold Soviet cities hostage in order to deter Soviet retaliatory strikes. Even so, Soviet discussions do not directly address the city-avoidance aspect of the countervailing strategy. The targeting strategy which the Soviets attribute to the U.S. does not in itself suggest city-avoidance because it lists key economic installations, transportation and communication centers, and large administrative centers. Large cities tend to contain all such types of targets. From the viewpoint of Soviet civil defense leaders and planners, therefore, enemy strikes on targets in large cities cannot be ruled out. Possibly the Soviet view is best reflected in a major manual published in 1977 which lists not only "administrative-political centers" but specifically also "large cities" as potential targets and asserts that "the larger the city, the greater the probability that the enemy will select it as a target for nuclear strikes."[17/] According to the authors of the manual,

> *Analysis of the character of a future war leads to the conclusion that from the first minutes, areas with high population density may become targets of missile-nuclear strikes. These strikes will result in the destruction of cities, industrial installations and transportation, and also in enormous losses among the population. Consequently, the problem of protecting the entire population and the material resources of the country, its industrial and political, as well as strategic centers, against the effects of nuclear weapons has become one of the most important ones.*[18/]

At issue is not only the question of reducing losses and limiting damage per se, but, more important from the Soviet viewpoint, the preservation of the Soviet Union's ability to wage war, if need be a protracted one, and to win it. As former USSR Minister of Defense Marshal of the Soviet Union Grechko has insisted, it is "impossible" to wage war, let alone a successful one, "without a well-functioning homeland."[19/]

Consequently,

> *The side which can preserve to the greatest extent its production forces and their base—the people—ensure the stable work of administrative organs and important industrial facilities and transportation, as well as protect the bases for supplying food and raw materials can be victorious in such a war.*[20]

There is also the fact that the largest cities, which are the most likely to be targeted, tend to contain the highest concentration of precisely those elements of the population which the leadership values most for system survival, the sustaining of the war effort and for postwar recovery. The leadership, therefore, has a considerable stake in ensuring the survival of those cities' residents. Even though these cities may have priority in shelter construction, their number may not suffice to protect all residents; furthermore, Soviet civil defense planners are well aware that shelters may not be able to prevent significant losses among their occupants. Crisis relocation, however, offers several important advantages. First, Soviet civil defense planners do not expect the enemy to target a relocated and dispersed population. Second, it is much simpler and cheaper to protect the population, including the urban evacuees, against radioactive fallout than to protect the latter against all the effects of nuclear detonation in the cities. Third, a relocated population would not require massive rescue efforts following an attack on the cities. Finally, a relocated population would be more likely to retain its ability to function and to support the war effort. Consequently, even while seeking to increase the inventory of ready blast shelters in high risk cities to protect their residents against a surprise attack, Soviet civil defense planners still wish to have the option of relocating them if time permits.

Aside from the general utility of crisis relocation as a measure for protecting the urban population, Soviet civil defense identifies various elements of the urban population which should be relocated if at all possible regardless of the availability of shelters in the cities.

One obvious category is the leadership element which must maintain continuous command and control and, consequently, should be relocated to command post shelters outside the potential target cities. Another category consists of essential workers of enterprises, installations, and services which will remain in operation during the war. Finally, there is the urban civil defense force, whose mission is to conduct post-strike rescue, damage-limiting, emergency repair and restoration operations in cities and at enterprises subjected to nuclear strikes.

3.3 RELOCATION REQUIREMENTS FOR THE ESSENTIAL WORK FORCE

Soviet military doctrine anticipates a wartime requirement for continuing economic-logistic support of the armed forces, the population and civil defense activities. It is believed that in the event of a war, "the Soviet people and their Armed Forces need to be prepared for the most severe and protracted trial;" in other words, that a war—even one fought with nuclear weapons—may be protracted.[21] Such a war cannot be fought only with the weapons and equipment in being at its start. Given the intensity of military operations and the destructiveness of modern weapons, there will be a high rate of loss of and damage to weapons, equipment and supplies which will have to be replaced in the course of the war.[22] It is asserted, therefore, that "it is impossible to conduct a war without the continuing supply of the armed forces with everything they need."[23] Consequently, the war will necessitate the mobilization of the economy for defense and other essential production, and also the continuing operations of transportation, gas, electric power and water systems, municipal services and so on.[24] It is pointed out, therefore, that,

> *The supplying of the armed forces and the population with everything necessary and the equipping of the civil defense forces with technical supplies for the successful conduct of rescue and emergency repair work in the zones of devastation are only possible under conditions of sustained operation of the installations of the national economy in wartime.*[25]

Indeed, victory or defeat in war may depend on the "correlation of economic capabilities," and one objective of the war is to alter this capability in one's favor by inflicting losses on the enemy's defense economy while protecting one's own.[26/]

Civil defense measures to ensure essential wartime production include various methods of making economic installations more resistant to damage and the protection of the essential work force. Soviet plans call for providing sufficient spaces in blast shelters at essential enterprises and installations to protect one entire wartime workshift. It is considered inadvisible, however, to keep the resting workshifts in the high risk areas. There appear to be a number of reasons for this.

First, the personnel of the resting workshifts would be scattered throughout the cities. Consequently, the authorities would have inadequate control over them and could not ensure well-regulated changeovers of shifts or prevent absenteeism. Furthermore, under such conditions, it would be impractical to provide the off-duty workers with the same quality and hardnesses of shelters as those built for the working shift at the enterprises and installations. Consequently, as a Soviet civil defense manual published in 1977 observes, crisis relocation would not only "sharply reduce losses" but it would also create "favorable conditions for accomplishing the task of protecting the [working] shift in shelters in the event of nuclear strikes on the city."[27/]

Second, Soviet civil defense publications admit that shelters will reduce but not necessarily prevent fatalities and casualties in the event of an enemy nuclear strike. Shelters at and near ground zero of nuclear detonations will be destroyed or damaged, while others even further away may have their ventilation systems and doors blocked by debris or damaged by the blast. Additional losses may occur from the seepage of carbon monoxide or other toxic gases generated by fires and damaged industrial installations into the shelters. Thus, Soviet civil defense manuals note that even in the event of crisis relocation of the

urban population and the sheltering of the working shifts in the cities, losses from nuclear strikes may be on the order of 5 to 8 percent of the total pre-relocation population of the cities.[28/] Presumably these losses will be primarily among the sheltered workers present in the cities. Of course, the actual number of potential losses will depend on many factors, including the size of the working shifts, so that projected losses will vary from city to city. In any event, the Soviet civil defense planners recognize that the workers who will be present in the cities at the time of an enemy strike—even if they are in shelters—will be at greater risk than those who have been relocated to the exurban area. From the Soviet viewpoint, it would be undesirable, therefore, to place more essential workers at risk than are needed at a given time for maintaining critical production. Consequently, the best solution would be to keep the resting workshifts outside the high risk areas.

Third, there is the psychological or morale factor. Anxiety about the safety of relatives and family members would be likely to adversely affect the behavior of essential workers. Furthermore, the workers would not like to be separated from their families. The relocation of the families while all essential workers were to remain in the cities would cause morale problems among the latter as well as their family members. If the families were to remain in the cities with the workers, this may require the construction of additional shelters, and would probably not allay the workers' anxieties. If the families are relocated together with the workers, the latter—presumably having seen to their families' safety and wellbeing—would be more willing to commute to work in the cities with their workshifts. It is also likely that the off-duty workers will rest better in the exurban areas than if they remain in the high risk cities, and it will also be easier to supply them with food and essential goods.

Soviet civil defense also sees a requirement for the management of enterprises, organizations and services which will remain in operation in the cities in wartime to establish command posts in exurban areas

and shift a part of the administrative apparatus there. Usually this will involve the relocation of the directors, department and service chiefs, some of the management staffs—especially female employees, and some or all of the scientific-research personnel, senior engineers, as well as communications workers. Second-line management and technical personnel will remain in the cities or commute there with the workshifts. This is done not only to improve the survivability and effectiveness of management under nuclear war conditions, but also because the top managers and technicians will lead their enterprises' and organizations' civil defense forces.

In addition, there are urban organizations, institutions and production lines which the authorities believe should be relocated from the cities in order to allow them to remain in continuous operation in relative safety. Among them will be scientific-research institutions, design and construction organizations, various party and governmental agencies, educational institutions and so on.[29/] Not only would it be undesirable to risk the loss of the valuable personnel working in such organizations, but their activities are considered to be too useful to risk their being paralyzed in the event of enemy strikes on the cities.

The number of essential workers and other personnel whom the Soviet authorities wish to relocate from the cities in the event of a threat of war is unknown. The number is likely to be large because, in the event of a threat of war, the Soviets plan to shift a significant portion of the industry producing civilian goods to defense production, thereby making them essential enterprises and their employees essential workers. Consequently, the category of "essential workers" will include wartime employees of all defense-related enterprises and organizations, as well as those employed in municipal services, gas and electric power systems and transportation, and in critical industries for sustaining the population. Depending on the city, the number of such essential personnel may range from 10 to more than 20 percent of their residents.

3.4 RELOCATION REQUIREMENTS FOR THE URBAN CIVIL DEFENSE FORCES

One of the basic missions of Soviet civil defense is to conduct post-strike rescue, damage-limiting, emergency repair and restoration operations in the cities and at industrial installations subjected to nuclear strikes.[30/] It is claimed that "the more rapidly the damage resulting from the enemy's first strike is liquidated, the greater will be the possibility of attaining victory in the war."[31/] The requirement for post-strike rescue operations logically follows from the planned presence in high risk cities of significant numbers of essential workers.

In order to be able to rapidly initiate rescue, damage-limiting and repair operations following nuclear strikes, it is essential that the civil defense forces assigned to this mission not be pinned down in the cities by enemy strikes. They must be stationed outside the cities at the time of the strikes, and consequently, must be relocated together with their equipment to the exurban areas prior to the attack. This must be done regardless of the availability of shelters in the cities. Indeed, Soviet civil defense manuals note that the failure to relocate these forces prior to an attack could critically weaken the capabilities of civil defense to carry out its post-strike mission. In addition, in order to ensure effective civil defense activities, it is also considered necessary to relocate civil defense leadership and staffs to exurban areas. Included would be the civil defense leadership and staff of the republics, oblasts, cities, and urban districts (rayons), as well as those of essential enterprises, organizations and services which will remain in operation in the cities.

Soviet civil defense planners recognize that the effective conduct of post-strike rescue, damage-limiting, repair and restoration operations will require very large forces. Indeed, nearly all of the Soviet urban civil defense organizations and forces are involved in these operations. They may be assisted by military civil defense units and elements of rural civil defense forces, but the primary force is expected to come from the urban civil defense organizations. These latter forces will be

made up of industrial workers; workers of municipal gas, water and sewage services, the power industry, transportation and communications; personnel of construction and engineering organizations; police, public health and firefighting services, as well as food and trade organizations, and so on. It is estimated that some 115,000 persons work full time in civil defense and that over 20 million are members of civilian civil defense formations. Of the latter, probably some two-thirds are urban residents. Included in the force will be a significant number of essential workers in each workshift.[32/]

Crisis relocation, therefore, remains an important measure in Soviet civil defense planning—all the more so as the number of available shelters in high risk cities is still well short of that required to protect all of their residents.[33/] Regardless of the availability of shelters in the cities, however, the Soviets see a specific requirement for crisis relocation of select but quite numerous elements of the urban population. What concerns the Soviet authorities is not the desirability of crisis relocation but, as was noted, the possibility that there may be insufficient warning time prior to an attack to implement it.

Section 3

FOOTNOTES

1. For example, see L. I. Brezhnev, answers to questions by Vorwaerts (FRG), TASS, Moscow, May 2, 1978; Army General A. T. Altunin, "Humanitarian Aims, Responsible Tasks," Agitator Armii i Flota (Army and Navy Agitator), No. 3, February 1980, p. 8-12 and "Always in Readiness," Krasnaya Zvezda, October 3, 1982.

2. For example, see Major General M. M. Kir'yan, "Surprise" in Sovetskaya Voyennaya Entsiklopediya (Soviet Military Encyclopedia), Vol. 2, (Moscow: Voyenizdat, 1976), p. 161; Major General L. Korzun, "Achieving Surprise," Soviet Military Review, No. 10, October 1979, pp. 15-17; Major General N. Vasedin and Colonel N. Kuznetsov, "Modern Warfare and Surprise Attack," Voyennaya Mysl' (Military Thought), No. 6, June 1968, translated in FPD No. 0005/69, January 16, 1969, p. 43.

3. For example, see Colonel General V. Sozinov, "The Time Factor in National Anti-Air Defense," Vestnik Protivovozdushnoy Oborony (Herald of Anti-Air Defense), No. 10, October 1977, pp. 14-15; Marshal of the Soviet Union A. Grechko, Vooruzhennye Sily Sovetskogo Gosudarstva (The Armed Forces of the Soviet State), 2nd edition, (Moscow: Voyenizdat, 1975), p. 92; Major General R. Simonyan, "In Search of a 'New Strategy'," Pravda, March 19, 1979; Marshal of Aviation G. V. Zimin, editor, Razvitiye Protivovozdushnoy Oborony (Development of Anti-Air Defense), (Moscow: Voyenizdat, 1976), p. 87; Marshal of the Soviet Union V. G. Kulikov, "High Combat Readiness is the Most Important Condition of the Reliable Defense of the Motherland," Kommunist Vooruzhennykh Sil, No. 6, March 1973, p. 15; Colonel M. P. Skirdo, Narod, Armiya Polkovodets (The People, the Army, the Commander), (Moscow: Voyenizdat, 1970), p. 26.

4. For example, see Marshal of the Soviet Union, D. Ustinov, "For Averting the Threat of Nuclear War," Pravda, July 12, 1982; Otkuda Iskhodit Ugroza Miru (Whence the Threat to Peace), 2nd edition, (Moscow: Voyenizdat, 1982), pp. 14, 64-65; G. H. Trofimenko, Voyennaya Doktrina SShA (U.S. Military Doctrine), (Moscow: Znaniya, 1982), pp. 35-41; Lieutenant General M. A. Mil'stein, "Some Characteristic Traits of Current U.S. Military Doctrine," SShA: Ekonomika, Politika, Ideologiya (USA: Economics, Politics, Ideology), No. 5, May 1980, pp. 4-17; L. Semeyko, "Gambling on a First Strike Potential," Krasnaya Zvezda (Red Star), August 8, 1980, and "Directive 59: Evolution or Leap," Novoye Vreneya (New Times), No. 38, September 19, 1980; Major General R. Simonyan, "Gambling on Military Superiority," Krasnaya Zvezda, October 21, 1982.

5. P.T. Egorov, I.A. Shlyakhov, and N.I. Alabin, Grazhdanskaya Oborona (Civil Defense), 3rd edition, (Moscow: Vysshaya Shkola, 1977), p. 8. See also Lieutenant General D. Krutskikh, Uchebno-Metodicheskaye Posobiye po Podgotovke Rukovodyashchego i Komandno-Nachal'stvuyushchego Sostava Grazhdanskoy Oborony (Study-Methodological Manual for the Training of the Chiefs and Command-Leadership Elements of Civil Defense), (Moscow: Voyenizdat, 1978), p. 13.

6. Krutskikh, op. cit., p. 14.

7. Colonel General N. Lomov and Colonel S. Alferov, "On the Question of Soviet Military Doctrine," Voyenno-Istoricheskiy Zhurnal (Military-Historical Journal), No. 7, July 1978, p. 28; Grechko, op. cit., p. 92.

8. For example, see Marshal of the Soviet Union N. Ogarkov, "Guarding Peaceful Labor," Kommunist, No. 10, July 1981, p. 90; Colonel General A.T. Altunin, "The Main Direction," Voyennyye Znaniya (Military Knowledge), No. 12, December 1973, p. 5.

9. Skirdo, op. cit., p. 97. See also, Colonel A. Taran, "Leninist Theoretical Principles of Soviet Military Strategy," Voyennaya Mysl' (Military Thought), No. 6, July 1971, translated in FPD No. 0015/74, March 12, 1974, p. 46; Grechko, op. cit., p. 114; Colonel General M.A. Lomov, editor, Scientific-Technical Progress and the Revolution in Military Affairs, (Moscow: Voyenizdat, 1973), translated by the U.S. Air Force, Soviet Military Thought Series No. 3, (Washington, D.C., U.S. Government Printing Office), pp. 137-138; Lieutenant General M.M. Kiz'yan, editor, Voyenno-Tekhnicheskiy Progress: Vooruzhennayye Sily SSSR (Military-Technical Progress and the USSR Armed Forces), (Moscow: Voyenizdat, 1982), pp. 313-314.

10. Lieutenant General M. Gareyev, "Military Science as an Important Factor of Defense Potential," Soviet Military Review, No. 12, December 1976, p. 16.

11. Altunin, "Humanitarian Aims, Responsible Tasks," op. cit., p. 8; Colonel General A. S. Zheltov, editor-in-chief, V.I. Lenin i Sovetskiye Vooruzhennye Sily (V.I. Lenin and the Soviet Armed Forces), (Moscow: Voyenizdat, 1980), p. 488.

12. For example, see Colonel General of Aviation O.V. Tolstikov, KPSS o Neobkhodimosti Sovershenstvovaniya Grazhdanskoy Oborony (The CPSU on the Need to Perfect Civil Defense), (Moscow: Atomizdat, 1969), p. 7; Lomov, op. cit., p. 254.

13. Op. cit., p. 87. See also Colonel M. Ponomarev, "The United States: A Strategy of Confrontation," Krasnaya Zvezda, February 7, 1982.

14. Admiral of the Fleet of the Soviet Union S.G. Gorshkov, "Historical Experience and the Present," Voprosy Filosofiy (Question of Philosophy), No. 5, May 1975, p. 32.

15. For example, see N.I. Akimov, M.L. Vasilevskiy, I.D. Makarov, L.P. Rusman and M.P. Umnov, Grazhdanskaya Oborona (Civil Defense), (Moscow: Kolos, 1969), p. 7.

16. Otkuda Ishkodit Ugroza Miru, p. 65. For a discussion of Soviet perceptions of the U.S. countervailing strategy, see L. Coure, "The U.S. 'Countervailing Strategy' in Soviet Perception," Strategic Review, Fall 1981, pp. 51-64; Trofimenko, op. cit., pp. 35-36.

17. Egorov et. al., op. cit., pp. 9, 145.

18. Ibid., p. 10.

19. Grechko, op. cit., p. 114.

20. M. Badazhanov and N. Lugovoy, "To Increase Readiness and To Be Ready," Kommunist Tadzhikistana (Tadzhik Communist), December 29, 1970. See also G.K. Kotlukov, Yu.A. Lebedeva and L.I. Gorelov, Grazhdanskaya Oborona, (Moscow: Prosveshcheniye, 1976), translated by the Defense Civil Preparedness Agency, p. 2.

21. Marshal of the Soviet Union N.V. Ogarkov, "Strategy," Sovetskaya Voyennaya Entsiklopediya (Soviet Military Encyclopedia), Volume 7, (Moscow: Voyenizdat, 1979), p. 564. See also Marshal of the Soviet Union V.D. Sokovovskiy, Soviet Military Strategy, Harriett Fast Scott, editor, (New York: Crane, Russak and Co., Inc., 1975), p. 211; Marxism-Leninism on War and the Army, (Moscow: Progress Publishers, 1972), p. 291; Lomov and Alferov, "On the Question of Soviet Military Doctrine," Voyenno-Istoricheskiy Zhurnal (Military-Historical Journal), No. 7, July 1978, p. 22; Marshal of the Soviet Union I.Kh. Bagramyan, editor, Istoriya Voyn i Voyennogo Iskusstva (History of Wars and of Military Art), (Moscow: Voyenizdat, 1970), p. 490.

22. Ogarkov, "Guarding Peaceful Labor," p. 87; Skirdo, op. cit., pp. 60, 62; Colonel S.A. Bartinev, "The Economy and Military Might," Soviet Military Review, No. 7, July 1981, p. 14; Army General A.T. Altunin, editor, Grazhdanskaya Oborona, (Moscow: Voyenizdat, 1980), p. 12; Colonel A. Sakhoguzov, "The Problem of the Viability of the Economy in Modern War," Kommunist Vooruzhennykh Sil (Communist of the Armed Forces), No. 3, February 1972, p. 10.

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26. Major Generals D.A. Volkogonov, A.S. Milovidov and S.A. Tyushkevich, editors, Voyna i Armiya (War and the Army), (Moscow: Voyenizdat, 1977), pp. 155, 185; Colonel N. Kulikov, "Laws of War: Essence, Peculiarities," Soviet Military Review, No. 11, November 1978, p. 3; Grechko, op. cit., p. 114; Sukhoguzov, op. cit., p. 10.

27. Egorov et. al., op. cit., p. 85.

28. Akimov, et. al., op. cit., p. 65; N.P. Krechetnikov and N.P. Olovyanishnikov, Grazhdanskaya Oborona na Mashino-Stroitel'nykh Predpriyatiyakh (Civil Defense at Machine-Building Enterprises), 2nd edition, (Moscow: Mashinostroyeniye, 1972), p. 26.

29. Egorov, et. al., op. cit., p. 147.

30. For a discussion of Soviet civil defense concepts, plans, organization and operations for conducting post-strike rescue, damage-limiting, emergency repair and restoration operations, see Goure, Soviet Post-Strike Civil Defense Rescue, Damage-Limiting, Repair and Restoration Operations, passim.

31. Colonels M.P. Tsivilev, A.A. Nikanorov and B.M. Suslin, Inzhenerno-Spasatel'nye i Neotlozhnye Avariyno-Vosstanovitel'nye Raboty v Ochagakh Yadernogo Porazheniya (Engineering-Rescue and Emergency Repair and Restoration Work in Centers of Nuclear Destruction), (Moscow: Voyenizdat, 1975), p. 6.

32. See Goure, Soviet Post-Strike Civil Defense Rescue, Damage-Limiting, Repair and Restoration Operations, pp. 155-162.

33. For example, see Director of Central Intelligence, Soviet Civil Defense, NI78-10003, July 1978, p. 9.

Section 4

BASIC SOVIET CRISIS RELOCATION CONCEPTS AND REQUIREMENTS

As the history of Soviet civil defense concepts shows (see Section 2), crisis relocation has been a long-time feature among Soviet measures for the protection of residents and workers of high risk cities and installations. Over the years, Soviet civil defense leaders have elaborated their crisis relocation concepts and plans so that at the present time the Soviet approach to it appears to be well developed, quite comprehensive and essentially devoid of major conceptual gaps. Naturally Soviet concepts are shaped by Soviet views on war initiation, the likely duration of a nuclear war, and by perceived needs for wartime defense production, damage-limitation and restoration. They are also influenced by the Soviet value system and priorities, as well as by the Soviet advantages in and constraints on the practical implementation of crisis relocation.

4.1 BASIC SOVIET CRISIS RELOCATION CONCEPTS

The basic Soviet crisis relocation concepts are quite straightforward. Crisis relocation is simply the pre-attack maximum decongestion in an organized manner of the population of cities and industrial centers which are believed to be likely targets of enemy nuclear strikes, while also ensuring the continued operations of essential industrial enterprises, utilities and services.[1/] The objective is to thereby reduce the number of Soviet citizens at risk from all effects of nuclear weapons and, consequently, significantly lessen likely losses among the population.[2/] The former Chief of USSR Civil Defense, Marshal of the Soviet Union V.I. Chuykov, offered the following illustration:

> *For example, let us take city "A". If today the average population density in that city is 7,000 persons per square kilometer, then following the completion of dispersal and evacuation, it will decline to an average of 700 to 800 persons per square kilometer. In other words, it will decline*

> *by a factor of 8 to 10. This means that following the dispersal and evacuation, a nuclear detonation of the same yield will cause 8 to 10 times fewer losses than would be the case before the implementation of such measures.*[3/]

According to Chuykov and other Soviet civil defense spokesmen, losses among the population remaining in the cities after the completion of crisis relocation would be reduced by providing it with strong blast shelters which would effectively protect them even in the zones of "severe damage."[4/]

Crisis relocation will be ordered by the Soviet leadership when it believes a threat of a possible enemy attack on the Soviet Union to exist. This period is given the official name of "threatening situation" or is sometimes also referred to as "special period," which, when declared, will be used to carry out a variety of military and civil defense measures, including crisis relocation. The ordering of crisis relocation must be "timely." Soviet publications do not specify, however, exactly what threat indicators would cause the Soviet leadership to announce a "threatening situation" alert or how much time in advance of a possible attack the leadership would want to make such an announcement. Obviously, this will be dictated by specific circumstances and a variety of military and political considerations. The ultimate determination of the existence of a threat of war and of a "threatening situation" rests with the political leadership.[5/] The Soviets are sensitive to the failure of Stalin and his associates to correctly anticipate German intentions in 1941, and obviously are determined not to repeat this error.[6/] It is said that Soviet military doctrine has developed "recommendations on how to forestall an aggressor's surprise attack,"[7/] and as former USSR Minister of Defense, Marshal of the Soviet Union A. Grechko wrote:

> *Under conditions of a threat of aggression, it is essential to watch especially carefully the military preparations of the enemy, to ascertain his intentions in time, and to take the necessary measures to rebuff the enemy attack. The slightest oversight in this gives the aggressor the possibility of capturing the initiative, which will be very difficult to recapture subsequently.*[8/]

As was noted, a pre-emptive counterforce strike strategy and the seizing and retention by Soviet armed forces of the initiative are basic tenets of Soviet military doctrine.

In the Soviet view, crisis relocation applies only to residents of those cities, industrial centers and workers of installations which, in Soviet assessments, are likely targets for enemy nuclear strikes. Presumably such high risk areas would include the largest Soviet cities.[9/] Subject to relocation may also be the residents of the suburbs of high risk cities in a radius of 8 to 10 kilometers or more from the cities' limits.[10/] Presumably this zone would represent the radius of blast effects and thermal radiation from nuclear detonations in various parts of a high risk city. In practice, the area of the endangered suburban zone will vary from city to city depending on the specific location of likely targets for enemy strikes not only at the edges of the cities but also in the suburban zones themselves.

It is evident that many millions of urban residents will be subject to crisis relocation. Soviet civil defense planners insist, therefore, that the successful relocation in a short time of such a large number of persons will be a very complex operation which will require careful planning, organization and preparation and a variety of measures which must be carried out in peacetime. Included will be not only the organization of the departure and movement of the urban evacuees, but also the preparation of designated hosting areas to receive them, along with measures to sustain the evacuees in the hosting areas for prolonged periods of time. In addition, as is pointed out, the successful implementation of crisis relocation will depend on the psychological preparation of the population, which includes instilling in it an understanding of crisis relocation procedures, a sense of discipline, and faith in the effectiveness of civil defense measures. Finally, there is a perceived need for strict control over all aspects of the execution of crisis relocation as well as over the evacuees.

Given the difficulties of carrying out rapid crisis relocation of inhabitants of large cities, Soviet civil defense leaders and planners have proposed a number of long-term urban planning concepts intended, among other benefits, to facilitate crisis relocation. One such concept is to restrict the population growth of the largest cities.[11/] Such restrictions were to be achieved by prohibiting the construction of significant new industries as well as various institutions in such cities and prohibiting the moving of people from other areas to them. Over the years, several joint resolutions of the CPSU Central Committee and the USSR Council of Ministers have been adopted to this effect.[12/] The "policy of restricting the growth of large cities," was also incorporated into several Five Year Plans.[13/] Other suggested measures included the construction of satellite towns around large cities to which some of the industries in the latter could be relocated; dispersal of new industries to areas with low industrial development; city development planning to facilitate traffic and access to suburbs; and so on.[14/] Some of these long-term measures appear to have been implemented to varying degrees. The restriction on the growth of large cities, however, and on the expansion of industrial capacities in them have not been effective. In general, since World War II, the Soviet Union has undergone rapid urbanization—one characteristic of which has been the rapid growth of the population of the larger cities. A substantial number of satellite towns have been built around the large cities. According to Soviet sources, however, many of their residents work in the nearby cities, while a substantial portion of the work force employed in the industries located in the satellite towns actually continues to reside in the cities. Both of these conditions may complicate the implementation of crisis relocation because of the Soviet concept of relocating workers and employees through their places of employment.

4.2 SOME SOVIET VIEWS ON BASIC REQUIREMENTS FOR CRISIS RELOCATION

In general, all crisis relocation programs have similar basic requirements. Details, however, may vary considerably depending on specific local conditions, capabilities for effecting the relocation, the

nature of the exurban zones, the character of the social, economic and administrative systems and the cultural traits of the population and so on. In the matter of crisis relocation, Soviet spokesmen like to claim an advantage for the Soviet Union, which they allege to be the result of the size of Soviet territory and the superiority of the Soviet system. For example, a First Deputy Chief of the USSR Civil Defense Staff has asserted that:

> *Our country has everything it needs to successfully take steps to disperse and evacuate the population: a planned national economy, a large territory and a smoothly operating transportation system. All this makes it possible to carry out evacuation measures in a short time.*[15/]

Or, again it is said that:

> *The enormous territory of our country and also the socialist system of economic planning, as well as the public ownership of land, housing, enterprises and municipal services and trade organizations make possible the timely preparation of the exurban zone [to receive urban evacuees].*[16/]

The territorial size of the Soviet Union and its large rural areas undoubtedly confer an advantage in crisis relocation when compared, for example, with Western Europe. Even so, in the Soviet Union as in other countries local conditions will tend to vary a great deal. For example, in the Soviet Union the actual ratio of urban to rural population varies greatly from oblast (province) to oblast and in the republics. Indeed, in many oblasts and a number of republics, the number of urban residents significantly exceeds those in the rural areas.[17/] A large territory also does not mean that all of it would be readily accessible to evacuees or would be sufficiently developed for hosting purposes. For example, in some areas of the USSR—notably in the northern regions, eastern Siberia and in the desert areas of Central Asia, the cities have little or no nearby developed rural zones which could serve to host the evacuees. Of course, Soviet civil defense leaders only plan to relocate the residents of high risk cities and industrial centers and

not all urban residents in a given oblast or republic. Even so, as a practical matter, the hosting areas for each high risk city will pose their own particular problems.

There is no doubt that Soviet planning and implementation of crisis relocation benefits from the Soviet administrative system, state ownership of the economy, transportation, housing and other resources, and from the Soviet system of control over the population. This permits a high degree of detailed crisis relocation planning, tight control over the execution of the relocation and effective allocation of resources. Given that crisis relocation is a complex and multi-faceted operation, a basic requirement is the effective cooperation of a wide range of organizations and the coordination of plans, measures and activities which must be carried out by them on various levels. In this respect Soviet civil defense benefits from the fact that participation in crisis relocation organization, planning and implementation at all levels is compulsory for all elected councils (Soviets), administrative departments, organizations, agencies, institutions, economic units, housing administrations, and so on, down to individual citizens. No aspect of it, be it at the urban and industrial level or the hosting area level, is voluntary or permits independent actions.

The Soviets believe that there are a number of other basic requirements for crisis relocation. Policy decisions have to be made to determine who is subject to crisis relocation and in what order of priority. There must be a warning system to announce the start of the relocation which allows for partial or general relocation. Transportation is of particular importance. The execution of crisis relocation and the rates of movement of evacuees to the exurban areas will be very sensitive to the availability and capacities of the transportation system and of travel routes. This poses particular problems in the Soviet Union which has relatively little automotive transportation in private hands. The number of vehicles in the urban transportation system is limited, there is a shortage of all-weather roads, and many rail lines are not double-tracked. Furthermore,

there is a requirement to coordinate the movement of evacuees and the use of travel routes with the military authorities in order to avoid interference with priority military movements. Identification and assignment of hosting areas is another basic requirement, as well as preparations to sustain the evacuees there for a protracted time. Finally, there has to be strict control over the behavior of the population and enforcement of its obedience to orders in the course of the relocation. Soviet manuals insist that the population's self-discipline and obedience are a basic prerequisite for the effective implementation of crisis relocation. It is said that:

> *It is the duty of the population to unconditionally obey all orders concerning evacuation and dispersal, to strictly maintain public order, to prevent the spread of panic, to demonstrate a high degree of vigilance and readiness to do everything that is required.*[18]

As was noted, such discipline and obedience does not come by itself, but is believed to have to be instilled in the population by means of civil defense instruction and training, propaganda and general "military-patriotic" and communist education. Furthermore, it must be reinforced by close supervision, police and security enforcement, and the organized actions of every aspect of crisis relocation.

Soviet planners also see a requirement for the long-term preparation of the exurban zones and hosting areas in order to facilitate the relocation and improve the capabilities of the hosting areas to absorb and sustain the evacuees. It is recommended, therefore, that attention be paid to the development of roads leading from the high risk cities, the construction of road by-passes around these cities, the duplication of key bridges, and the development of rural roads leading to rural settlements.[19] It is also recommended that improvements be made to the infrastructure of the host areas. This includes the expansion of water and electric power capacities and communication nets, the building of summer camps and resort facilities, schools and hospitals, the

development of a network of stores and restaurants, the improvement of food processing facilities, and the stockpiling of food and other essential supplies.[20/]

4.3 THE SOVIET CONCEPT OF "DISPERSAL" AND "EVACUATION"

One factor influencing Soviet crisis relocation planning and requirements is the Soviet insistence on the need to maintain critical industries, utilities and services in continuous operation in high risk areas. As a result, the population subject to relocation is divided into two basic categories: essential workers who will commute to work in the high risk areas, and the rest of the population which will remain in their assigned hosting areas for as long as the authorities consider necessary. The Soviets call the relocation of the first category "dispersal," and the second category "evacuation." What primarily distinguishes the two is the distance of their hosting areas from high risk areas and the respective activities of the evacuees following their relocation.

"Dispersal" is the organized removal by transport or on foot of workers and employees of enterprises, utilities and services which will remain in operation in high risk areas during wartime.[21/] The essential workers will be organized into two 12-hour workshifts, each shift commuting to work from its hosting area. The basic requirement is that not more than 4-5 hours be spent by the workers on the round-trip to and from work.[22/] This requirement determines the selection of hosting areas assigned to these workers, both in terms of their distances from the work places and of their distances from main roads and rail lines.

A similar requirement also exists for the relocation of a large part of the urban civil defense formations whose mission is to engage in post-strike rescue, damage-limiting, repair and restoration operations. These formations must be deployed in the exurban zone in such a manner that they could reach the high risk areas in a few hours of travel by motor vehicles. Furthermore, as was noted, a significant portion of the essential workers in each workshift will also be members of their installations' civil defense formations. In practice, therefore, the relocated

civil defense formations will largely share the dispersal areas with the essential workers.

"Evacuation" refers to the organized removal by transportation or on foot of the non-essential element of the urban population; i.e., persons unfit for work as well as those whose places of employment will close down for the duration of the war.[23/] Because there will be no urgent wartime requirement for these persons to return to the cities, and because they will be largely employed in the local economy in their assigned hosting areas, the latter will be located at a greater distance from the high risk areas or further away from main routes of transportation than the hosting areas designated for "dispersal." This in turn will affect the distances the majority of the urban population will have to travel, the utilization of transportation means and the length of time each round-trip will take, and may pose problems in the accessibility of hosting areas during some seasons of the year.

In addition to essential workers and the non-working population, there will be a third category of evacuees. This group will be made up of personnel of enterprises, institutions, organizations and agencies which will relocate their operations to the exurban zone. Because these persons will not be required to commute to work over any considerable distances, they, together with their organizations, can be relocated to localities further away from high risk cities than those designated for "dispersal" purposes. From the viewpoint of the selection of hosting areas, therefore, this group will also be subject to what the Soviets call "evacuation."

4.4 SOVIET VIEWS ON THE POSSIBLE DURATION OF A CRISIS RELOCATION POSTURE

Soviet planners recognize that it is impossible to predict the length of time it may be necessary to maintain a crisis relocation posture; i.e., keep the relocated population in hosting areas. There are many possible scenarios depending on the character, duration, and outcomes of crises and possible wars. Soviet spokesmen do not specifically discuss the case of a crisis which leads to the implementation of crisis relocation

but is resolved without a nuclear attack against Soviet territory. The Soviets, however, do not insist that a "threatening situation" is necessarily followed by such an attack. At the same time, it is obviously undesirable for domestic as well as military and foreign policy reasons to publicly discuss the possible use of crisis relocation for demonstration or coercion purposes. For the same reasons there is no mention of a situation in which the Soviet Union initiates the war, although Soviet military spokesmen indicate that the Soviet Union expects to pre-empt an enemy attack. For discussion and planning purposes, therefore, Soviet civil defense manuals deal with crisis relocation as a measure carried out when, in the perception of the leadership, there arises a real and urgent threat of an enemy nuclear attack on the Soviet Union. It appears to be assumed that the "threatening situation" period, whose duration cannot be predicted, will be likely but not necessarily followed by such an attack. As was noted, a major Soviet concern is that the "threatening situation" period may be very short.

The length of time the relocated population may have to remain in the exurban zone will largely be a function of the duration of the threat of nuclear strikes on Soviet cities. Soviet military leaders do not exclude the possibility that a war between the Eastern and Western coalitions may be protracted, even though the initial nuclear strikes may in a large measure determine its course and outcome.[24/] Soviet spokesmen also claim that the U.S. is preparing to wage a protracted nuclear war.[25/] The Soviets do not predict the possible duration of such a war, but they appear to believe that it could be a matter of many months rather than days or weeks. This is confirmed by the Soviet insistence on wartime defense production to replace expended and lost military supplies and equipment and also by the Soviet requirement for rapid repair and restoration of damaged essential production facilities in the course of the conflict.[26/] It does not follow, however, that the Soviets expect the main nuclear exchange phase, during which the Soviet Union may be exposed to the mass of nuclear strikes, to be protracted, even though both sides are likely to keep a portion of their strategic forces in

reserve. In the Soviet view, the initial phase of a nuclear war is likely to be characterized by massive nuclear strikes, each side attempting to create favorable conditions for the attainment of its war objectives in the subsequent phase. The latter phase may see only a limited use of strategic nuclear weapons, while the conflict is waged in various land and naval theaters of operations.[27/] Indeed, it is during this phase that wartime defense production and the repair and restoration of damaged installations may have a significant impact on the conduct of the war and its possible outcome.[28/] Consequently, during this phase the threat to surviving Soviet cities and industrial installations would diminish and some or all of their population and workers may be able to return to them. It may be necessary also to bring back a significant portion of the relocated population to carry out repair and restoration work in damaged cities and economic installations. As one Soviet military writer put it, "large masses of the population will be employed in the liquidation of the consequences of nuclear strikes."[29/] In short, the Soviet authorities would not necessarily keep the entire relocated population in their hosting areas for the duration of the war. Of course a great deal will depend on the character of the war, the extent of damage to cities and the economy, and generally the post-nuclear strike environment.

One consideration which may affect the length of time a crisis relocation posture can be maintained is its economic cost to the state. The disruption of economic activities caused by crisis relocation and the cost of sustaining a large unproductive body of urban evacuees may make it very difficult for a state to maintain such a posture for a considerable length of time, especially in the absence of an enemy nuclear attack on the country. The Soviet system of "dispersal" and "evacuation" is designed to ease this problem. It permits the continuation of essential production and of operations of utilities and basic services. At the same time, Soviet plans call for the employment of the non-essential evacuees in agriculture, in industrial enterprises

located in the exurban zone or relocated there from the cities, and in various services to the rural and relocated population. Thus, while the Soviet national economy would suffer a significant decline as a consequence of crisis relocation, it would not be paralyzed. From an economic standpoint, therefore, the Soviet Union may anticipate an ability to maintain a crisis relocation posture for a protracted period of time without suffering intolerable costs.

Another limitation on the length of time a crisis relocation posture can be maintained is the ability of the state to sustain the evacuees in their hosting areas. Soviet civil defense recognizes the need for maintaining stocks or reserves of food, medicine, and basic goods for this purpose in the exurban areas.[30/] Soviet sources do not indicate, however, how large these stocks may be and for what length of time of consumption by the population they are planned for. One Soviet manual mentions that stocks of agricultural produce should suffice for the duration of the war, but the assumed duration is not specified.[31/] In the case of food stocks to feed workshifts at enterprises in the high risk areas, a civil defense manual suggests that they should suffice for one month.[32/] Of course additional supplies could be brought in later from the exurban areas. Presumably, the stocks of food and goods in the exurban areas should suffice until agricultural work can resume and the population can be sustained from current production. If this were to be the case, the crisis relocation posture could be maintained for a protracted time.

4.5 SOVIET VIEWS ON PRIORITIES IN AND ROLES OF CRISIS RELOCATION

As a general principle, the Soviets apply their civil defense measures in a selective or discriminatory manner. They do so on the basis of two basic criteria. The first is the importance of a given city, economic center or installation and the likelihood that it may be targeted by the enemy for nuclear strikes. The importance of a city appears to depend on its size, location, its significance as a political,

administrative, economic, transportation and communications center, and the number of high value targets contained in it.[33] Installations appear to be rated according to their significance for defense, the economic power of the state and for post-war recovery. The second is the value to system survival, command and control, the war effort and recovery of specific organizations and individuals. This is reflected in the quality of the shelters built for one type of organization or individuals as compared to others, and also in the Soviet concepts of "dispersal" and "evacuation" in crisis relocation plans.

Of course, there must be a criterion for determining the cities or installations whose residents or workers should be subject to relocation. In all probability there is some ranking in priority even among them, the residents of some high risk cities being considered of greater value than others. Furthermore, not all cities which contain potential targets for nuclear strikes may be necessarily considered as requiring the relocation of all of their inhabitants. For example, in the case of a city with a high value plant or installation located in its outskirts or in its suburbs, there may be only a requirement to relocate some of the the leadership elements and the workers of that high value plant or installation, but not of all residents. Thus, the greater the number of high value installations, organizations and personnel in a given city, the higher its priority is likely to be in crisis relocation plans.

The second criterion allows the Soviet authorities to set priorities for crisis relocation in accordance with the Soviet value system. Even though the objective of Soviet civil defense is said to be the protection of the "entire population", especially in high risk areas, it is clear that the authorities believe some elements of the population to be more valuable than others. Soviet spokesmen are fond of citing Lenin's "directive" to the effect that:

> *The first production force of entire mankind is the worker, the toiler. If he survives, we will save and restore everthing...but we will perish if we fail to save him.*[34]

But even among the toilers, there is a gradation of their value to the state.

Given that the Soviet system of crisis relocation of all working people is through their places of employment, it is relatively easy for the authorities to establish priorities in the order of departure of the evacuees and in the use of means of transportation. As was noted, aside from the leadership element, particular value is assigned to essential workers, civil defense forces and no doubt also to those organizations, institutions and agencies which are expected to continue their activities in the exurban areas, especially if their activities are related to defense support, economic, political, governmental or scientific-research functions. Soviet civil defense manuals make no mention of the relocation of the leadership element, but it is more likely to be the first to leave. The manuals do note, however, that the authorities will have the options of ordering first the dispersal of essential workers and civil defense forces to be followed by the evacuation of the rest of the urban residents, or they can order the evacuation ahead of dispersal or again initiate the simultaneous dispersal and evacuation of the population.[35/] It is said that the choice will be determined by "a special decision of the government" in the light of the degree of tension in the international situation, i.e., the urgency of the perceived threat. It seems likely that in a situation in which the Soviet leadership expects an imminant initiation of nuclear war, first priority will be assigned to the relocation of the more valuable elements of the urban population. In a slowly escalating crisis or for demonstration purposes, the leadership could begin crisis relocation with the progressive evacuation of the non-essential urban population. It is also said that the order in which the relocation will be conducted will depend on the character of each city, the number and condition of evacuation routes available to it, transportation capabilities, the season of the year and weather conditions.[36/] It is also noted that in special cases a "partial" evacuation may be carried out for the purpose of removing from the cities a "specific category of the population."[37/]

In general, as was noted, the Soviets have become increasingly concerned with accelerating the rate of crisis relocation so as to complete it in the shortest possible time. Among other measures, this has led to the concept of relocation by the "combined method," that is the simultaneous use of all available means of transportation and the departure of some elements of the population on foot. To what extent this approach is expected to shorten the time required for completing the relocation is not known. There are indications, however, that the Soviets expect to be able to relocate a majority of the residents of cities slated for relocation in a matter of a few days.[38/] Presumably, the relocation of the smaller number of the more valuable elements of the population on a priority basis would require less time.

Section 4

FOOTNOTES

1. For example, see Colonel General A.T. Altunin, "Civil Defense Today," in Lyudi i Dela Grazhdanskoy Oborony (People and Affairs of Civil Defense), (Moscow: Voyenizdat, 1974), p. 9; L. Antipov, "Evacuation and Dispersal," Voyennyye Znaniya (Military Knowledge), No. 7, July 1982, p. 32; Marshal of the Soviet Union V.I. Chuykov, Grazhdanskaya Oborona v Raketno-Yadernoy Voyne (Civil Defense in a Missile-Nuclear War), (Moscow: Atomizdat, 1969), p. 23; N.I. Akimov and V.G. Il'in, Grazhdanskaya Oborona na Obektakh Sel'skokhozyaystvennogo Proizvodstva (Civil Defense at Installations of Agricultural Production), 2nd edition, (Moscow: Kolos, 1978), p. 100.

2. M. Muradyan, "Questions of Civil Defense: Organization is the Main Thing," Kommunist (Yerevan), September 23, 1979; P.T. Egorov, I.A. Shylakhov and N.I. Alabin, Grazhdanskaya Oborona (Civil Defense), 3rd edition, (Moscow: Vysshaya Shkola, 1977), pp. 112-114; M.N. Titov, P.T. Egorov and B.A. Gayko, Grazhdanskaya Oborona, (Moscow: Vysshaya Shkola, 1974), p. 45.

3. Marshal of the Soviet Union V.I. Chuykov in Nauka i Zhizn' (Science and Life), No. 1, January 1969, cited in K.G. Kotlukov, K.S. Ogloblin and A.I. Sgilevskiy, Grazhdanskaya Oborona Vchera i Segodnya (Civil Defense Yesterday and Today), (Moscow: Atomizdat, 1975), p. 70. See also Egorov et. al., op. cit., pp. 112-114.

