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RECENT DEVELOPMENTS IN THE SOVIET  
CIVIL DEFENSE PROGRAM

Leon Gouré

June 1963

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RECENT DEVELOPMENTS IN THE SOVIET  
CIVIL DEFENSE PROGRAM

Leon Gouré\*

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My present report on Soviet civil defense represents my personal views based on work I have done since 1957 on this subject for The RAND Corporation. In my studies I have sought to ascertain the role of civil defense in Soviet strategic and military planning, and to understand the character and scope of the Soviet civil defense program and of its actual implementation. I have described some of my findings in several papers published by The RAND Corporation and in a book, Civil Defense in the Soviet Union, which was published in 1962 by the University of California Press.

I would like to take this opportunity to bring my earlier reports up to date, since a considerable body of new information and photographic evidence has become available in the past two years, and to discuss some of the limitations and assumptions of the Soviet civil defense program.

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This paper was prepared for presentation to Subcommittee No. 3 of the Armed Services Committee of the House of Representatives, Washington, D.C., June 17, 1963.

For the past few years Soviet civil defense has been a subject of public discussion in the United States, and a considerable amount of conflicting information has been published about it. Following President Kennedy's announcement in the fall of 1961 of plans to accelerate and expand the United States civil defense program, the Soviet Union attempted to cast doubts on the value of the U.S. effort. On a few occasions, Soviet spokesmen, making informal statements addressed exclusively to foreign audiences, have denied the existence of a civil defense program in the Soviet Union. Disparagement of American efforts and denials that the Soviet Union had a civil defense program of its own seemed to indicate only a weak Soviet effort, if any, in this field.

The most frequently cited instance of such a denial was the statement made by Mrs. Khrushchev on October 6, 1961, to a group of Western peace marchers in Moscow. In answer to a question by one of the Westerners, Mrs. Khrushchev said that the Soviet Union was not building shelters because "we are not getting ready for war."<sup>1</sup> This statement, incidentally, was made not long after the Soviet Union had unilaterally resumed nuclear testing and had exploded nuclear weapons of 50 MT or more. Mrs. Khrushchev's statement and similar ones by some less well-known Soviet personalities have been widely quoted in the West -- but none of them has ever been reported in the Soviet press or in Soviet broadcasts.

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<sup>1</sup>New York Times, October 7, 1961.

The impression that the Soviet Union had no civil defense activities was reinforced by the reports, most of them published during 1961, of certain foreign travelers and newsmen who had failed to see any evidence of civil defense activities in the Soviet Union. In what I am about to say, I shall try to demonstrate that the impression of inactivity created for foreign audiences by Soviet spokesmen is not merely misleading, but basically false. I shall also try to explain why a number of Western travelers have been able to travel widely in the Soviet Union without seeing evidences of a big civil defense program.

The negative reports of travelers on Soviet civil defense activities are not surprising. Civil defense in the Soviet Union, a totalitarian state, is not a subject of popular debate, nor does its efficient functioning require such intensive use of mass communication media as in the West. The main newspapers, Pravda, Izvestia, and Red Star, very seldom mention the subject of civil defense. The Soviet government maintains secrecy over the scope of the national program, the total amount of shelter space available, the total number of persons trained, and the size of the national civil defense budget. Furthermore, the Soviets do not post signs indicating the location of their shelters so that these are difficult to recognize, especially by foreigners who are unfamiliar with Soviet shelter design.

Being part of a mass program, however, local Soviet civil defense activities and the existence of a nationwide program cannot remain secret. They are discussed

and publicized in a variety of national and local newspapers and magazines. Hundreds of different civil defense manuals are published, many in hundreds of thousands of copies, including translations of Western publications. Exercises are held and prominent Soviet leaders make speeches on behalf of the Soviet civil defense program.

One national newspaper, Soviet Patriot, in its nine issues for October 1961, the very time of Mrs. Khrushchev's denial, carried fourteen articles reporting on local civil defense activities in fourteen cities. The November 1961 issues carried twenty-five reports on twenty-four cities; the December issues contained sixteen reports on fourteen cities. By January 1962 the figures were up to thirty-one reports on thirty cities, the same in February, and so on. These numbers have been fairly typical of this publication for the past seven years. This year, the January issues carried twenty articles on civil defense activities in eighteen cities or regions of the USSR, the February issues had twenty-four reports on twenty-five cities, while the March issues published thirty-three reports on twenty-six cities all over the Soviet Union. In addition to reports on civil defense activities, this Soviet newspaper and various journals publish photographs of Soviet civil defense operations, and even of shelters.

Finally there are movies, radio broadcasts, and exhibits. Moscow has had a permanent Civil Defense Exhibit, open to the public, since 1952. About the time of Mrs. Khrushchev's statement to the peace marchers, a Soviet domestic radio broadcast stated: "A shelter is

the most reliable protection against poisonous substances and radioactive fallout."<sup>2</sup>

I would like to stress here that my statements about the Soviet civil defense program will be based largely on what the Soviets themselves openly say and publish about that program. My understanding of the breadth and thoroughness of the program was extended by personal observations which I made in 1960 during a month-long trip through the Soviet Union. In the course of my travels I visited nine cities in Northern, Central, Southern, and Asiatic Russia. My observations have been supported by photographic evidence and by the reports of competent foreign observers residing for extended periods in the Soviet Union.