4. Chuykov, Grazhdanskaya Oborona v Raketno-Yadernoy Voyne, p. 24; Civil Defense Staff of the Lithuanian SSR, Uchebno-Metodicheskoye Posobiye dlya Podgotovki Naseliniya k Grazhdanskoy Oborone (Instruction-Methodological Manual for Training the Population in Civil Defense), (Vilnus: Mintis, 1967), p. 65; P.G. Yakubovskiy, Grazhdanskaya Oborona, (Moscow: Prosveshcheniye, 1972), p. 26. See also L. Goure, Shelters in Soviet War Survival Strategy, (Washington, D.C.: Advanced International Studies Institute, 1978), pp. 6-7.

5. Colonel M.P. Skirdo, Narod, Armiya, Polkovodets (The People, The Army, The Commander), (Moscow: Voyenizdat, 1970), p. 122.

6. L.I. Brezhnev, Fifty Years of Great Achievements of Socialism, (Moscow: Progress Publishers, 1970), p. 63; editorial, "Be on Alert," Voyennyye Znaniya, No. 6, June 1977, p. 1; Marshal of the Soviet Union N. Ogarkov in Sovetskaya Rossiya (Soviet Russia), February 23, 1977.

7. Army General A.A. Yepishev, editor, KPSS i Voyennoye Stroitel'stvo (The CPSU and Military Development), (Moscow: Voyenizdat, 1982), p. 97.

8. Marshal of the Soviet Union A. Grechko, Vooruzhennye Sily Sovetskogo Gosudarstva (The Armed Forces of the Soviet State), 2nd edition, (Moscow: Voyenizdat, 1975), p. 92.

9. Egorov et. al., op. cit., p. 145.

10. Civil Defense Staff of the Lithuanian SSR, op. cit., p. 70.

11. Chuykov, Grazhdanskaya Oborona..., p. 34; Egorov, et. al., op. cit., p. 145.

12. For example, see Pravda, June 10, 1971; A.N. Kosygin, speech on Radio Moscow, June 9, 1971.

13. Pravda, February 14, 1971, and December 14, 1975.

14. Egorov et. al., op. cit., pp. 146-147, 149; Radio Kiev, October 22, 1969; Yu. Stepanov, "Next to the Epicenter," Sovetskaya Rossiya, August 14, 1970; K. Novikov, "Problems of Effective Utilization of Labor Resources," Kommunist, No. 13, September 1969, p. 107; N. Nekrasov, "The Future of Our Industry," Trud (Labor), June 15, 1972. See also L. Goure, War Survival in Soviet Strategy: USSR Civil Defense, (Washington, D.C.: Advanced International Studies Institute, 1976), pp. 142-144.

15. Lieutenant General D.I. Shuvyrin, "What Should be Known About Civil Defense," Radio Kiev, January 21, 1970. See also Chuykov in Nauka i Zhizn', op. cit.

16. N.I. Akimov, M.L. Vasilevskiy, I.D. Makarov, L.P. Rusman and M.P. Umnov, Grazhdanskaya Oborona (Moscow: Kolos, 1969), p. 62. See also Egorov et. al., op. cit., p. 145.

17. For example, see L. Goure et. al., The Role and Capabilities of Rural Areas in Soviet Civil Defense, Final Report, (Washington, D.C.: Advanced International Studies Institute, April 1981), prepared for the Defense Nuclear Agency, Contract No. DNA 001-79-C-0407, pp. 6-13.

18. Chuykov, Grazhdanskaya Oborona ..., p. 23. See also Eto Dolzhen Znat' i Umet' Kazhdyy (Everyone Must Know This and Be Able to Do This), (Moscow: Voyenizdat, 1974), pp. 26-27; Army General A.T. Altunin, editor, Grazhdanskaya Oborona, (Moscow: Voyenizdat, 1980), p. 20.

19. Egorov et. al., op. cit., pp. 147, 149-150; Akimov, Vasilevskiy, et. al., op. cit., p. 61.

20. Egorov et. al., op. cit., p. 149.

21. Ibid., p. 81; Altunin, Grazhdanskaya Oborona, p. 42; Akimov and Il'in, op. cit., p. 100; Lieutenant General D.A. Krutskikh, Uchebno-Metodicheskoye Posobiye po Podgotovke Rukovodyashchego i Komandno-Nachal'stvuyushchego Sostava Grazhdanskoy Oborony (Instruction-Methodological Manual for the Training of Chiefs and Command-Leadership Element of Civil Defense), (Moscow: Voyenizdat, 1978), p. 21; Titov et. al., op. cit., p. 45.

22. Egorov et. al., op. cit., p. 84; N.I. Akimov and V.G. Il'in, Grazhdanskoya Oborona na Obektakh Sel'skokhozyaystvennogo Priozvodstva, (Moscow: Kolos, 1973), p. 141.

23. Egorov et. al., op. cit., p. 82; Krutskikh, op. cit., p. 22; Altunin, Grazhdanskaya Oborona, p. 42; Titov et. al., op. cit., p. 45.

24. For a discussion of Soviet views on protracted war, see R. Soll, "The Soviet Concept of Protracted Nuclear War," Strategic Review, Fall 1980, pp. 15-28.

25. Marshal of the Soviet Union N.V. Ogarkov, Vsegda v Gotovnosti k Zashchite Otechestva (Always in Readiness to Defend the Fatherland), (Moscow: Voyenizdat, 1982), p. 15.

26. For example, see Skirdo, op. cit., pp. 62, 126; Major Generals D.A. Volkogonov, A.S. Milovidov and S.A. Tyushkevich, Voyna i Armiya (War and the Army), (Moscow: Voyenizdat, 1977), pp. 155-156, 183; Army General E.E. Mal'tsev, editor, KPSS—Organizator Zashchity Sotsialisticherkogo Otechestva (CPSU—Organizer of the Defense of the Socialist Fatherland), (Moscow: Voyenizdat, 1977), p. 18; L. Goure, Soviet Post-Strike Civil Defense Rescue, Damage-Limiting, Repair and Restoration Operations, Final Report, (McLean, VA: Science Applications, Inc., August 1982), prepared for the Federal Emergency Management Agency, Contract No. EMW-C-0571, pp. 5-15, 117-128.

27. For example, see Major General V. Zemskov, "Characteristic Features of Modern War and Possible Methods of Conducting Them," Voyennaya Mysl' (Military Thought), No. 7, July 1969, FPD translation No. 0022/70, April 6, 1970, p. 20.

28. Skirdo, op. cit., pp. 60-61.

29. Ibid., p. 62.

30. For example, see Mal'tsev, op. cit., p. 331; Kotlukov et. al., op. cit., p. 21; Colonel A. Sukhoguzov, "The Problem of Viability of the Economy in Modern War," Kommunist Vooruzhennykh Sil, No. 3, February 1972, p. 13; Egorov et. al., op. cit., p. 11; Akimov and Il'in, op. cit., 1st edition, p. 15.

31. Akimov and Il'in, op. cit., 1st edition, p. 15.

32. Egorov et. al., op. cit., p. 183.

33. For example, see Krutskikh, op. cit., p. 10; Akimov, Vasilevskiy et. al., op. cit., p. 61.

34. Cited in Altunin, "Civil Defense Today," op. cit., p. 8.

35. For example, see Civil Defense Staff of the Lithuanian SSR, op. cit., p. 71; Akimov, Vasilevskiy et. al., op. cit., p. 64.

36. "Dispersal and Evacuation," Voyennyye Znaniya, No. 4, April 1983, p. 16.

37. Ibid.

38. P.T. Egorov, I.A. Shlyakhov, N.I. Alabin, Grazhdanskaya Oborona, 2nd edition, (Moscow: Vysshaya Shkola, 1970), p. 523; Director of Central Intelligence, Soviet Civil Defense, NI78-10003, July 1978, p. 9.

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Section 5

SOVIET CRISIS RELOCATION PLANNING

In the Soviet view, crisis relocation must be well planned, organized and prepared, and tightly controlled. Because of its complexity and the need to implement it in a short period of time, crisis relocation must already be prepared in peacetime. Key elements of such preparation are the development of detailed, comprehensive plans; careful coordination of plans; preparation of essential information, orders and instructions; and the drawing up of various schedules.

Soviet crisis relocation planning benefits from several factors. One is the hierarchical structure of the Soviet governmental system and the degree of control each level exercises over lower ones. There is also a centrally directed national civil defense organization. Another factor is that participation in civil defense planning, including planning of crisis relocation, is compulsory for all relevant governmental, administrative, economic, municipal, technical and service organizations as well as civil defense staffs at all levels. This includes not only the urban areas, but also the exurban areas which find themselves designated by higher authorities to serve as hosting areas for urban evacuees. Other advantages derive from the dependence of the population on public means of transportation, state ownership of the economy and all essential resources, and the ability of the authorities to requisition private property at will.

5.1 ORGANIZATIONS INVOLVED IN CRISIS RELOCATION PLANNING

Crisis relocation planning in the Soviet Union largely reflects the organization of USSR Civil Defense. This organization is said to be based on the "territorial-production" principle—that is, along both territorial-administrative and functional-economic lines. Below the Chief of USSR Civil Defense and his staff in the USSR Ministry of Defense—which sets general policies and programs including crisis relocation—responsibility for civil defense rests first of all with the executive, administrative,

and managerial chiefs at all levels who are by law designated as civil defense chiefs for the area, personnel and facilities under their control. These chiefs are assisted by:

- deputies for dispersal and evacuation;
- full time chiefs of staff charged with implementation of the decisions of the chiefs. The chiefs of staff are also first deputies of the civil defense chiefs;
- staffs made up of full or part-time personnel; and,
- service chiefs who organize and lend specialized and technical support.

Along the territorial-administrative line, "dispersal and evacuation is led by the chiefs of civil defense of republics, oblasts or krays [provinces], cities and urban rayons [districts], and their staffs."[1/] In this case, the chiefs of civil defense will be the chairmen of the Councils of Ministers of the republics, and at lower levels the chairmen of the executive committees of the elected soviets [councils] of peoples' deputies. This territorial-administrative approach also applies to rural rayons [counties] and localities when the chiefs of civil defense are the chairmen of the executive committees of the rural rayons and village soviets of peoples' deputies. The soviets—as the elected legislative organs—and their executive committees are required by law to actively participate in the organization of civil defense and the implementation of appropriate measures. Thus, the soviets at all levels are required to deal with problems relating to the wartime protection of the population in general, including legislative measures associated with "the organization and implementation of the dispersal of the people and the evacuation of the population from the cities and large inhabited localities."[2/] As a practical matter, the soviets will act on the requests and recommendations of the chairmen of the executive committees of the soviets—i.e., the chiefs of civil defense.

The lowest level of the territorial-administrative structure is made up of the Housing Bureaus (ZhEK) and Housing Managements which administer one or more apartment buildings in the cities. These housing bureaus and managements are not specifically responsible for crisis relocation planning, which will be done at the rayon level. They are, however, involved in crisis relocation because they implement the relocation of the non-working urban residents, and consequently they participate in the planning by supplying appropriate data to the urban rayon planners.[3/]

Along the functional line, responsibility for crisis relocation planning at higher levels rests with the ministers and department chiefs and their deputies for dispersal and evacuation, and civil defense staffs. At the lower levels, it rests with the managers (directors) of economic units and organizations, such as factories, power plants, collective and state farms, educational institutions and so on, assisted by their deputies for dispersal and evacuation and their civil defense staffs. Thus at a plant, the crisis relocation plan is "developed on the basis of directives on the question of civil defense issued by the appropriate ministry and the recommendations of the higher level civil defense staff,"[4/] i.e., primarily the city or urban rayon civil defense staffs and less frequently the oblast or republic staffs.

Although the final crisis relocation plans are drawn up in documents prepared by the civil defense staffs and signed by the chiefs of civil defense, the deputy chiefs of civil defense for dispersal and evacuation play an important role in the planning of crisis relocation. According to a Soviet civil defense manual, they are specifically charged with "directing the development of plans for the dispersal of workers and employees and the evacuation of members of their families,"[5/] as well as for the evacuation of the non-working urban population. In the urban areas, the deputies work primarily through Evacuation Commissions which have both planning and organizational functions in crisis relocation. The evacuation commission's function is to assist the civil defense staffs and chiefs in the planning, organization and implementation of crisis relocation.

Evacuation commissions are established at the council of ministers of republics, ministries and departments, executive committees of soviets of workers' deputies of oblasts (krays), cities, rayons and at large installations of the national economy. For the organization of the reception of the dispersed and evacuated population, there are established evacuation reception commissions at the executive committees of soviets of workers' deputies of rural rayons, village (settlement) soviets, and collective and state farms.[6]

The evacuation commissions are chaired by the deputy chiefs of civil defense for dispersal and evacuation. The membership of the commissions includes representatives of the communist party organization, planning organizations, civil defense staffs and services, transportation organizations, educational institutions, social services, health services, trade and public feeding services, public order and safety services, military commissariats, communications organizations, and so on.[7] At large economic installations, where the evacuation commission is established by the installations' directors (who are also their chiefs of civil defense) by order of the higher civil defense staff, the membership of the commissions include: representatives of the installations' party committees, the enterprises' management committees, the trade union committees, Komsomol (Communist Party Youth) committees, personnel departments, special departments, chiefs of shops or departments, and of the civil defense staffs and services.[8]

Soviet civil defense manuals do not detail the responsibilities and functions of the evacuation commissions above the city and rayon levels, but presumably the higher level commissions have roughly similar functions. At the city and urban rayon levels, the evacuation commissions are responsible for:[9]

- Maintaining a census of the population, departments, agencies, organizations, enterprises and installations subject to dispersal and evacuation.
- Determining the capabilities of inhabited localities in the exurban zone for receiving and housing the evacuated population, departments, institutions and organizations.

- Assigning exurban rayons and localities (i.e., hosting areas) to the urban rayons, enterprises, departments, institutions and organizations.

- Developing and maintaining a census of means of transportation and evacuation routes, assigning them to installations for the transportation of dispersed and evacuated personnel, and preparation of movement schedules.

- Determining the composition of foot columns and their routes.

- Determining and solving requirements for material, technical, and other support of, and supply for, the dispersed and evacuated population.

- Preparing the necessary documents and schedules pertaining to crisis relocation, distributing, and safekeeping them.

- Establishing time spans for the implementation of dispersal and evacuation.

The evacuation commissions of installations perform similar functions. Specifically, they:[10/]

- Keep count of the number of workers and employees subject to dispersal and of their family members who will be evacuated through the installations.

- Determine the best utilization of available means of transportation and their routes.

- Determine the number of persons to be evacuated on foot, the composition of foot columns and their specific routes.

- Identify and prepare intermediate evacuation points, transportation boarding and debarkation points.

Evacuation Reception Commissions are established in hosting areas for the planning, organization and implementation of the reception of urban evacuees and their resettlement. Membership in these commissions will be made up of representatives of the executive committees of the soviets and party committees, chiefs (or their deputies) of public trade

and feeding organizations, representatives of public health services, and other public and municipal service organizations. In essence, therefore, the evacuation reception commissions, like the urban evacuation commission, will be composed of representatives or chiefs of departments, services, and organizations directly involved in the planning, preparation, and implementation of crisis relocation. The Soviet system also requires that there be representatives of the CPSU on all such commissions. The responsibilities of the evacuation reception commissions include the development of plans for meeting the arriving evacuees, the allocation of housing for them, the preparation of supplies and services needed to sustain the evacuees, the determination of employment of evacuees, and so on.[11/] The rural soviets and the evacuation reception commissions appear to have little say in the identification of hosting areas or who and how many evacuees will be assigned to use them. This information, along with planned schedules for the arrival of evacuees, will be provided by the urban or oblast civil defense staffs and evacuation commissions. The evacuation reception commissions, however, will provide information to the urban and oblast evacuation commissions about the capabilities of the hosting areas to receive, house, and support the urban evacuees.

At the lowest level of the crisis relocation planning ladder are the various services which are represented in the evacuation commissions and are also subordinated to the civil defense chiefs and staffs at the various levels. These services and the organizations belonging to them develop plans for carrying out the specialized functions and duties which are required in support of crisis relocation. This applies in particular to transportation organizations which must develop plans and schedules for moving the evacuees in accordance with the allocation of transportation means established by higher civil defense staffs and evacuation commissions. Other services include public health which is called upon to provide medical assistance in the course of the relocation; the police which must maintain order and traffic control; clothing and food wholesale and retail as well as public feeding organizations and so on.

5.2 THE COORDINATION OF CRISIS RELOCATION PLANS

The coordination of crisis relocation planning is essentially a vertical process which first moves down from the top and then up from the bottom (see Figure 5.1). As one would expect, the plans become increasingly detailed and specific as they progress from the higher to the lower level. The higher staffs provide essential guidelines, directions, instructions, and necessary information. Each higher staff provides the next lower staffs under its control with relevant excerpts from its own crisis relocation plan.[12/] The lower staffs take these excerpts as guidelines and basis of information for the elaboration of their own plans. For example, while at the oblast and republic levels, hosting rayons for each city may be designated in a general way; the city and urban rayon civil defense staffs and evacuation commissions will take these designated hosting areas and assign specific hosting localities to residential rayons, factories, institutions and organizations. In principle, each city will use first of all adjacent rural rayons as hosting areas. In practice, however, oblasts may contain several major cities whose population would be relocated or large areas unsuitable for use as hosting areas. Consequently, the cities must be told by the oblast or republic civil defense staffs and evacuation commissions which hosting areas are dedicated to their use. Another role of the republic and oblast staffs is to coordinate relocation plans when, because of its location or local conditions, a city requires hosting areas beyond the borders of the oblast or republic in which it is located.[13/]

For coordination purposes, each lower civil defense staff and evacuation commission submits its civil defense plans, including those for crisis relocation, to the next higher civil defense staff for approval.[14/] This results, therefore, in an upward moving coordination process. Most of the coordination apparently takes place at the urban rayon and city levels, and where necessary, at the oblast or republic levels. As was noted, there is also a requirement to coordinate transportation plans and the selection and use of evacuation routes with the military authorities,

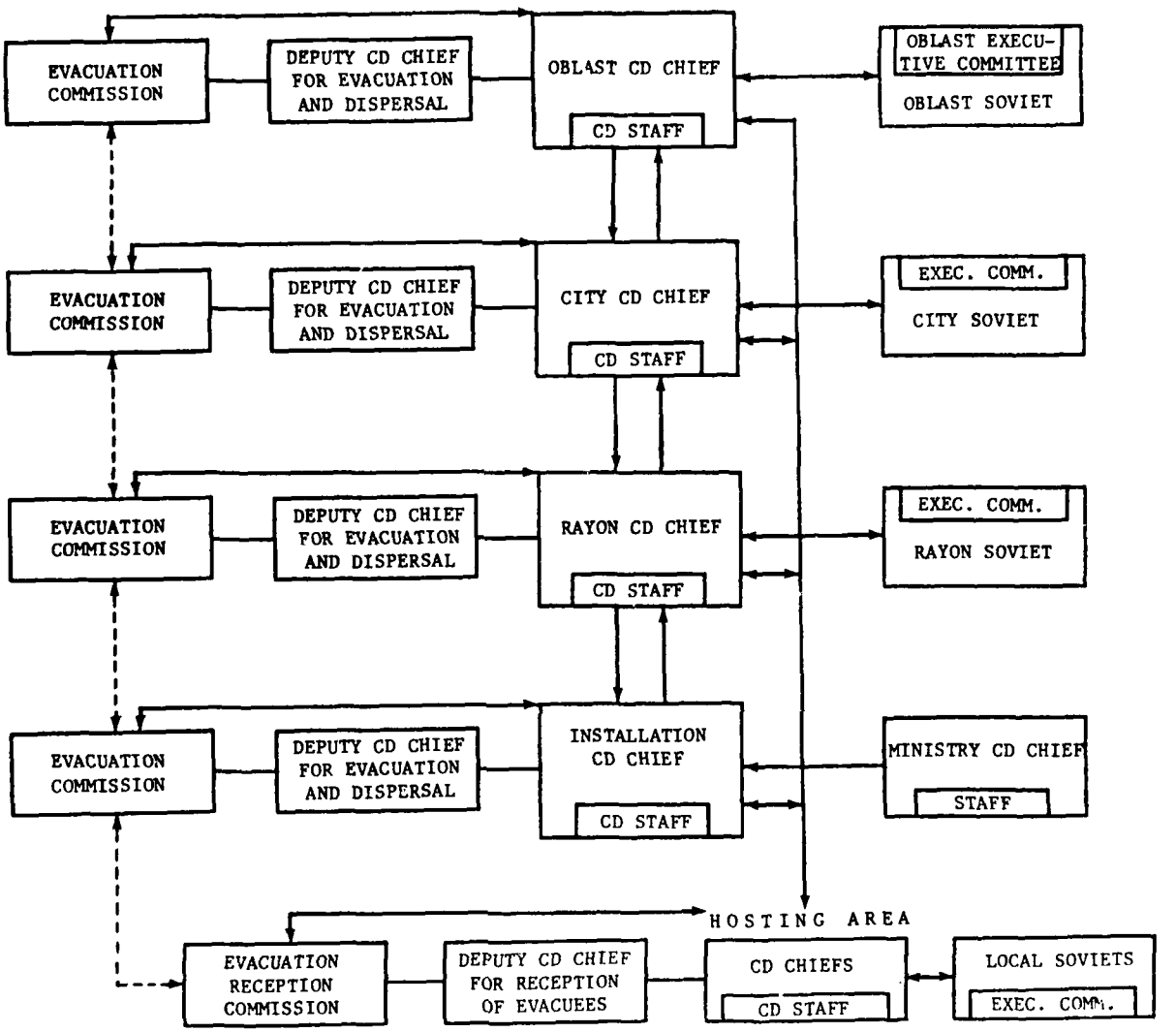

Figure 5.1 Coordination of Crisis Relocation Planning

in particular, the military district commands and the armed forces' Rear Services Command.[15] Especially significant will be the coordination of the use of the railroads, where the military will be likely to have priority, and also of the use of certain highways and roads, where military convoys will probably have the right of way. This will require, therefore, careful coordination of the scheduling of military and evacuation traffic. Finally, one reason for the presence of representatives of the military commissariats on the evacuation commissions is the requirement for coordination of crisis relocation plans with military plans for the call-up of military reservists and draftees and their movement to assembly areas and for the requisitioning of civilian vehicles and equipment for military use.[16] In general, the question of allocation and use of means of transportation and of routes and the scheduling of evacuation movements by transportation and on foot are the most complex aspect of Soviet crisis relocation planning, which are likely to require the most careful and detailed coordination at all levels of the planning process.

A great deal of coordination is also necessary between the urban crisis relocation planners at the various levels and the rural soviets and civil defense staffs in the designated hosting areas.[17] What is required is to coordinate plans for the relocation of urban evacuees with the capabilities of the hosting areas to receive, house and care for them. Consequently, information and coordination flow in both directions: from the rural staffs and evacuation commissions to the urban installations, civil defense staffs and evacuation commissions, and from these to the rural staffs and evacuation reception commissions.[18] In addition, the urban rayon and installation civil defense staffs and evacuation commissions are expected to study their assigned hosting areas and localities on the spot in order to develop more detailed information for planning purposes and to determine, in cooperation with the local staffs and evacuation reception commissions, what improvements in and additions to facilities and services would be needed to provide acceptable conditions for the hosting of urban evacuees.[19]

5.3 ELEMENTS OF INFORMATION REQUIRED FOR CRISIS RELOCATION PLANNING

Soviet civil defense manuals do not discuss the elements of information required by republic and oblast civil defense staffs for planning crisis relocation. Presumably, while more general in content, they will not greatly differ from the requirements of city planners which are discussed in Soviet publications.

At the city level, the civil defense chiefs, staffs and evacuation commissions are said to require the following basic information.

5.3.1 Guidelines and Instructions from Higher Organs

These directives, orders and instructions apparently will define among others: the categories of residents to be dispersed and those to be evacuated; the sequence, timing and character of the elements of the plan to be prepared; the designation of the hosting rayons and significant localities; the persons responsible for the preparation of the plan and its implementation; and the availability of railroad transport and uses of main transportation arteries.[20/]

5.3.2 Statistical Information

This will include information on the total number of residents in the city; the number of enterprises, departments, organizations, educational institutions, scientific-research institutions and other significant institutions and organizations; the number of workers, employees and civil defense formations to be dispersed and the number of their family members; the number of residents to be evacuated; and the number and types of institutions, organizations and agencies to be relocated.[21/]

This sort of census poses a number of problems. One is the definition of the geographic area within which the residents should be subject to relocation. Generally, as Soviet civil defense manuals indicate, the danger zone is defined as the area bounded by a line of 1.4 psi blast overpressure. Persons outside this line would be

considered safe from blast overpressure, although thermal radiation from nuclear detonations, especially air bursts, will extend beyond the 1.4 psi blast overpressure radius. The real difficulty faced by Soviet planners is to decide the probable ground zero of the detonation of the nuclear weapons, their likely yields and whether they would be ground or air bursts. Since targeted installations may be at the edge of the city limits or in the nearby suburbs, it may be necessary to include in the compulsory relocation a substantial part of the residents of the city suburbs. As was noted, one Soviet manual has recommended that residents of suburbs in a radius of 8 to 10 kilometers from the city limits be included in the compulsory relocation.[22/] This distance would slightly exceed the radius of 1.4 psi blast overpressure generated by the detonation of a 300 kiloton warhead at the city limits (9.1 km radius for an air burst and 7.3 km for a surface burst).[23/] Another manual asserts, however, that the determination of the danger line beyond the city limits will depend on the "significance of the city, its size, the number of its inhabitants, and the probable yield of nuclear weapons which may be used by the enemy."[24/] What this seems to say is that the danger line will be determined by the probable number of targets and their location in a given city and probably in the suburbs as well, the density of inhabitants in the suburbs and the probable yields of the weapons the enemy is likely to use against the likely targets in the city. It appears, however, in practice the designated hosting areas usually will be significantly further away from the city limits than the above-mentioned 8 to 10 km.

Another requirement is that the city crisis relocation planners must be told which enterprises, utilities, services and so on will remain in operation during wartime in the cities, and therefore the identity and size of the workforce which will be considered to be essential and subject to dispersal. Presumably this determination is made by the military authorities and the ministries already in peacetime in accordance with Soviet plans for economic mobilization. The city soviets may also define in this light which urban utilities and services will

be considered as being essential. It is not clear whether the ministries and higher civil defense staffs will inform the city staffs which enterprises are considered to be essential or whether the enterprises so designated by higher authorities will inform the city staffs and evacuation commissions of their status. Changes in the status of enterprises, utilities and services will affect the cities' crisis relocation plans. The same applies to the identification of institutions, organizations, and agencies as well as enterprises or production lines slated for relocation in order to continue their operation in the exurban zone.

Soviet publications also note that maintaining a current exact count of workers, employees and their family members slated for "dispersal" and of other residents slated for "evacuation" poses some difficulties. Thus, one manual notes:

> *Keeping count of workers and employees does not pose any particular difficulties, but the counting of the number of family members to be evacuated with them is more difficult. Apparently, this will require a personal questioning because some of the family members will be dispersed with the enterprises where they work or evacuated with educational institutions, childrens' institutions, etc. If one adds to this that not every worker and employee is a head of family, it becomes evident right away what a laborious and intensive work has to be carried out to determine the number of people who must be dispersed and evacuated.*[25/]

The population count is facilitated by the fact that all urban residents are registered with the police (militia) and the housing managements or bureaus (ZhEKs) and, of course, those who are employed are also listed in the files of the personnel departments of their places of employment.[26/] Consequently, "at every enterprise, department, educational institution and housing administration there are, prepared in advance, evacuation lists of all workers, employees and members of their families."[27/] One problem, however, is that in principle, family members—many or all of whom may be working—will be relocated with the head of the household. If a family member is considered to be an essential

worker while the head of the family is not, it may be to the advantage of the family to register for dispersal with the place of employment of the essential worker. In any event, it means that each place of employment must keep current lists not only of employees who will be relocated through that particular place and know who will not do so, but also maintain up to date lists of family members of employees who wish to be relocated together with the latter. The civil defense staffs of places of employment, rayons and cities will also maintain lists of personnel of civil defense formations which are slated for deployment in the exurban zone. Excluded from the relocation lists will be military reservists who would be called up for active military service in the event of a general mobilization. The identification of such persons is relatively easy because each reservist has a military passbook which shows his current mobilization status, and his military status is also known to the personnel department of his place of employment.

One particular problem not addressed by Soviet civil defense manuals is that of the non-residents who will be present in the cities at the time crisis relocation is ordered. For the most part, the authorities—i.e., the police and hotel or housing administrations—will know who they are and where they are staying because such persons must register on arrival and show their internal passport which each adult Soviet citizen is required to have. Persons traveling on business will also have travel orders issued by their places of employment. What is unclear is whether such persons will be subject to evacuation through the hotel or housing administrations where they are staying or whether those who travel on business will be dispersed with the employees of those enterprises, departments, organizations, institutions or agencies which they have come officially to visit. It is also not clear how the families of heads of households who are in the essential worker category will be relocated in their absence. It seems likely, however, that because these families will be registered for relocation with the place of employment of the head of household, they will be relocated by these places of employment even in their absence. A last minute switch in the listing of these families would probably introduce too much confusion.

5.3.3 Information on the Hosting Areas

This will include the number of inhabited points or localities in the rural area and of buildings in them suitable for housing people and evacuated departments, organizations and institutions, and the quality of living and support conditions in these populated points.[28/]

Actually, the required information includes all potential housing in the rural areas assigned to the city for the relocation of its inhabitants, i.e., not only the private homes of rural residents and public and commercial buildings in the villages, collective and state farms, or small towns, but also the capacities of tourist centers, pioneer camps, sanitariums and resorts in the designated hosting rayons. This information has to be provided by the soviets, civil defense staffs and evacuation reception commissions of the hosting areas.[29/] It is supposed to be further refined as a result of visits by representatives of the urban civil defense staffs and evacuation commissions to the hosting areas.[30/]

The planners will also have to know the geographic character of the assigned hosting areas and the distances from the cities to the localities which will serve to host dispersed workers and the evacuated population. The allocation of hosting areas and of assigning the evacuated population to them will depend on the degree of development of the exurban zone and the density of the population residing in it. The The sparcer the population in the exurban area and the greater the distances from the cities to hosting localities, the more difficult and time-consuming will be the relocation of the urban population.

5.3.4 Information on Transportation

This will include information on the availability of rail, road and waterway transportation routes and their potential traffic capacity; the number, types and capacities of available means of transportation; the number and location of railroad stations and passenger platforms, boat docks, and points for boarding and off-loading vehicles; the state

of the bridges on the evacuation routes, the possibilities of increasing the volume of traffic on roads and waterways and of eliminating bottlenecks.[31]

The city civil defense staff will be informed by the railway administration about the availability of trains, their capacity and scheduling. In the case of vehicles, the staff may determine how many will be under its control in the event of crisis relocation, although some uncertainty is bound to exist in the case of vehicles used in intercity traffic and long-distance passenger and freight haulage. It appears that privately-owned vehicles will be included in the count.[32]

One particular problem will be the need of the planners to anticipate the effects of weather on road and river traffickability. In major parts of the USSR roads and waterway traffic is severely curtailed or altogether halted in winter. In the absence of heavy snow, however, cross-country travel and crossings over frozen rivers bypassing bridges are possible. Traffic on non-hard surface roads is also greatly curtailed in spring and fall.

As was noted above, crisis relocation planners will have to know which rail lines and roads will be reserved for the use of the military or on which of them military traffic will have priority. They will also require to be informed by the military commissariats how many vehicles and of what type present in the city and in the hosting areas will be requisitioned by the military in the event of a mobilization.

Precise information on the availability and capacities of means of transportation, routes and distances to hosting areas will make it possible for the planners to determine the allocation of means of transportation, the rates of evacuation by transport, and also how many residents of a given city will have to leave on foot. This in turn will allow the planners to estimate the length of time which will be required for the execution and completion of the relocation.

5.3.5 Information on Medical Capabilities

This will include information on the availability in the city and in the exurban zone of medical institutions, their types and capacities; the number and types of medical personnel; the amounts of stored medical and prophylactic supplies; and the capabilities for providing medical service to the population at evacuation assembly points, along evacuation routes and in the hosting areas.[33/]

For all practical purposes, the public health service is a part of the civil defense medical service.[34/] The urban medical organizations, their personnel and medical supplies will be relocated to the exurban zone. The relocated medical organizations as well as those normally present in the exurban areas will have two functions. One will be to participate in post-strike rescue operations in the areas of nuclear destruction and in the evacuation and treatment of rescued casualties. The other will be to provide medical services to the residents and evacuated population in the exurban areas.[35/] The crisis relocation planners will have to know which medical organization and personnel will be requisitioned for military use, which organizations and personnel will be reserved for the treatment of casualties from enemy strikes, and which will be available for servicing the population. They will also need to anticipate the probable number of sick persons in urban hospitals who will need to be evacuated by appropriate transport, the adequacy of existing medical facilities and services in the rural areas for the residents and evacuated population and the extent to which they would have to be expanded by evacuated urban medical organizations, the amounts of medical supplies to be relocated from the city and also present in the hosting areas, and the needs for the further stockpiling of such supplies.

Presumably, in the matter of allocation of medical personnel and medical aid posts to the evacuation assembly points in the cities and along the evacuation routes—especially the march routes of columns traveling on foot—this will be primarily a task for the civil defense

medical service. What it and the planners will need to know will be the number of planned assembly points, medical posts and convoys or foot columns which will have to be staffed by medical personnel. Medical posts at intermediate evacuation points on the foot evacuation routes will be manned by medical personnel of rural health services.

5.3.6 Information on Food Stocks and Food Processing and Catering Capabilities in Hosting Areas

This will include information on the availability, amounts, and location of stocks of food and supplies of first necessity; the number and service capacities of public feeding facilities in the hosting areas; the availability and production capacities of baking plants and bakeries; and the feasibility of organizing mobile public feeding points, the order of delivery of food and objects of first necessity in short supply.[36/]

This information will have to be provided by various state and local organizations in the cities, as well as in the exurban areas, dealing with food and essential goods production, storage, processing, distribution and sales. Stocks of supplies in the cities not held back for the use of workshifts at essential installations will be relocated to the exurban zones and the urban public feeding and trade organizations will help to expand the existing capacities in the hosting areas. The planners will need to know whether the combined stocks of food and other essential goods in the hosting areas will suffice to sustain the local residents and evacuees for a designated period of time, what additional supplies may be needed and where these could be obtained.[37/] The question of the adequacy of food processing capacities, especially bakeries, in the hosting areas is an important one. If they are insufficient, the planners may have to undertake steps in peacetime to expand them or provide for mobile field bakeries or seek some other practical solutions.

5.3.7 Information on Shelter Availability and Requirements for Construction

This includes information on the availability, capacities and protective qualities of shelters, primarily at urban assembly points

and in the hosting areas; the availability of building materials and prefabricated units for the construction of rapidly-erectable shelters and anti-radiation covers.[38/]

In Soviet plans, protection of the relocated population includes providing it with anti-radiation shelters in the hosting areas. It also includes providing sufficient spaces in blast shelters at or near evacuation assembly points in the cities to protect people undergoing processing for relocation at these points. Surveys of existing shelters and anti-radiation covers will permit the planners to estimate how many additional shelters and covers should be built in peacetime or will have to be built when a "threatening situation" is announced and the crisis relocation is initiated. Information on shelters and covers built in the hosting areas will be provided by the rural civil defense staffs and evacuation reception commissions. This information may have to be fairly frequently updated because the rural areas build anti-radiation covers in the course of civil defense exercises. Nevertheless, at present, hosting areas do not usually have sufficient ready anti-radiation covers to accommodate the urban evacuees. Such shelters could be built over time or during a protracted crisis. Otherwise they will have to be built simultaneously with the crisis relocation by the rural residents as well as the evacuees themselves.

Although not specifically mentioned by the manuals, one can assume that the planners will also need information on the availability and types of mechanized and motorized construction equipment, i.e., bulldozers, cranes, graders, scoopshovels, etc.—both in the cities and in the hosting areas—which would be available to assist in the construction of shelters and covers. As to construction materials, Soviet designs for rapidly erectable anti-radiation covers allow for the use of a wide variety of materials.[39/] Particularly desirable however is the construction of detached shelters and covers using prefabricated, reinforced concrete large diameter ducts and pipes and reinforced concrete blocks and plates. No doubt, the pre-stocking of such materials

or of cut lumber and boards, especially in hosting areas short of local building materials, would facilitate the rapid construction of the necessary shelters and covers.

5.3.8 Information on the Availability of Gas Masks

This will include information on their availability, locations of their storage, and the order and schedules for their distribution to the dispersed and evacuated urban population.[40/]

Individual means of protection consist of gas masks and may also include protective coveralls, hoods, gloves and boots. When these are not available, they may consist of gauze face masks and clothing readily adaptable to prevent direct skin contact with radioactive dust and toxic liquids. In principle, the entire population should be equipped in time of emergency with individual means of protection. Normally such equipment is held by the places of employment for working people, and by the housing administrations for the non-working residents. Institutions and organizations which will transfer their operations to the exurban zone may store their individual means of protection in their designated hosting localities. In principle, however, urban workers and residents should be issued their individual means of protection prior to their relocation. If this is not possible, they should be issued them in their hosting areas.

5.3.9 Information on Water Supply

This includes information on the availability of water sources along evacuation routes and especially in the hosting areas, their capacities and the possibilities and time requirements for the building of new ones.[41/]

The adequacy of the water supply is a potential problem for the hosting areas. The supply must be sufficient not only to meet the daily needs of the evacuees in addition to those of the local residents and their livestock, but it must also permit the stocking of shelters and anti-radiation covers with water for their occupants for the anticipated

length of the latters' shelter stay time. The available water supply in the hosting areas may limit the number of evacuees they can sustain or require the development of additional water sources already in peacetime or in conjunction with the crisis relocation. Presumably, information on the water supply will be provided by the hosting areas.

5.3.10 Weather Information

This includes information on the prevailing meteorological conditions characteristic for a given region and possibilities of flooding and other natural disasters.[42/]

Soviet civil defense manuals show concern for the possibility of flooding of the exurban areas and specifically of potential hosting areas. Account is taken not only of seasonal flooding and of the frequency of flooding due to severe weather conditions, but also of the possibility of flooding as a result of the destruction by enemy action of dams and large reservoirs.[43/] Areas subject to or threatened by potential flooding will not be used for hosting evacuees. Consequently, information about such areas will allow the planners to refine their selection of hosting areas and their allocations.

Information on prevailing meteorological conditions will allow the planners to anticipate the state of evacuation routes and their traffickability during various times of the year. Knowledge about prevailing winds may influence the choice of direction of relocation of civil defense formations and other urban organizations so as to avoid potential radioactive fallout zones.

The information required by enterprises, departments and large organizations is essentially the same as that required by the city and urban rayon civil defense staffs and evacuation commissions. Most of the required information will be passed on to the enterprises, etc. by the rayon staffs and evacuation commissions. The ministry and the chief of civil defense of the rayon to which a given enterprise is subordinated will inform the chief of civil defense of the enterprise concerning the

location of the hosting localities assigned to the enterprise, the means of transportation available to it, the routes to be used by vehicles and by marching columns of employees and their families, and the amount of time allocated to the execution of the relocation.[44]

In the case of the chief of civil defense, staffs and evaucation reception commissions in the exurban areas, the required information for planning purposes will include: the number of evacuees assigned to a given hosting area or locality; the schedule of arrival of trains, motor convoys, boats and marching columns; the location of intermediate evacuation points; the amount and types of transportation means available for moving evacuees from the intermediate evacuation points to their final destinations; the location of disembarkation points for trains and boats; the availability of housing space, supplies, water and other support capabilities and services in the hosting areas; and what supplies, equipment and service capabilities will be relocated from the cities to the hosting areas.[45]

5.4 CHARACTER AND CONTENT OF CRISIS RELOCATION PLANS

Crisis relocation plans at all levels are a part of the general plans covering all aspects of civil defense. A crisis relocation plan consists of written documents specifying various directives, assignments, schedules and information, supplemented by lists, diagrams, time tables, maps, charts, logistic tables, and so on.[46] Essentially, the plans indicate who will be dispersed and who will be evacuated; the locations and assignments of hosting areas; when the relocation should begin after it is ordered; the use and allocation of means of transportation and routes; the number of persons to be evacuated on foot, their points of departure, routes of march; the number and location of evacuation assembly points, transportation boarding points, and intermediary evacuation points; the distribution of supplies and location of stocks; services and personnel who manage and assist in the implementation of crisis relocation; movement schedules, and so on.[47]

AD-A128 795 THE SOVIET CRISIS RELOCATION PROGRAM(U) SCIENCE APPLICATIONS INC MCLEAN VA CENTER FOR SOVIET STUDIES L GOURE MAY 83 SAI-84-166-WA EMW-C-0571 2/3

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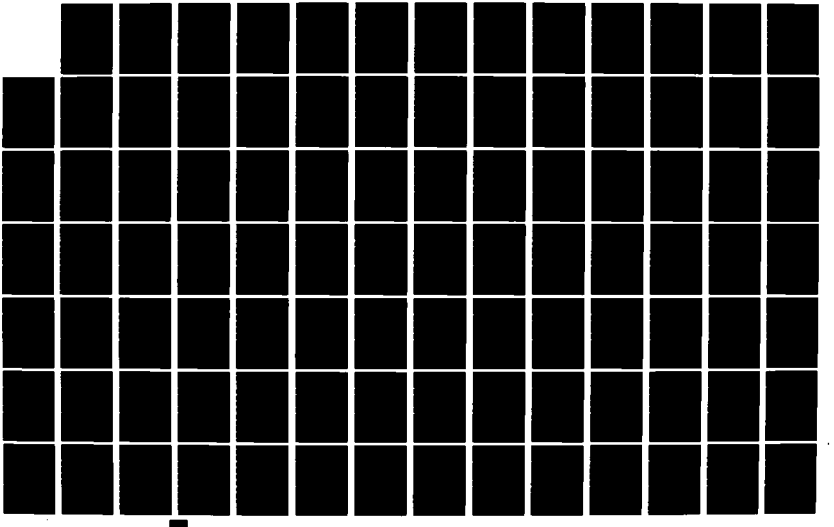

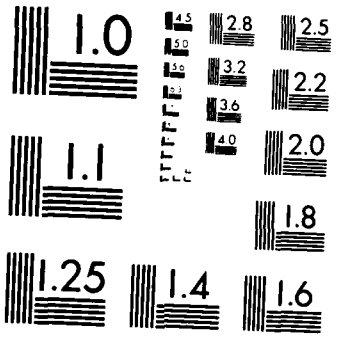

Soviet manuals do provide examples of the content of crisis relocation plans of large industrial enterprises. As noted above, such plans specify the number of workers, employees and family members subject to dispersal or evacuation; the assigned hosting areas and localities; the transportation means to be used and their scheduled arrival and departure; the location and number of evacuation assembly points established by the enterprise; the travel routes for transportation and foot columns; points of boarding means of transportation and debarkation; schedules for relocating workshifts; the provisioning of the workers and their family members with individual means of protection; the location of the enterprise's command post in the exurban area; the communications frequencies, call names and nets to be used; the deployment of civil defense forces; and the availability of shelters at the enterprise and in the hosting areas.[48/]

According to a hypothetical civil defense plan of an industrial enterprise published in a Soviet civil defense manual, Figure 5.2 shows the entries dealing with crisis relocation.[49/]

The example of a crisis relocation plan shown in Figure 5.2 is not necessarily complete. There will be various lists, maps, schedules, and other attachments—including specific lists of workers and family members who will be evacuated by transport and on foot; specific assignments of means of transport and movement schedules; allocations of hosting localities or parts of localities to shops and departments, and so on. According to one manual, the attachments will include a map of the city showing the locations of the enterprise, the evacuation assembly points, and the number of workers assigned to each of them; the location of railroad stations and designated places of boarding of vehicle convoys and boats; the time of arrival of transport and their capacities; the best routes to the evacuation assembly points; and the transport boarding points and traffic control points (see Figure 5.3).[50/] Another set of attachments will consist of maps or diagrams of evacuation routes—especially routes to be used by foot columns—indicating points of assembly

location of the hosting localities assigned to the enterprise, the means of transportation available to it, the routes to be used by vehicles and by marching columns of employees and their families, and the amount of time allocated to the execution of the relocation.[44/]

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CIVIL DEFENSE PLAN OF THE No. 135 MECHANICAL PLANT

Short description and main task of CD of the enterprise.

The enterprise is located in the Western section of City X, in its industrial microrayon [park]. On the basis of its significance, the enterprise is assigned to the Y category for CD purposes....

The enterprise is connected to the railway freight station by a spur ... km long.

The planned number of workers and employees of the enterprise is ... persons.

With the occurrence of a threat of enemy attack, the enterprise shifts to a two-workshift system....

The hosting area for the workers and employees is ... km from the Evacuation Assembly Point. The round trip by transport of the duty workshift will require ... hours, including time for assembly and boarding of means of transportation.

The prevailing winds are from an easterly direction. In the event of a nuclear detonation in the center of the city, the territory of the enterprise may be in a zone of radioactive contamination....

By directives of the Ministry and the decisions of the Chief of Civil Defense of the Z Rayon, the enterprise is assigned the following main CD tasks:

⋮

To disperse the workers and employees and resettle them in the exurban zone in ... hours following the announcement of a threat of an enemy attack;

To carry out the evacuation of the family members of the workers and employees of the enterprise to the exurban zone by the combined method in ... hours;

⋮

Dispersal of Workers and Employees and Evacuation of Members of Their Families to the Exurban Zone

Upon receiving orders from the CD staff to execute the dispersal of the enterprise's workers and employees and the evacuation of members of their families to the exurban zone by the combined method: transport by rail and motor vehicles ... persons, move on foot ... persons.

The scheduled workshift, the personnel of [civil defense] formations, and family members will travel by transport according to the lists of the enterprise's CD staff.

The order and timing of the dispersal and evacuation will be in accordance with the calculations of the enterprise's CD staff.

For the assembly, registration and dispatching of personnel to the exurban zone, there will be established Evacuation Assembly Points (SEPs):

SEP No. 1, located in the enterprise's club, will be assigned to shops No. 1, 2, 3, 4, 8, 10, 11, 12, and 13. In all, ... workers, employees and members of their families are assigned to SEP No. 1. The chief of SEP No. 1 is I. V. Petrov;

SEP No. 2, located in the Shipping-Loading Administration Office, is assigned to No. 5, 6, 7, and 9 shops and departments. In all, ... workers, employees and members of their families are assigned to SEP No. 2. The chief of SEP No. 2 is I. I. Korolev.

The SEPs will be brought to full readiness in ... hours following the order to begin the evacuation.

For the transportation of children, the elderly and sick persons from the disembarkation points and the evacuation reception point to the place of resettlement, the local [i.e., rural] CD staff will provide buses....

The resettlement of the workers, employees and members of their families in the exurban zone [i.e., hosting area] will be carried out in accordance with the diagram (see Attachment X).

The work and travel of the duty workshift to the enterprise and [back to] the exurban zone will be carried out according to a sliding schedule (see Attachment Y).

Providing Workers, Employees and Members of their Families with Individual Means of Protection:

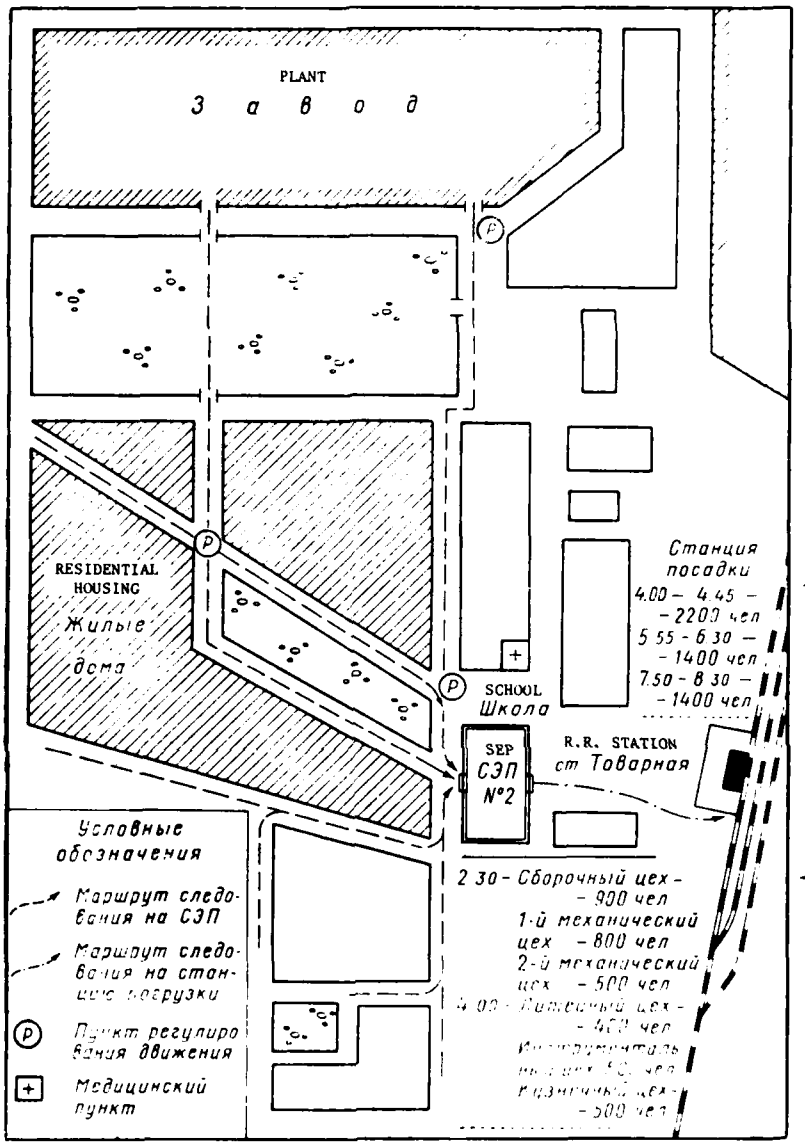
Provide the personnel of [CD] formations, workers, employees and members of their families with individual means of protection from the means kept in storage and also from means provided by the rayon CD staff.

Issue individual means of protection and individual means of medical protection by shops and departments according to the time indicated in the plan.

Issue individual means of protection first of all to the personnel of [CD] formations. The chiefs of the Anti-Radiation and Anti-Chemical Defense Service are to check the technical state of the individual means of protection in ... hours.

Workers, employees and members of their families should also have simple means of protection (respirators and anti-dust gauze masks).

Figure 5.2 Hypothetical Civil Defense Plan of an Industrial Enterprise



SOURCE: N.P. Krechetnikov and N.P. Olovyanishnikov, Grazhdanskaya Oborona na Machino-Stroitel'nyk Predpriyatiyakh, (Moscow: Mashinostroyeniye, 1972), p. 48.

Figure 5.3 Schedules for Use of Evacuation Assembly Point and Railroad Station by an Industrial Plant

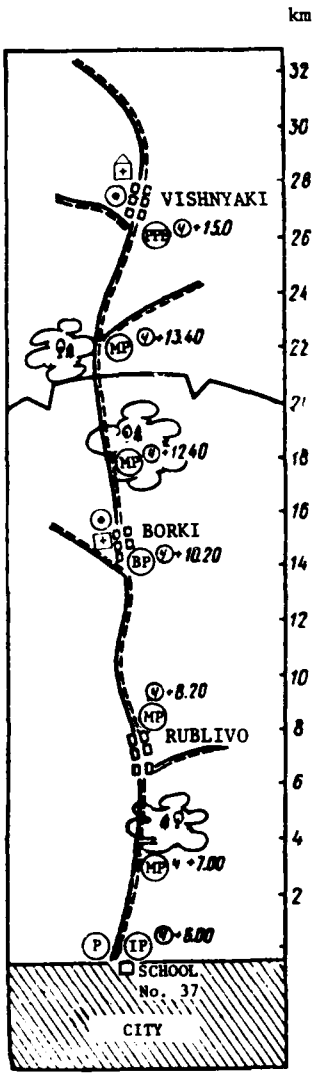
and departure, the number of each column, the number of persons assigned to each column, departure times, control points, rest stops, medical aid posts, watering and warming up points, intermediate evacuation points, etc. (see Figure 5.4).[51/] Other attachments will consist of tables dealing with assigned transport, the organization of convoys and their schedules, points of disembarkation, schedules for transporting personnel who marched on foot to intermediate evacuation points to their assigned hosting areas, etc.[52/] Finally, there may be lists of personnel assigned to operate evacuation assembly points, lead train and vehicle convoys and foot columns, man control points, as well as of personnel who will be dispatched right away to the hosting areas to coordinate the arrival and resettlement of the evacuees with the local staffs and evacuation reception commissions.

Essential enterprises may also develop alternate plans which allow for the staggered evacuation of the workshifts or the simultaneous evacuation of the entire workforce. For example, the plan may allow for dispersing first either the duty shift or the resting shift, or it may establish a staggered evacuation schedule to keep the requirements for transport to a minimum.[53/]

A separate section of the plan is prepared by the Material-Technical Supply Service of the enterprise. It will indicate how and where the enterprise's vehicle convoys will be provided with fuel, emergency repairs and maintenance; where the evacuees will be issued food; and what stores or stocks will supply the food and goods of basic necessity to the evacuees during the relocation process and to the workshifts at the enterprises.[54/]

The hosting areas in turn will develop, on the basis of information provided by the urban civil defense staffs and evacuation commissions, appropriate plans for the reception, resettlement, supplying and protection of the evacuees assigned to them (see Section 8).

The civil defense staffs, evacuation commissions and evacuation reception commissions at all levels are responsible for the proper



NOTATIONS

Length of route—26 km.

Assembly and departure point—School No. 37, Peschanaya St., No. 90, Tel. No. 130-90-37.

Telephones along route at collective farm "Rassvet," Borki Village.

Borki has a food and clothing store and restaurant with 80 seats, a club house with 200 spaces, a Medical Aid Station (1 doctor, 2 nurses), and an artesian well.

Intermediate Evacuation Point is at Vishnyaki. Telephone in House of Culture and space for 300 persons, a secondary school with space for 500 persons; stores: food-2, clothing-1, household goods-1, restaurant with 150 seats, hospital with 30 beds, artesian well and water system.

All rest stops: in the summer, in the woods; in winter in inhabited points.

From the Intermediate Evacuation Point, evacuees will be transported by state farm "Vishnyaki" in D+2.

LEGEND

(4) Hour of announcement of the start of evacuation

(PPE) Intermediary Evacuation Point

(MP) Short rest stop

(BP) Long rest stop

(P) Traffic control point

(IP) Point of departure

Watering point

Medical aid point

Hospital

SOURCE: P.T. Egorov, I.A. Shlyakhov, and N.I. Alabin, Grazhdanskaya Oborona, 3rd edition, (Moscow: Vysshaya Shkola, 1977), p. 93.

Figure 5.4 March Route by a Foot Column From the City to the Intermediate Evacuation Point

dissemination of planning and instruction documents in peacetime, the safekeeping of the documents, and their correct distribution at the start of the crisis relocation. While precise information about Soviet peacetime practices in the matter of dissemination of relocation planning documents is lacking, it appears that such documents are usually fairly closely held and shown only on a need-to-know basis to authorized personnel. Although in some cases employees and workers of large enterprises appear to have been told in the course of civil defense instruction the location of their assigned hosting areas and the method of transportation to them, in other cases such information is kept secret by the managers and civil defense staffs.[55/] In general, it appears that the Soviets tend to consider crisis relocation plans to be an element of national defense planning and, therefore, treat their content as a sensitive matter. The same secrecy applies to plans for the mobilization of the economy for defense production and to the specific plans of enterprises to convert to such production in time of crisis. Naturally the Soviet authorities are also secretive about which plants and installations and specific elements of the workforce will be in the "essential" category in wartime.

There is no indication in Soviet publications how frequently the relocation plans are reviewed, updated or revised at the various levels, and whether there is a schedule for such reviews and revisions. No doubt updates and revisions are necessary from time to time for various reasons, such as urban growth, economic development, demographic changes in rural areas, changes in transportation capabilities and routes, etc. Major revisions—especially those affecting the allocation of hosting areas, transportation and evacuation routes, and the scheduling of evacuation movements—will impact planning at many levels and require new coordination efforts. Given the complexity of this process, it is likely that the civil defense staffs are reluctant to undertake major plan revisions and, consequently, will wait for orders from higher levels to do so. Presumably, minor updates and revisions are carried out in the course of and as a result of command-staff and integrated exercises which are fairly regularly held at various levels.

Although Soviet manuals do not discuss this, it appears that, at least in the case of large cities, the oblast or republic civil defense staffs will play a direct role in supervising, directing and coordinating the implementation of crisis relocation. There are indications that each of these large cities and adjacent hosting areas will be divided into sectors, and that each sector will be under the control of a sectorial staff drawn from the oblast (republic) staff. The sectorial staff will have overall control over the urban and rural rayon staffs, civil defense forces and all resources in its sector.

On the whole, it appears that Soviet crisis relocation plans are comprehensive, detailed, and fairly well coordinated. They deal with all elements of the relocation process. This does not mean, however, that the plans, especially at the lower levels, are always entirely realistic or devoid of errors. At least in theory, shortcomings should have become evident and be corrected in the course of exercises.[56/] However, in the absence of large-scale relocation exercises, it may not be possible to adequately test the realism and correctness of the plans (see Section 10).

Section 5

FOOTNOTES

1. Lieutenant General D.A. Krutskikh, editor, Uchebno-Metodicheskoye Posobiye po Podgotovke Rukovodyashchego i Komandno-Nachal'stvuyushchego Sostava Grazhdanskoy Oborony (Instruction-Methodological Manual for the Training of the Chiefs and Command-Leadership Elements of Civil Defense), (Moscow: Voyenizdat, 1978), p. 23. See also Army General A.T. Altunin, editor, Grazhdanskaya Oborona (Civil Defense), (Moscow: Voyenizdat, 1980), p. 43; N.I. Akimov and V.G. Il'in, Grazhdanskaya Oborona na Obektakh Sel'skokhozyaystvennogo Proizvodstva (Civil Defense at Installations of Agricultural Production), (Moscow: Kolos, 1973), pp. 20, 146; V.G. Strekozov, Oboronnaya Rabota Mestnykh Sovetov (Defense Work of Local Soviets), (Moscow: Yuridicheskaya Literatura, 1981), p. 50.

2. Strekozov, op. cit., p. 50.

3. Altunin, op. cit., p. 43; P.T. Bykov, M.A. Belikov, I.F. Vydrin et al., Nachal'naya Voyennaya Podgotovka (Initial Military Training), (Moscow: Voyenizdat, 1979), p. 272.

4. N.P. Krechetnikov and N.P. Olovyanishnikov, Grazhdanskaya Oborona na Mashino-Stroitel'nykh Predpriyatiyakh (Civil Defense at Machine Building Enterprises), 2nd edition, (Moscow: Mashinostroyeniye, 1972), p. 43.

5. Ibid., p. 33.

6. Krutskikh, op. cit., p. 23. See also P.T. Egorov, I.A. Shlyakhov and N.I. Alabin, Grazhdanskaya Oborona, 3rd edition, (Moscow: Vysshaya Shkola, 1977), p. 87; Krechetnikov and Olovyanishnikov, op. cit., p. 60.

7. Krutskikh, op. cit., p. 23.

8. Krechetnikov and Olovyanishnikov, op. cit., p. 60; Akimov and Il'in, op. cit., p. 147; Egorov et al., op. cit., p. 88.

9. Egorov et al., op. cit., p. 88; Akimov and Il'in, op. cit., p. 147.

10. Egorov et al., op. cit., p. 88; Krechetnikov and Olovyanishnikov, op. cit., p. 60.

11. N.I. Akimov and V.G. Il'in, Grazhdanskaya Oborona na Obektakh Sel'skokhozyastvennogo Proizvodstva, 2nd edition, (Moscow: Kolos, 1978), p. 107.

12. Akimov and Il'in, op. cit., 1st edition, p. 146, and 2nd edition, p. 102; Krechetnikov and Olovyanishnikov, op. cit., pp. 43, 45; Egorov et al., p. 86.

13. Civil Defense Staff of the Lithuanian SSR, Uchebno-Metodicheskoye Posobiye dlya Podgotovke Naseliniya k Grazhdanskoy Oborone (Instruction-Methodological Manual for the Training of the Population in Civil Defense), (Vilnus: Mintis, 1967), p. 71.

14. Egorov et al., op. cit., p. 176.

15. "A Transportation Order Has Been Received," Voyennyye Znaniya (Military Knowledge), No. 5, May 1969, pp. 22-23; Yu. Chernyshev, "Network Planning," Voyennyye Znaniya, No. 5, May 1969, pp. 29-30.

16. Akimov and Il'in, op. cit., 1st edition, p. 20.

17. Egorov et al., op. cit., p. 88; Akimov and Il'in, op. cit., 1st edition, p. 142.

18. For example, see Akimov and Il'in, op. cit., 2nd edition, pp. 107-108.

19. Egorov et al., op. cit., p. 88; Krechetnikov and Olovyanishnikov, op. cit., p. 61.

20. Akimov and Il'in, op. cit., 1st edition, p. 298.

21. Egorov et al., op. cit., p. 86.

22. Civil Defense Staff of the Lithuanian SSR, op. cit., p. 70.

23. A.S. Balayev, editor, Bor'ba s Pozharami na Obektakh Narodnogo Khozyaystva v Usloviyakh Yadernogo Porazheniya (Firefighting at Installations of the National Economy Under Conditions of Nuclear Destruction), (Moscow: Voyenizdat, 1973), p. 12.

24. M.N. Titov, P.T. Egorov and B.A. Gayko, Grazhdanskaya Oborona, (Moscow: Vysshaya Shkola, 1974), p. 46.

25. Krechetnikov and Olovyanishnikov, op. cit., p. 60. See also P.T. Egorov, I.A. Shlyakhov and N.I. Alabin, Grazhdanskaya Oborona, 2nd edition, (Moscow: Vysshaya Shkola, 1970), p. 119.

26. Egorov et al., op. cit., 2nd edition, p. 119.

27. Bykov et al., op. cit., p. 272.

28. Egorov et al., op. cit., 3rd edition, p. 86.

29. Ibid., p. 85.

30. Krechetnikov and Olovyanishnikov, op. cit., p. 61.

31. Egorov et al., op. cit., 3rd edition, p. 86; Akimov and Il'in, op. cit., 1st edition, p. 146; Titov et al., op. cit., p. 167.

32. Civil Defense Staff of the Lithuanian SSR, op. cit., p. 73; Titov et al., op. cit., pp. 167-168; N.P. Olovyanishnikov, Grazhdanskaya Oborona, (Moscow: Vysshaya Shkola, 1979), p. 47; Colonel A. Tsyganok, "In One's Own Cars," Voyennyye Znaniya, No. 11, November 1974, p. 27.

33. Egorov et al., op. cit., 2nd edition, p. 119, and 3rd edition, p. 86.

34. See M.M. Babadzhanov and Ya.V. Lidskiy, Osnovy Meditsinskoy Sluzhby Grazhdanskoy Oborony (Fundamentals of Civil Defense Medical Service), (Tashkent: Meditsina, 1970), passim; V.A. Rybasov, Organizatsiya Meditsinskoy Sluzhby Grazhdanskoy Oborony (Organization of the Civil Defense Medical Service), (Moscow: Meditsina, 1970), passim; F. Korotkov, editor, Meditsinskaya Sluzhba Grazhdanskoy Oborony (Civil Defense Medical Service), (Moscow: Meditsina, 1975), passim.

35. Akimov and Il'in, op. cit., 2nd edition, p. 110.

36. Egorov et al., op. cit., 2nd edition, p. 119, 3rd edition, p. 86.

37. Akimov and Il'in, op. cit., 1st edition, p. 15; M.P. Tsivilev, A.A. Nikanorov and B.M. Suslin, Inzhenerno-Spasatel'nye Raboty (Engineering-Rescue Work), (Moscow: Voyenizdat, 1975), p. 78.

38. Egorov et al., op. cit., 2nd edition, p. 119, 3rd edition, p. 86.

39. See L. Goure, Shelters in Soviet War Survival Strategy, (Washington, D.C.: Advanced International Studies Institute, 1978), pp. 24-36.

40. Egorov et al., op. cit., 3rd edition, p. 86. The second edition of this manual does not mention this requirement, see op. cit., 2nd edition, p. 119.

41. Egorov et al., op. cit., 3rd edition, p. 86.

42. Ibid.

43. Ibid., p. 85; Krutskikh, op. cit., p. 22.

44. Egorov et al., op. cit., 3rd edition, p. 178.

45. Akimov and Il'in, op. cit., 2nd edition, pp. 107-108.

46. Egorov et al., op. cit., 2nd editon, p. 120, 3rd edition, p. 176; Krechetnikov and Olovyanishnikov, op. cit., p. 45.

47. Egorov et al., op. cit., 2nd edition, p. 120, 3rd edition, pp. 178-183.

48. Krechetnikov and Olovyanishnikov, op. cit., p. 44.

49. Egorov et al., op. cit., 3rd edition, pp. 178-180.

50. Krechetnikov and Olovyanishnikov, op. cit., p. 45.

51. Egorov et al., op. cit., 3rd edition, p. 87.

52. Krechetnikov and Olovyanishnikov, op. cit., p. 45.

53. Ibid., p. 47.

54. Egorov et al., op. cit., 3rd edition, p. 183.

55. For example, see A.A. Gromov and N.P. Krechetnikov, Grazhdanskaya Oborona Promyshlennogo Obekta (Civil Defense at an Industrial Enterprise), 2nd edition, (Moscow: Atomizdat, 1975), p. 70.

56. For example, see Ibid., p. 76; Colonel N. Zvyagin, "Staff Drill in a Rayon," Voyennyye Znaniya, No. 5, May 1976, pp. 31-32.

Section 6

ORGANIZATION OF URBAN CRISIS RELOCATION

It was noted in the preceding section that the planning, coordination and supervision of crisis relocation rests primarily with the civil defense staffs and evacuation commissions, along with the various services most directly involved in its implementation. As was described earlier, the basic Soviet concept for the organization of crisis relocation is according to the "territorial-production principle."[1/] This means that the relocation of workers, employees and their families is organized and carried out by their places of employment, while non-working persons who are not immediate family members of workers and employees are relocated in accordance with their places of residence through the housing administrations and managements. This approach to the organization of crisis relocation offers a number of advantages. First, it facilitates the planning for the allocation of transportation means and hosting areas. Second, it permits better control over the population, its movements and the planned use of routes to the exurban areas. Third, it allows the authorities to keep the work force of essential enterprises, services, departments, institutions and organizations together in their dedicated hosting locations.

While applying the "territorial-production principle" to crisis relocation, the actual relocation of the urban population is implemented through what the Soviets call "Evacuation Assembly Points."

6.1 EVACUATION ASSEMBLY POINTS (*Russian Acronym: SEP*)

The SEPs are established by the city Evacuation Commissions and by the Evacuation Commission of large enterprises, installations, institutions and organizations,[2/] upon the recommendation of the civil defense chiefs. The function of the SEPs is to assemble, register and organize the departure of evacuees, including their boarding of transport or the formation of foot columns.[3/] The SEPs must also organize

the sheltering of their personnel and evacuees assembled there in the event of an enemy attack.[4/] Until the early 1970s, the mission of the SEPs also included warning the population of the start of the evacuation.[5/] Presumably this mission was abolished because it required an excessive number of personnel for its implementation. The procedure was too slow and there are other means of warning the population about the order to start the evacuation (for example, radio, television, etc.).

The SEPs are organized in peacetime. Each is given an identification number. They have a staff and are assigned specific quarters where they will set up operations in the event of crisis relocation. Depending on whether they will process workers, employees and their families or the non-working element of the population, the SEPs will be attached to enterprises, installations, departments, institutions and organizations or to housing administrations in residential areas. Each will be assigned a specific number of workers and employees or non-working residents to process. Workers and employees of small enterprises, installations or institutions will be assigned to the SEPs of larger nearby enterprises, installations, etc. The number of persons assigned to each SEP for processing appears to be relatively small—on the order of 2,000 to 3,000, although it may be somewhat larger in some cases.[6/] Presumably this will expedite the processing of evacuees and facilitate control over them, as well as reduce the number of persons who may be concentrated at each SEP in the event of an attack. It also means that it will be necessary to establish a large number of SEPs.

Each SEP has a chief whose appointment is recommended by the chairman of the Evacuation Commission which establishes the SEP and is confirmed by the city or rayon Executive Committee of the Soviet of Peoples' Deputies.[7/] The chief is selected from among the leadership-management element of the organization on the basis of which the SEP is established.[8/] The SEP's chief is assisted by a deputy and a supply officer. The rest of the personnel are also recruited from the organization served by the SEP or, if necessary, from various public services.

In addition to the chief, deputy chief and supply officer, the SEP will have (as shown in Figure 6.1):

- A *Registration Group* which will register the arriving evacuees, issue them appropriate documents and instructions, and keep a tally of the number of processed and dispatched evacuees.[9/] The size of this group will vary depending on the number of persons assigned to be processed by a particular SEP. According to Soviet civil defense manuals, the size of this group will range from six to twelve persons.[10/]

- A *Medical Team* of two to five persons, drawn from the enterprises', institutions', etc. own medical services or from the public health department.[11/] This team will assist evacuees who are ill or become ill while at the SEP.

- A *Public Order and Safety Group* of two to six persons, drawn from the enterprises', institutions', etc. own security personnel or from the police, will maintain order at the SEP and direct traffic around it.[12/]

- An *Information Desk* manned by one or two persons to assist the evacuees.[13/]

- A *Mother and Child Room* where mothers with infants and very young children can wait, nurse or feed their children and so on, manned by two or three assistants.[14/]

- *Leaders of railway and vehicle convoys and foot columns,* and personnel to guide the evacuees to the boarding points after they have completed processing at the SEP. The number of such persons will vary depending on the number of evacuees to be processed by a specific SEP, the type of transportation they will use, the distances from the SEPs to transportation boarding points, etc.[15/]

- The SEP may have other personnel such as assistants to supply offices, telephone or radio operators, representatives of the evacuation commissions, etc.

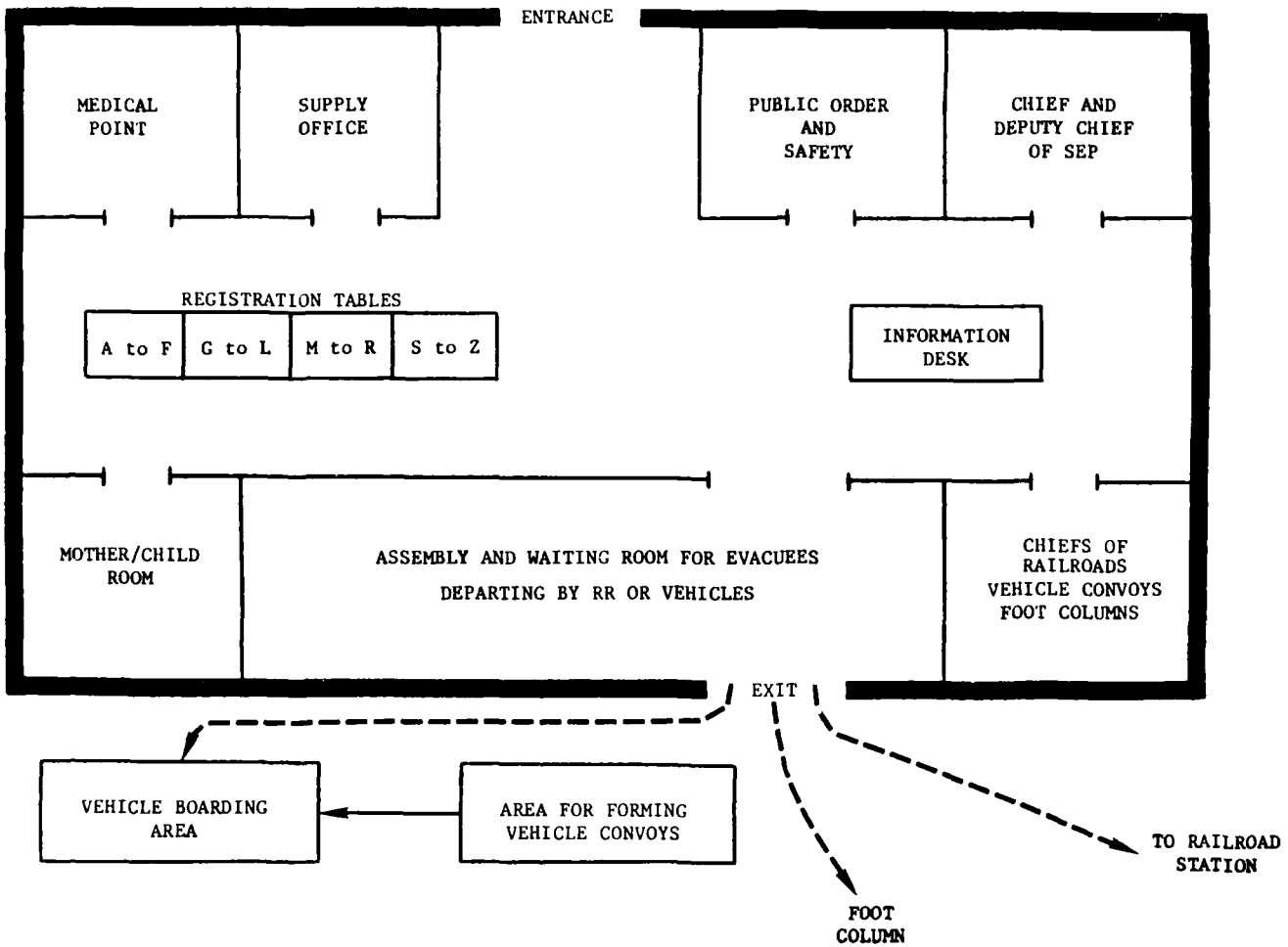


Figure 6.1 Schematic of an Evacuation Assembly Point (SEP)

In all, the personnel of a SEP will consist of some 25 to 40 persons. As was noted, it previously included a *Warning Group* of some 15 to 20 persons, which was responsible for warning the population assigned to each SEP about the start of the relocation and informing them where and at what time they were to report to the SEPs.[16/]

When the order for crisis relocation is given, the SEPs will be deployed in public buildings such as schools, club houses, movie theaters, or even in large shelters, dining halls and other appropriate spaces at enterprises, installations, institutions, etc.[17/] Wherever possible, they should be located near the transportation boarding points or near points of departure of foot columns.[18/] If there are nearby boarding points for rail, motor vehicle or water transport, the SEPs will be set up at the enterprises, installations, etc. themselves. In summer, SEPs may also be set up in the open air.[19/]

SEPs, therefore, will be set up near railroad stations or rail-branch lines and sidings at enterprises, at vehicle loading docks or in open areas where vehicle convoys have room to form, or docks, piers and landings of river and sea-going ships. In the case of persons to be evacuated on foot, the SEPs may be set up close to the edge of town, near the designated points of departure of the columns and terminal points of the urban transportation system.[20/] They may also be set up at the enterprises, institutions, etc. regardless of their location, from which the evacuees will be marched or transported in organized groups to the starting points of their march.

Preferably, therefore, the evacuees assigned to and processed by a given SEP should be moved by a single mode of transportation, i.e., railroad, motor vehicle, boat or on foot. This means that the evacuees will be assigned to SEPs in accordance with the planned methods of moving them prepared by the Evacuation Commissions. This need not always be the case. However, use of mixed methods of moving evacuees of a given SEP will complicate the processing and organization of the evacuees and control over them. Therefore, a large enterprise, installation, institution,

department or organization will have a number of SEPs, sufficient not only to process all the workers, employees and family members, but also in accordance with the different modes of moving them to the exurban area. The assignment of workers, employees and their family members and non-working residents to specific SEPs and their modes of transportation or movement is planned in advance by the enterprises', installations', institutions', organizations', or rayons' civil defense staffs and evacuation commissions, who will know on the basis of information provided by transportation agencies how many persons can be transported and how many will have to walk.[21/] The times at which the evacuees will be required to report to the SEPs will depend on the scheduled arrival and departure of transportation, and they may be staggered to reduce the number of persons concentrated at a SEP at one time.

Each SEP is provided with a number of instructions and documents. These include operating instructions for SEP personnel, an organization chart of the SEP, and especially important lists of persons assigned to the SEP for processing; also included are schedules for reporting to the SEP and schedules of arrival and departure of means of transportation, the identification numbers of assigned trains and railroad cars, vehicle convoys or foot columns, lists of leaders of rail and vehicle convoys and foot columns, and maps or schematic sketches of routes of foot columns. There will also be lists of persons in the evacuation commissions and civil defense staffs to be contacted to report progress in the processing and departure of evacuees or in case of difficulties, etc.[22/]

One purpose of registration of evacuees is to keep a precise count of who is being evacuated and how evacuees are allocated to means of transportation or foot columns. Given that the SEPs are provided with a list of persons specifically assigned to them for processing, this also makes it possible for them to identify any unauthorized persons seeking to leave via a particular SEP or attempting to use transportation

without permission. It also allows the SEPs to ascertain the progress made in the processing and departure of the evacuees and to determine who has failed to report to his assigned SEP.

During the registration, the evacuees will be informed by what means they will leave the city, the identification number of the railroad cars, motor vehicle convoys or foot columns they are assigned, and their destination. Once registration is completed, the evacuees will be organized into groups at the SEPs and will be marched at the appropriate time to boarding points or foot column assembly points under the supervision of SEP personnel and appointed leaders. In most cases, the boarding points for motor vehicles will be at or very near the SEPs. At the transportation boarding points SEP workers, personnel of the railroad administration and so on will direct the arriving evacuees to their assigned railroad cars, vehicles or ship compartments, and assist them in boarding and handling their baggage.[23/] The chief of a SEP is also responsible for arrangements for picking up and the evacuation of persons on his list who are too ill or incapacitated to report personally to the SEP.

6.2 CONTROL

As it is planned, Soviet crisis relocation requires strict control over the population, its movements, destination, and the use of means of transportation. Unauthorized departures, use of transportation and routes and settlement in hosting areas are strictly prohibited.

Prior to 1975, control was exercised by means of an evacuation pass or certificate issued to each head of household. The evacuation pass or certificate was prepared in advance by the enterprises, institutions, organizations or housing managements and their evacuation commissions, and issued to the evacuees before they reported to their assigned SEP.[24/] In an emergency, they could be filled out during registration at the SEPs. The pass gave the bearer permission to leave the city through a designated SEP, free use of transportation to a designated hosting area,

and the right to be housed there and to receive food and other basic supplies and services.[25]

As shown in Figure 6.2, the pass consisted of three detachable sections. Each section listed the name of the person; his date and place of birth; his permanent address; the names, relationship and years of birth of family members accompanying him or her; and his destination in the hosting area. One section listed the number of the SEP and address, and another the time for reporting to the SEP after the start of the evacuation is announced.[26] The pass also included a list of instructions about what the individual should take along and the weight limit on his baggage, how to provide young children with identification, what to do before leaving one's residence and so on.

One section of the pass was to be retained by the Evacuation Commission; another was to be given to the SEP at the time of the individual's registration. This was called a Control Coupon and was used by the SEP to keep a count of processed and dispatched evacuees. The third section was to be kept by the individual for purposes of identification during the relocation process and for registration upon arrival in the hosting area. In effect, this section served as proof that the individual was in the right hosting location and, consequently, was entitled to housing, food and other supplies and services. These passes were to be distributed either in advance to heads of families by their place of employment or housing managements or by the Warning Group at the time of the start of the relocation. The pass was only valid when signed by the recipient.

The system of evacuation passes prepared in advance apparently was abolished in 1974.[27] The reason appears to be that the filling out of the passes at the start of the relocation took too much time, while filling them out in advance required frequent revisions and reissuance of the passes. Furthermore, the abolition of the Warning Groups of the SEPs eliminated one method of distribution of the passes.

Full Name_____

Year and Place of Birth_____

_____

Permanent Residence_____

_____
(City, Inhabited Point, Street, House No.)

Departing to_____

_____
(Oblast, Rayon, Inhabited Point, Street, House No.)

Accompanied by:

No.	Family Name and Initials	Relationship	Year of Birth	Place of Work or Study

Signature of Recipient_____

Date_____

Assigned to SEP No._____

Removed from List_____
Date

Signature_____

CONTROL COUPON

FOR USE BY EVACUATION ASSEMBLY POINT NO.___

_____
Address

Time for Reporting_____
(Day, Hour)

Full Name_____

Year and Place of Birth_____

_____

Permanent Address_____

_____
(City, Rayon, Inhabited Point, Street, House No.)

Destination_____

_____
(Oblast, Rayon, Inhabited Point, Street, House No.)

Accompanied by:

No.	Family Name and Initials	Relationship	Year of Birth	Date of Departure From SEP

_____
Date/Signature

FOR PERSONAL IDENTIFICATION

Identifies_____
(Full Name)

Year and Place of Birth_____

_____

Permanent Address_____

_____

Evacuated Through SEP_____
(No., Address)

TO_____

_____
(Oblast, Rayon, Inhabited Point, Street, House No.)

Accompanied by:

No.	Family Name and Initials	Relationship	Year of Birth	Place of Work or Study

_____
Date/Signature

INSTRUCTIONS

1. When the start of the evacuation (dispersal) is announced, it is essential to:

   Take along passports, military service book, education and specialization diplomas, workbook, childrens' birth certificates, food (for 2-3 days), water, underclothing, shoes, sleeping clothes, warm clothing and other essential things, for a total weight of up to 50 kg per person.

2. All pre-school children must have sewn on their clothing and underclothes identifications with their family name, first and middle name, date of birth and permanent address.

3. Report to the assembly point at the time indicated on the control coupon.

4. Before leaving the apartment, turn off all lights and heating utensils, gas and water lines, windows and ventilators, and turn over keys to representative of housing management (Zhek).

5. The evacuation pass gives the right to evacuation (dispersal) through a specific evacuation point, free transportation to hosting location, assignment of housing, work, and all types of supplies.

SOURCE: *N.I. Akimov and V.G. Il'in, Grazhdanskaya Oborona na Obektakh Sel'skokhozyaystvennogo Proizvodstva, (Moscow: Kolos, 1973), pp. 144-145.*

Figure 6.2 Evacuation Pass

The present system still requires that the urban residents know in advance or are informed at the time of the start of the relocation to which specific SEP they are assigned, its location and the time when they should report to it. This information will be provided in the course of peacetime civil defense instruction of the population and also at the time of the start of the relocation. Presumably, the population will know in any event that the SEPs will, in most cases, be at or near places of employment or residence. The information desks at the SEPs will assist individuals seeking information about their assigned SEPs and the time they should report to them.

The present control system consists of matching the identification of individual evacuees against the list of persons assigned to a given SEP, which is prepared by the places of employment or the housing administrations and provided to the SEP by the Evacuation Commission. As was noted, each SEP will also be provided with lists of individuals assigned to travel by various types of transport or to be moved from the city on foot. The identification of the individual evacuee during registration will be made upon his presentation of his internal passport and other identification documents (for example, marriage certificates, children's birth certificates, military services books, workbooks, etc.)[28/] Soviet citizens are required to have internal passports, military service books, workbooks, etc. for identification and other purposes.

This system makes it necessary for the evacuation commissions to keep their personnel lists of evacuees up to date and to frequently update the allocation of evacuees to transportation. According to Soviet manuals, when the order to begin the relocation is given, the evacuation commissions will "refine" their lists of evacuees and transportation schedules.[29/] Precisely how this would be accomplished is not stated. However, representatives of the work places' personnel departments, housing administrations and evacuation commissions at the SEPs may help update the lists and assist the SEP's registration groups in deciding what to do about individuals not on their lists.

Once the evacuees are registered, they will be issued a coupon showing the number of the railroad car or the motor vehicle convoy they are authorized to board or the number of the foot column they are assigned to.[30/] Presumably they will not be allowed to leave the SEP without permission, but will be formed into groups and marched together to the boarding points or foot column assembly points.

The present control method appears to be somewhat less rigorous than the earlier one. The pass system told the individual not only the number of the SEP he was assigned to and the time he was to report to it, but also his destination in the hosting area. It also provided proof of his right to be in a given hosting location. Under the present system, there may be greater likelihood of confusion, of residents reporting to the wrong SEP or at the wrong time, as well as becoming lost at the boarding points or during foot marches and not knowing their destination or having written proof of the right to be traveling to a given destination.

It is not clear to what extent the present system expedites the processing of the evacuees. The earlier pass system, especially if the passes were issued to the individuals in advance of the relocation, should have allowed for a more orderly and rapid processing of the evacuees at the SEPs. Of course the present system is probably more expeditious than the case when places of employment, institutions, housing administrations or the SEPs were to begin filling out the evacuation passes and distribute them only after the start of the relocation.

Not all elements of the relocated population will necessarily be processed through the SEPs. The exceptions are likely to be the civil defense formations and staffs which will be redeployed in the exurban zone, the operational-management groups of essential enterprises, installations, services and institutions which will establish command posts in the exurban areas, and the representatives of evacuation commissions, enterprises and so on dispatched to the hosting areas to coordinate the arrival and resettlement of the relocated population.[31/] These elements

will be under the control of the chiefs of civil defense and their staffs and will be dispatched by them to the exurban zone using specially assigned motor or other transport.

Physical control over the population in the course of its departure from the city will be exercised by the Public Order and Safety Service, i.e., the police, volunteer security teams and the security guard personnel of enterprises, institutions, departments. etc. They will establish traffic control points in the streets, at enterprises, near SEPs and transportation boarding points and also will help maintain order at the SEPs, boarding points and points of formation and departure of foot columns. The civilian security forces may be supplemented by military police and other military personnel.[32/]

6.3 INFORMATION ON EVACUATION ORGANIZATION AND PROCEDURES GIVEN TO THE POPULATION

In order to execute the relocation as rapidly as possible, the population must act in an orderly manner and know what to do. The Soviet authorities recognize that panic and confusion among the population could seriously disrupt the crisis relocation plans and greatly slow down the relocation process.[33/] Consequently, the population must know something about the organization and procedures of crisis relocation and, in particular, how it should act and what it should do.

Information about the organization and procedures of crisis relocation is provided to the population in a number of ways. The basic source of information is the hour devoted to crisis relocation in the compulsory civil defense instruction program for the population. This may be supplemented by exercises. In addition, there are various civil defense pamphlets and manuals, posters, slide shows and films, as well as discussions of this topic on radio and television.

As was noted, the current civil defense instruction program for the adult population devotes one hour to the subject of "Dispersal and Evacuation." During that time, the instructors explain the concepts of

evacuation, dispersal and exurban zone, the organization of relocation on the "territorial-production" principle, the role of the Evacuation Commissions and SEPs, how the population will be warned, the procedures at the SEPs, the organization of the departure of the evacuees by various transportation means and on foot, what the evacuees should take along, etc.[34/] During the instruction—which is organized at places of work or education or for non-working people, at places of residence—the listners may be told what SEPs they are assigned to, their location, and when they should report to the SEPs after the start of the relocation.[35/] They also may be informed by what means of transportation they will travel or whether they will leave the city on foot.[36/] The instructions emphasize what the individuals should take along (warm clothing, food, water, personal documents, gas masks, money, etc.), how to pack their possessions (preferably in backpacks, but they can also use suitcases), the weight limit on baggage, what sort of identification tags to put on the baggage, how to provide young children with identification tags, and what to do to secure their residences before leaving.[37/]

One hour of instruction on dispersal and evacuation is also included in the preliminary or pre-draft military training program for upper class high school students and students of vocational and technical schools.[38/]

Information on dispersal and evacuation is also contained in the basic civil defense pamphlet for mass distribution called, What Everyone Must Know and Be Able to Do. To date, four editions of this pamphlet have been published, each in millions of copies. The texts of the third edition (1974) and the fourth edition (1981) dealing with crisis relocation state in general terms: how the population will be informed about the start of the relocation, the role of the SEPs in the relocation system and its procedures, the necessity for evacuees to report to the SEPs at the specified time, what the evacuees should take with them, and what they should do to secure their apartments.[39/] The information is simple and terse. In the 1974 edition, the text dealing with relocation is only one page long (out of a total of 47 pages), and in the 1981 edition it is

about a page and a quarter long (out of a total of 54 pages). Significantly, both pamphlets advise the population to put identification tags on their baggage showing, in addition to the name and permanent address of the individual, the hosting location to which he is being sent. Presumably the individuals will either know their assigned hosting location in advance or will learn about them when registering at the SEPs.

Soviet civil defense manuals and journal articles intended for the general population, however, provide far more details on what the population should know about and its duties during relocation.[40] They sometimes also provide special information—for example, on how to prepare for the evacuation of infants and young children, i.e., what special clothes, food, games and toys, gas masks, etc. to take along.[41]

Of course, evacuation exercises (which will be discussed in a later section), especially when they include visits to SEPs and travel to hosting areas, serve to reinforce the populations' knowledge of relocation procedures. It is doubtful, however, that large numbers of the urban population have actually participated in relocation exercises involving travel to hosting areas.

Soviet publications sometimes claim extensive knowledge by specific groups of workers or employees of relocation organization, procedures and plans. For example, in the case of the Moscow First Ballbearing Plant, it is claimed that:

> *If one asks the workers and employees of our enterprise about how they and members of their families will be evacuated or dispersed to the exurban rayon, they will tell about from where and how they will receive the order to begin the evacuation, what personal things and food should be taken along, what personal documents it is essential to have; they will indicate by what means (by transport or on foot) they will leave the city, the location of their evacuation assembly point, of the station (dock) for boarding assigned transport, the final destination in the dedicated hosting rayon, and, most important, the inhabited point and house number where they will be housed.*[42]

Whether in fact the majority of the urban population has such detailed knowledge of relocation procedures and plans is uncertain.

Section 6

FOOTNOTES

1. L. Antipov, "Evacuation and Dispersal," Voyennyye Znaniya (Military Knowledge), No. 7, July 1982, p. 32.

2. P.T. Egorov, A.A. Shlyakhov and N.I. Alabin, Grazhdanskaya Oborona (Civil Defense), 3rd edition, (Moscow: Vysshaya Shkola, 1977), p. 88; N.P. Krechetnikov and N.P. Olovyanishnikov, Grazhdanskaya Oborona na Mashino-Stroitel'nykh Predpriyatiyakh (Civil Defense at Machine-Building Enterprises), 2nd edition, (Moscow: Mashinostroyeniye, 1972), p. 60; Army General A.T. Altunin, editor, Grazhdanskaya Oborona, (Moscow: Voyenizdat, 1980), p. 44.

3. Egorov et. al., op. cit., p. 88; Lieutenant General D.A. Krutskikh, Uchebno-Metodicheskoye Posobiye po Podgotovke Rukovodyashchego i Komandno-Nachal'stvuyushchego Sostava Grazhdanskoy Oborony (Study-Methodological Manual for the Training of the Chiefs and Command-Leadership Elements of Civil Defense), (Moscow: Voyenizdat, 1978), p. 24.

4. Egorov et. al., op. cit., pp. 88, 89; N.I. Akimov and V.G. Il'in, Grazhdanskaya Oborona na Obektakh Sel'skokhozyastvennogo Proizvodstva (Civil Defense at Installations of Agricultural Production), 2nd edition, (Moscow: Kolos, 1978), p. 104.

5. Yu. Pavliy and M. Tsivilev, Evakuatsiya Naselniya Gorodov-Sposob Zashchity ot Yadernogo Oruzhiya (Evacuation of the Population of Cities—A Method of Protection Against Nuclear Weapons), (Moscow: DOSAAT, 1965), pp. 10-11; N.I. Akimov, M.L. Vasilevskiy, I.D. Makarov, L.P. Rusman and M.P. Umnov, Grazhdanskaya Oborona, (Moscow: Kolos, 1969), p. 69; P.T. Egorov, I.A. Shlyakhov and N.I. Alabin, Grazhdanskaya Oborona, 2nd edition, (Moscow: Vysshaya Shkola, 1970), p. 116; N.I. Akimov and V.G. Il'in, Grazhdanskaya Oborona na Obektakh Sel'skokhozyaystvennogo Proizvodstva, (Moscow: Kolos, 1973), p. 148.

6. Akimov, Vasilevskiy et. al., op. cit., p. 69.

7. Egorov et. al., 3rd edition, p. 89; Akimov and Il'in, op. cit., 2nd edition, p. 104.

8. Egorov et. al., op. cit., 3rd edition, p. 89.

9. Egorov et. al., op. cit., 2nd edition, p. 485.

10. Ibid., p. 484; Akimov, Vasilevskiy et. al., op. cit., p. 70; Akimov and Il'in, op. cit., 1st edition, p. 148.

11. Egorov et. al., op. cit., 2nd edition, p. 484, and 3rd edition, p. 89; Akimov and Il'in, op. cit., 1st edition, p. 148 and 2nd edition, p. 105; Akimov, Vasilevskiy et. al., op. cit., p. 70.

12. Egorov et. al., op. cit., 2nd edition, p. 484 and 3rd edition, p. 89; Akimov, Vasilevskiy et. al., op. cit., p. 68; Akimov and Il'in, op. cit., 1st edition, p. 148; Altunin, op. cit., p. 45.

13. Egorov et. al., op. cit., 2nd edition, p. 484; Akimov and Il'in, op. cit., 1st edition, p. 148, 2nd edition, p. 105.

14. Egorov et. al., op. cit., 2nd edition, pp. 484-485; Akimov and Il'in, op. cit., 1st edition, p. 148, 2nd edition, p. 105; Altunin, op. cit., p. 45.

15. Akimov and Il'in, op. cit., 1st edition, p. 148, 2nd edition, p. 105; Egorov et. al., 2nd edition, pp. 484-485.

16. Egorov et. al., op. cit., 2nd edition, p. 484; Akimov, Vasilevskiy et. al., op. cit., p. 70.

17. Egorov et. al., op. cit., 3rd edition, p. 89; M.N. Titov, P.T. Egorov and B.A. Gayko, Grazhdanskaya Oborona, (Moscow: Vysshaya Shkola, 1974), p. 47; Altunin, op. cit., p. 44.

18. Egorov et. al., op. cit., 3rd edition, p. 89; Titov et. al., op. cit., p. 47; Akimov and Il'in, op. cit., 2nd edition, p. 104; Krutskikh, op. cit., p. 24; N.P. Olovyanishnikov, editor, Grazhdanskaya Oborona, (Moscow: Vysshaya Shkola, 1979), p. 48.

19. Altunin, op. cit., p. 44.

20. Krutskikh, op. cit., p. 24.

21. Egorov et. al., op. cit., 3rd edition, p. 287.

22. A.A. Gromov and N.P. Krechetnikov, Grazhdanskaya Oborona Promyshlennogo Obekta (Civil Defense at an Industrial Enterprise), 2nd edition, (Moscow: Atomizdat, 1975), p. 74; Akimov and Il'in, op. cit., 1st edition, pp. 148-149.

23. Egorov et. al., op. cit., 3rd edition, pp. 89, 92; Altunin, op. cit., p. 44; Akimov and Il'in, op. cit., 2nd edition, p. 104.

24. Akimov, Vasilevskiy et. al., op. cit., p. 70; N. Shirokov, "Leaving a City," Voyennyye Znaniya, No. 3, March 1974, p. 28; Titov et. al., op. cit., pp. 49-50; Akimov and Il'in, op. cit., 1st edition, p. 146.

25. Civil Defense Staff of the Lithuanian SSR, Uchebno-Metodicheskoye Posobiye dlya Podgotovki Naseleniya k Grazhdanskoy Oborone (Instruction Methodological Manual for Training the Population in Civil Defense), (Vilnus: Mintis, 1967), p. 76; Akimov and Il'in, op. cit., 1st edition, p. 145.

26. Civil Defense Staff of the Lithuanian SSR, op. cit., pp. 173-175; Akimov and Il'in, op. cit., 1st edition, pp. 144-145; Titov, et. al., op. cit., pp. 49-50.

27. Colonel A. Zaytsev, "First Lessons," Voyennyye Znaniya, No. 6, June 1976, p. 18. Note, however, that the evacuation pass system was still mentioned in M. Muradyan "Questions of Civil Defense: Organization is the Main Thing," Kommunist (Yerevan), September 23, 1979, p. 2.

28. Lieutenant General A.M. Popov, editor, Nachal'naya Voyennaya Podgotovka (Preliminary Military Training), 3rd edition, (Moscow: DOSAAF, 1980), p. 269.

29. Egorov et. al., op. cit., 3rd edition, p. 91; Akimov and Il'in, op. cit., 2nd edition, p. 105; USSR Civil Defense Staff, Major General Yu. N. Afanas'eyev, editor, Kompliksnyye Obektovyye Ucheniya Grazhdanskoy Oborony na Promyshlennykh Predpriyatiyakh (Comprehensive Civil Defense Installation Training at Industrial Enterprises), (Moscow: Voyenizdat, 1978), p. 77.

30. Gromov and Krechetnikov, op. cit., p. 75.

31. Krutskikh, op. cit., p. 71; Afanas'eyev, op. cit., p. 80; Altunin, op. cit., p. 46.

32. Lieutenant General Ye. Galitskiy, "The Coordination of Civil Defense With Units of the Armed Forces," Voyennaya Mysl' (Military Thought), No. 4, April 1968, translated in FPD No. 0052/69, May 27, 1969, p. 52.

33. Gromov and Krechetnikov, op. cit., p. 70; Altunin, op. cit., p. 48.

34. For example, see "Dispersal and Evacuation," Voyennyye Znaniya, No. 2, February 1980, p. 14; Antipov, op. cit.; Colonel A. Zaytsev, "For Those Who Teach: An Important Method of Protection," Voyennyye Znaniya, No. 8, August 1978, p. 28; Shirokov, op. cit., pp. 28-29; "Dispersal and Evacuation," Voyennyye Znaniya, No. 4, April 1983, p. 16.

35. Gromov and Krechetnikov, op. cit., p. 70; "Dispersal and Evacuation," Voyennyye Znaniya, No. 4, April 1983, p. 16.

36. Ibid.

37. For example, see Zaytsev, "For Those Who Teach," op. cit.; "Dispersal and Evacuation," op. cit.; Shirokov, op. cit., Eto Dolzhen Znat' i Umet' Kazhdyy (What Everyone Must Know and Be Able to Do), 4th edition, (Moscow: Voyenizdat, 1981), p. 32.

38. Antipov, op. cit. See also Popov, op. cit., pp. 269-270, and 2nd edition (Moscow: Voyenizdat, 1979), pp. 272-273; P.A. Gusak and A.M. Rogachev, Nachal'naya Voyennaya Podgotovka (Preliminary Military Training), (Moscow: Prosveshcheniye, 1981), pp. 229-230.

39. Eto Dolzhen Znat' i Umet' Kazhdyy, 3rd edition, (Moscow: Voyenizdat, 1974), pp. 26-27, and 4th edition, op. cit., pp. 25, 32.

40. For example, see Altunin, op. cit., pp. 148-151; Antipov, op. cit.; "Dispersal and Evacuation," op. cit.

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Section 7

ORGANIZATION AND MANAGEMENT OF CRISIS RELOCATION MOVEMENTS

The rapid and yet orderly relocation of many millions of urban residents poses great difficulties and calls for complex planning, organization and management. The implementation of the relocation requires a system for warning the population of the start of the relocation, the effective use of available means of transportation and their precise allocation to the population, careful organization and scheduling of the evacuation of urban residents on foot, control over and logistic support of the relocation movements, and so on.

In the matter of the organization and management of crisis relocation movements, the Soviet Union has a number of advantages as well as specific problems. As was noted, the advantages include the ability to control the departure of the urban population, the use of transportation means and evacuation routes, the allocation of destinations (i.e., hosting areas), and, presumably, the behavior of the population and of personnel assigned to implement the relocation. The most obvious problems result from shortages of transportation means and of all-weather hard surface roads, as well as from possible adverse weather conditions. Other potential problems arise from the necessity to plan tight and largely rigid movement schedules which could easily be disrupted and thereby have an adverse effect on the rate of relocation.

7.1 WARNING THE POPULATION

The urban population subject to dispersal and evacuation must be informed "in good time" about the start of the relocation.[1/] Along with this, as was noted, the heads of family must know to which SEP they are assigned and at what time after the start of the relocation they should report there.

The USSR Council of Ministers has sole authority to order the initiation of crisis relocation.[2/] At the national level, it is trans-

mitted to other national level governmental-administrative agencies, including the ministries, the chief of USSR Civil Defense, and, of course, the General Staff of the Soviet Armed Forces. Below this level, the order apparently is transmitted on the "territorial-administrative" principle to the heads of goverrment at republic, oblast, city and rural rayon levels, who in turn transmit it to their civil defense staffs.

In a city, responsibility for the dissemination of the order to begin the relocation rests with the city's chief of civil defense and his staff, assisted by the city's Civil Defense Communications Service.[3/] In accordance with previously prepared plans, the city's civil defense staff will notify the urban rayon chiefs of civil defense and staffs, and directly or through the latter, the chiefs of civil defense of large industrial enterprises, installations, departments, educational institutions and so on.[4/] At each level the staffs will notify the evacuation commissions and, where appropriate, the housing administrations.[5/]

There appears to be three methods of notifying the population which can be used selectively or simultaneously:

- Notification by the work place. For example, it is said that "The population will be notified about the start of the evacuation by the enterprises, departments, educational institutions..." and so on.[6/] First of all, notification will be given to people at work and students in classrooms.[7/] The enterprises, installations, institutions, departments, organizations and so on may also notify their off-duty employees by telephone and messengers or through the housing administration of the housing belonging to the enterprises, institutions, etc.[8/]

- Notification by place of residence. Non-working urban residents and also off-duty workers and employees will be notified about the start of the relocation at their places of residence by the housing administrations (ZhEK), housing managements and the police.[9/]

- Notification by mass media. Warning about the start of the relocation can be disseminated by the mass media—in particular, radio,

public address systems in the streets, television, and it may also be announced in the press.[10/] This can be supplemented by the use of loudspeakers mounted on vehicles.[11/] This method would be used if the objective is to simultaneously warn the largest possible number of urban inhabitants in the shortest possible time.

The choice of the method of notifying the population depends on the selection of the order in which the relocation will be conducted. According to Soviet civil defense manuals, the authorities can carry out first the dispersal of essential workers and then the evacuation of the rest of the urban residents, or first the evacuation to be followed by the dispersal, or simultaneously both the dispersal and evacuation.[12/] According to one civil defense manual, the choice is said to "depend entirely on the degree of international tension" at the time the decision is made to initiate crisis relocation.[13/] According to another manual, the choice "will depend on existing circumstances, the peculiarities of the city and exurban zone, and also on transportation capabilities,"[14/] which suggests that the choice may be made at the local level.

Furthermore, it is noted that the order to begin the relocation need not necessarily coincide in time with the government's announcement of the existance of a "threatening situation."[15/] It could precede such an announcement or be initiated subsequently to it, presumably as a result of a further aggravation of the international situation and the threat of war.

The Soviet notification system makes it possible for the authorities to inform the population about the start of the relocation selectively and, to a certain extent, in a concealed manner. This is true both for the case where dispersal precedes evacuation as well as where evacuation precedes dispersal. In the first case, essential workers and personnel of civil defense formations could be notified at their places of work as well as by telephone and messengers without resort to any public announcement of the start of relocation. This would also be the case for the notification of the leadership elements and other elite and special groups.

Similarly, if it is decided to evacuate the non-working residents first, they could be notified by their housing administrations and educational institutions also without a general public announcement being made to that effect. If the leadership were to try to conceal the relocation, the dispersal or the evacuation could precede the government's public declaration of the existence of a "threatening situation."

In the case where the government decides that the existing threat calls for an immediate general relocation of the urban population, the order to do so is likely to be announced by the combined use of all notification methods, including the use of national and local radio and television broadcasts and all other means of mass communications. It is recognized that the effectiveness of radio and television as means for notifying the population will depend on the time of day. It will be most effective during daytime and early evening when the population has its sets turned on, which is also when it will be easiest to notify the working population at its places of work. During the night, however, when radios and television sets are shut off, this method will be less effective and may necessitate the use of loudspeakers on vehicles, messengers, and telephones.[16/] It is also said that "special attention" has to be given to the problem of notification of the population on non-working days, i.e., weekends and holidays.[17/] The population is also instructed that when hearing the order to begin the relocation at home, it should make sure to warn neighbors.

Selective notification, especially of essential workers, is likely to be relatively slow, except when the enterprises, installations, organizations and so on are on a one-workshift system and the notification is made during work time, or when most or all workers and employees live in the enterprises', installations', etc. housing. Notification of non-working residents through the housing administrations may be more rapid. Of course, the authorities have the option of notifying the entire urban population and then implementing the relocation in accordance with a pre-planned order of priorities, i.e., first dispersal then evacuation or the

reverse. It is noteworthy, however, that in the civil defense instruction on the question of dispersal and evacuation of the population, it is recommended to include a "detailed examination of the order of notification of workers, employees and members of their families."[18/]

While the authorities have the option of selective notification of the population about the start of the relocation and of carrying out the relocation in stages, they have publicly shown increasing concern that the time for conducting the relocation is likely to be short. This appears to suggest that the Soviet civil defense leadership assigns greater probability to the necessity of carrying out a general relocation of the population than to a selective one carried out in stages.

The combined method of notification of the population offers a number of advantages. It ensures the timely notification of people at work and persons at home who may not have immediate access to radios and television. Notification by places of employment, studies and housing administrations also appears to be important as a method for informing or reminding the inhabitants about the location of their assigned evacuation assembly points (SEPs) and the time they should report to them. Although, as was noted in Section 6, the population is said to be given this information in the course of civil defense instruction and exercises, not everyone will retain this information or has received it. For example, Soviet civil defense manuals note that the places of work and housing administrations will inform the "workers, employees and their families, and the rest of the population about the time they must report to the evacuation assembly points for departure to the exurban zone."[19/] It is also noteworthy that the 1974 and 1981 editions of the most widely disseminated civil defense pamphlet for use by the general population specifically state that notification of the start of the relocation will be carried out by the work places and housing administrations, but make no mention of the use of radio and television for this purpose.[20/] Earlier manuals suggested that the workers would be instructed in advance to report, together with their families, to their places of work in the

event they are off-duty when the start of the relocation is announced.[21] Presumably, they have been told to proceed to the appropriate SEPs.

7.2 PRIORITIES

Soviet crisis relocation plans provide for an orderly and carefully scheduled departure of the urban population for exurban areas. As was noted, the plans are said to establish the order in which the various elements of the population will be notified and also the order in which they must report to the SEPs for processing and departure to the exurban areas. The times set for reporting to the SEPs after the start of the relocation is announced are determined by schedules of the arrival of various means of transportation or by the departure schedules of the foot columns. Soviet crisis relocation plans, therefore, must establish in advance an order of priority for the departure of the urban residents. Indeed, the plans have to establish not only an order of priority for the scheduling of departures of urban residents from the cities, but along with it a system of priorities for the use of available transportation by the evacuees. Specifically, concerning the latter, the plans must establish who among the evacuees will leave the cities by transportation and who will have to do so on foot.

Soviet civil defense publications tend to be vague about the priority system in crisis relocation. In part this is said to be due to the considerable variations in the availability of means of transportation among the cities. Another reason is that in principle the authorities have the option of initiating the dispersal ahead of the evacuation, or doing the reverse, or carrying them out simultaneously. Even so, a priority system is still required for scheduling the population's departures and for determining the use of transportation.

Understandably, Soviet publications have nothing to say about the relocation of the leadership element, except as it relates to the relocation of the management of essential enterprises, installations, and services. Similarly, nothing is said about the relocation of

various elite or special elements, such as important governmental or party organizations, the KGB, and so on. Presumably, given the high value placed on these elements and the requirement for their organizations to remain in continuous operation, they will have high priority in relocation and will carry it out independently from the rest of the urban population.

It appears that the priority system in scheduling the departure of the urban population as well as for the use of transportation primarily reflects a classification of the population in terms of its value to the system and the state, its contribution to the war effort, and its civil defense role.

From this viewpoint, high on the list are the essential workers and managerial personnel of enterprises, installations and services which will remain in operation during wartime and personnel of civil defense formations, along with civil defense staffs assigned to carry out post-strike rescue, damage-limiting, emergency repair and restoration operations in areas of nuclear damage. There may be other elements of the population also high on the list of priority for relocation—concerning which little is known—such as families of professional military personnel.

There are two reasons why high priority is assigned to the relocation of essential workers. One is the value placed on the preservation of this element of the work force. The other is the requirement to maintain essential enterprises, installations and services in continuous operation. Ideally, therefore, the relocation should not result in a temporary cessation of such operations. This can be accomplished by relocating only one workshift at a time in such a manner that the initially relocated workshift is ready to return to work from the hosting area within a number of hours after its relocation.[22/] Even when operations can be temporarily halted, the authorities will want them to be resumed at the earliest possible moment by bringing back to the cities one of the relocated workshifts as soon as possible. In both cases, therefore, the earlier the departure of the essential workers from the

cities, the sooner the relocated workshifts could be brought back to maintain the operations of essential enterprises, installations, and services. For this reason, Soviet civil defense manuals specify that the workshifts of enterprises which will remain in operation will be transported whenever possible to their designated areas of dispersal in the exurban zone.[23/]

As was indicated, priority in relocation is also assigned to urban civil defense formations which must be deployed in readiness to conduct rescue, damage-limiting, emergency repair and restoration operations in the event of enemy nuclear strikes against targets in the cities. In part, these formations will be made up of essential workers, which constitutes a further reason for the early and rapid relocation of the latter.[24/] However, other elements of the urban population will also be included in these forces. Given that an enemy strike is possible at any time, the relocation of civil defense formations is clearly a matter of priority.[25/] The civil defense formations will be transported to their deployment areas in the exurban zone.[26/]

High on the priority list will also be management elements of enterprises, utilities and services which will remain in operation. These elements, usually including the directors or chief managers and their staffs, will be required to establish command posts in the exurban area from which they will manage their enterprises or installations as well as lead their civil defense staffs and formations. Consequently, the civil defense staffs, service chiefs and other key civil defense personnel of essential enterprises and installations will be relocated together with the management elements and civil defense formations. According to one Soviet civil defense manual, the management and civil defense staff elements of essential enterprises and installations may leave for the exurban areas in two to four hours after the order to start the relocation is given.[27/] Naturally these elements will also have priority in the use of transportation.

All the above elements of the urban population are subject to what the Soviets define as "dispersal." It should also be noted that in most cases the personnel in these priority categories will be accompanied by members of their families.

There is one category of the urban population which, while being subject to "evacuation" rather than "dispersal," will have a special claim on the use of transportation, but not necessarily priority in the order of leaving the cities. This category is composed of pregnant women, young children (up to the age of 10)—either accompanied by their mothers or in childrens' institutions, the elderly, the sick and handicapped, and any other persons physically unfit to evacuate the cities on foot.[28/] As to the rest of the population which has no special claim on the use of transportation, it is said to be "removed in an organized manner on foot."[29/]

Soviet civil defense manuals do not specify what priority system will be applied to the departure of the population on foot. It is very likely, however, that the scheduling of departures of foot columns will also reflect the Soviet value system. In other words, priority will be given to elements of the essential work force; family members of essential workers; workers and employees of enterprises, departments, institutions and organizations which either cease operations for the duration of the war or will be relocated to exurban areas; and students of technical or vocational schools and institutes of higher learning. It is likely that non-working persons who do not have working family members will be low on the priority list for scheduled departures.

Some special service elements of the urban population may also be held back until the major part of the urban population has been relocated. This element may include workers of the urban transportation systems (subways, streetcars and trolley buses) who will be employed in transporting the residents to their assigned SEPs and points of departure of foot columns.[30/] It will also include the SEP personnel, personnel of evacuation commissions and other personnel engaged in the management

and control of the relocation, of transportation, and of boarding points. Whether the families of people in this category will also remain in the cities until the latter's departure or will be relocated ahead of them is not known.

7.3 PLANNING AND ORGANIZATION OF THE DEPARTURE OF EVACUEES

Soviet civil defense planners believe that speed is of the essence in organizing the departure of the population from cities which are potential targets for enemy nuclear strikes.[31/] This applies to the reporting of the urban residents to the SEPs for processing as well as to their departure from the city to exurban hosting areas.

As was noted, the individual urban resident must be informed about which SEP they are assigned to and the time he or she must report to it after the start of the relocation is announced. Soviet publications suggest that in order to expedite the movement of the residents to the SEPs, especially to those located at the edge of the cities for the formation of foot columns, urban public transportation will remain in operation.[32/] This will also make it possible for the evacuees assigned to use various means of transportation for travel to the hosting areas to bring to the SEPs the maximum authorized weight of baggage, i.e., 50 kg (110 lbs.) per person.[33/]

Urban public transportation includes subways, street cars, trolley buses and buses. Presumably, during the relocation the subways—which at present have been built in seven cities (Moscow, Leningrad, Kiev, Kharkov, Tbilisi, Tashkent and Baku), will not be used as shelters, although in the event of a sudden attack people present on the station platforms and in the trains would probably remain sheltered in the subway systems. In all in 1981, the Soviet subways had 4,834 passenger cars which transported during that year 3,974 million passengers.[34/] There were also 20,864 street cars and 24,593 trolley buses in use in 1981, which together transported during that year 17,192 million passengers.[35/] It is likely, however, that city motor buses will be pressed into service to transport

evacuees from the cities. Even with full use being made of public transportation, it is evident that a large part of the urban population, especially in the case of large cities, will have to walk to the SEPs.

Given the large number of SEPs and that essential workers will be relocated by their places of employment—thus requiring them to report there rather than to SEPs near their residences, there is the danger that the population movement inside the cities will become chaotic and dangerously disorganized. This is recognized by Soviet civil defense planners who note that:

> *The implementation of evacuation measures according to the production principle also poses certain difficulties because during the period of assembly of the population and dispatching it from the city, in the course of movement to assembly and boarding points there may occur large flows of citizens from one [urban] rayon to another. This will require especially careful organization of the evacuation and the assignment of additional forces to the organs of public order and safety, road maintenance, and traffic control.*[36/]

The planners also note that even limited relocation exercises have shown that there are likely to be considerable difficulties in getting the urban residents to adhere to precise time schedules for reporting to the SEPs.[37/]

Account will also have to be taken of sick persons who are unable to report to the SEPs. According to the manuals, relatives or neighbors will report such persons to the chiefs of the enterprises or housing administrations, or the sick persons will do so themselves by telephone. The chiefs, administrations, or SEPs will then arrange to transport the sick to the transportation boarding points. What transportation means will be used for this purpose is not explained. Sick persons in hospitals, clinics or other medical facilities will be evacuated ' the medical institutions in ambulances and specially adapted vans and buses.[38/]

Since the early 1970s, it is planned to move the population from the cities by the "combined method." This method calls for the simultaneous use of all available means of transportation, as well as the

removal of a significant portion of the population on foot. The population will be moved from the cities in "all directions," apparently regardless of prevailing winds.[39] Of course, the geographic locations of the cities, the character of transportation routes and of the exurban zone will dictate the actual directions of movement of the evacuees.

In planning relocation by the "combined method," account will be taken of all means of transportation available to a given city, i.e., railroad, river or ocean-going shipping, and motor vehicles, regardless of the peacetime ownership of these means.[40] This will also include the use of privately owned vehicles and motor boats.[41]

As was noted, the relocation transportation plans are drawn up in peacetime and constitute a part of the general civil defense plans of cities. The transportation plans are drawn up jointly by the civil defense staffs and the transportation organizations. The use of railroads is planned by the Ministry of Railroads and the administrations of the railroad sectors in which the particular cities are located. In the case of motor vehicles, the planning will involve all of a city's motor vehicle organizations, including municipal bus services and taxis, intercity bus services, and all truck parks, as well as owners of private vehicles. Vehicle transportation is planned and coordinated by the chief of the city's Civil Defense Transportation Service in conjunction with the city's civil defense staff.[42] On the basis of the city's transportation plan, the transportation organizations will be informed about:[43]

- Which transportation organization will provide transportation for which SEP, in what amount, when, who will control the means of transportation, the assigned boarding point and the destination in the exurban area;

- The order and schedule for adapting and preparing means of transportation for moving evacuees;

- The assigned routes of travel and the scheduled times of the transports' arrival at their destinations;

- The organization of supplying motor vehicle transport with fuel, lubricants and spare parts; and,
- The schedule for use and location of repair and service facilities for the means of transportation.

The transportation organizations are responsible for the readiness of their transportation means to implement the transportation plan and also for the readiness of designated passenger boarding and disembarkation points, as well as for implementing the transportation schedules.[44/] Appropriate excerpts from the city's transportation plan are then transmitted to the rayon civil defense staffs and evacuation commissions, and from there to the staffs and evacuation commissions of large enterprises, installations and organizations.

The availability and scheduling of assigned means of transportation make it possible for the rayon and enterprise civil defense staffs and evacuation commissions to plan how many persons and specifically which ones will leave the city by transport or on foot. Soviet civil defense manuals note that although essential workers and their families have priority in the use of transportation, in the event of a shortage of the latter, a portion of them may have to be evacuated on foot.[45/] For example, a hypothetical plan and schedule of an enterprise for relocation of its workers and employees and members of their families by the "combined method", shown in Figure 7.1, is described in a Soviet civil defense manual.[46/] It is noteworthy that in this hypothetical plan, all workers and employees would be transported, while more than half of their family members would be moved on foot. In accordance with the method of movement, two SEPs are indicated—one for those who will use transportation and one for those who will travel on foot. The identified means of transport of the hosting rural rayon will be used to transport the arriving evacuees from the disembarkation points in the case of those using transport or intermediate evacuation points in the case of those on foot, to their final hosting localities. One also notes that in this plan only one and a half hours are allocated to the processing

IDENTIFICATION OF SHOP OR DEPARTMENT		TOTAL		TO BE MOVED BY TRANSPORT						TO BE MOVED ON FOOT					
CASTING SHOP		Workers & Employees	Family Members	Workers & Employees	Family Members	SEP # and Time to Report to It	Boarding Point and Arrival Time	# of Train (Vehicle Convoy) and Time of Departure	Station (Point) of Disembarkation, Arrival Time	Rural Rayon Transport to be Provided By		# of Family Members	# of Column and Name of Leader	SEP # and Time to Report to It	Distance to Hosting Location/Duration of March	Location of Intermediate Rest Points	Where Will Be Housed	Rural Rayon Transportation Provided By
Buses		*690*	*1,100*	*690*	*500*	*No. 2, 15:00 hours*	*Station No. ... 16:30 hours*	*No. 270, 17:00 hours*	*Bachmoye*	*Buses*		*600*	*No. 5, Ivanov*	*Technical School 10:00 hours*	*28 km, 24 hours*	*Lugovoye Strel'tsovo*	*Tourist Base*	*Buses*

Figure 7.1 Hypothetical Plan and Schedule for the Relocation of the Workers and Family Members of a Plant Shop

of 1,190 persons at the SEP and to their proceeding to the assigned boarding point, and half an hour is allocated to boarding the train or convoy. Whether such a tight schedule is realistic is open to doubts.

According to Soviet plans, railroads will be used when possible for longer-distance haulage, while motor vehicles will be used to move evacuees to hosting areas closer to the cities.[47/] In effect, therefore, motor vehicle transport will be used primarily to move essential workers and employees, civil defense personnel and members of their families to "dispersal" areas within commuting distances from the cities. If evacuees have to be transported to more distant host areas, this may be done in two stages—by transporting them first to intermediate evacuation points, and later, as transport becomes available, to their final destinations.[48/] Large industrial enterprises may also plan the relocation of their work-shifts on the basis of a staggered schedule which takes account of the round trips of motor vehicle convoys assigned to them.[49/]

The availability of inland waterway and seagoing transport will depend on the cities' geographic location. This will also dictate the distances that such transport will travel to assigned disembarkation points. Of course, the use of inland waterways and, in part, of seaways will depend on the seasons of the year.[50/] It is noted, however, that where and when such transport is available, it could significantly reduce the need for overloading rail and vehicle transport as well as shorten the time required for completing the relocation.[51/]

As was previously noted, railroad boarding points are established at railroad stations and platforms and at sidings at enterprises, freight yards and so on. Waterway and seagoing transport boarding points will be at ports, piers, docks, and boat landings. Wherever possible, motor vehicle boarding points will be at or near SEPs. Responsibility for preparation of boarding points and managing their operations rests with the transportation organizations.[52/] Control over the evacuees will be exercised first of all by chiefs of groups of evacuees and of foot columns and their assistants assigned by the evacuation commissions—usually from among "responsible" persons drawn from the enterprises,

installations, organizations, etc. whose workers, employees or residents are being evacuated.[53/] Control over the movement of transport is by their own organizations or administrations. Vehicle traffic control on the routes will be by dispatcher points and road traffic control points.[54/] Dispatchers will also regulate the scheduling of departure of foot columns. To facilitate movement control, the transport organizations, city, rayon and enterprise civil defense staffs; SEPs; and dispatcher and traffic control points will be linked by radios.[55/]

The evacuation from the cities of "material treasures" may be carried simultaneously with the relocation of the population, using transportation means not suitable for moving people, or following the completion of the relocation of the urban residents.[56/] The category of "material treasures" is a broad one, and includes all things which it is desirable and practical to relocate from the cities. Included will be stocks of food, medicine, clothing, spare parts for industrial equipment and transport, instruments and production or engineering plans and drawings, technical and communications equipment, machinery and supplies for setting up production lines in exurban areas, and so on.[57/]

7.4 RAILROAD TRANSPORT

In the Soviet Union, the railroad is considered to be the main method of transportation outside the cities. This is so because the railroads constitute an all-weather transportation system and, unlike motor vehicle transport, are independent of road conditions. Consequently, it is asserted that

> *Railway transportation is the main type of transportation used for moving the population to the exurban zone. It is best suited for mass transportation and its operations are independent of the time of the year and weather. The evacuated population can be brought directly to the hosting localities or to transfer points to other types of transportation.*[58/]

The relocation plans, therefore, call for the maximum use of railroads compatible with the priority uses of the railroads by the armed forces. The railroad administrations will be responsible for the implementation of the relocation plans and schedules assigned to them, as well as for the preparation of the rolling stock for use by evacuees and of boarding and disembarkation points.[59/]

In order to move the maximum number of persons at one time, the length of the trains and the number of persons per car will be increased in comparison to peacetime norms.[60/] Use will be made not only of passenger but also of freight cars. The plans call for a maximum packing of the passengers in the cars. For example, Table 7.1 shows the differences between the peacetime and relocation norms of permissible number of passengers for various types of railroad cars.[61/]

Table 7.1 Comparison of Peacetime vs. Relocation Loading Quotas for Various Types of Railroad Cars

TYPES OF RAILROAD CARS	Number of Passengers	
	Number of Seats	Passenger Norm During Relocation
Open All-Metal Car	86	150
Metal Passenger Car with Compartments	32 - 38	90
Commuter-Type Passenger Car	68 - 74	120
Electric Train Car Section	88 - 110	200 - 220
Large Freight Car	—	100
Semi-Freight Car	—	100

It is also said that large railroad passenger cars may carry up to 180 passengers, covered four-axle cars up to 130 passengers, platform freight cars up to 70 passengers, and that a diesel train with four cars can carry up to 600 passengers, etc.[62/]

In order to keep the rail lines open for the transportation of evacuees, loaded freight trains enroute to the cities will either be parked on side tracks or rerouted to stations outside the cities.[63/] Subsequently, they may be unloaded so as to make them available for transporting evacuees.

The evacuation trains will make as many round trips between the cities and hosting areas as is practical. Turn-abouts may be slow, however, especially on single-track lines, and also because the trains may travel to points at greater distances from the cities than in the case of motor vehicle convoys.

7.5 MOTOR VEHICLE TRANSPORT

Motor vehicles are the second most important method for transporting the urban population to exurban areas. They also appear to be the primary method for moving the urban civil defense forces to the exurban zone and for transporting them to the cities for post-strike rescue and repair operations in the event of enemy strikes on the cities. As was noted, motor vehicles will be used primarily to move evacuees to the dispersal areas or to intermediate evacuation points, which will increase the frequency of their round trips. Motor vehicles will also be used to move evacuees who arrived on foot at the intermediate evacuation points to their final hosting localities.[64/]

For the transportation of evacuees by motor vehicle, use will be made not only of passenger vehicles such as buses, mini-buses, taxis and private cars, but also of vans, trucks and dump-trucks. As in the case of railroad cars, passenger loading norms during the relocation will be greater than peacetime norms. For example, buses with 23 seats will carry 30 passengers, those with 32 seats will carry 40 to 45 passengers and sometimes up to 60 passengers, while trucks and dump trucks—after being fitted with benches—will carry up to 50 passengers.[65/] All vehicles including private cars will travel only in convoys of 15 to 30 vehicles, each lead by a convoy commander, and they will be allowed to

travel only on specifically assigned routes.[66] According to one Soviet article, a convoy of 21-30 buses traveling to points 60 km (37 miles) from the city could transport in 10 hours up to 3,000 persons, or 1,500 persons if the convoy is made up of trucks, 1,125 persons if dump trucks are used, and 300 persons if using passenger cars.[67] These numbers apparently assume two trips by each convoy to the hosting areas in one 10-hour period.

The motor vehicle transportation organizations will be responsible for outfitting the trucks and dump trucks with benches (25-30 cm wide and 60 cm apart) and with steps or ladders to facilitate boarding. This equipment must be prepared in peacetime and "stored in locations from which it can be issued rapidly to vehicle drivers."[68]

It is recognized that because large numbers of convoys will be on the move in all directions, it will be essential to precisely schedule their movements as well as maintain effective control over them.[69] Each route used by motor vehicle convoys will have dispatcher posts and traffic control posts manned by personnel from the civil defense transportation service, the public order and safety service, or the police.[70] Every route will be in the charge of a route commander or chief who will be responsible for organizing road maintenance and repair, the posting of necessary traffic signs and markers, the work of traffic control posts and technical support facilities and organizations.[71] Ideally, the route chiefs, dispatcher points and control posts, as well as convoy commanders should be equipped with radios to facilitate traffic control.[72] The convoy commanders will use flags in daytime and light signals at night for signaling to the vehicles in their convoys.[73] In order to sustain a high rate of utilization of the motor vehicles, the transportation organizations and the civil defense transportation formations will organize in advance relief drivers so as to operate the vehicles in several shifts.[74]

The convoy commanders will be issued movement schedules as well as maps showing their main and alternate routes of travel, the location

of the passenger boarding and disembarkation points, the location of fueling, vehicle service and repair points, and of traffic control posts.[75/] The fueling, servicing and repair of the motor vehicles is accomplished by fixed and mobile fueling and servicing stations organized by the civil defense Technical Service on the basis of existing fueling, service and repair organizations.[76/]

Primary responsibility for the readiness of the evacuation routes is placed on the civil defense chief on whose territory the route is located (i.e., the chairman of the executive committee of the rural rayon Soviet).[77/]

Alternate routes for the movement of the convoys are planned in advance in anticipation of the possibility that the main routes may not be usable for various causes, including destruction, flooding or fallout. In winter, the civil defense Detachment for Assuring Movement (ODD) and the rayon civil defense chiefs and road maintenance and construction organizations will clear the evacuation routes of snow. If the routes are blocked by damage to rail lines, roads or bridges, and no detours are available, the convoy commanders will disembark the passengers and get them under best available cover.[78/] If possible, efforts will be made—with the personnel and means at hand—to repair the track or road. If portions of the routes are in a fallout zone, efforts will be made by the convoy commanders to bypass the zones according to information provided by the traffic control posts, dispatcher points and civil defense staffs.[79/] If this is not possible, the convoys will attempt to cross the contaminated portions of the routes at high speed while the passengers put on their gas masks and protective clothes.[80/] Presumably this would be done only if the radiation levels are relatively moderate. Even so, such actions would entail considerable risks unless the convoy commanders are fully informed about the width of the contaminated areas, the radiation levels at various points within them, and the direction of movement of fallout clouds in the area. Once the contaminated portions of the routes are crossed, the convoy passengers and vehicles will undergo decontamination.[81/]

7.6 WATER TRANSPORT

Soviet civil defense manuals point out that attention should be given to the use of water transport for purposes of moving urban evacuees as well as civil defense formations from the cities. Given the Soviet Union's climate, however, water transport can be used the year around only in the country's southern latitudes. Water transport (river and seagoing) offers a number of advantages, such as the large passenger and freight-carrying capacities of vessels, their relatively high speeds, and the possibility of using them for temporary bridges or ferries on rivers in addition to existing bridges.[82/] To move evacuees, use will be made of passenger as well as freight vessels, motor and towed barges, pleasure boats, etc. It is noted that water transport will also be widely used for the evacuation of "material treasures," and for carrying civil defense formations to urban areas subjected to nuclear strikes.[83/] The use of barges and boats as bridges or ferries would serve to eliminate traffic bottlenecks at bridges or serve to substitute for damaged or destroyed bridges.[84/] In the case of coastal port cities, various types of seagoing ships would be used to move a portion of those cities' population by sea to small coastal towns, where the evacuees would either remain or be transported by motor vehicles to hosting areas farther inland.

7.7 RELOCATION ON FOOT

It is evident that according to present Soviet crisis relocation plans, a substantial part of the urban population would be required to leave the cities on foot. The objective of moving evacuees on foot is to accelerate the rate of the departure of the population from the cities and to place the largest number of urban residents beyond the range of possible prompt damage from nuclear strikes in the shortest time. Consequently, relocation on foot does not necessarily apply only to persons assigned to hosting areas nearest to the cities, and it does not mean that such evacuees will be expected to walk all the way to more distant

hosting areas. Indeed, the foot movement is usually planned for only one day of actual marching by the evacuees.[85/]

As in the case of the urban population element which will be relocated by transport, that required to leave on foot will do so according to the "territorial-production principle" and in an organized manner. Consequently, after being registered at their assigned SEPs, persons who will leave on foot will be formed into marching columns of up to 500 to 1,000 persons, grouped according to their work place or the work place of the head of family, or, in the case of non-working inhabitants, according to their place of residence.[86/] Each column will be assigned a number, a leader, a schedule for departure, a specific route, and a schedule for rest stops. The column will be subdivided into smaller groups, according to some Soviet manuals, of 50 to 100 persons[87/] and according to others, of 20 to 30 persons.[88/] Each of these groups will have a leader either appointed in advance or appointed by the chiefs of the column at the time of its formation. These chiefs and leaders will make sure that only properly assigned persons are marching with their column, they will maintain march discipline, prevent people from falling behind, and will arrange for assistance for marchers who become exhausted or ill.[89/] At least in theory, persons assigned to be relocated on foot will be drawn from the younger and more physically fit element of the population. They will also carry less baggage than the evacuees who will travel by transport.

Each march will be carried out according to preplanned schedules along specific routes which, in principle, have been reconnoited in advance and have been provided with the necessary support facilities. As far as possible, foot routes will avoid roads which are used for military traffic or the transportation of evacuees, i.e., they will use field tracks, wood trails, dirt roads, or marked cross-country trails.[90/] The prescribed average rate of march is 4-5 km per hour (2.5-3.1 miles/hr); however, route conditions and the weather may slow the rate of march to 3 km per hour or less.[91/]

The distance between columns marching along the same route should be not less than 500 meters.[92] The columns will halt for scheduled short rests (10-15 minutes) every 1-1.5 hours, and for one long rest period (1-2 hours) at the approximate mid-point of the day's march.[93] The duration of a one day's march may be on the order of up to 10 hours (including rest stops), and its length some 20-35 km (12.5-21 miles). It is expected that "as a rule" at the end of the first half of the day's march, the columns will be beyond the range of the dangerous prompt effects of possible enemy nuclear strikes on targets in the cities.[94]

According to plans, at various points along the routes of march, and especially at the planned long rest stops, there should be sources of water, medical aid posts and, in winter, facilities for warming up.[95] Hot food may be provided at the end of the day's march.[96] (See Fig. 5.4, p.82)

Except for foot columns which can reach their assigned hosting localities in one day's march, the others will proceed to Intermediate Evacuation Points (Russian acronym: PPE). These points will usually be in inhabited rural localities, near roads. The evacuees will either wait there for motor vehicle transport which will subsequently be provided by rural transportation organizations to take them to their final hosting locality,[97] or, after an overnight rest, they may march to their final destination if it is nearby.[98] The PPE performs two tasks: it receives, temporarily houses, feeds and, if necessary, shelters the evacuees marching on foot, and it arranges for the dispatching of the evacuees to their final destinations.[99] The PPEs, therefore, will have an organization to perform their mission. Each will have a chief, a deputy chief, a party-political group, a group for receiving and quartering the evacuees, a transportation group, a food supply group, a medical post, a public order and safety group, and facilities for caring for mothers with young children, giving information and so on.[100] The PPE should have sufficient fallout shelter spaces to protect the evacuees in the event of an enemy attack.

Control over each route of foot columns will be exercised by a chief and a control group. The control group will be made up of representatives of the enterprises, installations, organizations, institutions, or residential areas whose members will use the route; representatives of the rural rayon administration on whose territory the route is located, and representatives of public order and safety and other civil defense services.[101] The control group will be organized into a communication team (3-4 persons), a traffic safety section (8-10 persons), traffic control posts (5-8 persons), and a medical team (3 or more persons).[102] The communications team should have VHF radios and one or two motorcycles.[103] The traffic safety section will deal with the maintenance of the route; the traffic control posts will direct the foot columns along the appropriate routes, maintain order, conduct radiological surveillance, and report on the movement of the foot columns to the route chief.[104] The chiefs of the routes will be linked by radio to the urban civil defense staffs and evacuation commissions of enterprises, organizations or rayons which use their routes, to the rural rayon civil defense staffs and to the chiefs of the PPEs on their routes.[105] The medical team should be mobile in order to assist sick or hurt marchers along the route. During the march, the column chiefs and group leaders must be ready to direct the walking evacuees to the best available nearby cover in the event of an enemy attack or the occurrence of radioactive fallout.

The Soviet concept and organization of the relocation of the urban population on foot indicates a need for great many routes of march and probably an even greater number of intermediate evacuation points (PPEs). Unless the inhabited localities designated to serve as PPEs are relatively large, they may be able to house and support only one or two foot columns at a time.[106] Of course, in the warm season the evacuees may be able to camp in the open, but this may not be practical at other times of the year. Cities with poorly-developed nearby rural areas may face serious problems in this respect.

The concept of removing a portion of the urban population on foot and of allowing it to wait at intermediate evacuation points for transportation to final hosting localities has advantages as well as disadvantages. The main advantage, as Soviet publications point out, is that it accelerates the rate of removal of urban residents from the cities which are possible targets of an enemy strike and that these evacuees will be moved to points outside the cities where they will be safe from all nuclear weapon effects except radioactive fallout. The main disadvantage is that by not proceeding directly to the hosting localities, the completion of the relocation of persons who left the cities on foot will be delayed—possibly by several days, and this in turn may delay the construction of fallout shelters for those persons in the hosting localities by a similar length of time. Thus, in assessing the time Soviet civil defense may require to carry out crisis relocation of the urban population, account must be taken not only of the time needed to move this population out of the cities, but also the time needed for it to arrive at the hosting localities and to build the necessary means of fallout protection there. Of course, the requirement for relocating a portion of the urban population on foot is dictated by the relative shortage in the Soviet Union of means of transportation, rail lines and hard-surface roads. Soviet civil defense planners, therefore, quite properly believe that the population will face greater risks if it remains in the cities to await transportation than if it is moved on foot at least one day's march from the cities.

7.8 THE SCOPE OF SOVIET RELOCATION OF THE URBAN POPULATION

Soviet publications do not indicate how many cities or urban residents it is planned to disperse and evacuate in the event of a threat of war. They do mention, however, that major cities and significant administrative, industrial, transportation and communications centers may be subjected to nuclear strikes. While no specific mention is made of military targets near or in cities, Soviet spokesmen commenting on U.S. strategic targeting doctrine have at various times argued that the

co-location of military targets and centers of population makes it impossible to clearly distinguish between a counter-military and counter-population attack.

Over the years, the population of the Soviet Union has become increasingly urbanized. At present, 64 percent of the total Soviet population of some 272 million—or 174 million persons—are classified as urban.[107/] The urbanization has resulted in a rapid growth of the cities as well as in a steady increase in their number, especially as a result of the development of new economic regions. For example, in January 1981, the Soviet Union officially had 2,089 cities,[108/] as compared with 1,943 cities in January 1971.[109/] Given that in the Soviet view the larger cities are likely to be targeted by the enemy, Table 7.2 provides information on the number and population sizes of cities of 100,000 and larger and their share of the total urban and national population in January 1982.[110/]

Table 7.2 Population of Soviet cities of 100,000 or larger and their Percentage of the Total Urban and National Population

Cities (No. of Residents)	No. of Cities	Total Population (millions)	% of Total Urban Population	% of Total USSR Population
1 million and over	22	38.121	22.1	14.2
500,000 - 1 million	26	16.950	9.8	6.3
250,000 - 500,000	69	24.060	13.9	8.9
100,000 - 250,000	159	24.497	14.2	9.1
TOTAL	276	103.628	60.0	38.5

Undoubtedly an undetermined number of cities with populations of less than 100,000 would also be considered potential targets of enemy strikes, and their residents, therefore, would also be subject to crisis relocation. Consequently, the total urban population which the Soviets may plan to relocate may be in the range of 100 to 120 million.

According to Soviet relocation plans, families would be kept together as much as possible. Generally, the size of Soviet urban families is smaller than the families of the rural population. The average size of families residing together in such large cities as Moscow, Leningrad, Gorki, Kuybyshev, Novosibirsk, Sverdlovsk, and Chelyabinsk, all with populations in excess of one million, is 3.1-3.2 persons.[111/]

There is no indication in Soviet publications what portion of the urban population would be subject to "dispersal," i.e., which would be in the essential workers and employees category. It is known that in time of a threat of war the number of "essential" enterprises and installations would be considerably expanded as a result of the mobilization of the economy for defense-related activities. If, on the average, as the former Chief of USSR Civil Defense, Marshal of the Soviet Union V.I. Chuykov, has suggested, one workshift present in the cities following the relocation of their residents may constitute on the order of 10 percent of the cities' total population,[112/] the total number of essential workers and employees in cities which may be subject to evacuation could be on the order of 20 to 24 million (assuming a total number of evacuees of 100-120 million). The addition of the families which would be relocated with them may double this number to some 40-48 million.

In addition to essential workers, various other elements of the urban population would be subject to "dispersal"—in particular, the civil defense forces. While many members of these forces would be essential workers and employees of enterprises and installations which would remain in operation, there would be others belonging to various civil defense services, such as transportation, medical, engineering, firefighting, communications, food and trade, anti-radiation and anti-chemical, and so on drawn from municipal, construction and other organizations. For example, in 1980, 11.2 million persons were employed in construction, some 9 million in trade and public feeding, nearly 12 million in transportation and communications, 4.5 million in municipal services, and

there were 995,600 medical doctors and 2.8 million middle-level medical personnel.[113/] A majority of these people would be residing in urban areas, and a significant percentage of them would be members of civil defense formations which would be relocated to the exurban zone. While Soviet civil defense manuals are not explicit on this point, it seems likely that the families of members of civil defense formations and services will be relocated with them.

In theory, therefore, counting essential workers and civil defense personnel as well as their families, it is possible that some 50 to 70 million urban residents may be subject to "dispersal," that is subject to be moved to dispersal areas in the exurban zone. Presumably the rest would be subject to "evacuation."

It is equally difficult, however, to estimate the probable size of the urban population which would be subject to "evacuation." Of course, by Soviet definition family members of essential workers are also "evacuated," but in terms of their destination in the exurban zone they would join, as far as is practical, the essential workers in dispersal areas. In principle, the element of the urban population which would be subject to "evacuation" would include persons not employed in the national economy, pensioners and invalids, students of various types of higher educational, professional, technical and vocational boarding schools and employees (and their families) of enterprises, institutions, departments and organizations which will cease operations or relocate their activities to exurban areas. In 1980, out of a total population of 265 million, some 130 million were said not to be working in the national economy.[114/] This number included some 47.6 million pensioners, 13.8 million students in institutions of higher learning, middle level technical, professional and vocational schools, and approximately 80.5 million were dependent children, the elderly and other non-employed persons.[115/] Of the latter number, however, the dependent children in urban areas not in boarding schools would be evacuated with their parents. It is not clear to what extent pensioners and the elderly in general

living with their children will be considered as members of the latter's families for purposes of relocation. According to one Soviet civil defense manual, however, only a "small portion" of the total urban population would be neither employed nor belong to families of workers and employees.[116/] Of course the above figures apply to the USSR as a whole, and only a portion of persons in these categories would be residents of cities whose population would be subject to evacuation. The number of workers and employees (and their family members) employed in enterprises, organizations etc. which will cease operations or will relocate their operations to the exurban zone is not known, but it may constitute a significant percentage of the urban population. Hypothetically, if the above ballpark estimate of the possible number of urban residents who may be "dispersed" is anywhere correct, then a similar number—i.e., 50 to 70 million persons—would be subject to "evacuation." Of this number, the students and the physically fit workers and employees (and their family members) whose places of employment will cease operations are especially likely to be required to leave the cities on foot.

It should be noted, however, that the "dispersal" of some 50 to 70 million urban residents may pose major problems and may not be practical in the case of many cities. The main difficulty would be to find sufficient hosting areas for such a large number of persons which would also satisfy the criteria of "dispersal." Although Soviet manuals mention that the radius of the dispersal zone may extend up to 120 km (74.5 miles) from the cities, only a portion of the potential hosting localities in that zone will meet the requirements of proximity to main routes of transportation. Of course, conditions in the exurban zones and in potential "dispersal" hosting areas will vary from city to city. In many instances, however, the latter areas may not be sufficiently developed or have a population density which could accommodate what may possibly amount to at least half of the cities' populations. Where this is the case, Soviet plans call for the separation of essential workers from their families and the relocation of the latter to more distant or less accessible hosting localities. It is not unlikely,

therefore, that a portion—and possibly a significant one—of the family members of essential workers and members of civil defense formations would be "evacuated," i.e., relocated to evacuation rather than dispersal hosting areas. Presumably this would also mean in many instances that these family members would be moved to the exurban areas separately from their heads of family. If this is the case then the number of urban residents subject to "dispersal" may be significantly smaller than was estimated above.

7.9 TRANSPORTATION CAPACITIES AND RATES OF RELOCATION

It is not possible to determine with any degree of precision the capabilities of Soviet transportation to relocate the urban population in a crisis situation. As was noted, the use of some form of transportation, such as waterways, depends largely on the season of the year. A portion of the transportation, notably the railroads, will be mobilized for military use. Some portion—and probably a significant one—of the available motor vehicle pool will be undergoing repairs. Furthermore, transportation capacities, as well as transportation routes, will vary from city to city. Nevertheless, it is possible to make some rough estimates.

As was noted, Soviet cities have considerable inter-city transportation capabilities which could be used to move the population to SEPs or to starting points of foot columns at the edges of the cities. For example, in 1979 Moscow's total city transport carried some 15 million passengers per day, while its total population stood at a little over 8 million.[117/] Since then, Moscow has increased the number of streetcars, trolley buses, and subway cars. The electrified municipal transport of Kiev (total 1981 population of Kiev—2.2 million) carried in excess of 3 million passengers per day; while in Leningrad, with a population of 4.1 million, the city's electrified transport carried in excess of 5.7 million passengers per day.[118/] Generally it appears that while the capacities of the municipal electrified transportation vary

from city to city, it will suffice in the case of most large cities to meet transportation requirements during the relocation.

As to Soviet transportation capacities for carrying the population outside the cities, Table 7.3 shows the number of passengers carried in 1980.

Table 7.3 Volume of Passenger Transportation—1980[119/]

TYPE	TOTAL (millions)	AVERAGE PER DAY (millions)
Railroad	3,559	9.750
Suburban Railroad	3,201	
Waterways	138	378*
City Motor Buses	28,600	78.356
Taxis	1,379	3.778
Inter-City Buses	2,021	5.536

*Figure represents thousands

Of course, the distribution of the transportation capacities shown in the table is not even; furthermore, it includes capacities in cities and towns and even rural areas which would not be subject to relocation. Nevertheless, the larger cities will have the higher concentration of public and private transportation means. Concerning the latter, according to one Soviet source, the Soviet Union had in 1978 some 20 million registered private owners of cars and motorcycles.[120/] This number, however, allowed for multiple owners, and in any case, the number of privately owned passenger cars is not large in comparison to the U.S. In 1971 it was anticipated that by 1975, with the sale of some 800,000 cars, the number of cars in private use would reach approximately some 4 million.[121/] It was forecast that by 1980 Moscow would have 500,000 private cars.[122/] In addition, Moscow had some 17,000 taxicabs in 1979.[123/] It is noteworthy that already, in 1974, it was estimated

that in one urban rayon of Tallin, 25 percent of the workers and employees of one enterprise could be evacuated by private cars.[124/] In addition to private cars, many enterprises, installations, organizations and institutions will have their own buses, vans and trucks.

In 1981, the Soviet Union had 142,800 km (88,700 miles) of rail lines and 977,000 km (607,000 miles) of hard surface roads, of which some 373,000 km (231,800 miles) were all-weather roads.[125/] It should be noted also that many Soviet cities have highway bypasses around them, which may facilitate the flow of motor vehicle transport during relocation and reduce interference of the military traffic with relocation traffic.[126/]

The Soviet Union continues to expand its transportation capacities, including the double tracking of rail lines. In 1981-1985, the Soviet Union plans to double-track some 5,000 km (3,100 miles) of rail lines.[127/] The power of Soviet locomotives and the size of railroad cars is also increasing. At present, the Soviet Union produces approximately 1.3 million passenger cars, 786,600 trucks, and 87,000 buses per year.[128/] During the 10th Five Year Plan (1976-1980), the Soviet Union produced nearly 11 million cars, trucks and buses.[129/] Of course, a portion of the produced vehicles are exported, assigned to military use, and allocated to rural areas.

It is evident that, in principle, the Soviet Union has the transportation capacity to move a major part of its urban population in a relatively short time, especially if use is made of railway freight cars and trucks.[130/] As was noted, however, transportation capacities will vary from city to city, and in addition, will be limited by the number and weather conditions, the possible retention of vehicles by the relocated civil defense forces, and so on. It is, therefore, not possible to estimate how many urban residents will have to leave the cities on foot if the authorities decide to carry out the relocation in an "extremely compressed time period."

The rates of relocation will depend on many factors. Among them will be the speed with which the population will report to the SEPs and

how quickly transportation means will become available, the distances to hosting areas, and so on. According to some Soviet civil defense manuals, the first group of evacuees should be ready to report to the SEPs in one to three hours; however, it may require three to four hours to set up the SEPs, and the first motor vehicle convoys should be ready to leave in three to six hours after the start of the relocation is announced.[131/] Presumably, the railroads will operate on a similar schedule. Whether such schedules are realistic—especially if the relocation order comes "out of the blue" with no prior warning and preparations—is open to question. In particular, it seems doubtful that the families of the first group of evacuees could be assembled, packed, report to their assigned SEPs, processed there and embarked on trains or vehicles in three hours. As was noted earlier, the time apparently allocated to the processing of the evacuation groups at the SEPs appears to be unrealistically short.

It is also not clear how much time will be required for the first foot columns to assemble and depart, although in the case of students residing in educational institutions, the assembly process may require relatively little time. A hypothetical diagram of a planned march by a foot column in Soviet manuals (see Figure 5.4) shows the departure of the columns for the exurban area to begin four to six hours after the announced start of the relocation.[132/] In an article on relocation on foot, a chart shows the first column departing five hours after the order for relocation is given, with other foot columns using the same route following at intervals of one hour.[133/] A recent manual shows the first column leaving four hours after the start of the relocation with other columns following at 20-minute intervals.[134/]

The distances from the cities to hosting areas will determine not only travel time but also the rate of turn-about of trains and motor vehicle convoys. In addition, turn-abouts may be slow on single-track rail lines. In principle, travel times to dispersal areas should only be some two hours from the cities because Soviet plans allocate four to

five hours to daily round-trips by shifts of essential workers to and from the cities. Even so, the initial travel time by vehicle convoys to hosting areas may require from two to four hours or more.[135/] Altogether, therefore—as one manual suggests—from the start of the relocation to the arrival of the first group of evacuees in the dispersal areas may require eight to ten hours and possibly more.[136/] If this is so, then at best a convoy traveling to a nearby hosting area could make three trips carrying evacuees in the first 24 hours, assuming two trips in the second 12-hour period.[137/] According to an article reporting on a rural rayon staff exercise, it was assumed that evacuation trains would arrive in intervals of three to four hours.[138/] Of course, trains and vehicle convoys traveling to distant hosting areas may not be able to accomplish more than one round trip per day.

The rate of relocation is predicated on efficient planning and organization and on a disciplined behavior by the population. Inefficient allocation of transportation may cause delays in the rate of relocation. For example, a Soviet article published in 1969 complained that,

> *Unfortunately, there are often serious defects and omissions in the work of the staffs in planning civil defense measures. First of all, this is apparent in the planning of the utilization of various types of transportation. In particular, the desire to provide simultaneously all installations and [civil defense] formations with vehicles results in their scattering and complicates control over them. As a result, the implementation of the main task—the evacuation of the population—becomes protracted.*[139/]

To what extent this problem has been remedied is not known.

Soviet authorities are concerned about the possibility of panic and confusion among the urban residents in the event of crisis relocation and hope to prevent this by means of compulsory civil defense instruction and training programs for the population.[140/] Soviet accounts of relocation exercises, however, provide a mixed picture of disciplined and undisciplined behavior on the part of the participants—especially in the case

of exercises of evacuation on foot.[141/] Breakdowns of discipline during the march of one foot column slows down its rate of march and causes unscheduled halts, which in turn could delay the march of the foot columns following behind. Furthermore, even though the relocation on foot will expedite the population's departure from the cities, additional time will be required to move these evaucees from the intermediate evacuation points to their final destinations in the hosting areas.

Although Soviet publications persistently mention the need to accelerate the rate of relocation and to accomplish it in a very short time, they do not indicate the time allocated to the completion of the relocation in present civil defense plans. The only manual which refers to this question was published in 1970. It contains a hypothetical civil defense plan and schedules of an industrial enterprise. This plan allows two hours for the departure of the enterprise's "operational group" to the hosting area, and 72 hours for carrying out the "dispersal of workers, employees and their families."[142/] This hypothetical schedule applied to essential workers, who presumably have priority in relocation and would travel by transport. It suggested that the relocation of other elements of the population may have been expected to take longer than 72 hours. At the present time, the combination of improved transportation capacities and the "combined method" of relocation may possibly increase the rate of relocation and shorten the time for its completion, although there has been a considerable increase since 1970 in the size of the population of major cities. According to the relocation plans of a large Moscow enterprise, efforts are being made to increase the rate of evacuation on the first day of the relocation.[143/] Aside from the desire to move the largest possible number of urban residents as quickly as possibly beyond the effects of nuclear strikes on the cities, the push to maximize the rate of relocation on the first day may also be due to the slow turn-about of transportation, the retention by relocated civil defense formations of a portion of the available motor vehicles, and the need to transport work-shifts of essential enterprises to and from the cities even while the relocation is still in progress. In effect, therefore, there may be a

significant reduction in the availability of transportation after the first or second day of the relocation.

According to an estimate published by the Director of Central Intelligence in 1978, "on an average, two or three days would probably be required to evacuate the major portion of the Soviet urban population" using the combined method.[144/] The complete relocation of the population of the largest cities may require somewhat longer times, as will also the relocation of the inhabitants of cities with limited transportation routes or no nearby rural areas such as are found in the northern and far-eastern regions of the USSR. Even so, given the Soviet priority system, it appears possible that in most cases the more valuable element of the urban population, according to Soviet views, including the essential workers and civil defense formations, could be relocated in one to two days. Unusually severe weather conditions could slow down the rate of relocation. Such weather, however, would be relatively localized and would not affect simultaneously the country as a whole.

It is important to keep in mind, however, that the rate of the urban population's departure from the cities will not coincide with the rate of its arrival in the hosting areas, because a significant portion will be at intermediate evacuation points where it may have to wait several days for transportation to final destinations. Furthermore, as was noted, unless the hosting areas have been prepared in advance to receive the evacuees and shelter them from radioactive fallout, additional time would be required to build sufficient fallout shelters for their protection. It also seems likely that the requirement for workshifts of essential workers to commute to and from the cities every 12 hours will complicate the scheduling and flow of transportation. Finally, it appears that the effectiveness of control over the flow of the population from the city will depend on a large-scale use of radio communications, which—in practice—may result in mutual interference and a rapid saturation of available channels of communications.

Section 7

FOOTNOTES

1. M. Muradyan, "Organization is the Main Thing," Kommunist (Yerevan), September 23, 1979, p. 2.

2. Civil Defense Staff of the Lithuanian SSR, Uchebno-Methodicheskoye Posobiye dly Podgotovke Naseliniya k Grazhdanskoy Oborone (Instruction-Methodological Manual for Training the Population in Civil Defense), (Vilnus: Mintis, 1967), p. 71; M.N. Titov, P.T. Egorov and B.A. Gayko, Grazhdanskaya Oborona (Civil Defense), (Moscow: Vysshaya Shkola, 1974), pp. 45, 49.

3. N.P. Olovyanishnikov, editor, Grazhdanskaya Oborona, (Moscow: Vysshaya Shkola, 1979), p. 71; Army General A.T. Altunin, editor, Grazhdanskaya Oborona, (Moscow: Voyenizdat, 1980), p. 43.

4. N.I. Akimov and V.G. Il'in, Grazhdanskaya Oborona na Obektakh Sel'skokhozyaystvennogo Proizvodstva (Civil Defense at Installations of Agricultural Production), 2nd edition, (Moscow: Kolos, 1978), p. 104; Altunin, op. cit., p. 43.

5. Altunin, op. cit., p. 43.

6. P.T. Egorov, I.A. Shlyakhov and N.I. Alabin, Grazhdanskaya Oborona, 3rd edition, (Moscow: Vysshaya Shkola, 1977), p. 92; See also N.I. Akimov and V.G. Il'in, Grazhdanskaya Oborona na Obektakh Sel'skokhozyaystvennogo Proizvodstva, (Moscow: Kolos, 1973), p. 105; Altunin, op. cit.; USSR Civil Defense, Eto Dolzhen Znat' i Umet' Kazhdyi (Everyone Must Know and Be Able to do This), 4th edition, (Moscow: Voyenizdat, 1981), p. 25; Civil Defense Staff of the Lithuanian SSR, op. cit., p. 68.

7. Colonel A. Zaytsev, "For Those Who Teach: An Important Method of Protection," Voyennyye Znaniya (Military Knowledge), No. 8, August 1978, p. 28; "Dispersal and Evacuation," Voyennyye Znaniya, No. 4, April 1983, p. 16.

8. Altunin, op. cit., p. 43; Muradyan, op. cit.; Akimov and Il'in, op. cit., 1st edition, p. 149; Yu. Pavliy and M. Tsivilev, Evakuatsiya Naseleniya Gorodov, Sposob Zashchity ot Yadernogo Oruzhiya (Evacuation of Cities, A Method of Protection Against Nuclear Weapons), (Moscow: DOSAAF, 1965), p. 14.

9. Egorov et. al., op. cit., p. 92; Akimov and Il'in, op. cit., 2nd edition, p. 105; USSR Civil Defense, op. cit.; Altunin, op. cit., p. 43; Zaytsev, op. cit.; Titov et. al., op. cit., p. 49; "Dispersal and Evacuation," op. cit.

10. Muradyan, op. cit.; Akimov and Il'in, op. cit., 2nd edition, p. 105; Altunin, op. cit.; "Dispersal and Evacuation," Voyennyye Znaniya, No. 2, February 1980, p. 14; Civil Defense Staff of the Lithuanian SSR, op. cit., p. 68.

11. Akimov and Il'in, op. cit., 1st edition, p. 149; Civil Defense Staff of the Lithuanian SSR, op. cit., p. 68.

12. Titov et. al., op. cit., p. 45; Civil Defense Staff of the Lithuanian SSR, op. cit., p. 71; N.P. Krechetnikov and N.P. Olovyanishnikov, Grazhdanskaya Oborona na Mashino-Stroitel'nykh Predpriyatiyakh (Civil Defense at Machine-Building Enterprises), 2nd edition, (Moscow: Mashinostroyeniye, 1972), pp. 45, 47.

13. Civil Defense Staff of the Lithuanian SSR, op. cit.. p. 71.

14. Titov et. al., op. cit., p. 45. See also "Dispersal and Evacuation," Voyennyye Znaniya, No. 4, April 1983, p. 16.

15. Civil Defense Staff of the Lithuanian SSR, op. cit., p. 71.

16. Ibid., p. 68.

17. "Dispersal and Evacuation," Voyennyye Znaniya, No. 2, February 1980, p. 14.

18. Ibid.

19. Altunin, op. cit., p. 43. See also, Egorov et. al., op. cit., p. 92; Zaytsev, op. cit.; USSR Civil Defense, op. cit., p. 25.

20. USSR Civil Defense, op. cit., p. 25; USSR Civil Defense, Eto Dolzhen Znat' i Umet' Kazhdyi, 3rd edition, (Moscow: Voyenizdat, 1974), p. 26. See also, Zaytsev, op. cit.

21. Krechetnikov and Olovyanishnikov, op. cit., p. [illegible].

22. Ibid.

23. Egorov et. al., op. cit., p. 82, 287; Lieutenant General D. Krutskikh, Uchebno-Metochicheskoye Posobiye po Pdogotovke Rukovodyashchego i Komandno-Nachal'stvuyushchego Sostava Grazhdanskoy Oborony (Study-Methodological Manual for the Training of Chiefs and Command-Leadership Elements of Civil Defense), (Moscow: Voyenizdat, 1978), p. 21; Altunin, op. cit., p. 46; "Dispersal and Evacuation," Voyennyye Znaniya, No. 4, April 1983, p. 16.

24. For example, see Altunin, op. cit., p. 46.

25. Krutskikh, op. cit., p. 71; Egorov et. al., op. cit., p. 82; Titov et. al., op. cit., p. 165.

26. Egorov et. al., op. cit., p. 82; Krutskikh, op. cit., p. 71.

27. P.T. Egorov, I.A. Shlyakhov and N.I. Alabin, Grazhdanskaya Oborona, 2nd edition, (Moscow: Vysshaya Shkola, 1970), pp. 521-522.

28. Egorov et. al., op. cit., 3rd edition, p. 82; Altunin, op. cit., pp. 148, 151; L. Antipov, "Evacuation and Dispersal," Voyennyye Znaniya, No. 7, July 1982, p. 32.

29. Egorov et. al., op. cit., 3rd edition, p. 82; "Dispersal and Evacuation," Voyennyye Znaniya, No. 4, April 1983, p. 17.

30. According to Titov et. al., op. cit., p. 169, the intra-city transportation system will remain at least partially in operation after the completion of the relocation in order to help move the arriving and departing shifts of essential workers.

31. Altunin, op. cit., pp. 42-43; also, "The Main Direction," Voyennyye Znaniya, No. 12, December 1973, p. 5; K.G. Kotlukov, K.S. Ogloblin and A.I. Sgilevskiy, Grazhdanskaya Oborona Vchera i Segodnya (Civil Defense Yesterday and Today), (Moscow: Atomizdat, 1975), p. 90; "Dispersal and Evacuation," op. cit.

32. F. Kurbatov, "For the Purpose of Protection," Voyennyye Znaniya, No. 4, April 1971, p. 21; G. Chechelenko, "In a Technical School," Voyennyye Znaniya, No. 2, February 1977, p. 22.

33. Altunin, Grazhdanskaya Oborona, p. 49.

34. USSR Central Statistical Administration, Narodnoye Khozyaystvo SSSR v 1980 godu, Statisticheskiy Ezhegodnik (USSR National Economy in 1980, Statistical Yearbook), (Moscow: Finansy i Statistika, 1981), pp. 315, 319; Vestnik Statistiki (Statistical Herald), No. 8, August 1982, p. 73.

35. Vestnik Statistiki, op. cit.

36. Civil Defense Staff of the Lithuanian SSR, op. cit., p. 72. See also, Lieutenant General D.I. Shuvyrin, "Staff Culture," Voyennyye Znaniya, No. 2, February 1969, p. 16.

37. A.A. Gromov and N.P. Krechetnikov, Grazhdanskaya Oborona Promyshlennogo Obekta (Civil Defense at an Industrial Enterprise), 2nd edition, (Moscow: Atomizdat, 1975), p. 76; Chechelenko, op. cit., p. 22.

38. Altunin, Grazhdanskaya Oborona, p. 49.

39. Ibid., p. 43.

40. Olovyanishnikov, op. cit., p. 134; Titov et. al., op. cit., p. 167.

41. Olovyanishnikov, op. cit., p. 47; Gromov and Krechetnikov, op. cit., p. 74; Colonel A. Tsyganok, "With Their Own Cars," Voyennyye Znaniya, No. 11, November 1974, p. 27; Civil Defense Staff of Lithuanian SSR, op. cit., p. 73;

42. Egorov et. al., op. cit., 3rd edition, p. 94.

43. Ibid., pp. 94-95.

44. Olovyanishnikov, op. cit., p. 134.

45. Altunin, "The Main Direction," op. cit.; Egorov et. al., op. cit., 3rd edition, p. 82.

46. Egorov et. al., op. cit., 3rd edition, p. 287.

47. Altunin, Grazhdanskaya Oborona, p. 44; Krutskikh, op. cit., p. 26.

48. "Dispersal and Evacuation," Voyennyye Znaniya, No. 4, April 1983, p. 17.

49. Krechetnikov and Olovyanishnikov, op. cit., p. 47.

50. Olovyanishnikov, op. cit., p. 139.

51. Kurbatov, op. cit.

52. Titov et. al., op. cit., p. 171.

53. Altunin, Grazhdanskaya Oborona, p. 50.

54. Egorov, et. al., op. cit., 3rd edition, p. 95; Titov et. al., op. cit., p. 171; Krutskikh, op. cit., p. 25.

55. Krutskikh, op. cit., p. 60.

56. Olovyanishnikov, op. cit., p. 134; Civil Defense Staff of the Lithuanian SSR, op. cit., p. 74; Akimov and Il'in, op. cit., 1st edition, p. 142; Egorov et. al., op. cit., 3rd edition, p. 94; "Evacuation Means," Sovetskaya Voyennoya Entsiklopediya (Soviet Military Encyclopedia), Vol. 8, (Moscow: Voyenizdat, 1980), p. 557.

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58. Titov et. al., op. cit., p. 48. See also, Civil Defense Staff of the Lithuanian SSR, op. cit., p. 73; Kurbatov, op. cit., p. 20.

59. Olovyanishnikov, op. cit., p. 135.

60. Altunin, Grazhdanskaya Oborona, p. 44; Krutskikh, op. cit., p. 26.

61. Olovyanishnikov, op. cit., p. 136.

62. Civil Defense Staff of the Lithuanian SSR, op. cit., p. 73.

63. Olovyanishnikov, op. cit., p. 136.

64. Civil Defense Staff of the Lithuanian SSR, op. cit., pp. 80-81.

65. Ibid., p. 74; Olovyanishnikov, op. cit., p. 138.

66. Civil Defense Staff of the Lithuanian SSR, op. cit., p. 73; Colonel A. Safronov, "For Those Who Teach: Convoy on the March," Voyennyye Znaniya, No. 5, May 1982, p. 27; Egorov et. al., op. cit., 3rd edition, p. 95; Krutskikh, op. cit., p. 26.

67. Colonel A. Safronov, "Automobiles Depart Along the Route," Voyennyye Znaniya, No. 9, September 1975, p. 32.

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71. Egorov et. al., op. cit., 2nd edition, p. 124.

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74. Kurbatov, op. cit.

75. Krechetnikov and Olovyanishnikov, op. cit., p. 47; Civil Defense Staff of the Lithuanian SSR, op. cit., p. 73.

76. Major General S. Yeroshkevich, "Mobile Vehicle Fueling Stations," Voyennyye Znaniya, No. 11, November 1979, pp. 24-25; Olovyanishnikov, op. cit., pp. 141-142; Titov et. al., op. cit., p. 177-183; Safronov, "Automobiles Depart Along the Route," op. cit., p. 33; Egorov et. al., op. cit., 3rd edition, p. 188.

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81. Akimov and Il'in, op. cit., 1st edition, p. 151.

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84. Ibid., p. 140.

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86. Akimov and Il'in, op. cit., 2nd edition, p. 106; Egorov et. al., op. cit., 3rd edition, p. 92; Antipov, op. cit.; N. Shirokov, "Leaving a City," Voyennyye Znaniya, No. 3, March 1974, p. 28.

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88. Altunin, Grazhdanskaya Oborona, p. 44.

89. Akimov and Il'in, op. cit., 2nd edition, p. 102.

90. Kotlukov et. al., op. cit., p. 91; Olovyanishnikov, op. cit., p. 47; Altunin, Grazhdanskaya Oborona, p. 44.

91. Akimov and Il'in, op. cit., 2nd edition, p. 106; Olovyanishnikov, op. cit., p. 48; Antipov, op. cit.; Egorov et. al., op. cit., 3rd edition, p. 93; N. Zvyagin, "Organization of Departure on Foot," Voyennyye Znaniya, No. 7, July 1977, p. 34.

92. Egorov et. al., op. cit., 3rd edition, p. 94; Akimov and Il'in, op. cit., 2nd edition, p. 106.

93. Altunin, Grazhdanskaya Oborona, p. 44; Olovyanishnikov, op. cit., p. 48; Krutskikh, op. cit., p. 25; Egorov et. al., op. cit., 3rd edition, p. 94.

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123. Tsyganok, op. cit.

125. Vestnik Statistiki, No. 8, August 1982, p. 71; Narodnoye Khozyaystvo SSSR v 1980 Godu, p. 306.

126. For example, see Atlas Avtomobil'nykh Drog SSSR (Atlas of USSR Automobile Roads), (Moscow: Glavnoye Uprovleniye Geodeziy i Kartografiy, 1981), passim.

127. I. Pavlovskiy, "The Growing Capacities of Railroad Transport," Tyl i Snabzheniye (The Rear and Supplies), No. 8, August 1981, p. 9. Similar lengths were double-tracked in the periods 1971-1975, and again in 1976-1980.

128. "USSR Central Statistical Administration Report on the Results of the Fulfillment of the State Plan for the USSR's Economic and Social Development in 1981," Pravda, January 24, 1982.

129. "The Development of the Automotive Industry," Ekonomicheskaya Gazeta (Economic Gazette), No. 23, June 1981.

130. A "ballpark" estimate of Soviet transportation capacities prepared in 1969 concluded that in the 1970s, with only the use of half the total transportation capacity, the Soviet Union could transport 100 million urban residents to exurban areas in the course of four days. W.M. Brown and P.T. McClure, "Soviet Capabilities to Evacuate Urban Areas," in L. Goure, Soviet Civil Defense Revisited, 1966-1969, The RAND Corporation, RM-6113-PR, November 1969.

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132. Egorov et. al., op. cit., 3rd edition, p. 93; Akimov and Il'in, op. cit., 2nd edition, p. 103.

133. Zvyagin, op. cit.

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Section 8

THE ORGANIZATION AND MANAGEMENT OF HOSTING THE RELOCATED URBAN POPULATION

Crisis relocation includes not only the organization of the removal of the urban population from cities which are believed to be likely targets of enemy strikes, but also the resettlement of the relocated population in hosting areas for an indefinite period of time. Consequently, in the Soviet view it is essential to correctly select the hosting areas and allocate the evacuees among them; organize their reception, housing, feeding, medical care and essential support; and provide for their protection against radioactive fallout. It will also be important to maintain control over the evacuees in the hosting areas and, as far as possible, utilize them in the national economy and in support of the Soviet Union's war effort. Crisis relocation, therefore, requires that careful planning of the hosting of urban evacuees and preparation of the hosting areas to receive them be carried out in peacetime, along with the coordination of plans between urban and rural relocation organizations.

8.1 THE SELECTION OF HOSTING AREAS

Hosting areas are defined as the territory between the outer limits of the zones of possible damaging effects from nuclear strikes on urban targets and the administrative boundaries of the oblasts, krays, autonomous republics or republics (in the case of small ones which are not subdivided into oblasts) in which the cities are located.[1/] This approach simplifies the planning of the relocation from the administrative and coordination point of view. However, Soviet oblasts and republics vary greatly in size and in the ratio of their urban-to-rural populations. For example, the Irkutskaya Oblast in Siberia has a territory of 767,900 km^2 with 78 percent of its population considered to be urban vs. 22 percent rural; the Moscow Oblast (exclusive of Moscow City) has a territory of 47,000 km^2 with a population which is 75 percent

urban and 25 percent rural; the Armenian Republic has a territory of 29,800 km^2 and a population which is 66 percent urban and 34 percent rural; the Ferganskaya Oblast (Uzbek Republic) has a territory of 7,100 km^2 and a population which is 33 percent urban and 67 percent rural, and so on. Consequently, in various instances, because of insufficient hosting areas to meet the needs of a particular city or because of the geographic location of a city within an oblast or republic, hosting areas for them may be partially located in neighboring oblasts or republics.[2/]

The lines nearest to the cities beyond which the exurban zones are considered safe from the blast and thermal radiation effects of nuclear strikes on urban targets are determined by the cities' civil defense staffs on the basis of "the significance of the city, its size, the number of inhabitants, and the probable yields of nuclear warheads which may be employed by the enemy."[3/] Whether these lines change in accordance with changes in yields of U.S. strategic weapons is not indicated. To be excluded from hosting are areas in the exurban zone which may be threatened by flooding, either seasonally or as a consequence of the destruction of dams by the enemy.

In selecting exurban areas for hosting the relocated urban population, a basic Soviet consideration is the need to meet the requirements of the dispersed essential workers and civil defense formations for relatively rapid access to the cities. Specifically, "the areas of resettlement of workers and employees of enterprises which will continue their production activities in the city must be at such a distance from the city that not more than four to five hours is spent on travel to the city to work and back to the exurban zone for rest."[4/] The civil defense formations which are intended to conduct post-strike rescue, damage-limiting, repair and restoration operations in the cities in the event they are attacked must also be located within tw or three hours' travel time from them.[5/] To ensure the movements of essential workers and civil defense formations within the desired time span, the hosting

localities assigned to them should be no further than 5 km (3 miles) from highways or rail lines leading to the cities.[6/]

According to some Soviet sources, therefore, the essential workers and civil defense formations should be dispersed in the exurban zone not closer than 45 km (28 miles) and not further than 80 km (50 miles) according to one source,[7/] and 120 km (74.5 miles) according to another,[8/] from the cities. Another Soviet source, however, states that the hosting sites should be not less than 60 km (35 miles) from the cities.[9/] Furthermore, care has to be taken that the selected sites be a safe distance from two or more potential targets of nuclear strikes which are less than 60 km from each other.[10/] Given that there are likely to be potential targets in the suburbs and satellite towns near large cities, this will complicate the selection of hosting sites.

Another requirement for selecting hosting sites for essential workers is that they should be resettled according to the "production principle."[11/] The idea is to keep the workers and employees of essential enterprises, installations and services together in their assigned hosting localities. Consequently, each enterprise, etc., is assigned one or several hosting sites located near each other.[12/] At the sites, the workers and employees (and their families) will be settled compactly—that is, grouped together—according to the enterprises' shops, departments, divisions or services.[13/] This approach offers a number of advantages. First it will reflect the groupings of the workers and employees and their families as they arrive from the cities, because they will be relocated according to the "production principle" and by the shops, departments and services of the enterprises. Second, keeping them together in the hosting localities will facilitate the assembly and dispatching of the workshifts to the cities. Finally, it will facilitate control over the workers and employees, simplify the organization of the distribution of food, essential supplies and medical services, and allow the conduct of political-propaganda work among them.[14/]

The selection of hosting areas for other elements of the population will follow some of the same principles. Workers and employees of enterprises, departments, organizations and agencies which will cease operations, as well as students of relocated educational institutions, will also be kept together in the hosting areas. Similarly, the non-working urban residents will be relocated by their places of residence, each urban rayon being assigned hosting areas in one or two rural rayons.[15/] The difference between the hosting areas for these categories of evacuees and those for essential workers and employees is that the former will be hosted either in localities further away from rail lines and highways or at greater distances from cities than the hosting sites of the essential workers.[16/]

In selecting hosting sites, account will be taken of their capacities to house evacuees and their ability to provide essential facilities, stores, medical facilities, etc. to make it possible for the evacuees to remain there for an indefinite period of time. Soviet preference appears to be to resettle urban evacuees in smaller towns, "urban-type" settlements, and villages rather than disperse them among scattered individual farms. Of course, given the collectivization of agricultural land, individual farms are not the most common form of rural habitation in the Soviet Union. In 1970, only 20 percent of the so-called "inhabited rural points" (i.e., distinct inhabited places) had up to five residents and 8 percent had six to ten residents.[17/] However, at that time 74 percent of the "inhabited rural points" had 100 or less residents.[18/] Since then a program has been underway to reduce the total 469,253 points identified in the 1970 census by some 200,000, with particular attention being given to the elimination of the smaller and economically inefficient ones and the consolidation of their inhabitants in larger settlements.[19/] A stated objective of this program is also to provide the rural population with more amenities and facilities and, in a sense, to urbanize their living conditions.

Of course, given that the choices of hosting localities for essential workers and civil defense formations are limited by the requirements to be within some two to three hours' travel time from the cities and near highways and rail lines, they may not be able to accommodate in each instance all the essential personnel as well as their families. In such cases, family members may be sent to other, possibly more distant, localities which, however, must be in the same "evacuation direction" from the cities as that taken by the dispersed heads of families.[20/]

As was noted (see Section 5), hosting areas will be assigned to cities by higher civil defense staffs and soviets, i.e., by oblast or republic staffs and the executive committees of the oblast soviets or republic councils of ministers. Once the general hosting areas or localities are identified, the city civil defense staffs and evacuation commission ascertain the character and infrastructure of the potential hosting localities assigned to each city and allocate them to the rayons and large enterprises, installations and institutions.[21/] Information on housing, facilities, food stocks, etc. in the hosting localities is provided by the executive committees of the rural rayon soviets and their evacuation reception commissions and also by the rural rayon civil defense staffs. The rural rayons and localities and the small towns have no say in their selection as hosting areas, and cannot refuse to take in the urban evacuees assigned to them. The most significant limiting factor on the number of evacuees assigned to each rural rayon and "inhabited point" will be the amount of available potential housing space in accordance with the planned hosting ratios. In the event that hosting areas cross oblast or republic boundaries, their location is negotiated between the executive committees of the oblasts or the councils of ministers of the republics.

According to the Soviet concept of crisis relocation planning, the civil defense staffs and evacuation commissions of every urban rayon, enterprise, installation, organization, institution, department, service, etc. will know in peacetime which hosting localities or exurban facilities

are dedicated to them. In their turn, the authorities in the hosting areas will know which urban organizations or rayons will use their areas, approximately how many urban evacuees are assigned to each hosting locality, and the planned schedules of arrival of the evacuees.

8.2 THE PLANNING AND MANAGEMENT OF HOSTING EVACUEES

The organization of the planning and management of hosting urban evacuees and their reception in the hosting areas is similar to the organization of the relocation of the urban population. The primary responsibility for organizing and planning the hosting of the evacuees rests with the civil defense chiefs and staffs of the rural rayons, settlements, and collective and state farms.[22/] At the rayon and settlement levels, the civil defense chiefs will be the chairmen of the executive committees of the rayon or settlement soviets (i.e., the county executives or mayors of settlements and villages); at the farm level, they will be the directors of the collective or state farms. The chiefs or the chiefs of the staffs will have deputies for evacuation measures who will be directly concerned with organizing the reception, resettlement, supplying and employment of the evacuees.[23/] Participating in planning and its implementation will be chiefs of various civil defense services. They will be responsible for various measures such as the transportation of the arriving evacuees from the disembarkation points to the hosting localities, the construction of anti-radiation shelters, the provision of food and the organization of public feeding, laundry and bathing facilities, stores, medical services, etc.[24/] Figure 8.1 shows, in schematic form, the organization of rural civil defense for hosting evacuees.

In order to assist the civil defense chiefs and staffs in planning and organizing the reception and resettlement of the evacuated urban population, Evacuation Reception Commissions are set up. These commissions are established by order of the executive committees of the rayon and settlement soviets and by the decision of the civil defense chiefs of collective and state farms and significant agro-industrial installations.[25/]

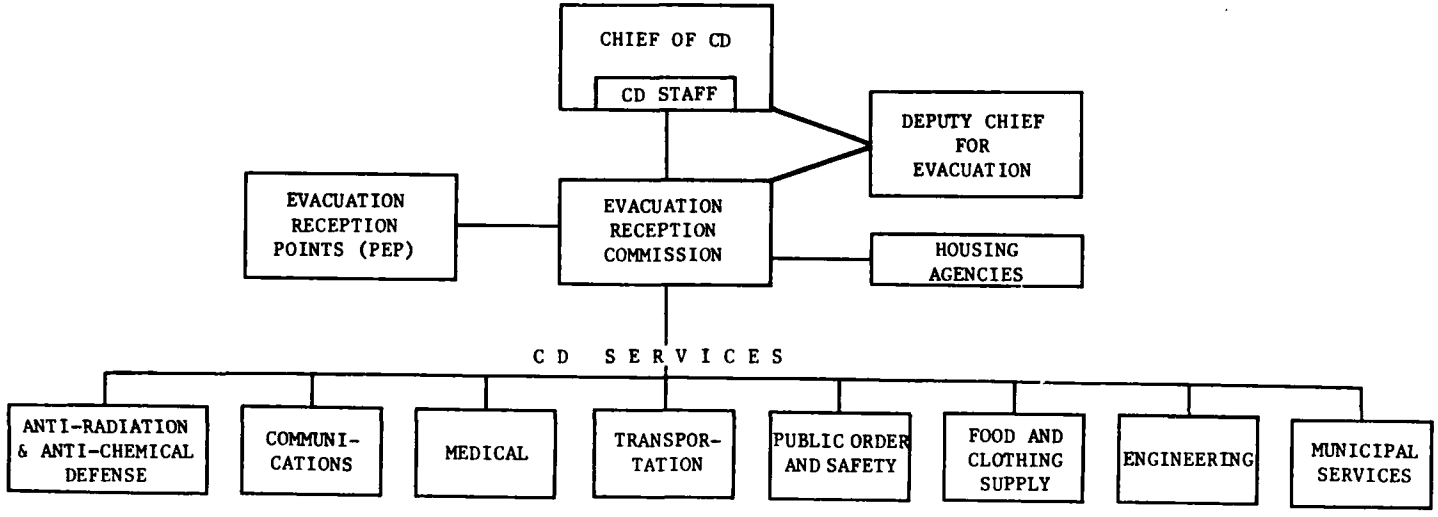

Figure 8.1 Schematic of Organization of Rural CD for Hosting Evacuees

They are organized not only in the areas of resettlement of evacuees, but also at the intermediate evacuation points on the routes of the foot columns.[26/]

The chairmen of the reception commissions are deputies of the chairmen of executive committees of rayon and village soviets (i.e., deputies for evacuation of the rayon and village civil defense chiefs) or deputies of chiefs of civil defense of collective and state farms. The commissions are made up of representatives of the party, various civil defense services (public feeding, trade, medical, communications, public order and safety), and of housing agencies, transportation and road construction organizations, etc.,[27/] i.e., all organizations, agencies and services involved in the reception, transportation and resettlement of urban evacuees.

The responsibilities of the evacuation reception commissions include: the development and timely updating of plans for the reception, housing and supplying of the evacuated population; the organization of meeting the arriving evacuees, processing and distributing them among the hosting localities; the organization of supplying evacuees with food and basic necessities; the construction of fallout shelters; communications with urban evacuation organizations and higher level rural evacuation reception commissions, and so on.[28/] The evacuation reception commissions of intermediate evacuation points are also responsible for organizing the transportation of evacuees to their final resettlement localities.[29/]

The rural civil defense staffs and evacuation reception commissions develop plans for the reception, resettlement, and protection of the evacuees. The plans are based, first of all, on information provided by the urban civil defense staffs and evacuation commissions which control the evacuees assigned to a given hosting area or locality. This information will include: the number of evacuees it is planned to relocate to a given hosting area; the types of organizations, departments or institutes which will continue operations in the hosting area

and the number of their members (employees and family members); the mode of movement of the evacuees to the hosting areas (i.e., by train, which convoys, boats, or on foot); the approximate schedules of arrival of trains, convoys and boats and the points of disembarkation of the passengers; the number of evacuees who will await transportation at the intermediate evacuation points; the names of responsible officials in the urban organization, their telephone numbers or radio call channels.[30/]

With this information, evacuation reception plans are prepared which deal with:[31/]

- the order of reception of evacuees at the disembarkation points and the deployment of evacuation reception points;
- the organization of transportation or march of arriving evacuees from the disembarkation or reception points to the places of their resettlement;
- determination of available housing, the distribution of the evacuees among the local population and other available housing;
- the provision of the evacuees with individual means of protection and anti-radiation shelters;
- the provision of the evacuees with food and basic necessities, determination of available stocks, and the identification of shortfalls in the stocks as well as measures to obtain additional supplies;
- organization of medical services for evacuees and of necessary stocks of medical supplies;
- organization of potential employment of evacuees in the local economy;
- organization of communications with urban civil defense staffs and evacuation commissions and higher rural civil defense staffs and evacuation reception commissions, as well as evacuation reception commissions of intermediate evacuation points, and so on.

According to a 1973 Soviet civil defense manual, the plan is largely in the form of tables and schedules, accompanied by notes, maps

APPROVED BY:

Chief of CD of Collective Farm

_____
Signature

_____
Date

Names of Organizations, Departments, Residential Administrations, etc. to be Resettled	Number of Evacuees to be Resettled	Arriving by What Means of Transportation	Locations of Disembarkation Points	Probable Times of Arrival	Number of Persons to be Housed in: Inhabited Points, Administrative Buildings, Farms, etc.					Persons Responsible for Resettlement
					Homes	Public Bldgs.	Farms	Etc.	Etc.	

Chief of Collective Farms CD Staff

_____
Signature/Date

Figure 8.2 Evacuation Reception Plan of a Collective Farm

or schematic drawings.[32] For example, the plan for the reception of evacuees at a collective farm is shown in Figure 8.2.[33]

The plans may include charts detailing the allocation of the evacuees to the homes of rural residents and other available housing space. For example, Figure 8.3, published in a Soviet manual, shows the available space in private residences, the number of evacuees assigned to them, the available floorspace, as well as some of the amenities in each home.[34]

The plans may also include tables showing the existing anti-radiation shelter capacities, the requirements for the construction of additional shelters, and the materials and man-hours of work needed for their construction. For example, Table 8.1 is a hypothetical table published in a Soviet manual showing these requirements in the case of a collective farm.[35]

The various civil defense services, organizations, administrations, agencies and services involved in the reception, transportation, supplying and support of the evacuees develop their own detailed plans of operation.

8.3 ORGANIZATION OF THE RECEPTION OF EVACUEES

According to Soviet concepts, the organization of the reception of urban evacuees includes: meeting them on arrival and assisting them during disembarkation from transports, registering them, allocating them to hosting localities, bringing them to these localities and directing them to assigned housing. To fulfill these functions, the evacuation reception commissions establish Evacuation Reception Points (several acronyms are used in Soviet literature: PEP, EPP, and sometimes PPN).[36]

Specifically, the Evacuation Reception Points (hereafter identified by the acronym "PEP") are responsible for organizing the meeting and registration of the arriving evacuees at the disembarkation points,

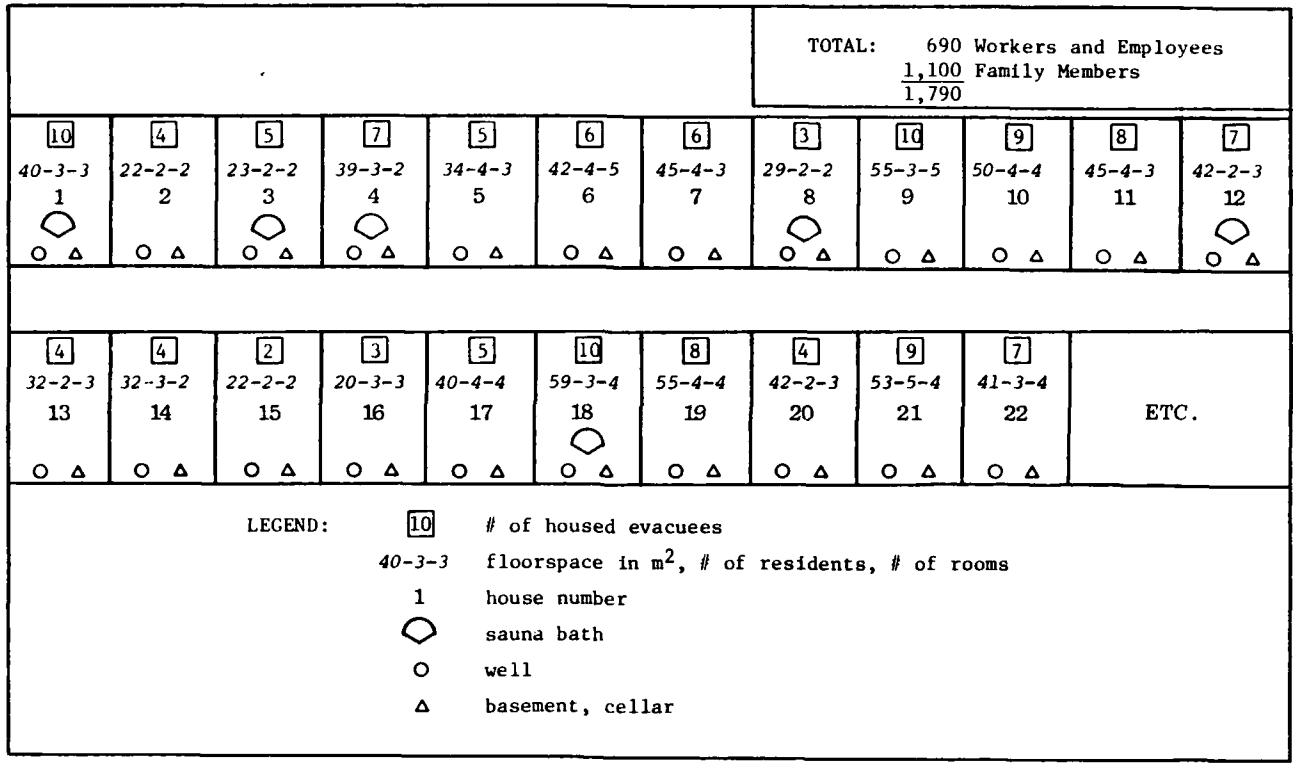

Figure 8.3 Plan of Allocation of Evacuees to Private Homes

Table 8.1 Existing Shelters and Requirements for Additional Shelters at a Collective Farm

DEPARTMENTS AND FARMS	TOTAL POPULATION		EXISTING SHELTERS		NUMBER OF PERSONS WITHOUT SHELTERS	NUMBER OF SHELTERS TO BE BUILT	MATERIEL REQUIREMENTS		VOLUME OF WORK (manhours)
	Residents	Evacuees	Number	Number of Places			Timber	Saw wood, Poles	
1st Dept. - Berezka	670	1,200	140(2)	670	1,200	20(3)	120 m^3	360 m^3	720
(Included at Farm)	(54)	--	--	--	54	2	6 m^3	18 m^3	36
2nd Dept. - Uvarovo	250	100	65	350	--	--	--	--	--
(Included at Farm)	(8)	--	--	--	8	1	1 m^3	3 m^3	8
3rd Dept. - Lubny	345	150	82	495	--	--	--	--	--
(Included at Farm)	(23)	--	--	--	23	1	2 m^3	6 m^3	12
4th Dept. - Perovo	375	250	90	625	--	--	--	--	--
(Included at Farm)	(20)	--	--	--	20	1	2 m^3	6 m^3	12
TOTAL	1,640	1,700 (1)	377	2,140	1,305	25	131 m^3	393 m^3	788

NOTES: (1) The hosting ratio is 1:1.

(2) Mostly family shelters in basements and cellars.

(3) Probably dugouts with an average capacity of 60 spaces.

assigning them to hosting localities and housing, providing the arriving evacuees with medical assistance (and, if necessary, with a place to warm up and hot food), and dispatching them to their hosting locations.[37/] The organization and number of persons assigned to man the PEPs will depend in part on the number of evacuees each is expected to process, but generally each will be expected to process up to 2,000 to 3,000 evacuees.[38/] Basically, a PEP will include a chief, a deputy chief, and a supply officer. In addition, it will have:[39/]

- a group for meeting the arriving evacuees—16 to 21 persons;
- a registration group—6 to 12 persons;
- a public order and safety group—2 to 6 persons;
- a dispatching and escort group to transport (walk) the evacuees to their hosting locations—6 to 10 persons;
- a medical post—2 to 3 persons;
- a mother-child room with two attendants;
- possibly a kitchen and food serving team of up to 12 persons;
- the PEP may also have a communications-messenger team.

The PEPs will be set up in public buildings (schools, club houses, etc.) near the points of disembarkation of the evacuees arriving by transport. Most often these will be near railroad stations and platforms or at convenient points of arrival of motor vehicle convoys.

To function effectively, the PEPs prepare and acquire in peacetime various documents and lists. These will include lists of evacuees who are expected to arrive and be processed by a given PEP; such lists will be supplied by the urban evacuation commissions. There will also be lists of personnel assigned to the PEPs, plans on how to warn and assemble the personnel; lists of telephone numbers of various civil

defense, transportation, and urban evacuation commission officials; lists of hosting localities, their housing capacities and housing allocations for evacuees; documents on the hosting localities' transportation capacities and schedules for the transportation of arriving evacuees to hosting localities; etc.[40] The PEPs will also be informed by the evacuation reception commissions about the arrival schedules of the evacuees.

The reception group will meet the evacuation trains and convoys; help organize the disembarkation; assist the invalids, elderly, pregnant women and women with small children; and direct and guide the evacuees to the PEPs.[41]

At the PEPs, the arriving evacuees will undergo a new registration. In principle, the urban evacuation commissions of enterprises, installations, departments, organizations, institutions and rayons will have supplied the PEPs in advance with lists of evacuees assigned to the hosting area served by each PEP. In effect, these lists should be the same as those used by the urban SEPs to register the evacuees. In order to assist the registration and reception, the urban enterprises, installations, institutions and rayons or their evacuation commissions send out representatives to the rural evacuation reception commissions and PEPs. These representatives are supposed to depart for the exurban areas ahead of the main flow of evacuees. Presumably, these representatives will bring along up-to-date lists of evacuees from their respective organization. In any event, the registration serves as a method of control and accountability and as a basis for the allocation of housing, food and other supplies. Prior to 1974, the registration was based on the presentation by the evacuees of evacuation passes. At present, the evacuees identify themselves by presenting their personal internal passports, workbooks and other identification which the registrars will check against their lists of authorized evacuees.[42] The registration books used by the PEPs may have the format shown in Figure 8.4 on the following page.[43] The registration books may also be used to note other

information on the evacuees such as their party membership, levels of education, professions and specialties, military service status, etc.[44/]

No.	Name	Year of Birth	Family Relationship	Former Address	Place of Settlement	Date of Arrival	Comments
1	Sukharev, Ivan Sergeyevich	1910	Head of Family	Moscow, Sovetskaya St. No. 5-18	Pyatnitsa Village	5-5	
2	Sukhareva, Elena Ivanovna	1913	Wife	Same	Same	5-5	

Figure 8.4 Registration Form of an Evacuation Reception Point

At the PEPs, the registered evacuees will be assigned their places of settlement and will be told in which private houses or public buildings they will live.[45/] If the latter information is not provided at the PEPs, the housing assignments will be made at the hosting localities themselves by the local deputies for reception of evacuees and the evacuation reception commissions. On arrival at the hosting localities, the evacuees will be met by specially-designated local people who will guide them to their assigned housing.[46/] If urban enterprises, organizations and institutions have developed close ties in peacetime with their assigned hosting localities and their evacuation reception commissions, the arriving workers, employees and their families may have already been instructed as to which specific homes or buildings they will be housed.[47/]

Hospitalized urban residents will be relocated together with the hospitals in which they are patients to medical facilities in the exurban areas. Sick persons who are not hospitalized and who arrive together with other evacuees will be treated at the PEP's medical posts and, if necessary, transported to nearby rural medical facilities.[48/]

Following registration at the PEPs, the arriving evacuees will proceed to their assigned hosting localities. This move is organized by the dispatching and escort group of the PEPs and the civil defense transportation services. These groups are led by the deputy chiefs of the PEPs.[49] If the hosting locations are nearby, the able-bodied evacuees assigned to them will be marched there in organized groups led by members of the escort group. If they are at greater distances from the disembarkation points and PEPs, the evacuees may be transported there. Use will be made of all transportation means available in the hosting rayons, i.e., buses, trucks, tractors with trailers, etc. The elderly, invalids, mothers with young children, and pregnant women will have priority in the use of transportation to their assigned hosting localities.[50] Given the poor state of Soviet rural roads—especially in spring and fall, and during heavy snowfall in some regions—heavy reliance may be placed on tractor-trailers for local transportation of the evacuees.

In addition to providing local transportation, the rural and small town transportation organizations will transport evacuees from the intermediate evacuation points (PPEs) to the hosting localities.[51] This will be done to reduce demand on urban transportation organizations while the relocation is still in progress. As the urban motor vehicle transportation organizations complete their primary mission of transporting essential personnel and their families to dispersal areas, they may also be used to transport evacuees waiting at the intermediate evacuation points to their final destinations.[52]

In principle, the rural areas have significant transportation capacities, although these are more widely dispersed than those of the urban areas. For example, in 1980 the rural areas received some 347,600 tractors of all types and 214,700 trucks.[53] That year, Soviet agriculture had some 2,562,000 tractors of all types and 1,596,000 trucks.[54] In addition, in 1980 the Soviet Union produced 312,000 trailers for tractors.[55] According to the 11th (current) Five Year Plan (1981-1985), Soviet

agriculture will receive, over the five years, over 3 million trucks and 3.2 to 3.4 million trailers for tractors, as well as large amounts of mechanized construction machinery, i.e., bulldozers, excavators, scrapers, etc.[56/] Furthermore, during the present decade, it is planned to build some 130,000 km (81,000 miles) of automobile roads connecting the collective and state farms with rayon centers, and some 150,000 km (93,000 miles) of hard surface roads on the territory of the farms and settlements.[57/] All this will help improve the transportation capabilities in the rural areas. It should be kept in mind, however, that some of the rural transportation means may be requisitioned by the military and that another portion will be used for various civil defense and economic purposes such as providing transportation for rural civil defense forces, transporting materials and supplies for the construction of shelters, the building up of food and materiel stockpiles, etc. Furthermore, only a portion of the tractors will be adapted for pulling trailers.

Whether the rural transportation organizations could effectively fulfill all the tasks assigned to them is open to some doubts. Congestion of evacuees at disembarkation points and PEPs is likely to occur because available transport may not be able to accomplish round trips to hosting localities in the time between the arrival of evacuation trains and convoys.[58/] It is likely that, in practice, a majority of the arriving evacuees will be marched in organized groups to their final destinations with transportation being used to carry their baggage. As was noted, shortages in transportation means will also delay the movement of evacuees from the intermediate evacuation points (PPEs) to the hosting localities and could result in temporary congestion of evacuees at those points.

Once assigned a hosting locality and housing, the evacuees are obligated to remain there. Unauthorized departure from the assigned hosting localities is strictly prohibited.[59/] Without the approval of the local evacuation reception authorities and coordination with the authorities at another location, evacuees who attempt to leave without

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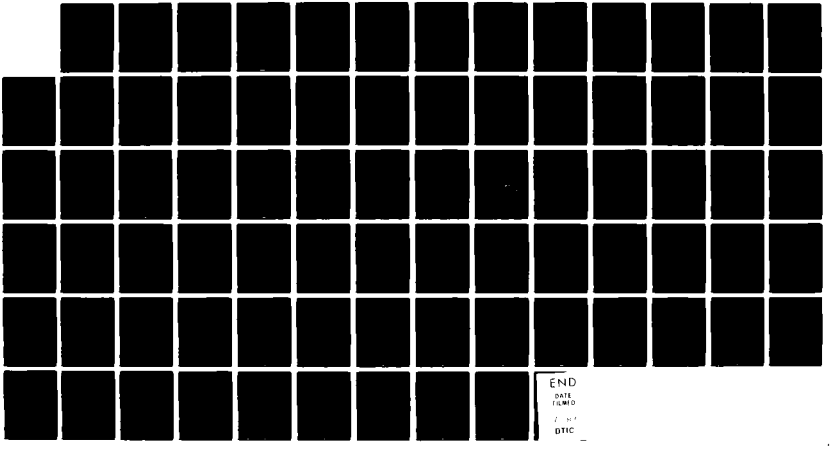

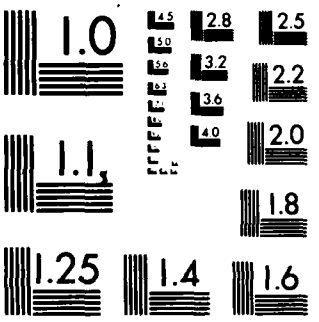

permission would be denied housing, food and any other assistance by other hosting localities. The evacuees would also be prohibited from changing housing in the hosting localities without the permission of the local authorities.

8.4 HOSTING RATIOS AND HOUSING

Hosting ratios depend on the character of the exurban areas which will be used for hosting urban evacuees, specifically on the numbers and density of the population residing in those areas. Of course, hosting localities will also include various facilities such as childrens' summer camps, tourist facilities, resorts, etc. whose hosting capacities will be independent of the local population. Hosting ratios will also be influenced by the use made of non-residential buildings in the hosting localities for housing evacuees.

Insofar as the evacuees are quartered with the local population, the preferred ratio is one or two evacuees for every local resident.[60/] Actually, Soviet publications prefer to discuss the hosting ratio in terms of norms of floorspace in private homes for residents and evacuees. According to these publications, the floorspace for local residents and evacuees living with them should be not less than 2 m^2 (21.5 ft^2) per person,[61/] and may range up to 4 m^2 (43 ft^2) per person.[62/] The hypothetical housing allocation chart (Figure 8.3) indicates allocations of floorspace ranging from 3 m^2 (32 ft^2) to over 5 m^2 (54 ft^2), with most being on the order of 3 to 4 m^2. The hosting ratios shown in that chart were 1.5 to 3.3 vacuees per local resident in private homes. In 1981, the total floorspace in private rural housing amounted to 1,071 million m^2 with an additional 333 million m^2 in public housing.[63/] Of course, only a portion of this housing would be available for hosting purposes.

Although Soviet preference is for a hosting ratio of one or two evacuees per rural resident, this may not be practical in all cases. As was noted, the ratios of urban-to-rural population in the oblasts and republics vary greatly. Some heavily industrialized oblasts with large

cities have a ratio of 90 percent urban to 10 percent rural population. For example, this is the case for the Donetskaya Oblast in the Ukrainian Republic, the Moscow Oblast including the city of Moscow, the Leningrad Oblast including the city of Leningrad, and so on.[64/] In other oblasts the ratios are more favorable. For example, in the case of the Kiev Oblast, including the city of Kiev, the urban population accounts for some 75.6 percent of the total population; in the case of the Minskaya Oblast, including the city of Minsk (capital of the Belorussian Republic), the urban population amounts to 67 percent; in the case of the Alma-Atinskaya Oblast, including the city of Alma-Ata (capital of the Kazakh Republic), the urban population amounts to about 63 percent, and so on. Of course, the figures for the urban population include the residents of urban localities in these oblasts who may not be subject to relocation. Some of these localities may possibly even serve to host evacuees for the larger cities. As was noted, there will be particularly difficult hosting problems in the case of cities with little rural development around them. This will be especially the case in parts of Siberia and the northern regions of the USSR. For example, in the Murmarskaya Oblast, 90 percent of the population is classified as urban; in the Khabarovskiy Kray, 80 percent of the population is urban; in the Chelyabinskaya Oblast, 82 percent is urban; in the Mangyshlakskaya Oblast, 89 percent is urban, and so on. In some cases, in the absence of nearby rural settlements, a majority of the residents of relatively isolated cities will probably have to camp out and live in dugouts. It is also likely that because of the requirement to locate essential workers within commuting distance from the cities, the hosting ratio in the dispersal zones, in some cases, may exceed the preferred norm of not more than two evacuees for every local resident.

All available housing may be used in the hosting areas to house evacuees, including private homes as well as public buildings, storage facilities, summer camps, tourist facilities, rest homes, summer cottages of urban residents, etc. Owners of private homes will be required to

accept the number of evacuees assigned to them. Generally, preference is given to housing individual evacuees and especially families in the homes of local residents.[65/] Evacuated organizations which will continue to function in the hosting areas, such as educational institutions, public health, scientific, administrative and production organizations will be housed by preference in public buildings, summer camps, tourist facilities, rest homes, etc.[66/] It is noted, however, that some of the public buildings may be requisitioned for the use of military commissariats or for the deployment of medical facilities.[67/]

In principle, because the rural civil defense staffs and evacuation reception commissions know in advance which urban organizations and how many evacuees they will be required to host, the rural residents will be told in peacetime how many evacuees will be quartered in each of their homes.[68/] In some cases, the house owners have met the evacuees they are expected to house. This is so because they may have been visited by the prospective evacuees during evacuation exercises or because the authorities encourage urban residents to visit their prospective hosts and become familiar with their assigned hosting localities.[69/]

8.5 SUPPLYING EVACUEES WITH FOOD, BASIC NECESSITIES AND SERVICES

Planning for supplying food, basic necessities and services to the evacuees is the responsibility of the rural civil defense staffs and evacuation reception commissions with the support of the local soviets and the urban deputy chiefs of civil defense for material and technical supplies, as well as all relevant local economic, municipal, trade, service and supply organizations. The implementation of the plans rests with the civil defense staffs, and specifically, with the appropriate service organization, such as the rayon Food and Clothing Supply Service and the local Municipal Personal Services (i.e., repair shops, barber shops, laundries, public baths, etc.)[70/]

The organization of the food supply is a critical factor. Soviet plans assume that crisis relocation will coincide or may be preceded by

the institution of a food rationing system and a rapid buildup of food stocks in the exurban areas. It is also assumed that, according to instructions, the evacuees will take with them a three-day supply of food which they will use to feed themselves during the first two to three days of the relocation,[71] thereby allowing time for the organization of the feeding of the evacuees.

There will be several sources of food which would be used to feed the evacuees. One source will be the normal stocks of food present in the rural areas at the time the relocation is initiated. In the Soviet Union, a major part of agricultural produce, including grain, is stored and processed in the rural areas and small towns.[72] Another source will be special food reserves maintained in the hosting areas for the specific purpose of feeding evacuees from large cities.[73] Some of these reserves appear to be stored in protected underground facilities. The creation of such food reserves for use in crisis is said to be one of the responsibilities of civil defense.[74] In addition, the USSR maintains large, special war reserves of food and other supplies to be released only in time of war. Finally, another source will consist of the stocks of food evacuated from the cities' stores and warehouses, either simultaneously with the relocation of the population or immediately following its completion.[75] The allocation and authorization of release of various stocks may be one of the responsibilities of the sectorial oblast staffs.

The size of the various food stocks is not known. Normal stocks in the cities and rural areas will tend to change seasonally. Special stocks held for use during crisis relocation may be expanded in time of crisis. The war reserves are probably maintained on a permanent basis. The total stocks could be substantial and may be sufficient for sustaining the population for a protracted period of time. Problems may arise, however, with the ability of the authorities to distribute them following an attack as a result of the disruption of the transportation system. In this connection it should be noted that Soviet wartime economic and civil

defense plans call for the earliest possible post-strike resumption of agricultural production.

As was noted, the question of availability of food stocks, their size and possible shortfalls, as well as their location, is studied in the course of the planning of crisis relocation by both the urban and rural evacuation organizations, which also take account of the capabilities of hosting areas for food processing and preparation.[76/] In principle, the evacuees should be fed as much as possible from current agricultural stocks and production. This, however, will not be possible during parts of the year and some hosting areas are likely to have difficulties in this respect. It is also not explained what specific measures would be taken in hosting areas where agriculture is largely engaged in growing industrial crops, i.e., cotton, hemp, sugar beets, etc. Presumably, such areas will require larger special reserves of food in place for use in the event of crisis relocation.

The evacuees will be issued food by the rural food stores and public food catering establishments.[77/] In 1981 there were 96,400 such establishments in the rural areas (vs. 212,100 in the cities).[78/] However, the rural establishments may be augmented by relocated urban stores and catering organizations. It is also possible that in the case of essential workers and employees, they will be issued food directly by the organizations employing them. It is not unlikely that essential enterprises, installations and organizations will have priority in drawing on food stocks and reserves.

The evacuees will either receive food rations for preparation in the homes where they are staying or they will be given hot meals at the public catering establishments, to be consumed at home or at the establishments. If the distribution and capacities of the food catering establishments are insufficient to meet the needs of the evacuees, mobile cooking-feeding units—using field kitchens, tents, etc.—may be organized, either by the food supply service in the rural areas or by the relocated urban food stores and food catering establishments, factory food catering

organizations, etc.[79] It should be noted that the urban civil defense forces will include Mobile Feeding Stations (PPP) and Mobile Food Supply Stations (PPPS) organized on the basis of public food catering establishments and food stores.[80] Although their primary mission will be to feed the personnel of civil defense units, especially while they are engaged in post-strike rescue, damage-limiting, repair and restoration operations, in the absence of an enemy attack they would be used to provide hot meals or dry food rations to the evacuees, especially the essential workers and their families. Similarly, mobile bakeries may be deployed to supplement the bakeries in the hosting areas. If the capacities of the bakeries in the hosting areas are insufficient to meet daily requirements, the evacuees will be issued flour to do their own baking at their residences.[81] Meanwhile, the working shifts at essential enterprises in the cities will be fed by the enterprises' food catering organizations. According to one manual, these organizations may maintain a one-month stock of food at the enterprieses.[82]

The availability and capacities of food processing facilities, especially flour mills, undoubtedly vary from place to place. Many large flour mills appear to be located in or near cities. It is not clear, therefore, what Soviet plans are to ensure sufficient flour milling in the hosting areas. There are indications, however, that urban flour mills and other food processing facilities will be considered as essential enterprises and consequently they will remain in operation during crisis relocation and, as far as possible, in war time.

Basic necessities will be made available to the evacuees through the retail stores in the rural areas. At the end of 1981 there were some 330,700 such stores in the rural areas, including some 50,000 temporary stores housed in tents.[83] The primary function of the civil defense Clothing Supply Service is to provide clothing to civil defense personnel operating in the zones of destruction. This clothing will be taken from stocks stored in the rural areas and relocated urban stocks. Even so, in an emergency this service could be used also to provide

clothing to evacuees who have been exposed to CBR contamination. Basically, however, the relocated population will have to depend primarily on what it has brought along to the hosting areas. As was noted, the people evacuated by transport will be allowed up to 50 kg of baggage per person, while those evacuated on foot will be restricted to whatever baggage the individual is able to carry during the march.

It is recognized that the evacuees will tend to lack a number of basic necessities such as bedding, dishes and plates. Consequently, it is said that it will be the local population's "patriotic duty" to help the evacuees by lending them bedding, cooking utensils, plates, etc.[84/] The extent of such assistance by the local population cannot be predicted. Presumably, most rural households will have extra bedding, but possibly not enough in situations of high hosting ratios. It is unlikely, however, that the rural stores—even when supplemented by the stocks of relocated urban stores—would have sufficient bedding to supply a majority of the evacuees.

The evacuees will also make use of all personal service facilities available in the rural areas, i.e., laundries, baths, barber shops, shoe repair shops, etc. These services may be expanded with the help of evacuees from similar urban services.[85/] The capacities of these service facilities may be increased in peacetime with the assistance of the urban organizations which are assigned to the hosting locality. In principle, the urban organizations should assist the hosting areas in advance to prepare for the hosting of the evacuees, and this includes, where necessary, expanding their service and support capacities by the construction of additional sources of water supply, laundries, baths, eating facilities, etc.[86/]

Medical services for the evacuees will be provided first of all by the rural rayon public health departments and the network of rayon medical facilities, i.e., hospitals, clinics, out-patient services, and so on.[87/] This network will be supplemented by evacuated urban public health organizations and personnel.[88/] However, a large portion of the

evacuated urban medical organizations which will constitute the main element of the civil defense Medical Service and probably also some of the rural medical facilities will be dedicated to the treatment of casualties from enemy strikes and military casualties. It is noted, therefore, that "the role of home care of the sick will greatly increase."[89/] Great attention will be paid also to the prevention and control of communicable diseases and epidemics, and along with this, to rodent and insect control.[90/]

One interesting feature of Soviet views on requirements for service to evacuees is that they should have access to their bank savings accounts. This should be arranged by the rural banks.[91/] Eligible persons will also continue to receive their pension and retirement payments. Such arrangements will be facilitated by the fact that the Soviet Union has a single state banking system, and that the authorities will know everyones' relocation areas. What is not clear is whether Soviet planners expect the evacuees to pay for their basic food rations, essential goods and services (they will not pay rent), or whether these supplies and services will be provided free of charge. It would appear that at least prior to an actual enemy attack the former will be the case, except for civil defense personnel. The underlying assumption is that all able-bodied persons will continue to be employed either in essential enterprises or in the local economies. Of course, the government will continue to set prices. This system may break down, however, in the event of a large-scale enemy attack. In such a situation, if World War II experience can serve as an example, the working people may be paid in food rations, while the non-working people may be issued basic rations free.

In this connection, it is important to note that great importance is attributed in Soviet relocation plans to arrangements for the employment of the evacuees. The rural authorities will be responsible for making such arrangements for non-essential evacuees. These evacuees will be employed in agriculture, local enterprises and services or in enterprises and organizations which have been relocated from the cities.[92/]

The authorities expect the evacuees to replace rural workers called up for military service or engaged full time in civil defense activities, and to provide the necessary manpower for labor-intensive agricultural operations (for example, harvests). Undoubtedly, under war conditions agricultural activities will become more labor-intensive.

8.6 PROTECTION OF THE RELOCATED POPULATION

An important element of planning for the reception of the relocated urban population consists of measures for its protection against radioactive fallout and toxic chemicals. Such planning involves the local soviets, the civil defense staffs and evacuation reception commissions. Measures for the protection of the evacuees, as well as of the local residents, include providing them with individual means of protection, i.e., gas masks and protective clothing, the construction of anti-radiation shelters, and the organization of radiation monitoring, warning and decontamination systems.

Soviet plans call for providing the entire population with individual means of protection. These may consist of manufactured gas masks and special protective coveralls, hoods, gloves, boots and individual decontamination kits; or, if these are unavailable, of gauze dust masks and ordinary clothes adapted to prevent skin contact with radioactive dust or toxic chemicals (i.e., raincoats, plastic capes, boots, gloves, etc.). Normally, employed persons will be issued special protective equipment, if it is available, by their places of employment, or they may have the simplified equipment at home. As was noted, the relocated population is instructed to take along such equipment when leaving the cities. Urban organizations may also store such equipment in the exurban areas to be issued to their employees in time of crisis or following their relocation. It is likely, however, that a portion of the evacuees will not have individual means of protection. Consequently, the authorities of the hosting areas are expected to prepare and stock at least gauze masks and other simple protective devices, if not gas masks and protective clothes.[93/]

If such protective devices are not stocked in advance, the authorities must organize their production with the help of the local population and the evacuees themselves.

More important for the protection of the relocated and local population are anti-radiation shelters. Surveys of existing facilities which can be adapted for this purpose are conducted in peacetime and serve to determine requirements for the construction of additional shelters and for resources and investments needed for this purpose. First preference is given to sheltering people in existing basements and detached cellars, and where they exist, in nearby caves, mines and other underground spaces. If there is insufficient space in the existing facilities to shelter the local residents and evacuees, additional anti-radiation shelters will be built, i.e., dugouts, bunkers, covered trenches, etc.[94/] Planning and implementation of shelter construction will be the responsibility of the deputy chiefs of civil defense for engineering and technical matters and/or the chiefs of the civil defense Engineering Services of the rayons, settlements and collective and state farms.[95/] In principle, the hosting rayons and localities should stock the necessary construction materials in advance.[96/] As much as possible, the construction of detached shelters will be carried out with the help of mechanized equipment (bulldozers, excavators, cranes, etc.) already present in the rural areas, as well as those evacuated there by the urban construction organizations for use by the civil defense engineering formations.

As far as possible, the adaptation of existing basements and detached cellars for use as anti-radiation shelters in the hosting area should be implemented already in peacetime.[97/] In doing so, the local residents are told to take into account the requirement to provide shelter spaces for the urban evacuees who will be housed with them.[98/] However, even if basement shelters have been adapted in advance—and this does not appear to be a uniform practice by any means—they still will have to be brought to a state of readiness, i.e., cleared of things

stored in them, checked, possibly improved, equipped with sitting and sleeping accommodations, stocked with food and water, etc. If there is insufficient space in existing basement shelters, cellars, etc., and additional rapidly-erectable anti-radiation shelters will have to be built for the urban evacuees, it may not be practical to do so in advance because such shelters tend to deteriorate with time. According to Soviet plans, therefore, such shelters will be built in time of a threat of an attack, either by the local residents before the start of crisis relocation or by the evacuees themselves following their arrival in the hosting areas. This will be done under the direction of the local civil defense staffs and engineering services.[99/]

The time required for the construction of anti-radiation shelters will depend on the number of shelters to be built in each hosting locality, the availability of mechanized equipment, power tools and construction materials, the character of the soil and weather conditions. Evacuees housed in childrens' summer camps, tourist facilities, or in poorly developed rural areas may be especially in need of hastily-erected detached shelters. In the absence of hosting settlements, dugouts can also serve as housing for the evacuees.

According to a hypothetical schedule published in a 1970 Soviet civil defense manual, 72 hours would be allocated to the construction and preparation of anti-radiation shelters for the relocated population.[100/] The same schedule also allowed 72 hours for the implementation of the relocation. Whether these two periods were expected to coincide was not made clear. It is apparent, however, that unless the shelters have been built in advance, the evacuees who will arrive in the hosting areas on the first day of the relocation may not have sufficient ready shelter spaces to accommodate all of them for the first 24 to 72 hours. It is possible that this lag in shelter availability will be reduced for evacuees arriving on the second or third day of the relocation if the shelter construction initiated with the start of the relocation is on a scale designed to accommodate all evacuees assigned to a given hosting

area. However, if each arriving group of evacuees builds only sufficient shelter spaces for its own use, then shelter construction to accommodate all evacuees could become more protracted. In particular, this may be the case of evacuees who have left the cities on foot and are waiting for transportation at the intermediate evacuation points. It is possible, therefore, that the provision of all evacuees with spaces in anti-radiation shelters may extend three or more days beyond the completion of the departure of the urban population from the cities.

According to plans, all anti-radiation shelters should be equipped and stocked to make possible several days of continuous occupancy by the shelterees. It is uncertain, however, how well the shelters built by and for the evacuees will be stocked with food, water and other necessities. In the case of basement shelters in private homes or privately-owned cellars, the burden of such stocking apparently will fall on their owners. In the case of other shelters, their stocking and equipping will be the responsibility of the local civil defense staffs and retail trade organizations. It is uncertain whether, in all cases, there would be in the hosting localities sufficient containers for storing drinking water in the shelters, bucket toilets, stoves, flashlights and candles, and other essential supplies.[101/]

Another element of the protection of the relocated population will be a system of monitoring the movement of radioactive clouds, timely warning of the danger of radioactive fallout, and the monitoring of radiation levels and chemical contamination. This is carried out by the Anti-Radiation and Anti-Chemical Service of the republic, oblast, urban and rural civil defense forces in conjunction with military civil defense units. The monitoring is done on the ground by observation posts established in the urban and rural areas and by aircraft and helicopters for tracking the movement of the clouds and measuring radiation levels.[102/] On the basis of this information, the oblast and urban civil defense staffs warn the rural rayon civil defense staffs of the threat of radioactive or chemical contamination,

and the latter alerts the local staffs, and through them, the population. Local monitoring of radiation levels will be carried out by posts of the Anti-Radiation and Anti-Chemical Service and civil defense reconnaissance teams equipped with dosemeters, radiation meters, etc. The Anti-Radiation and Anti-Chemical Service and its formations will also direct and carry out the decontamination of equipment, vehicles and, if necessary, personnel.[103/] For the latter, use will be made of available public and private shower-bath facilities and, if necessary, of mobile shower units.

8.7 CONTROL IN THE HOSTING AREAS

As was noted, evacuees will be prohibited from leaving their assigned hosting areas without permission or changing residences within the hosting localities without the approval of the local authorities. No doubt a primary form of control over the population will be the threat of denial of housing, food and other supplies to persons acting in an unauthorized manner. In addition, there is the threat that persons violating orders and discipline may be charged with various crimes, including violation of the statutes on the citizens' duties and obligations in the USSR Constitution, sabotage of the war effort, and treason. The latter two may apply in particular to essential workers and employees who may refuse to go to work at the essential enterprises and installations in the cities or other potential targets for enemy strikes. These essential workers would also be strictly prohibited from attempting to leave the essential organization in which they are employed. For all practical purposes, essential workers and employees would be frozen in their jobs for the duration of the crisis or war. The same will be true for evacuees employed in agriculture, unless they are released from such work in order to be employed by more essential enterprises or services which are in need of their special qualifications or of additional manpower.

Implementation of control over the evacuees will be carried out by several agencies. First, it will be the responsibility of the rural soviets, civil defense chiefs and staffs and public order and safety service, along with the local communist party organizations. Second,

especially in the case of essential workers and employees, direct control will be exercised by the essential enterprises', installations', organizations', and services' managements, civil defense staffs, party organizations and public order and safety service formations present in the dispersal area. In the event of a serious breakdown of discipline, the local authorities could call on military police, KGB security troops, and so on.

Soviet manuals do not make entirely clear what the order of authority will be once crisis relocation is carried out. It is evident that the urban civil defense staffs, services and formations will not become subordinated to or controlled by the rural civil defense chiefs and staffs. Similarly, from the viewpoint of their activities, the essential workers and employees will remain under the control of the managements of the urban enterprises, installations, organizations, and services which employ them. Presumably, therefore, the rural authorities will have control over evacuees only in those spheres of activity for which they are specifically responsible, and most fully over the non-working elements of the evacuated urban population. Even so, those elements may be under partial control of the relocated urban soviets and their executive committees and party organizations. In the Soviet system, the urban administrative and party organizations tend to carry more weight than rural ones, and even in a crisis relocation posture, it is unlikely that the former would be subordinated to the latter. Consequently, control over the evacuees apparently will tend to be divided among rural and relocated urban authorities. Coordination and resolution of conflicts will be exercised by higher authorities, probably by the oblast (republic) and sectorial civil defense chiefs and staffs, and the oblast executive committees and republic councils of ministers. Finally, in wartime, especially under post-strike conditions, the military authorities are likely to have considerable say in setting repair, restoration and production priorities and generating demands for the allocation of evacuees to work on urgent projects. Furthermore, if conditions permit, the relocated urban military commissariats will continue

the activities in implementing the call-up of evacuees for military service.

Conceptually and organizationally, Soviet plans appear to provide for the efficient and well-organized reception, housing, protection and support of urban evacuees in the hosting areas. This is facilitated by compulsory and active participation in the plans and their implementation by all appropriate administrative, economic, public and personal service organizations and agencies, as well as the residents of the hosting areas. In theory, once the relocation and resettlement are completed, the crisis relocation posture could be maintained for a protracted and, if food is available, for an indefinite period of time, while the evacuees either work in essential enterprises or in the local economy.

In practice, living conditions in the hosting areas will probably be austere. They will depend on the rural areas' infrastructure and, in particular, on the availability of food, water, medical supplies, food processing and preparation capacities, and construction materials. The availability of food will depend on the size of local stocks and reserves, the efficient functioning of the country's or regional redistribution system of food supplies, and ultimately on the uncertain ability of agriculture to maintain sufficient food production following an enemy attack. In the matter of water supply and food processing and preparation facilities (for example, bakeries), the development of capacities to meet the needs of urban evacuees is time-consuming and would have to be carried out already in peacetime. The extent to which rural localities are willing to invest resources in such additional capacities is uncertain. In principle, they should receive financial and technical assistance from the urban organizations assigned to be relocated to given localities.[104/] The extent to which this is practiced is unknown.

Finally, although the medical facilities and services in the rural areas will be markedly expanded by the relocation of urban medical organizations to the exurban areas, the extent to which these facilities

and available medical supplies and stocks (including those relocated from the cities) will be able to meet the needs of the evacuees, in addition to the treatment of casualties, is also uncertain. The best one can say in this regard is that the compulsory integration of all medical facilities and personnel into the civil defense system and the deployment of urban medical organizations in the rural areas create favorable conditions for the best possible medical service to the population under war conditions.

Section 8

FOOTNOTES

1. N.I. Akimov and V.G. Il'in, Grazhdanskaya Oborona na Obektakh Sel'skokhozyaystvennogo Proizvodstva (Civil Defense and Installations of Agricultural Production), (Moscow: Kolos, 1973), p. 141; Civil Defense Staff of the Lithuanian SSR, Uchebno-Metodicheskoye Posobiye dlya Podgotovke Naseleniya k Grazhdanskoy Oborone (Instruction-Methodological Manual for the Training of the Population in Civil Defense), (Vilnus: Mintis, 1967), p. 71; P.T. Egorov, I.A. Shlyakhov and N.I. Alabin, Grazhdanskaya Oborona (Civil Defense), 2nd edition, (Moscow: Vysshaya Shkola, 1970), p. 110.

2. Civil Defense Staff of the Lithuanian SSR, op. cit., p. 71; Egorov, et. al., op. cit., p. 112.

3. M.N. Titov, P.T. Egorov and B.A. Gayko, Grazhdanskaya Oborona (Civil Defense), (Moscow: Vysshaya Shkola, 1974), p. 46. See also, Egorov, et. al., op. cit., p. 110; P.T. Egorov, I.A. Shlyakhov and N.I. Alabin, Grazhdanskaya Oborona, 3rd edition, (Moscow: Vysshaya Shkola, 1977), p. 82.

4. Egorov et. al., op. cit., 3rd edition, p. 84; Civil Defense Staff of the Lithuanian SSR, op. cit., p. 72; Akimov and Il'in, op. cit., p. 141.

5. Titov et. al., op. cit., p. 46; Akimov and Il'in, op. cit., p. 141; Army General A.T. Altunin, editor, Grazhdanskaya Oborona, (Moscow: Voyenizdat, 1980), p. 46; Egorov et. al., op. cit., 3rd edition, pp. 84, 192; L. Goure, Soviet Post-Strike Civil Defense Rescue, Damage-Limiting, Repair and Restoration Operations, (McLean, VA: Science Applications, Inc., August 1982), Final Report prepared for the Federal Emergency Management Agency under Contract No. EMW-C-0571, pp. 63-65, 75.

6. Egorov et. al., op. cit., 3rd edition, p. 84; Altunin, op. cit., p. 46.

7. N.I. Akimov, M.L. Vasilevskiy, I.D. Makarov, L.P. Rusman and M.P. Umnov, Grazhdanskaya Oborona, (Moscow: Kolos, 1969), p. 63.

8. Colonel Iskender on Radio Baku, July 31, 1967.

9. Lieutenant Colonel V. Kurochkin, "Taking the Peculiarities of the Installation Into Account," Voyennyye Znaniya (Military Knowledge), No. 9, September 1971, p. 22.

10. Ibid.

11. Egorov et. al., op. cit., 3rd edition, p. 84; N.I. Akimov and V.G. Il'in, Grazhdanskaya Oborona na Obektakh Sel'skokhozyaystvennogo Proizvodstva, 2nd edition, (Moscow: Kolos, 1978), p. 100.

12. Egorov et. al., op. cit., 3rd edition, p. 84; Akimov and Il'in, op. cit., 2nd edition, p. 102; F. Kurbatov, "For the Purpose of Protection," Voyennyye Znaniya, No. 4, April 1971, p. 20.

13. Altunin, op. cit., p. 46.

14. Egorov et. al., op. cit., 3rd edition, p. 84; Akimov and Il'in, op. cit., 2nd edition, p. 102; Kurbatov, op. cit.

15. Egorov et. al., op. cit., 2nd edition, p. 114.

16. Altunin, op. cit., p. 46; Egorov et. al., op. cit., 3rd edition, p. 85; Akimov and Il'in, op. cit., 2nd edition, p. 102.

17. USSR Central Statistical Administration, Itogi Vsesoyuznoy Perepisi Naseleniya 1970 goda (Results of the All-Union Population Census of 1970), Vol. 1, (Moscow: Statistika, 1972), p. 146.

18. Ibid.

19. Ibid.; M. Strongina, "The Development and Control of the Resettlement System," Voprosy Ekonomiki (Question of Economics), No. 12, December 1978, p. 61; Judith Pallot, "Rural Settlement Planning in the USSR," Soviet Studies, (Glasgow), No. 2, April 1979, pp. 214-230.

20. Lieutenant General D.A. Krutskikh, editor, Uchebno-Metodicheskoye Posobiye po Podgotovke Rukovodyashchego i Komandno-Nachal'stvuyushchego Sostava Grazhdanskoy Oborony (Instruction-Methodological Manual for the Training of Chiefs and Command-Leadership Elements of Civil Defense), (Moscow: Voyenizdat, 1978), p. 22.

21. For example, see Egorov et. al., op. cit., 3rd edition, pp. 84, 86.

22. Ibid., p. 90; Civil Defense Staff of the Lithuanian SSR, op. cit., pp. 78-79; Akimov, Vasilevskiy et. al., op. cit., p. 66; Akimov and Il'in, op. cit., 1st edition, p. 152; L. Antipov, "Evacuation and Dispersal," Voyennyye Znaniya, No. 7, July 1982, p. 32.

23. Colonel N. Bykov and Lieutenant Colonel P. Shipilin, "Planning by a Rural Soviet," Voyennyye Znaniya, No. 6, June 1976, p. 25; Colonel N. Zvyagin, "Staff Drill in a Rayon," Voyennyye Znaniya, No. 5, May 1976, pp. 31-32; Akimov and Il'in, op. cit., 1st edition, pp. 21, 26.

24. Bykov and Shipilin, op. cit.; Akimov and Il'in, op. cit., 1st edition, pp. 21-26; B. Morkovkin, Grazhdanskaya Oborona na Sele (Civil Defense in the Village), (Moscow: DOSAAF, 1968), p. 9.

25. Akimov and Il'in, op. cit., 2nd edition, p. 107; Egorov et. al., op. cit., 3rd edition, p. 90.

26. Akimov and Il'in, op. cit., 2nd edition, p. 107.

27. Ibid.; Egorov et. al., op. cit., 3rd edition, p. 90; Zvyagin, op. cit., pp. 31-32; Civil Defense Staff of the Lithuanian SSR, op. cit., p. 79; Antipov, op. cit.

28. Akimov and Il'in, op. cit., 2nd edition, p. 107; Egorov et. al., op. cit., p. 90; Zvyagin, op. cit., pp. 31-32.

29. Akimov and Il'in, op. cit., 2nd edition, p. 107.

30. Ibid., pp. 107-108; Akimov, Vasilevskiy et. al., op. cit., p. 74.

31. Civil Defense Staff of the Lithuanian SSR, op. cit., p. 79; Egorov et. al., op. cit., 3rd edition, p. 90; Zvyagin, op. cit., pp. 31-32; Akimov and Il'in, op. cit., 1st edition, pp. 304-308.

32. Akimov and Il'in, op. cit., 1st edition, p. 305.

33. Ibid., p. 306.

34. Egorov et. al., op. cit., 3rd edition, p. 288.

35. Akimov and Il'in, op. cit., 1st edition, p. 308. A Soviet collective or state farm may encompass a number of settlements and actual farms.

36. Egorov, et. al., op. cit., 3rd edition, p. 90; Altunin, op. cit., p. 46; Akimov and Il'in, op. cit., 2nd edition, p. 108; Akimov and Il'in, op. cit., 1st edition, p. 153; Antipov, op. cit.; N.P. Olovyanishnikov, editor, Grazhdanskaya Oborona, 2nd edition, (Moscow: Vysshaya Shkola, 1979), p. 48.

37. Akimov and Il'in, op. cit., 2nd edition, p. 108; Altunin, op. cit., p. 46; Egorov et. al., op. cit., 3rd edition, p. 90.

38. Civil Defense Staff of the Lithuanian SSR, op. cit., p. 81.

39. Akimov and Il'in, op. cit., 1st edition, p. 153, and 2nd edition, pp. 106-107; Akimov, Vasilevskiy et. al., op. cit., pp. 67-68.

40. Akimov, Vasilevskiy, et. al., op. cit., p. 67.

41. Akimov and Il'in, op. cit., 2nd edition, p. 108.

42. Lieutenant General A.M. Popov, editor, Nachal'naya Voyennaya Podgotovka (Initial Military Training), 3rd edition, (Moscow: DOSAAF, 1980), p. 269.

43. Akimov, Vasilevskiy et. al., op. cit., p. 75.

44. Ibid.

45. Ibid., p. 75.

46. Akimov and Il'in, op. cit., 2nd edition, p. 109; Akimov, Vasilevskiy et. al., op. cit., p. 76.

47. For example, see A.A. Gromov and N.P. Krechetnikov, Grazhdanskaya Oborona Promyshlennogo Obekta (Civil Defense at an Industrial Enterprise), 2nd edition, (Moscow: Atomizdat, 1975), p. 70.

48. Akimov, Vasilevskiy et. al., op. cit., p. 75.

49. Akimov and Il'in, op. cit., 2nd edition, p. 109.

50. Ibid.

51. Ibid., p. 108; Egorov et. al., op. cit., 3rd edition, pp. 90, 94.

52. Egorov et. al., op. cit., 3rd edition, p. 94.

53. USSR Central Statistical Administration, Narodnoye Khozyaystvo SSSR v 1980 godu (USSR National Economy in 1980), (Moscow: Finansy i Statistika, 1981), p. 217.

54. Ibid., p. 215. At the end of 1981, the rural areas have 2,595,200 tractors, Vestnik Statistiki (Statistical Herald), No. 7, July 1982, p. 74.

55. Narodnoye Khozyaystvo SSSR v 1980 godu, p. 172. Annual trailer production for the period 1970-1980 was in the range of 290,000 to 312,000.

56. N. Dolgin, "The Contribution of Civil Defense," Voyennyye Znaniya, No. 12, December 1982, p. 12.

57. Ibid.

58. For example, see Zvyagin, op. cit., pp. 31-32.

59. Altunin, op. cit., p. 50; "Dispersal and Evacuation," Voyennyye Znaniya, No. 2, February 1980, p. 14; Antipov, op. cit.

60. Egorov et. al., op. cit., 2nd edition, p. 121. See also, op. cit., 3rd edition, p. 288.

61. Krutskikh, op. cit., p. 22.

62. Egorov et. al., op. cit., 2nd edition, p. 121; N. Zvyagin, "Planning by the Rural Staff," Voyennyye Znaniya, No. 9, September 1970, p. 20; Civil Defense Staff of the Lithuanian SSR, op. cit., p. 84.

63. Vestnik Statistiki, No. 10, October 1982, p. 67.

64. Narodnoye Khozyaystvo SSSR v 1980 godu, pp. 12-17.

65. Egorov et. al., op. cit., 3rd edition, p. 85; Akimov and Il'in, op. cit., 1st edition, p. 142; Antipov, op. cit.

66. Egorov et. al., op. cit., 3rd edition, p. 85; Antipov, op. cit.; Akimov and Il'in, op. cit., 1st edition, p. 142; Krutskikh, op. cit., pp. 22-23.

67. Civil Defense Staff of the Lithuanian SSR, op. cit., p. 84.

68. "Dispersal and Evacuation," op. cit.; Colonel Yu. Yakovenko, "In a Complex Situation," Voyennyye Znaniya, No. 4, April 1975, p. 31; Colonel A. Zaytsev, "For Those Who Teach: An Important Method of Protection," Voyennyye Znaniya, No. 8, August 1978, p. 28; Antipov, op. cit.; "Dispersal and Evacuation," Voyennyye Znaniya, No. 4, April 1983, p. 17.

69. Gromov and Krechetnikov, op. cit., p. 70; N.P. Krechetnikov and N.P. Olovyanishnikov, Grazhdanskaya Oborona na Mashino-Stroitel'nykh Predpriyatiyakh (*Civil Defense at Machine-Building Enterprises*), 2nd edition, (Moscow: Mashinostroyeniye, 1972), p. 61; L. Goure, War Survival in Soviet Strategy: USSR Civil Defense, (Washington, D.C.: Advanced International Studies Institute, 1976), pp. 105-119.

70. Akimov and Il'in, op. cit., 2nd edition, p. 109; Civil Defense Staff of the Lithuanian SSR, op. cit., pp. 84-85.

71. Zaytsev, op. cit., Akimov and Il'in, op. cit., 2nd edition, p. 109.

72. Director of Central Intelligence, Soviet Civil Defense, NI78-10003, July 1978, p. 10.

73. Ibid.; Akimov and Il'in, op. cit., 1st edition, p. 15; Egorov et. al., op. cit., 3rd edition, p. 11; Major Generals V.D. Volkogonov, A.S. Milovidov and S.A. Tyushkevich, Voyna i Armiya (War and the Army), (Moscow: Voyenizdat, 1977), p. 190; Army General E.E. Mal'tsev, *editor*, KPSS—Organizator Zashchity Sotsialisticheskogo Otechestva (CPSU—Organizer of the Defense of the Socialist Fatherland), 2nd edition, (Moscow: Voyenizdat, 1977), p. 331.

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75. Ibid., p. 95 and 2nd edition, op. cit., p. 126; Civil Defense Staff of the Lithuanian SSR, op. cit., p. 85.

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77. Akimov and Il'in, op. cit., 2nd edition, p. 109; Egorov et. al., op. cit., 3rd edition, p. 95.

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81. Civil Defense Staff of the Lithuanian SSR, op. cit., p. 85.

82. Egorov et. al., op. cit., 3rd edition, pp. 95-96, 183.

83. Vestnik Statistiki, No. 6, June 1982, p. 75; Narodnoye Khozyaystvo SSSR v 1980 godu, p. 440.

84. Altunin, op. cit., p. 51; Zaytsev, op. cit.

85. Akimov, Vasilevskiy et. al., op. cit., p. 76; Egorov et. al., op. cit., 3rd edition, p. 95; Akimov and Il'in, op. cit., 2nd edition, p. 109.

86. Krechetnikov and Olovyanishnikov, op. cit., p. 61; Egorov et. al., op. cit., 3rd edition, p. 96.

87. Akimov and Il'in, op. cit., 2nd edition, p. 110; Altunin, op. cit., p. 47; Egorov et. al., op. cit., 3rd edition, p. 96.

88. Egorov et. al., op. cit., 3rd edition, p. 96; Akimov and Il'in, op. cit., 2nd edition p. 110.

89. Akimov and Il'in, op. cit., 2nd edition p. 110.

90. Egorov et. al., op. cit., 2nd edition, p. 127 and 3rd edition, op. cit., p. 96.

91. Akimov and Il'in, op. cit., 2nd edition, p. 110.

92. Ibid. and 1st edition, op. cit., p. 157; Altunin, op. cit., p. 47; Zaytsev, op. cit.

93. Akimov and Il'in, op. cit., 2nd edition, p. 109; Zaytsev, op. cit., Civil Defense Staff of the Lithuanian SSR, op. cit., p. 79; Altunin, op. cit., p. 47.

94. See L. Goure, Shelters in Soviet War Survival Strategy, (Washington, D.C.: Advanced International Studies Institute, 1978), passim; Egorov et. al., op. cit., 3rd edition, pp. 70-77; Akimov and Il'in, op. cit., 2nd edition, pp. 87-98.

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99. Altunin, op. cit., pp. 47, 50; Akimov and Il'in, op. cit., 1st edition, p. 156 and 2nd edition, op. cit., p. 109.

100. Egorov et. al., op. cit., 2nd edition, p. 523.

101. See L. Goure, The Role and Capabilities of Rural Areas in Soviet Civil Defense, (Washington, D.C.: Advanced International Studies Institute, April 1981), Final Report prepared for the Defense Nuclear Agency under Contract No. DNA-001-79-C-0407, pp. 106-111.

102. Egorov, et. al., op. cit., 3rd edition, pp. 97, 194; Akimov and Il'in, op. cit., 2nd edition, pp. 237, 254-256; Olovyanishnikov, op. cit., pp. 94-96; Titov et. al., op. cit., pp. 110-111; A. Safronov, "A Helicopter on Reconnaissance," Voyennyye Znaniya, No. 11, November 1971, p. 19; F. Korol'kov, "An Effective Farm," Voyennyye Znaniya, No. 9, September 1980, p. 19.

103. See Goure, Soviet Post-Strike Civil Defense Rescue, Damage-Limiting, Repair and Restoration Operations, pp. 129-135.

104. Krechetnikov and Olovyanishnikov, op. cit., p. 61; M. Muradyan, "Organization is the Main Thing," Kommunist (Yerevan) September 23, 1979; Goure, War Survival in Soviet Strategy, p. 110.

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Section 9

THE ROLE OF THE MILITARY IN CRISIS RELOCATION

According to Soviet concepts, civil defense is an integral part of the Soviet Union's defense posture and an important element of its warfighting capability and strategy. The objectives of USSR Civil Defense are not only humanitarian—that is, mitigation of human losses, or the survival of the nation and the state, but also the preservation of a functioning logistic base for sustaining the operations of the armed forces and the attainment of military superiority over immediate and potential enemies in the course of the war and following its termination.[1/] Indeed, Soviet military spokesmen have repeatedly pointed out the direct connection between civil defense, the maintenance of an effective war effort and a favorable war outcome.[2/]

It is logical, therefore, for USSR Civil Defense to be under military control. Furthermore, as the present chief of USSR Civil Defense, Army General A. T. Altunin, has pointed out,

> *While solving a wide range of tasks for strengthening the defense capability of the Soviet state, civil defense has numerous points of contact with the armed forces. Moreover, in the post-war years, experience with the solution of these tasks leads to the conclusion that in modern conditions, successful actions of civil defense are impossible without the active participation in its affairs, without the leadership and assistance of organs of military command. Daily attention is paid to civil defense by the leadership of the Ministry of Defense, the General Staff of the Armed Forces, the military councils of military districts, and fleets, commanders, political organs and staffs.*[3/]

Altunin went on to note that "close cooperation between the Armed Forces and civil defense of the country...has become a firmly established tradition."

> *It cannot be otherwise. In the event of war, the armed forces, while rebuffing the enemy's attack,*

> *will provide civil defense with comprehensive assistance in the implementation of its measures, especially in the liquidation of the consequences of the enemy's attack. In their turn, civil defense units and formations will solve a number of responsible tasks in the interest of the armed forces.*[4]

One area of cooperation and joint action by military forces, especially the civil defense troops and civil defense, is in post-strike rescue, damage-limiting, repair and restoration operations in zones of nuclear damage. "Liquidation" of the consequences of an enemy strike is the primary mission of the civil defense troops and of the majority of civilian civil defense formations. Soviet publications also note that civilian civil defense formations will work on repair and restoration of damaged rail lines, bridges and highways in order to assist the movement of troops and supplies.[5] The military may dedicate aircraft and helicopters for tracking and monitoring the movement of radioactive clouds and may assist civil defense in maintaining communications.[6]

The role of the military in crisis relocation is usually not specifically discussed in Soviet civil defense publications. In one sense, it can be said that the military will interfere with or hinder crisis relocation. This will be so because troop movements and military logistic operations will make use of rail lines and roads also needed for the relocation of the urban population. Such interference will probably be less severe if the redeployment of the armed forces takes place prior to the start of crisis relocation, but it may become a significant factor if the redeployment takes place simultaneously with crisis relocation. Similarly, the movement of reservists called up for military service, if it coincides with the relocation, will also interfere with the transportation of urban evacuees. Thus, careful planning and coordination of military and relocation movement schedules will be necessary to avoid serious disruptions in the flow of transportation and the rate of departure of urban evacuees.[7] Furthermore, as was noted, it is possible that some mechanized equipment and vehicles belonging to civilian organizations in the cities and rural areas may be requisitioned by the military

in the course of the mobilization of the armed forces. In addition, a high percentage of vehicle drivers and operators of mechanized equipment are likely to be called up for military service.

Even so, the civil defense troops and other types of military units may also assist in the implementation of crisis relocation. According to some Soviet sources, this assistance may take various forms. One of these would be the establishment of a joint military-civil defense system of traffic control and of military assistance in the deployment of an effective communications net during the relocation, as well as military aid in road maintenance, improvement and construction to facilitate the flow of traffic to the hosting areas.[8/] The military may assist the civil defense public order and safety service and formations in the maintenance of order during the relocation and in the hosting areas.[9/] Military engineers may assist civil defense in the construction of shelters, water sources and reservoirs, as well as protected storage facilities for stocks of food, medical supplies, fuel and other basic necessities in the host areas.[10/] In an emergency, military units and equipment may be used to supply power to hospitals, bakeries and communication centers in the hosting areas, and the armed forces may provide medical assistance to the civilian population and allow it to use some of the military hospitals for the treatment of civilian casualties.[11/] It is also suggested that military transport aircraft may be used to deliver supplies of food, medicine and so on to the population in areas which have been isolated or damaged by enemy nuclear strikes.[12/] In an emergency, military units may provide field kitchens and bakeries, assist in water purification and distribution, and the construction of sanitation facilities in the hosting areas, as well as help in decontamination operations.

It is pointed out that the assistance of the armed forces will be especially desirable during the preparation of the hosting areas for receiving urban evacuees because "in rural areas, considerable effort is required for implementing a number of the preparatory measures."[13/] It is also suggested that the military could assist in implementing such

measures (road construction, construction of shelters, water reservoirs, storage facilities, etc.) during peacetime troop combat training and exercises.[14/]

Soviet publications do not indicate how extensive military assistance is likely to be during crisis relocation. There is no indication of how much of this assistance is planned in advance in peacetime or how much reliance is placed on it by the urban and rural rayon civil defense chiefs and staffs. It is also not known to what extent the military actually assists in peacetime in improving the capabilities of hosting areas.

In all probability, however, the extent of assistance by the armed forces to civil defense during crisis relocation will depend on circumstances. The armed forces will be in a better position to render such assistance in a protracted pre-attack crisis during which the mobilization and deployment of the armed forces has been largely completed than in the case when military mobilization and deployment coincides with the initiation of crisis relocation. This will be so because, in addition to the civil defense troops, the military units which will be used to assist civil defense will be made up primarily of reserve and rear echelon units "which are not actively engaged in combat missions."[15/] Also involved would be the personnel of military academies and schools.[16/] Thus, in the event of a sudden threat of attack and simultaneous mobilization and crisis relocation, the reserve and rear echelon units will be engaged in dispersing, absorbing reservists, acquiring equipment and so on, while the civil defense troops, in addition to expanding their size, will be moving into position to carry out their primary mission. Consequently, it is doubtful that in such a situation the armed forces will be able to render significant assistance to the implementation of the relocation of the urban population. Furthermore, the disposition of military units would probably make across-the-board assistance to the hosting localities impractical except under conditions of a protracted crisis. Finally, it is likely that in any event, such assistance will tend to be rendered on a priority basis which will favor the "essential" or "valuable" elements of the relocated population.

Section 9

FOOTNOTES

1. See Director of Central Intelligence, Soviet Civil Defense, NI78-10003, July 1978, p. 1; L. Goure, War Survival in Soviet Strategy—USSR Civil Defense, (Washington, D.C.: Advanced International Studies Institute, 1976), pp. 47-57.

2. For example, see Colonel General A.T. Altunin, "The Main Direction," Voyennyye Znaniya (Military Knowledge), No. 12, December 1973, pp. 4-5, and in "Humanitarian Aims, Responsible Tasks," Agitator Armiy i Flota (Agitator of the Army and Navy), No. 3, February 1980, p. 8; Marshal of the Soviet Union A.A. Grechko, Vooruzhennye Sily Sovetskago Gosudarstva (Armed Forces of the Soviet State), 2nd edition, (Moscow: Voyenizdat, 1975), p. 114.

3. Army General A.T. Altunin, "Civil Defense Today," in Lyudi i Dela Grazhdanskoy Oborony (Peoples and Affairs of Civil Defense), (Moscow: Voyenizdat, 1974), p. 14.

4. Ibid., p. 15.

5. Colonel General of Aviation O. Tolstikov, "Civil Defense in a Nuclear Rocket War," Voyennaya Mysl' (Military Thought), No. 1, January 1964, translated in FDD No. 939, August 4, 1965, p. 36; Lieutenant Colonel Ye. Galitskiy, "The Coordination of Civil Defense with Units of the Armed Forces," Voyennaya Mysl', No. 4, April 1968, translated in FPD No. 0052/69, May 27, 1969, p. 47.

6. Tolstikov, op. cit., p. 36; Galitskiy, op. cit., pp. 47, 51.

7. Galitskiy, op. cit., pp. 48-49.

8. Ibid., pp. 49, 50.

9. Ibid., p. 52

10. Ibid., pp. 50-51.

11. Ibid.

12. Tolstikov, op. cit., p. 37.

13. Galitskiy, op. cit., pp. 49-50.

14. Ibid., p. 50.

15. Ibid., p. 49.

16. N.I. Akimov and V.G. Il'in, Grazhdanskaya Oborona na Obektakh Sel'skokhozyaystvennogo Proizvodstva (Civil Defense at Installations of Agricultural Production), (Moscow: Kolos, 1973), p. 19.

Section 10

CRISIS RELOCATION TRAINING EXERCISES

Soviet civil defense leaders recognize that civil defense organizations and plans—including crisis relocation—must be tested in exercises in order to ensure their effectiveness. Crisis relocation exercises not only serve to train the civil defense organizations and population, but also test the realism of relocation plans, movement schedules, the readiness of hosting areas to receive evacuees, and so on. There are, however, inherent limitations on the scale of peacetime relocation exercises. These limitations arise as a result of financial and economic cost considerations, the potential adverse effects of such exercises on public morale and attitudes, and the possibility that they may cause dangerous misunderstandings and alarm abroad. Consequently, the Soviet civil defense leadership finds it more practical to conduct crisis relocation exercises on a scale which minimizes their cost and potential adverse effects and yet, it is hoped, serve to accomplish useful test and training objectives.

As was noted (see Section 6), the time devoted in the compulsory civil defense course for the general population to instruction in crisis relocation procedures is one hour. This is also the case in the new instruction course initiated in 1983. The new course recommends, however, that the instruction should be given at the SEPs in order to familiarize the trainees with their locations, organization, and procedures.[1/] The main focus of instruction is on warning procedures, how people should prepare for their departure, and how they should behave at the SEPs and during their move to the hosting areas.

Given the total dependence of the urban population on the civil defense organizations and services for executing crisis relocation, the main purpose of crisis relocation exercises is less intended to instruct

the general population than to provide practical training for civil defense leaders, staffs, organizations, and services responsible for crisis relocation and to test their plans, schedules, and capabilities. Of course, in the course of the exercises, the elements of the population participating in them also gain experience and learn how to behave and what to expect. Indeed, the introduction of the combined method of relocation has increased the importance of testing relocation on foot and training those elements of the population which will depart in this manner.

The following text provides an examination of the types and content of various exercises prescribed in the Soviet civil defense program and how they are conducted in practice. In addition, the extent of preparations of hosting areas will be discussed.

10.1 TYPES OF EXERCISES

Although formal instruction of the general population in crisis relocation is limited in terms of time devoted to it, this does not mean that the Soviet authorities do not believe it to be important. It is part of a general message to the population to the effect that there exists effective protection against nuclear weapons and that the authorities will provide such protection and take care of people. It is believed that this sort of message, along with instructions on what to do and how to behave will serve to prevent panic in the event of an announcement of a "threatening situation" and the initiation of crisis relocation. For example, Soviet civil defense spokesmen assert that,

> *It is obvious that panic could be avoided if people are acquainted beforehand in the evacuation procedures and the living conditions in the hosting areas, and if they are taught to observe specific rules of behavior and are convinced that fallout covers and shelters are provided in the exurban locations.*[2/]

As has been noted, in practice the amount of specific information on crisis relocation given to the population varies. In some cases,

elements of the urban population are only told in general terms about the organization and procedures of crisis relocation. In other instances, especially in the case of "essential workers," they may be informed about the location of their hosting areas, what means of transportation they may use and even in which homes in the rural areas the individual worker or employee and members of his family will be housed.[3/] This instruction, however, is distinct from practical training in crisis relocation. Such training is additional to the standard annual 20-hour civil defense instruction course. In practice, crisis relocation exercises involving elements of the population may differ in scope and may be held either specifically for this purpose or as a part of a more comprehensive civil defense exercise.

In the Soviet civil defense program there are a number of types of prescribed exercises which differ in their scope, degrees of comprehensiveness and serve a number of purposes. Essentially, they can be reduced to three basic types:

- SPECIAL-TACTICAL EXERCISES[4/]

Special-tactical exercises are primarily carried out to train the leaders and personnel of civil defense formations to perform their specific missions. They may involve only one type of formation or combine several types which are required to deal with a given technical-tactical problem. They may also include demonstration exercises for representatives of various staffs and service chiefs or serve to test the use of new equipment. The special-tactical exercises apply to crisis relocation only insofar as they exercise those types of civil defense organizations and formations which perform various tasks in support of crisis relocation. In particular, this applies to the transportation services and formations which may practice the adaptation of vehicles, railroad cars or ships for the transportation of evacuees; traveling in convoys; actions in zones of radioactive contamination; etc. The food and clothing supply formations may practice deployment in the exurban areas and operations under field conditions; medical formations may set

up medical aid points; and the public order and safety formations may practice security measures and traffic control.

- COMMAND-STAFF EXERCISES[5/]

Command-Staff exercises serve to train civil defense chiefs and staffs as well as leaders of services and formations, evacuation commissions and evacuation reception commissions. These exercises may be conducted in various ways, some of them including the participation of small civil defense units. These exercises also serve to test the coherence of the plans, the realism of schedules, and the state of readiness of civil defense staffs and services, as well as to solve planning, organizational and operational problems. Exercises of this type are held at all levels. They may be ordered by higher staffs or by the chiefs of civil defense at a given level. The format of such exercises varies. They may be held in the form of seminars, sand-table exercises, command post exercises, or they may involve some elements of civil defense formations. The exercises may deal with a single problem or examine actions in a complex tactical situation. If they deal with problems of crisis relocation, the urban or enterprise staffs, evacuation commissions and relevant service chiefs will examine their plans, measures, schecules and capabilities for relocating the population, and while in the rural areas, they will examine the reception, transportation, housing, sheltering and supplying of evacuees.[6/]

Command-staff exercises may be of one or more days' duration. They may be held in various facilities. Sometimes, in order to lend them greater realism and to test communications, they are held by oblast, city, urban rayon or installation staffs in their urban or exurban command post shelters.

- INTEGRATED (or COMPREHENSIVE) EXERCISES[7/]

Integrated exercises usually consist of a sequence of tactical situations and problems and may involve all types of civil defense formations at a given level as well as elements of the population. Such exercises are usually of two or three days' duration. They may be held

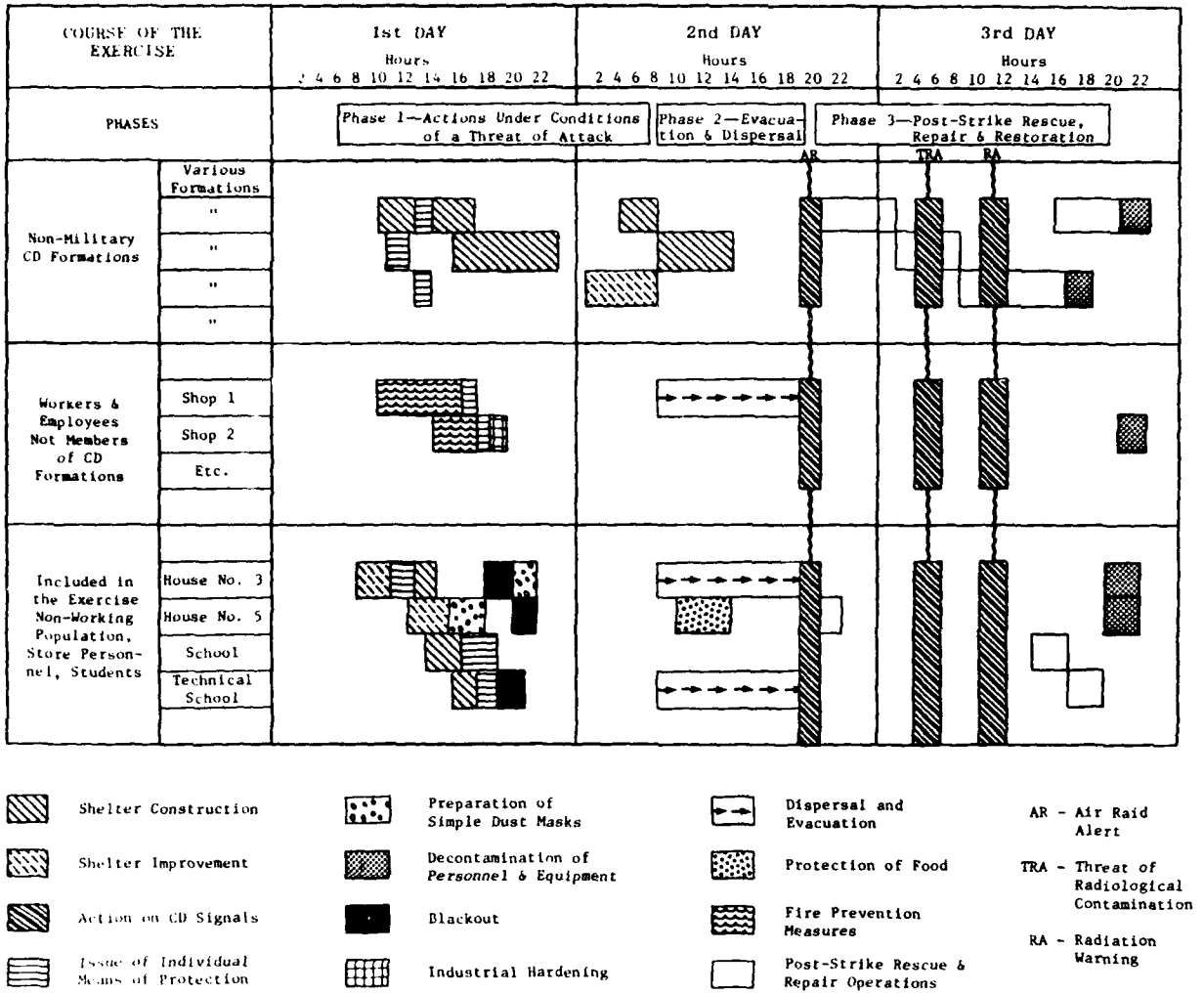

Figure 10.1 Diagram of a Suggested Plan of an Integrated Exercise

at city, urban rayon and rural rayon levels, and they are required to be held on a regular basis by industrial enterprises, economic installations, educational institutions, rural settlements and collective and state farms. According to civil defense regulations, such exercises should be held every three years.

An integrated exercise usually is divided into three phases which represent a sequence of tactical situations. Figure 10.1 shows a diagram of a suggested plan of an integrated exercise. The first phase assumes the receipt of warning of the existence of a "threatening situation" or "threat of attack" condition (i.e., pre-attack strategic warning). During this phase, the exercise consists of the implementation of a variety of civil defense preparatory measures such as the construction of additional rapidly-erectable shelters, fire prevention, distribution of gas masks, hasty hardening of industrial equipment and machinery, preparation of hosting areas, some relocation of civil defense formations to exurban areas and so on.[8/]

The second phase of the exercise, usually held on the second day, "begins with issuing to the trainees an order to implement the dispersal of workers and employees and the evacuation of members of their families."[9/] At an enterprise, the order may be given by its civil defense chief in the form shown in Figure 10.2.

The second phase, therefore, includes exercising the warning of the population, the deployment of evacuation assembly and evacuation reception points (SEPs and PEPs) and intermediate evacuation points (PPEs) on the foot march routes, tests of communcations, the schedules and uses of transportation, reconnaissance of foot march routes, deployment of medical aid and supply points, and so on. It is suggested that the exercise also be used to seek ways of shortening the time required for the implementation of crisis relocation. This phase of the exercise may include the actual relocation of elements of the population to exurban areas. Usually these elements consist of the off-duty workshift of enterprises and non-working members of their families, students of

In accordance with the decision of higher organs, at 12:00 hour, (date), begin to implement all evacuation measures without exception as provided in the plant's civil defense plan.

In accordance with the above, I order:

1. *The deputy chief of civil defense of the plant for dispersal and evacuation, together with the civil defense staff:*
   - *to organize the warning of the workers, employees and members of their families about the start of the dispersal and evacuation in accordance with current instructions.*
   - *to organize the departure on foot and by vehicle convoy in the time prescribed in the plant's civil defense plan and in the attached schedule, and to arrange for the foot columns' short and long rest stops, medical aid points and warming points.*
2. *The chief of the plant's SEP to deploy the SEP beginning at 12:00, (date), and organize its operations.*
3. *The chief of the Transportation Service to ensure the arrival of transport according to the time stated in the plan, to ascertain from the railroad agencies the numbers of the [assigned] trains and their time of arrival at the boarding points.*
4. *The chief of the Medical Service to assign medical personnel for servicing the foot columns and to organize medical support at the SEP and at transport boarding points.*
5. *The chief of the Public Order and Safety Service to assign details to the SEP and to boarding points, and also to take measures to ensure safety on all routes of movement of foot columns and vehicle convous in accordance with previous instructions.*[10/]

Figure 10.2 Model Exercise Order Issued By a Plant's CD Chief

vocational schools and institutes, and other persons not engaged in production activities.

The third phase begins with the sounding of an air-raid alert, and after people have taken shelter, then assumes that a strike has taken place. This phase of the exercise focuses on the rapid filling of shelters and the conduct of post-strike rescue, damage-limiting, repair and restoration operations by civil defense formations and sometimes by units of military civil defense troops.

In practice, there appears to be considerable leeway in the conduct of intergrated exercises. Their precise objectives, tactical assumptions and durations may vary for various reasons, among them the installation's capabilities and size, the production schedules, degrees of cooperation between different staffs and localities (for example, between urban installations and rural hosting areas), cost considerations, and so on. Consequently, sometimes the exercises omit the second phase, i.e., crisis relocation, or substitute for it a command-staff seminar. On other occasions, the crisis relocation exercise may be held separately from the integrated exercise.

10.2 THE CONDUCT OF CRISIS RELOCATION EXERCISES

There is strong evidence that special-tactical, command-staff and integrated civil defense exercises are widely held in the Soviet Union. Soviet publications and radio broadcasts contain numerous reports of such exercises and usually identify the organizations participating in them, as well as their locations. Some of the reports are accompanied by photographs. Because of the routine character of these exercises, it is very likely that the great majority of them go unreported in Soviet publications. There are, however, mentions in the press that given cities, oblasts, or even republics, have completed a cycle of required integrated exercises. Even so, Soviet publications rarely—if ever—mention command-staff or integrated exercises being held at republic, oblast, joint oblast, or large city levels, although there is evidence

that they actually do take place. Mention of city-wide integrated exercises are also rare and, to the extent that they have been reported, appear to be limited to small and medium size cities, i.e., to cities with populations of up to 50,000. There are some reports, however, of urban rayon exercises held in large cities. The most numerous reports deal with command-staff and integrated exercises held at urban enterprises, schools and institutes, and other urban organizations and at rural rayon, settlements and collective and state farms.

In general, it appears that the required evacuation commissions and evacuation reception commissions have been [illegible] that the evacuation assembly points (SEPs) and evacuation [illegible] points (PEPs) are planned and their personnel is identified. [illegible] importance of the role played by the SEPs and PEPs in the [illegible], there is a need to exercise them. Consequently, [illegible] exercises in urban and rural areas may be limited to the setting [illegible] SEPs and PEPs and sometimes also of intermediate evacuation points (IEPs).[11] They may or may not include the actual processing of elements of the population. In addition, the exercises serve to refine and update the lists of evacuees assigned to given SEPs. Such exercises need not include the actual moving of urban residents to exurban areas. They may, however, include limited tests of transportation plans and schedules, such as the dispatching of motor vehicle convoys to the SEPs, or the scheduling of evacuation trains at nearby railroad stations, or ships in ports.

According to Soviet publications, exercises involving the setting up of evacuation assembly points (SEPs) are widely practiced by urban industrial enterprises, schools and other educational institutions, other urban organizations, and at times also by housing administrations. Among the cities where such exercises have been reported in Soviet publications are: Moscow, Leningrad, Kiev, Minsk, Riga, Vilnus, Tallin, Tbilisi, Alma-Ata, Novosibirsk, Omsk, Leninabad, Khar'kov, Krasnodar, Magnitogorsk, Rostov, Sevastopol, Samarkand, Voronezh, Voroshilovgrad, Ordzhonikidze, Archangel, Murmansk, Magadan, Zaporozhe, Ufa, Nal'chik, Ul'yanov, Balkhash, Chekhov, Cheboksary, Kolomna and Zhitomir.[12]

The setting up of evacuation reception points (PEPs) during integrated exercises held in rural areas also appears to be a common practice. In the absence of actual urban evacuees, outside observers or incidental local residents may be used to allow the PEPs to practice the processing of arriving "evacuees."

Exercises involving the preparation of vehicles and ships for the transportation of evacuees, convoy movements, and uses of public transportation for transporting urban evacuees appear to be widely practiced. Among localities where such exercises have been reported to have been held are Moscow, Leningrad, Zaporozhe, Magnitogorsk, Tallin, Sevastopol, Samarkand, Chekhov, Murmansk, Omsk, and so on.[13/]

A major difficulty in organizing relocation exercises which involve moving urban residents to exurban areas is the necessity to coordinate the timing of the exercise between the urban installations, organizations or rayons and the appropriate organizations in the hosting areas.[14/] The timing of the holding of exercises is often dictated by economic considerations—that is, a desire to minimize disruption of production activities, and in this respect, the preferences of urban installations and organizations and of the rural authorities often do not coincide. Even when they do and the arrangements have been agreed upon, the joint exercise may consist of nothing more than a visit by a "small group of enterprise officials" to the hosting locality for the purpose of coordinating aspects of the relocation plan and various problems associated with it.[15/] The leadership, however, has been urging a wider practice of holding joint urban-rural exercises. For example, the chief of USSR Civil Defense, Army General A.T. Altunin, wrote in 1978:

> *It is necessary to practice more widely joint exercises of rural and industrial installations. The first are required to prepare appropriate conditions for resettling dispersed or evacuated urban inhabitants; solve problems of joint actions and communications; and test their readiness to come in good time to the assistance of the city in*

order to conduct rescue work there. The second should test the realism of their evacuation plans, assist the village to prepare all the necessary conditions for [the resettlement] the urban inhabitants, build anti-radiation shelters, and so on.[16]

Despite such exhortations, however, Soviet publications—while mentioning instances of joint urban-rural relocation exercises—provide no clear picture of their extent or frequency.

As was noted, exercises—including actual relocation of urban residents—may be either a part of an integrated exercise or they may be held separately for only that purpose. According to published Soviet reports, such exercises vary in size. They may range from the relocation of a small number of residents to several thousands. Most often they involve off-duty workers, employees and non-working members of their families or students of vocational-technical schools and other educational institutions.

Unfortunately, descriptions of relocation exercises in Soviet publications or broadcasts are often vague. For example, Radio Alma-Ata (Kazakh SSR) reported that "during civil defense exercises *in a number of* cities in our republic, people were evacuated to rural areas."[17] There are references to joint urban installation-rural exercises being held regularly in the Tula Oblast (RSFSR).[18] Reports on the exercises sometimes provide some indications of the number of persons involved in them, but often do not. For example, it is mentioned that during an exercise held at the Kharkov (Ukrainian SSR) Tractor Plant, 800 persons, made up of plant workers and members of their families, were actually transported to hosting areas,[19] or that some 3,000 persons were involved in a relocation exercise held by Moscow University.[20] Again, 300 persons were transported to hosting areas from the Ukrainian State Institute for Design of Metallurgical Plants in Dnepropetrovsk (Ukrainian SSR).[21] In the case of exercises held at the Moscow First State Ball Bearing Plant, however, it is only mentioned that "a portion of the workers and employees," apparently several hundred of them, were relocated and remained overnight in the hosting areas.[22] In the majority of cases,

there is no indication of the number of persons who participated in the exercises and few details are given about how the exercises were conducted.

In addition to the above-mentioned relocation exercises, Soviet publications report exercises including relocation of workers and other urban residents to have been held at the Minsk (Belorussian SSR) "Luch" Shoe Factory, where an unspecified number of workers and members of their families traveled in a motor vehicle convoy to the hosting area;[23] an Electric Equipment Plant in Cheboksary (RSFSR), which allocated fifteen hours to the exercise which included the participation of the off-duty workshift, two civil defense rescue detachments and 200 residents in the hosting area;[24] and the Leningrad Optical-Mechanical Combine (LOMO).[25] Other relocation exercises are reported to have been held at: a repair plant in Moscow; the Refrigeration Plant No. 1 in Tallin (Estonian SSR); the Maymakan Shipyards in Archangel (RSFSR); the Olenegorskiy Mining Enrichment Combine and two state polytechnical institutes in Monchegorsk (RSFSR); the Kiev (Ukrainian SSR) "Tocheloktro Pribor" and "Arsenal" plants; the Novocherkassk (RSFSR) State Rayonal Electric Power Station; the Ufa (RSFSR) Motor Construction Plant; the Voronezh (RSFSR) "Elektrosignal" Plant; the Voroshilovgrad (Ukrainian SSR) "October Revolution" Diesel Motor Plant; the Rostov (RSFSR) "Krasnyy Aksay" Agricultural Machine Plant; the Tbilisi (Georgian SSR) "Isani" Shoe Factory No. 1; the Chimkent (Kazakh SSR) Cement Plant; the Sverdlovsk (RSFSR) S.M. Kirov Polytechnical Institute; the Kishinev (Moldavian SSR) Collective Farm Academy; and the Dushanbe (Tadzhik SSR) Construction Materials Combine.[26] Sometimes the reports fail to identify the urban enterprise or organization which participated in the exercises as, for example, in the case of exercises held in Kimovsk (RSFSR), Kaluga (RSFSR), Balkhash (Kazakh SSR), and Poltava (Ukrainian SSR).[27] In other instances it is not made clear whether integrated exercises at industrial enterprises did or failed to include relocation exercises as, for example, in the case of "Svetotekhnika" Lighting Equipment Plant in Likhoslavl' (RSFSR), the Port of Murmansk (RSFSR), the "Volna" Plant in Novgorod (RSFSR),

the V.I. Lenin Metallurgical Combine in Magnitogosk (RSFSR), the "Gelian" Plant in Samarkand (Uzbek SSR), a Furniture Plant in Chekhov (RSFSR), and so on.[28]

It also appears that urban rayonal integrated exercises may include practices in the relocation of urban residents. For example, such exercises have been reported in the Siberian city of Khabarovsk (RSFSR) and the Crimean city of Sevastopol (Ukrainian SSR).[29] In the latter case, the exercise included industrial workers, students and non-working residents and the use of various means of transportation, including the railroad, motor vehicles and ships.

> *Of particular interest and value, in terms of the complexity and volume of work performed, was the exercise conducted by a combined evacuation assembly point assigned to a refrigeration plant administration. This exercise involved the participation of enterprises, organizations and institutions associated with the fleet and also the population of a fishing village—housewives and retired persons.*[30]

Since the institution of the combined method of moving the urban population, attention has been given to foot relocation exercises.[31] Such exercises have been held at both industrial enterprises and educational institutions. For example, they are reported to have been held at a Furniture Combine in Kremenchug (Ukrainian SSR) which included a march of 38 km (23 miles), the Moscow Aircraft Maintenance Plant of the Ministry of Civil Aviation, the Riga (Latvian SSR) Electric Lamp Plant, an unnamed plant in Poltava (Ukrainian SSR), the Moscow Vocational-Technical School No. 55 and Mechnical-Technical School of the USSR Ministry of Light Industry, the Vladimir (RSFSR) Polytechnical Institute, the Kolomna (RSFSR) Pedagogical Institute, the Kishinev (Moldavian SSR) Suvkhoz Academy, the Moscow First State Ball Bearing Plant—where the evacuees marched 25 km (15.5 miles), and so on.[32]

In addition to evacuation reception exercises organized jointly with urban enterprises and institutions, the rural civil defense organizations may hold their own evacuation exercises. Some of these exercises

are held for localities believed to be in areas of potential flooding and involve the relocation of the residents, livestock and farm equipment. Others are used to practice the relocation of some elements of the the local population and the evacuation of livestock from the path of radioactive fallout.

It should be noted that discussions and descriptions of exercises in Soviet publications tend to serve several purposes. Some exercises are offered as models of how to organize and conduct them. Indeed, they may have been demonstration exercises attended not only by representatives of higher staffs, but also by chiefs or chiefs of staff of other enterprises, services, collective and state farms, and so on. In other instances, they provide examples of shortcomings and errors which should be corrected or avoided. They may also serve to show what steps organizations took to improve their performance in the exercises after first doing a poor job of them.

10.3 PREPARATION OF HOSTING AREAS

For effective crisis relocation of the urban population, the hosting areas must have the necessary infrastructure to receive, house, shelter and supply the evacuees. In many instances, this requires improvements in the infrastructure of the hosting areas, some of which preferably should be carried out in peacetime. Such improvements may be undertaken by administrations of the hosting areas on their own, often in the course of rural integrated exercises. They may also be carried out with the technical and possibly financial assistance of the urban enterprises, institutions and organizations.

As was noted, the chiefs of urban enterprises, installations, and organizations, the chiefs of the civil defense staffs and heads of evacuation commissions are urged to develop and maintain planning and working ties with corresponding rural organizations in their assigned hosting areas and to assist the latter in preparing and improving conditions and capabilities for receiving and resettling urban evacuees.[33/] Such assistance

may include: improving the condition and traffic capacity of rural roads, construction of additional sources of water and anti-radiation shelters, expanding local food preparation and public feeding capacities, stockpiling gas masks, improving communications, installation of standby power generating equipment, and so on. While the extent of such cooperation is not known, Soviet publications do cite instances of them. Thus, among others, the publications mention such assistance having been provided by the School and Children Furniture Factory in Riga (Latvian SSR), the Audeias Combine in Vilnus (Lithuanian SSR), the Motor Construction Plant in Ufa (RSFSR), the V.I. Lenin Metallurgical Plant in Magnitogorsk (RSFSR), the Aksay Agricultural Machine Plant in Rostov (RSFSR), the Motor Vehicle Plant No. 13 in Leningrad (RSFSR), the Ukrainian Academy of Sciences in Kiev (Ukrainian SSR), various localities in the Kazakh SSR, and the Moscow First State Ball Bearing Plant.[34/]

Exercises held in rural rayons, at village and rural soviets, settlements and collective and state farms usually include the preparation of basements for use as anti-radiation shelters and the construction of additional ones. They may also include the stockpiling of food and medical supplies. Exercises of this type are reported to have taken place in most or all parts of the USSR.[35/] The reports, however, mention only infrequently that the local residents built sufficient shelters not only for themselves but also for evacuees.[36/] Of course, a portion—and in many instances, the majority—of the evacuees will be sheltered in the basement shelters and cellars of the rural residents where they are quartered.

In the case of cities with insufficiently developed nearby rural facilities, the exercises may include the construction of huts and dugouts in the countryside to house, as well as provide anti-radiation protection for the evacuees. For example, in the case of a joint exercise held by the Olenegorskiy Mining Enrichment Combine and two state polytechnical institutes in the city of Monchegorsk (Murmansk Oblast, RSFSR), the combine's civil defense formations and the students "set up a

temporary area to accommodate evacuated personnel in the tundra."[37] They built dugouts and huts equipped with heating which provided protection against radioactive fallout. Presumably such exercises are held in other cities in the arctic and far eastern regions. It must be assumed, however, that such hastily erected dugouts and huts are not permanent structures but will deteriorate fairly rapidly. Consequently, the preparation of such hosting areas is likely to take place either shortly before the relocation of the urban inhabitants of such regions or simultaneously with their relocation.

Another form of preparation of potential support for evacuees is the organization and exercising of mobile food catering and food and clothing distribution units. As was noted, these units are organized primarily on the basis of urban public food catering establishments, factory canteens, as well as food and clothing stores. The exercises consist in the deployment of such units in the hosting areas, either independently or in conjunction with a relocation exercise, and appear to be fairly widely held.[38] For example, during a relocation exercise of several hundred workers held by the Moscow First State Ball Bearing Plant, the plant's canteens and food store deployed a mobile food catering point including a field kitchen in the hosting area which was used to feed the personnel participating in the exercise.[39]

10.4 PROBLEMS AND SHORTCOMINGS

Although according to Soviet publications relocation exercises, at least on a small scale, have and continue to be held throughout the USSR, the same publications also indicate that peacetime crisis relocation training has and continues to be plagued by difficulties and shortcomings. In a large part, this appears to be due to the reluctance of some officials and managers to devote in full measure the time and resources required for conducting full-scale, effective exercises. As a result, it is not possible to assess the degree of readiness of Soviet civil defense to execute a rapid and effective relocation of the urban population in an actual crisis situation.

One difficulty appears to be that urban enterprises, organizations, and institutions, as well as rural rayons and collective and state farms, sometimes either fail to hold relocation exercises or do so in an over-simplified manner which, as one official noted in 1976, are of "little value."[40/] For example, a relocation exercise held at a vocational-technical school consisted of merely assembling the students at the school's gate.[41/]

Another shortcoming is that despite official exhortations calling for the development of contacts between urban enterprises, organizations and institutions and the rural soviets, evacuation reception commissions and civil defense staffs in their assigned hosting areas, and the holding of joint urban installation-rural exercises, this is not practiced as widely as the authorities wish. Comments to this effect have appeared repeatedly in Soviet publications during the 1970s and most recently in 1982.[42/]

Still another problem is the exercizing of foot relocations as a part of relocation exercizes by the combined method. In 1979, the Deputy Chief of USSR Civil Defense, Lieutenant General S. Kremenskiy, noted that "more attention" was being given to the combined method of evacuation. At the same time, however, he complained that "only in a few educational institutions is the combined method of evacuation exercised."[43/] Although foot evacuation exercises appear to have been held more widely in subsequent years, they have not been without problems. In some cases, the route had not been reconnoitered in advance, in others the participants maintained poor discipline resulting in delays, unplanned stops and a great deal of straggling.[44/] Of course, in an actual crisis, there are likely to be fewer discipline problems. However, these exercises usually do not require the participants to carry personal baggage as would be the case in a crisis. Along with this, it should be noted that no large-scale tests of transportation movements appear to have been held.

Another problem area is the readiness and capabilities of the hosting areas to rapidly receive, house, shelter and supply urban

evacuees. Especially uncertain appears to be the readiness of the hosting localities to provide evacuees with sufficient spaces in anti-radiation shelters. Although some officials claim that "successes have been scored in organizing the protection of the rural population,"[45] in practice the availability of anti-radiation shelters in rural areas appears to be uneven. In many instances the exercises held in rural localities consisted, in addition to clearing some basements and cellars, in the construction of only one or two dugout shelters or covered trenches as a demonstration of knowledge and skill in this type of construction. More recently, however, it is claimed that in the course of integrated exercises in the rural areas it is becoming the practice to build "numerous anti-radiation shelters."[46] Even so, as was noted, Soviet publications make only infrequent mention of the construction of sufficient shelters in rural localities to accommodate all the urban evacuees assigned to them. Furthermore, given the temporary character of some of these shelters, it appears that they are often dismantled after the exercise, while the population continues to use available basements and cellars for storage purposes. It appears, therefore, that while capabilities to shelter the rural population are being progressively improved, there is no requirement at present for the hosting areas to build and maintain sufficient shelters to accommodate the urban evacuees assigned to them. Apparently this will be done in an actual crisis, either in advance of the arrival of the evacuees or simultaneously with their arrival. This is one reason why the civil defense instruction program for the population includes training in the methods of construction of simple anti-radiation shelters. According to present plans, however, the hosting areas are required to stock in peacetime the necessary building materials and tools for the construction of such shelters. As was noted, in a crisis situation, extensive use would be made also of mechanized equipment available in the rural areas provided by relocated urban construction organizations and military units for the purpose of expediting the construction of such shelters.

While, as Soviet publications indicate, shortcomings in Soviet relocation exercises and preparations undoubtedly do occur, their

significance should not be exaggerated. One purpose of their being mentioned in Soviet publications is to bring pressure on the responsible leaders and organizations in order to make them rectify these shortcomings. Furthermore, organizations which conducted unsatisfactory exercises may be required to repeat them. Another purpose of public criticisms is to alert higher staffs, civil defense inspectors, and communist party organizations to pay more attention to problem areas and to ensure appropriate levels of performance by their subordinate organizations.

Undoubtedly Soviet readiness for crisis relocation benefits from the numerous small-scale tests of plans and capabilities which are carried out through the country. Even so, in the absence of large-scale, city-wide relocation exercises, it is uncertain how well Soviet plans will work in an actual crisis relocation. It is not so much a question of the inability of the authorities to carry out the relocation than of its rate. In other words, the implementation of an actual crisis relocation may take somewhat longer and may be less well organized than planned. Even so, it seems likely that the relocation of those elements of the population which the authorities view as being the more valuable ones—i.e., leadership and elite elements, key organizations, essential workers, civil defense formations, etc.—would be accomplished in a relatively short time and that the hosting areas to which these elements are assigned will probably be best prepared to receive them. Still, in the case of the initiation of the relocation with no or short prior warning, it is likely that some additional time, a matter of a few days, may be needed to complete the construction of the necessary number of anti-radiation shelters and other improvements in the hosting areas' infrastructure.

Section 10

FOOTNOTES

1. "Dispersal and Evacuation," Voyennyye Znaniya, No. 4, April 1983, p. 17. See also, Eto Dolzhen Znat' i Umet' Kazhdyy (What Everyone Must Know and Be Able to Do), 3rd edition, (Moscow: Voyenizdat, 1974), pp. 26-27; "Dispersal and Evacuation," Voyennyye Znaniya, No. 2, February 1980, p. 14; Colonel A. Zaytsev, "For Those Who Teach: An Important Method of Protection," Voyennyye Znaniya," No. 8, August 1978, p. 28; Army General A.T. Altunin, editor, Grazhdanskaya Oborona (Civil Defense), (Moscow: Voyenizdat, 1980), pp. 43-48.

2. L. Antipov, "Our Common Duty," Voyennyye Znaniya, No. 1, January 1973, p. 25. See also, I. Markelovich, Deputy Chief of Lithuanian Civil Defense Staff, Radio Vilnus, July 26, 1974; "If Tomorrow There is an Exercise," Voyennyye Znaniya, No. 6, June 1978, p. 17.

3. For example, see O. Mal'tsev, "Our Duty," Voyennyye Znaniya, No. 11, November 1970, p. 24; Major General A. Tsikhun, "On The Path of Improvement," Sovetskaya Belorussiya (Soviet Belorussia), March 11, 1971; V. Sokolov, "What Training is All About," Pravda Ukrainy (Ukrainian Pravda), July 7, 1970; A.A. Gromov and N.P. Krechetnikov, Grazhdanskaya Oborona Promyshlennogo Obekta (Civil Defense at an Industrial Enterprise), 2nd edition, (Moscow: Atomizdat, 1975), p. 70.

4. P.T. Egorov, N.A. Shlyakhov and N.I. Alabin, Grazhdanskaya Oborona, 3rd edition, (Moscow: Vysshaya Shkola, 1977), p. 246; S.P. Bystritskiy, Kompleksnyye Obektovyye Ucheniya Grazhdanskoy Oborony v Kolkhoze (Sovkhoze) (Integrated Installation Civil Defense Exercise at Collective (State) Farms), (Moscow: Voyenizdat, 1977), p. 6; Major General Yu.N. Afamas'ev, editor, Kompleksnyye Obektovyye Ucheniya Grazhdanskoy Oborony na Promyshlennykh Predpriyatiyakh (Integrated Installation Civil Defense Exercises at Industrial Enterprises), (Moscow: Voyenizdat, 1978), pp. 6-7; Gromov and Krechetnikov, op. cit., p. 51.

5. Egorov et. al., op. cit., p. 246; Bystritskiy, op. cit., pp. 7-8; Afamas'ev, op. cit., p. 7; Gromov and Krechetnikov, op. cit., pp. 48-49, 51; Colonel N. Zvyagin, "Staff Training in a Rayon," Voyennyye Znaniya, No. 5, May 1976, pp. 31-32.

6. For example, see Zvyagin, op. cit.; Gromov and Krechetnikov, op. cit., p. 51.

7. Egorov et. al., op. cit., pp. 246-247; Bystritskiy, op. cit., pp. 8-10; Afamas'ev, op. cit., pp. 48-54; Major General O. Nikolayev, "Integrated Exercises," Voyennyye Znaniya, No. 3, March 1976, pp. 18-19; St. Perminov and P. Gorbunov, "Integrated Rayonal," Voyennyye Znaniya, No. 9, September 1975, pp. 20-24; Radio Khabarovsk, May 22, 1974; Captain V. Zhitarenko, "Civil Defense Readiness," Krasnaya Zvezda (Red Star), January 21, 1976; Major General M. Rakcheyev, "When the Siren Sounded," Sovetskiy Patriot (Soviet Patriot), June 9, 1976; Colonel Yu. Yakovenko, "Integrated Installation Exercise at a School," Voyennyye Znaniya, No. 9, September 1976, pp. 20-22; "Integrated Enterprise Exercises Ahead," Voyennyye Znaniya, No. 1, January 1976, p. 19.

8. Colonel N. Zaytsev, "Preparation of an Exercise," Voyennyye Znaniya, No. 3, March 1976, p. 20; "Plan-Schedule of a Leader of an Integrated Installation Exercise," Voyennyye Znaniya, No. 2, February 1977.

9. Afamas'ev, op. cit., p. 53.

10. Ibid., p. 93.

11. Bystritskiy, op. cit., p. 46; Shirokov, op. cit., p. 28.

12. V. Shtanko, "There Need Be No Shortcomings," Voyennyye Znaniya, No. 4, April 1969, p. 17; D. Galkin and P. Grishchenko, "Among the Metal Workers of Magnitogorsk," Voyennyye Znaniya, No. 3, March 1971, p. 14; O. Odnol'ko, "Useful Lesson," Voyennyye Znaniya, No. 11, November 1971, p. 16; V. Sokolov, "What Training is All About," Pravda Ukrainy, July 7, 1970; M. Dubrovin, "At A Sovkhoz-an Exercise," Krasnaya Zvezda, February 8, 1974; Colonel Yu. Yakovenko, "In a Complex Situation," Voyennyye Znaniya, No. 4, April 1975, p. 31; V. Frolov, "After the All Clear," Voyennyye Znaniya, No. 8, August 1975, p. 27; Major General F. Rotar, "On the Scale of an Entire Village," Voyennyye Znaniya, No. 2, February 1975, p. 27; G. Chechelenko, "In a Technical School" and S. Ladynskiy, "In an Institute," Voyennyye Znaniya, No. 2, February 1977, pp. 22-23; Colonel V. Pas'ko, "Students at an Exercise," Voyennyye Znaniya, No. 1, January 1978, p. 31; A. Podoprelov, "Are We Wrong?" Voyennyye Znaniya, No. 9, September 1982, p. 21; N. Voytko, "On the Eve of Training," Voyennyye Znaniya, No. 9, September 1982, p. 22; Colonel K. Khisyametdinov, "The Communists Are Up to the Requirements," Voyennyye Znaniya, No. 11, November 1982, pp. 18-19; A. Kurilov, "Integrated Exercise—Assistants and Umpires," Voyennyye Znaniya, No. 5, May 1982, p. 18; Gromov and Krechetnikov, op. cit., p. 76.

13. P. Kompaniyets, "Expanding the Needs of an Installation, Voyennyye Znaniya, No. 11, November 1969, p. 18; Yu. Kovalev, "To Comprehend Means to Act," Voyennyye Znaniya, No. 6, June 1971, p. 24; Galkin and Grishchenko, op. cit., p. 15; Odnol'ko, op. cit.; Tsygomok, op. cit.; M. Vasin, "Combat Alarm at the 'Crelian' Plant," Pravda Vostoka (Pravda of the East), July 30, 1970; Khisyametdinov, op. cit.

14. Bystritskiy, op. cit., p. 46.

15. For example, see Major P. Firsov, "Following a Uniform Plan," Voyennyye Znaniya, No. 6, June 1978, pp. 16-17; P. Savchenko, "One's Own Burden," Voyennyye Znaniya, No. 4, April 1982, p. 9.

16. Army General A.T. Altunin, "Put the Valuable, the Most Advanced Into Practice," Voyennyye Znaniya, No. 10, October 1978, p. 19. See also Colonel A. Rudenko, "Village Integrated Exercises," Voyennyye Znaniya, No. 2, February 1982, p. 14.

17. Radio Alma-Ata, November 12, 1969,

18. Rudenko, op. cit.

19. V. Sokolov, "In Readiness: An Instructive Civil Defense Exercise at a Plant," Pravda Ukrainy, April 28, 1968.

20. V. Kulikov and M. Sokolov, "After Careful Preparation," Voyennyye Znaniya, No. 9, September 1970, pp. 16-17.

21. A. Mol'tsev, "All Weapons' Knowledge," Voyennyye Znaniya, No. 11, November 1970, pp. 18-19.

22. Gromov and Krechetnikov, op. cit., pp. 54, 74; L. Ovchinnikov, "The Readiness Has Been Checked," Voyennyye Znaniya, No. 9, September, 1968, pp. 18-19.

23. A. Filimonov, "Under the Leadership of the Party Committee," Voyennyye Znaniya, No. 8, August 1969, p. 17.

24. A. Stekol'shchikov, "How the Dispersal Was Carried Out," Voyennyye Znaniya, No. 10, October 1969, pp. 18-19.

25. I. Bukhanchuk, "He is Still a Fighter Today," Voyennyye Znaniya, No. 10, October 1970, p. 21.

26. Lieutenant Colonel B. Nikitin, "After the 'Nuclear Strike'," Krasnaya Zvezda, October 24, 1969; Sovetskaya Estoniya (Soviet Estonia), August 14, 1979; Radio Arkhangelsk, April 26, 1970; A. Zazulin, "Under Arctic Conditions," Voyennyye Znaniya, No. 9, September 1976, pp. 18-19; Sokolov, op. cit.; G. Panov, "In the Factory of Communist Labor," Voyennyye Znaniya, No. 12, December 1970, p. 13; Sovetskiy Patriot, July 22, 1970; M. Petrov, "We Learn Ourselves and Teach Others," Voyennyye Znaniya, No. 11, November 1970, p. 25; A. Sinitsyn, "Reliance on Communists," Voyennyye Znaniya, No. 12, December 1970, p. 12; Lieutenant Colonel B. Nikitin, "At the Alarm Signal," Krasnaya Zvezda, February 24, 1971; O. Popov, "Competition—A Lively Business," Voyennyye Znaniya, No. 5, May 1971, p. 12; B. Klemanskiy, "Subject to

Criticism," Voyennyye Znaniya, No. 6, June 1971, p. 26; Yu. Itakovlenko, "The Director Leads the Training," Voyennyye Znaniya, No. 2, February 1972, pp. 14-15; A. Kondrat'ev, "On the Order of the Day—Civil Defense," Voyennyye Znaniya, No. 2, February 1972, p. 21; D. Nikolayev and P. Samsonov, "The First in the Country," Voyennyye Znaniya, No. 2, February 1976, pp. 28-29; A. Demochkin, "At Various Levels," Voyennyye Znaniya, No. 8, August 1974, p. 30.

27. Perminov and Gorbunov, op. cit.; Firsov, op. cit.,; Frolov, op. cit.; I. Yashan, "Good Condition Wins," Sovetskiy Patriot, November 12, 1975.

28. "Integrated Enterprise Exercises Ahead," op. cit.; Pravda Vostoka, July 30, 1970; Khisyametdinov, op. cit.; Galkin and Grishchenko, op. cit.

29. Radio Khabarovsk, May 22, 1974; V. Odnol'ko, "On the Shore and at Sea," Voyennyye Znaniya, No. 3, March 1969, pp. 20-21, and "Useful Lessons," op. cit.

30. Odnol'ko, "Useful Lessons," op. cit., p. 16.

31. Kremetskiy, op. cit., p. 24.

32. Yashan, "The Exercise Was Unusual," op. cit.; Perminov and Gorbunov, op. cit.; V. Pilyugin and I. Golubkov, "In the 'Nuclear Strike' Zone," Sovetskaya Latviya (Soviet Latvia), December 22, 1974; Colonel V. Atamanyuk and A. Utkin, "Not Without Mistakes But Useful," Voyennyye Znaniya, No. 9, September 1976, pp. 22-23; Pas'ko, op. cit.; Photograph, Voyennyye Znaniya, No. 9, September 1976, p. 22; Chechelenko, op. cit.; Nikolayev and Samsonov, op. cit.; Gromov and Krechetnikov, op. cit., p. 74; Yakovenko, op. cit.; Colonel V. Postrigan, "The Director Led the Exercise," Voyennyye Znaniya, No. 6, June 1975, p. 36; Colonel N. Zvyagin, "Organization of Pedestrian Evacuation," Voyennaya Znaniya, No. 7, July 1977, p. 34.

33. M. Muradyan, "Organization is the Main Thing," Kommunist (Yerevan), September 23, 1979.

34. P. Berezovskiy and V. Klinkin, "In the Resettlement Area," Voyennyye Znaniya, No. 5, May 1970, p. 24; P. Rybin, "It is Always Clearer on the Spot," Voyennyye Znaniya, No. 9, September 1970, p. 11; Petrov, op. cit., Galkin and Grishchenko, op. cit., Popov, op. cit.; Kompaniets, op. cit.; Sokolov, op. cit.; P. Savchenko, "One's Own Burden," Voyennyye Znaniya, No. 4, April 1982, p. 9; Gromov and Krechetnikov, op. cit., p. 54.

35. For example, see Lieutenant Colonel P. Bezmen, "At a Preparatory Stage," Voyennyye Znaniya, No. 9, September 1982, pp. 14-15; V. Mironov, "With Increased Strength," Voyennyye Znaniya, No. 10, October 1982, p. 19; Rudenko, op. cit.; "As Life Has Demonstrated," Voyennyye Znaniya, No. 9, September 1978, pp. 20-21; Colonel Yu. Yakovenko, "Thoughts on a Joint Exercise Held on the Territory of a Rural Soviet," Voyennyye Znaniya, No. 2, February 1979, pp. 20-21; A.S. Mel'nik, "An Integrated Exercise," Sel'skoye Khozyastvo Belorussiy (Belorussian Agriculture), No. 8, August 1980, p. 37; Perminov and Gorbunov, op. cit.; Lieutenant Colonel M. Dubrovin, "An Exercise at a Sovkhoz," Krasnaya Zvezda, (February 8, 1974.

36. "As Life Has Demonstrated," op. cit.; Perminov and Grobunov, op. cit.

37. Zazulin, op. cit.

38. For example, see P. Dolgopolov, "Under Field Conditions," Voyennyye Znaniya, No. 2, February 1977, pp. 30-31; Lieutenant Colonel I. Zhemchuzhnikov, "The Exercise Had to be Repeated," Voyennyye Znaniya, No. 9, September 1978, pp. 22-23; V. Ivanov, "In the Service Sphere," Voyennyye Znaniya, No. 9, September 1981, p. 17; N. Koretskiy, "Effectiveness and Quality for Exercises," Voyennyye Znaniya, No. 1, January 1982, p. 18; S. Yaguynkov, "Training at the Combine," Voyennyye Znaniya, No. 4, April 1982, p. 8, Voyennyye Znaniya, No. 6, June 1982, p. 17.

39. Gromov and Krechetnikov, op. cit., p. 54.

40. Colonel A. Zaytsev, "First Lessons," Voyennyye Znaniya, No. 6, June 1976, p. 18. See also, Kremenskiy, op. cit.; V. Leshkinov, "Chief of Staff's Rostrum: Continuing the Discussion of an Important Matter: We Are Too Much in View," Voyennyye Znaniya, No. 10, October 1978, p. 20; I.N. Khokholov, "We Expose Shortcomings," Radio Vilnus, April 12, 1974; "Civil Defense Exercises at Civil Defense Units," Krasnaya Zvezda, September 19, 1972; "As Life Has Demonstrated," op. cit.; Major General F. Rotar and Colonel M. Udovenko, Sovetskaya Moldaviya, February 18, 1970.

41. Zaytsev, "First Lessons," op. cit.

42. For example, see Kremenskiy, op. cit.; A. Zagrebin, "Solving a Humanitarian Task," Voyennyye Znaniya, No. 8, August 1978, pp. 16-17; Zvyagin, op. cit.; Rudenko, op. cit.

43. Kremenskiy, op. cit.

44. For example, see Yashan, op. cit.; Atamanyuk and Utkin, op. cit.

45. Major General S.A. Stalauskas, Chief of Staff of Civil Defense of the Lithuanian SSR, Radio Vilnus, November 26, 1976.

46. N. Dolgin, "The Contribution of Civil Defense," Voyennyye Znaniya, No. 12, December 1982, p. 13.

Section 11

CONCLUSIONS AND POSSIBLE IMPLICATIONS FOR U.S. CIVIL DEFENSE

Crisis relocation is an important and long-standing element of post-World War II Soviet civil defense plans and programs. Soviet civil defense leaders and planners believe that under appropriate conditions and with adequate organization and preparation crisis relocation can be a very effective method of protecting the mass of the urban residents and industrial workers in high-risk areas from enemy nuclear strikes. They also have been well aware that a capability to implement crisis relocation can be attained much sooner and relatively more cheaply than the construction of sufficient blast shelters to protect the urban population in place. Given the attention it has received over many years in the Soviet Union, it can be said that Soviet crisis relocation concepts are well developed, comprehensive, and appear to be devoid of significant gaps.

While admitting the undisputed utility of crisis relocation, Soviet civil defense leaders have developed some misgivings about sole or primary reliance on this method for protection of the population. In all but one respect, however, these misgivings have not paralleled public and media criticisms of crisis relocation in the U.S. Arguments heard in the U.S. about the alleged destabilizing and provocative character of crisis relocation, its lack of realism, practicality and impossibility of rapid implementation, the unacceptable vulnerability of the population while the relocation is in progress, the dangers of enemy strikes on the evacuated population in hosting areas, and so on have not been publicly raised and appear to be discounted in the Soviet Union. In their public statements, Soviet leaders and spokesmen insist that all civil defense measures, including crisis relocation, are merely humanitarian in purpose and, consequently are neither destabilizing nor provocative. Furthermore, they appear to believe that neither side would target the population per se, and they insist that strikes against a dispersed population are unlikely because they would be ineffective and wasteful of valuable nuclear assets.

Since the late 1960's, however, Soviet leaders have been concerned over war initiation scenarios which would give the Soviets little prior warning of an enemy attack and thereby preclude the implementation or completion of crisis relocation. Consequently, from the early 1970's Soviet civil defense publications ceased to identify crisis relocation as the "main" method of protecting the urban population and increased emphasis was placed on developing capabilities to shelter the population in place as an insurance against worst-case war initiation scenarios. Even so, the Soviets did not discount the possibility of other scenarios which allow for sufficient strategic warning to implement crisis relocation.

The current Soviet emphasis on shelter construction does not mean that the Soviets have changed their views on the utility of crisis relocation as an effective measure to protect the population. There are several reasons for this. One is not only the high cost but also the long lead-time required to provide the entire population in high-risk areas with effective shelters. At the present time, the Soviets appear to still be far from having such a shelter capability. Another reason is the recognition that losses among a sheltered population from enemy strikes in likely target areas will probably be significantly greater than among a relocated and dispersed population. More important is the Soviet belief that relocation of leadership elements and other valuable personnel, as well as of essential industrial workers, is necessary in order to ensure their ability to perform their critical duties under war conditions. In particular, it is considered impractical to keep essential workers in the cities in order to maintain key industrial enterprises, utilities, and services in continuous operation. Finally, given that Soviet civil defense intends to conduct large-scale rescue, damage-limiting, repair and restoration operations in areas damaged by nuclear strikes, there is a requirement for relocating the major part of the urban civil defense forces to exurban areas in order to ensure their ability to carry out this mission. Essentially, therefore, there is—and will continue to be—not only a Soviet

preference for executing crisis relocation in circumstances that permit doing so, but also a requirement for relocating select but significant numbers of urban residents regardless of existing shelter capacities in the cities and at industrial enterprises. There is every reason to expect that this requirement will remain in force even if the U.S. announces its commitment to a city-avoidance targeting strategy.

Crisis relocation concepts and plans inevitably reflect a given country's political, governmental, economic, social and value systems. In addition, they reflect a country's views on the likely character of the initiation and conduct of a possible nuclear war and on the wartime requirements for logistic and economic support of the armed forces, as well as the probable duration of the evacuees' stay in the hosting areas and the available resources for implementing the relocation.

In the case of the Soviet Union, its crisis relocation concepts, plans and methods of implementation undoubtedly benefit from, and are facilitated by, the Soviet system of centralized political and state authority, the state ownership of the economy and its degree of control over the population, as well as by the existence of a centrally-directed, hierarchically structured, country-wide civil defense organization. This means that the participation of government and economic organizations, public services, as well as civil defense staffs and forces at all levels in crisis relocation planning and implementation is compulsory. It also means that the authorities can designate which cities and installations will be subject to crisis relocation, the order of priority of relocation of various elements of the population, which hosting areas will be used and how transportation will be allocated. Furthermore, the authorities have the ability to prohibit and prevent all independent and uncontrolled relocation by the population, establish schedules for departure of all elements of the population subject to relocation, and assign to each urban resident (i.e., individual or family) his destination in the hosting areas. Finally, it makes possible not only effective planning of the use of all means of transportation but the identification of those urban

residents who will be required to leave the cities on foot in organized groups and the designation of their travel routes and destinations.

There is no doubt that Soviet insistence on the need to keep essential urban industrial enterprises, installations and services in operation during wartime has a significant effect on Soviet crisis relocation concepts and plans. First, this means that in the Soviet view certain elements of the population are more valuable than others for purposes of maintaining command and control, sustaining the war effort and civil defense operations, as well as preserving capabilities for post-strike reconstitution and postwar recovery. Consequently, just as in the matter of shelter availability, so in the matter of crisis relocation such elements will have priority over less valuable elements of the population. In the Soviet Union such differential treatment of the population is not seen as raising political or morale problems. Second, this gives rise to the concept of "dispersal" of essential personnel and of "evacuation" of non-essential urban residents, which in turn affects the selection of hosting areas appropriated to each of these categories and, to a considerable extent, the allocation of transportation. In particular, it means that essential personnel (and their family members) must be relocated by and through their places of employment, that each essential enterprise and installation must keep its employees together in the assigned hosting areas—which requires the assignment in advance of dedicated hosting localities, and that the selection of the latter must facilitate the commuting of workshifts to the cities. It should be noted that the concept of maintaining essential production and other economic and service activities in crisis situations and in wartime tends to mitigate the economic costs and disruption caused by crisis relocation and, consequently, makes a protracted relocated posture more tolerable to the state and society.

Soviet insistence on crisis relocation being highly organized, managed and controlled, thus making its implementation predictable, greatly facilitates planning and preparations at all levels. In the

urban areas the civil defense staffs and evacuation commissions can develop detailed plans which determine precisely which persons will be "dispersed" or "evacuated," how they will be assembled and processed, when they will depart, by what means they will leave the cities and what routes they will use, and to which hosting localities they will proceed. In their turn, the hosting areas and localities—knowing in advance which urban organization is assigned to them, how many evacuees will arrive, approximately when they will arrive and by what means—can prepare their plans for the reception, housing, anti-radiation protection, supply and essential service support of the evacuees. Furthermore, given that hosting localities are allocated to urban industrial enterprises, installations, departments, institutions, as well as rayons already in peacetime, they can ascertain the capabilities of the infrastructures of their assigned hosting localities and, where necessary, make plans to help upgrade them. The problem of housing evacuees is eased by the system of compulsory quartering of evacuees in the homes of local residents.

In order to manage and control crisis relocation, the Soviets require a system of evacuation assembly points (SEPs) in the urban areas for the purposes of assembling and processing the various groups of evacuees, organizing their departure and boarding of transport according to planned schedules and ensuring that the appropriate groups are sent to designated destinations. This in turn necessitates a staggered scheduling of the populations' arrival at the SEPs and therefore requires that the various elements of the population be informed of the times they must report to their assigned SEPs. The system of relocating the urban population through SEPs is somewhat cumbersome and not without problems. The requirement for processing the population through the SEPs not only introduces some delays in the initiation of its departure from the city, but the very large numbers of SEPs in simultaneous use in each city is likely to cause a great deal of confused movement by the residents.

Prior to 1975, there appeared to be an effective system of control over the population during crisis relocation based on issuing to urban

residents special evacuation passes (or coupons). These passes provided instructions on the arrival time of the bearers at the SEPs and their location, the evacuees' destinations, as well as information on personal baggage to bring along. They also were intended to identify the evacuees during processing at the SEPs, in the course of the relocation and in the hosting areas, and were used by the authorities to keep an accurate count of the departing evacuees and a record of their whereabouts. Precisely why this system was abandoned, especially in view of the fact that Soviet citizens are normally required to have various personal identification documents, military service and work books and so on, is not clear. Possibly it may have been a question of maintaining secrecy about the hosting locations of essential workers and other valuable personnel or a desire to avoid alarming the public. It is also possible that as a general rule it was decided to fill in the passes and issue them only in the event of an actual crisis relocation, which would have delayed its implementation.

The present system is based on lists of workers, employees and members of their families prepared by the places of employment and of non-working persons prepared by the housing administrations where they reside, or in the case of students, prepared by the administrations of educational institutions. These lists will be used by the SEPs to register the evacuees and to check their right to be relocated by a particular enterprise, installation, institution or residential area. Unlike the earlier evacuation passes which indicated the evacuee's destination, the present system does not appear to provide him with such documentation. This may increase the possibility that people will get lost or proceed to wrong destinations. Consequently, this places greater responsibility on the evacuation reception points (PEPs) in the hosting areas to ascertain, presumably on the basis of personnel lists provided by appropriate urban evacuation commissions, whether the arriving evacuees are authorized to stay in a given hosting locality. Fundamental to control is the policy of denying housing and food to persons not authorized to be in a given locality.

The peculiarities of Soviet transportation have both favorable and unfavorable implications for crisis relocation. On the favorable side, the absence of large numbers of privately owned motor vehicles and therefore the dependence of the urban population on transportation provided by the authorities, facilitates control over the movement of the population and the optimization of the use of all available transportation means and routes. The Soviet authorities have the advantage of being able to mobilize and requisition all available means of transportation regardless of their ownership for use during the relocation. The organization of motor vehicles into convoys facilitates movement scheduling and traffic control and ensures that the vehicles will proceed only to designated destinations. The system of fixed and mobile feeding and repair points along the roads will contribute to a smooth flow of traffic, a more rapid turnabout of vehicles, as well as better planning for the allocation of appropriate resources.

On the unfavorable side, the USSR suffers from a relative shortage of transportation and all-weather roads. This fact along with Soviet climatic conditions tends to make the railroads the primary year-around carrier for transporting evacuees. A further difficulty is that military traffic on railroads and roads will be given priority and may result in the closing of some highways to the transportation of urban evacuees. Furthermore, a portion of available motor vehicles will be retained by the relocated civil defense forces. Undoubtedly this will interfere with the relocation process and makes it necessary for urban civil defense staffs to carefully coordinate their transportation plans in advance with the military authorities. The shortage of transportation, especially of motor vehicles, has the effect of generating a requirement for multiple round trips by vehicle convoys in the course of the relocation. This results in limiting the distances that the motor vehicle convoys will travel from the cities during the initial phase of the relocation. Another consequence of the shortage of transportation is the necessity of having to move a portion of the urban population from the cities on foot.

As in the case of use of transportation, so in the case of evacuation on foot—Soviet plans envisage the movement to be well organized and controlled. The objective of relocating a portion of the population on foot is to accelerate the rate of the population's departure from the cities and especially to maximize the number of urban residents who can be moved in the shortest time beyond the range of the prompt effects of possible nuclear strikes on urban targets. In principle and probably largely in practice, such relocation will primarily be confined to the younger and more physically fit elements of the population and, according to plans, in most instances it will be limited to a one-day march from the cities. The organized groups will depart according to established times and follow mapped routes which will be provided at various points with water supply, warming facilities (in winter), fixed and mobile medical aid posts, and intermediate evacuation points (PPEs) in rural localities where the marching groups will wait for transportation to their final destinations.

The actual rate of relocation of the Soviet urban population is difficult to predict. It is very unlikely that in the course of a crisis any significant portion of this population would leave the cities voluntarily and without official orders prior to the government's announcement of crisis relocation. Of course, the Soviet authorities may institute a covert selective relocation of various elements of the population prior to ordering general crisis relocation. In general, it appears that with the steady improvements in Soviet transportation capabilities and the expansion of the road net, it may be possible, in the case of most Soviet cities, to organize the departure of a majority of their residents in some 48 to 72 hours.

Soviet planners recognize that crisis relocation requires not only the organization of rapid departure of the population from high risk cities, but also advanced planning and preparation of the reception, housing, supplying, and anti-radiation protection of the evacuees by the hosting areas. Given that in a large measure each city's hosting area will be unique, there will be considerable variations in the infrastructure

of the hosting areas and different needs for additional preparatory measures to give them the capabilities to host the evacuees assigned to them. Therefore, in crisis relocation planning attention is paid to the availability in the hosting areas of housing, food stocks, food processing, preparation and catering capacities, medical facilities and stocks of medical supplies, water supply, sanitation, transportation capabilities, and anti-radiation shelters or of stocks of building materials necessary for their construction. In principle, the authorities in the hosting areas will take steps in peacetime to remedy deficiencies in their areas' infrastructure either by their own efforts or with the assistance of the urban organizations they are expected to host. In the case of cities with no significantly developed and inhabited surrounding areas (especially in northern USSR and Siberia), the urban civil defense forces and residents will build temporary housing and shelters and other support facilities in designated locations in the wilderness.

Although there is a requirement for the hosting areas to maintain in peacetime, or develop in time of crisis, food stocks to feed urban evacuees, their planned size is not known. Probably the sizes of the stocks will vary depending on a number of factors, such as a given area's food production, storage capacities and normal amounts of stored food supplies, the planned hosting ratios, and the expected amounts of supplies which will be relocated from the cities to the hosting areas. There appear to be indications that special protected stocks of food specifically for use in the event of crisis relocation may be maintained in hosting areas near large cities. Even so, it is likely that the food stocks in the hosting areas for feeding the evacuees will suffice for a limited period of time, i.e., weeks or a few months. They appear to be intended primarily for use during the initial period of the relocation and in the event of a temporary cessation of agricultural production or the disruption of transportation by enemy strikes. Soviet planners assume that following such a period it will be possible to move and redistribute other state reserves of food from other areas and also resume agricultural activities. Of course, there will be stringent food rationing in the hosting areas as well as throughout the country.

A major difficulty in crisis relocation is the preparation of sufficient anti-radiation shelters to protect the evacuees as well as local residents in the hosting areas. While it is possible to adapt in peacetime existing basements, cellars and other structures in the hosting areas for use as anti-radiation shelters, they may not suffice to accommodate all the evacuees. Simple anti-radiation shelters (i.e., dugouts, covered trenches, etc.), however, tend to deteriorate fairly rapidly which discourages their construction in advance of crisis relocation. Consequently, although published Soviet reports do mention instances of rural localities where, during civil defense exercises, sufficient shelters were built to accommodate evacuees, it appears that in general the present practice is for hosting areas to stock building materials in readiness for the construction of such shelters in an actual crisis. Although these shelters can be rapidly erected, especially with the use of mechanized earth digging and moving equipment, the time required for their construction must be added to the relocation time before the evacuees can be said to be effectively protected.

The extent of the role played by the military—civil defense troops in particular—in the implementation of crisis relocation is not known. To a certain extent it will depend on such factors as whether the armed forces are in the midst of mobilization and deployment or have completed these activities. There are indications that if circumstances permit, military units will assist crisis relocation, at least selectively, in various ways such as: road improvement, maintenance of order and traffic control, communications, construction of shelters, water reservoirs and other essential facilities, supplementing civilian medical services, providing mobile power units, and so on.

Information on crisis relocation exercises in the USSR is fragmentary. There are indications that crisis relocation is included in civil defense command-staff exercises at all levels and also in integrated civil defense exercises held regularly at industrial enterprises, installations, educational institutions and also in rural rayons, settlements

and collective and state farms. For a variety of reasons, however, the scale of these exercises usually appears to be small. Most often they involve either elements of off-duty workers and members of their families or students of vocational or technical schools. The exercises may include both relocation by transport and on foot. While instances of moving several hundred or thousand persons to hosting areas are reported in Soviet publications, the latter also indicate that in many cases the exercises are limited to the deployment of SEPs and PEPs.

Although the small-scale crisis relocation exercises being held throughout the USSR undoubtedly serve to train the organizations and personnel charged with implementing the relocation and to test their plans and state of readiness, it is uncertain whether they can provide reliable indications of how well Soviet plans, schedules, etc. will actually work in the event of a massive relocation of the urban population. Of course, for economic and political reasons and because of fear of possible misinterpretations abroad, it is considered impractical in peacetime to hold exercises involving the relocation of the entire population of large cities. Consequently, a certain degree of uncertainty about the execution of crisis relocation is likely to persist. In particular, there may be more confusion and delays in the reporting of the population to the SEPs and in the arrival and departure of transport than Soviet plans allow for, and it may be impossible to adhere to the tight schedules for the assembly of evacuees and the boarding of transportation. Exercise results also cast some doubts on the ability of marching columns to adhere to movement schedules. Furthermore, one must anticipate that the civil defense chiefs, staffs, services, formations and the evacuation commissions will not all be equally well trained and efficient. Even so, there is no basis for believing that the relocation plans will be badly disrupted and that there will be long delays in the movement of the population from the cities.

Concerning the question of possible implications of Soviet crisis relocation organization, plans and management for U.S. civil

defense, it is important to keep in mind the many areas of fundamental differences between Soviet and U.S. governmental, societal, economic, population control and civil defense systems. There are also important asymmetries in the two countries' capabilities to implement crisis relocation. Even so, certain aspects of Soviet crisis relocation could be of interest for and may possibly have some application in U.S. crisis relocation planning (CRP).

1. The persistence of Soviet interest in crisis relocation of potentially threatened cities and the Soviet requirement to relocate essential workers and urban civil defense formations regardless of the availability of blast shelters in the urban areas are important arguments in support of U.S. CRP. The relevant question for U.S. planners appears to be not whether the Soviet Union will practice some sort of crisis relocation, but how rapidly it can carry it out. In principle, large differences between the Soviet Union and the U.S. in the time required for implementing and completing crisis relocation may leave the U.S. vulnerable to Soviet coercion or, in the event of a Soviet attack, may result in significantly larger U.S. population losses.

2. Soviet crisis relocation provides a good example of all the factors and elements which need to be taken into account for a comprehensive approach to and planning of crisis relocation. The Soviet example strongly suggests that the orderliness and speed of crisis relocation depends, in addition to good organization and careful planning and efficient use of available resources, on the exercise of effective control over the actions of the population in the course of the relocation and in the hosting areas. Rates of relocation will be affected not only by the organization of the departure of the population from the cities, but also by what is done to facilitate a smooth flow of movement (transportation) to the hosting areas. Also important is the development of methods for achieving a desirable distribution of evacuees among hosting areas and attention to the improvement of the latters' infrastructure to meet the material and other requirements for a protracted stay by urban evacuees.

3. The Soviet concept of "dispersal" of essential workers appears to be worthy of consideration if the U.S. also decides to maintain some essential services and production activities in the cities following crisis relocation. It would not be practical to keep all essential workers continuously in the cities for a protracted time even if they are provided with blast shelters. Aside from morale, control and supply problems, this approach would keep the entire force of essential workers at risk and, in the event of an enemy attack, could result in greater losses among them than if only one shift at a time is present in high risk areas. It is also likely that prolonged separation of the workers from their families would be unacceptable to both. The "dispersal" concept, however, requires that essential workers and members of their families be relocated together according to their places of employment, service or missions in the cities; that they be provided with dedicated hosting areas selected with the view of facilitating the commuting of workshifts to and from the cities; that the necessary means are maintained to transport these workers to and from work; and that all necessary conditions are created in the hosting localities to minimize demands on the workers' time and labor to sustain and protect them. There is also a requirement to give such essential workers training in civil defense.

4. One consequence of plans to keep significant numbers of essencial workers in high risk areas is the necessity to organize civil defense forces and capabilities to come to their assistance in the event of enemy strikes on the cities where they are working. The conduct of rescue operations will require forces which are significantly larger than the number of essential workers in the target areas. In order for such forces not to be pinned down by enemy strikes in the urban areas, they must be either relocated from the cities prior to enemy strikes or they must be organized on the basis of human and material resources normally present in exurban areas. Although, from a practical viewpoint the ability of such forces to conduct post-strike rescue operations will largely depend on the radiological environment and therefore is fraught

with uncertainties, the existence of such a force nevertheless is essential if elements of the essential work force are to be continuously kept in high risk areas.

5. The earlier Soviet system of issuing the urban population evacuation passes in advance of any crisis relocation may be worthy of some form of application in the U.S. It is important for CRP to encourage the urban population to proceed to pre-designated hosting areas along designated routes and in such a manner that it is distributed in the hosting areas in accordance with plans and the hosting localities' capabilities. In principle, the issuing of evacuation passes may serve a number of useful purposes: It would assign hosting areas or localities and inform the recipients of their location; it may ensure a better use of routes; it could help identify essential workers and direct them to dedicated hosting localities; it could contain instructions about how the population should act, what it should take along, where it should look for assistance, and so on. It appears likely that in the U.S., with the possible exception of essential workers, the assignment or allocation of hosting areas will be best made in accordance with the individuals' (and families') places of residence. Of course, it will be important to persuade the population that it should proceed to designated hosting areas because they are prepared to receive and care for the evacuees assigned to them. As in the Soviet Union, the passes could serve to identify the evacuees, possibly facilitate their redistribution among hosting localities following their arrival, provide the local authorities with some means of keeping count of and control over them (if a segment of the evacuation pass is used for registering the evacuees in the hosting areas), and permit a more effective use of available resources.

6. The Soviet concept of assigning as far as possible hosting areas to cities within the boundaries of states where the latter are located is sensible. The same can also be said about the basic principle of moving the urban population the shortest possible distance commensurate with its safety and the character of the exurban area from the cities.

Obviously, the greater the distances the evacuees are required to travel, the more the relocation will be protracted and the greater the likelihood of difficulties and delays in their movement and of their maldistribution in the exurban areas.

7. Soviet strategic targeting doctrine appears to have relevance for the selection of hosting areas in the U.S. According to this doctrine, the population would not be targeted per se and, in addition to military targets, Soviet strikes would be aimed primarily at key economic targets whose distribution could directly influence U.S. warfighting and control capabilities. This suggests that it may not be necessary for the U.S. to seek maximum dispersal of the relocated population in hosting areas, which may create major control and support problems. For example, use could be made, for hosting purposes, of all towns with populations of up to 50,000 or more if they do not contain significant strategic targets. In such cases, hosting ratios of two or three evacuees to one local inhabitant may be practical and safe.

8. Even though in the U.S. the major portion of the urban population will be expected to leave the cities using privately owned vehicles, there will be a requirement to organize the transportation of those elements of the urban population which will be unable to do so. Indeed, it may be desirable to encourage, either in general or selectively, the urban population to use non-private means of transportation. This should include the use of railroads, river boats and coastal vessels, as well as publicly owned buses and trucks. The well-organized use of railroads and ships is likely to result in a more rapid arrival by evacuees using them in hosting areas than by those traveling by motor vehicles. In the case of elements of the population not using private vehicles, passenger pick-up stations for public buses and trucks ideally should be located at terminal stops of subways, streetcars and trolley buses furthest from the city centers. This presumes, however, that these latter systems will remain in operation at least during the initial stage of the relocation. In any event, transportation pick-up points for persons not traveling by private vehicles

should be known to the urban population in advance and also publicized in the course of the relocation process. The Soviet concept of organizing public motor vehicles into convoys, each with an assigned leader, appears to have some merit because it may help maintain discipline among the drivers, facilitate the organization of round trips, and increase the likelihood that the passengers will be delivered to designated hosting localities.

9. The maintenance of a reasonably smooth flow of motor vehicles on the roads will depend in part on minimizing disruptions resulting from vehicle breakdowns, collisions and running out of gas. Reliance only on fixed fueling and repair facilities which normally exist along relocation routes is unlikely to meet the needs and, in fact, may contribute to traffic jams and delays. For these reasons, the Soviet system of organizing mobile fueling, repair and towing units along relocation routes appears to be a sensible approach to the problem.

10. It is obvious that the careful, indeed comprehensive, preparation of hosting areas to receive, house, feed and supply, medicate, service and shelter urban evacuees is essential for an effective crisis relocation and the credibility in public eyes of the crisis relocation concept. This requires, in addition to appropriate planning, the implementation in peacetime of various measures to ensure that the hosting areas' infrastructure is adequate to meet the expected requirements. The Soviet approach to this problem suggests the need for particular attention in hosting areas to such issues as the adequacy of water supply, food stocks and food processing and catering capabilities with fuel for this purpose, medical facilities and stocks of medical supplies, stocks of building materials for the construction of rapidly erectable anti-radiation shelters, etc. There is also great merit to Soviet concepts of careful preplanned relocation and assignment to hosting areas of urban medical facilities and personnel to augment existing medical facilities there or to set up new ones on the basis of stocked medical supplies and equipment. As far as possible, physicians in private practice should be instructed in advance

to either join urban medical organizations in the course of the relocation or report to designated medical facilities and health services in the hosting areas. Finally, the Soviet concept of organizing mobile field kitchens for feeding evacuees, especially in hosting areas with insufficient public feeding facilities is sensible and worth noting.

11. The Soviet system of population control is alien to the American system of government and values. Nevertheless, some degree of control during crisis relocation and in hosting areas will be essential to prevent behavior which may jeopardize the safety and survivability of the population. It would appear that serious attention will have to be given to problems of traffic control and management. In the hosting areas, experience with past disaster situations suggests that the distribution of food and basic necessities provides the authorities with a potent instrument of control. Other instruments of control may include: the organization of evacuees into relatively small groups, each with an appointed or elected leader (possibly these leaders could also serve as shelter managers); the establishment of a public order and safety service utilizing, among others, relocated urban police and security personnel; the setting up of various administrative and service organizations largely manned by evacuees for dealing with evacuees' problems. Finally, from the viewpoint of control as well as economics and morale it will be desirable to find useful work or occupations for as many evacuees as possible in the event of their protracted stay in the hosting areas.

12. There is no parallel in the U.S. to the Soviet compulsory civil defense instruction program for the general population. It should be noted, however, that the Soviet instruction of the population in crisis relocation is relatively simple and brief. Of course, in the Soviet Union, the population does not question the utility or practicality of crisis relocation, and it is required to show little initiative in implementing it. Basically, all it is asked to do is to report to designated evacuation assembly points at specified times. In the case of the U.S., however, a major part of the urban population will have to exercise far greater initiative because its possession of private means of transportation will give it the capability to

take independent actions. Nevertheless, it is probably true that relatively simple and brief instructions will suffice also in the U.S.—that is, instructions which tell the public when to leave, where to go and what routes to use, or alternatively when and where to find public transportation. In the case of the U.S., however, the question of the credibility of CRP and of the willingness of the public to implement it is far more serious than in the Soviet Union. There is, therefore, a requirement to educate the public in this matter which goes well beyond the specific instructions on actions to be taken in the event of crisis relocation. The population must be convinced that crisis relocation is a credible and realistic survival concept. It must be given an incentive to proceed to designated hosting areas and have confidence in the capabilities of these areas to receive, sustain and protect the evacuees for an indefinite period of time. The public must also be persuaded that a reasonable span of time will probably be available for implementing the relocation. Another subject of instruction of the population concerns the construction of rapidly erectable anti-radiation shelters in the hosting areas. In the Soviet Union, instruction in the construction of such shelters is given to the general public in the course of the compulsory civil defense training program and in greater detail to the multi-million members of the civil defense forces. Presumably, crisis relocation in the U.S. as well as in the Soviet Union will coincide with a large volume of construction of such shelters or the adapting of existing facilities for use as shelters, in which the evacuees will be required to actively participate. While the Soviet system of public instruction is not applicable in the U.S., there will be a need, nevertheless, to train a significant number of persons in how to build such shelters using various building materials, as well as prepare detailed instructions on shelter construction for distribution to the evacuees. Whether instruction in anti-radiation shelter construction should be given primarily to personnel recruited from various public services, civil defense organizations and construction workers in the hosting areas or should include similar personnel in urban areas will need to be determined.

There is no doubt that rapid crisis relocation of tens of millions of urban residents is a formidable and complex undertaking. Indeed, it is one of the most difficult in any civil defense program. Its implementation requires comprehensive planning, effective organization and extensive preparations, as well as some form of instruction of the population. There are no illusions on this score among responsible civil defense officials, either in the Soviet Union or in the U.S. Despite the inherent difficulties of crisis relocation, however, analysis of Soviet concepts, organization, plans and preparations indicate that the Soviet Union has developed it into a practical and effective method for protecting its urban population against enemy nuclear strikes and, indeed, recognizes that it is a better method of protection than sheltering the population in-place. The existence of this Soviet capability and its implications for Soviet crisis management and war survival should not be ignored by the United States.

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