In a speech in May 1962, Marshal of the Soviet Union V. I. Chuikov, Deputy Minister of Defense of the USSR and Chief of the Soviet Ground Forces, declared:

In strengthening the defense capability of the Soviet Union, an important place is held by civil defense, which, in a modern war is one of the factors determining the potential strength and survivability of a state... Civil defense must now be regarded as one of the essential elements of the overall defense preparations of the country.<sup>3</sup>

This statement was made in the presence of Marshal Malinovskii, Minister of Defense, all the Soviet service

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<sup>2</sup>Foreign Broadcast Information Service (FBIS), Daily Report, USSR and East Europe, October 13, 1961, p. cc7.

<sup>3</sup>Sovetskii patriot (Soviet Patriot), May 26, 1962.

chiefs, representatives of the Central Committee of the Communist Party, and other prominent political and military dignitaries. Obviously Chuikov had the approval of the Soviet leadership in stressing the importance of civil defense.

Since 1955 similar public statements have been made by other prominent Soviet military leaders, for example Marshals Budennii, Vasilevskii, Zhukov (when he was Minister of Defense), and Biriuzov (the present Chief of Staff of the Soviet Armed Forces). Marshal Konev, when he was First Deputy Minister of Defense, said that civil defense was of "exceptionally great importance for strengthening the defense capability of our country."<sup>4</sup>

The importance attributed to civil defense by Soviet leaders arises from the view that it is an integral part of Soviet war-fighting capability and strategy. This assertion is supported by the inclusion of a section on civil defense in the recently published book, Military Strategy, the first Soviet attempt since 1926 at a comprehensive description of Soviet strategy. This work, by a panel of officers, was completed last year under the editorship of Marshal Sokolovskii.<sup>5</sup>

The Soviet view is that a war between states with radically opposed political and social systems is bound

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<sup>4</sup>Sovetskii patriot, February 13, 1958.

<sup>5</sup>See Marshal V. D. Sokolovskii, ed., Soviet Military Strategy, translated and annotated by H. S. Dinerstein, L. Gouré, and T. W. Wolfe, The RAND Corporation, R-416-PR, April 1963, pp. 458-463. See also the same work published by Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1963, which has the same pagination.

to be unlimited in violence and intensity since each side will seek the complete eradication of its opponent. The war aims pursued by the belligerents being absolute, there will be no restraint on the use of "weapons of mass destruction," i.e. nuclear, chemical, and bacteriological weapons. This is a basic tenet of Soviet political and military doctrine.<sup>6</sup>

Modern weapons, Sokolovskii has written, make it possible to "annihilate the opponent or force him to surrender in the shortest possible time" by devastating "targets deep within a country in order to break up the organization of the country,"<sup>7</sup> and thus break the enemy's will and possibly even his ability to continue to resist. According to Malinovskii, the initial attacks would be directed not only against military targets but also against the opponent's industry and vital administrative, political, and communication centers.<sup>8</sup> To avoid defeat, a country must therefore be able to withstand and survive such an attack. Consequently, Malinovskii told the XXII Congress of the CPSU, "we must prepare our armed forces, the country, and the entire people, to withstand the aggressor mainly under conditions of a nuclear war."<sup>9</sup> According to Soviet statements on strategy, this

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<sup>6</sup> See, for example, Marshal Malinovskii, speech to the XXII Congress of the CPSU, Pravda, October 25, 1961.

<sup>7</sup> Sokolovskii, ed., Soviet Military Strategy, p. 305.

<sup>8</sup> Malinovskii, Pravda, October 25, 1961.

<sup>9</sup> Ibid.

necessitates reliance on a combination of offensive initiative and active as well as passive defense, i.e. preemptive attack, anti-aircraft and anti-missile defense, and civil defense.

While declaring that modern weapons make possible the attainment of "decisive results" in the "shortest possible time," Soviet doctrine also recognizes the possibility of a protracted war. While a small state can be easily destroyed or overrun, a quick victory over a large, powerful, and distant enemy is only possible if his will to resist collapses under the shock of the first nuclear attack. The Soviet leaders do not expect their country to collapse in this way. Khrushchev has acknowledged that it is not possible for one side to knock out the other with a surprise attack and that the aggressor must count on retaliatory attacks.<sup>10</sup> His prospective "aggressor," of course, is the United States, but we are safe in assuming he recognizes that the argument cuts both ways. Consequently, as one recent publication of the Soviet Ministry of Defense states: "War in all probability will not end with an exchange of mutually devastating nuclear/missile blows struck during the initial period."<sup>11</sup> Similarly, Marshal Malinovskii has

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<sup>10</sup>Pravda, January 15, 1960. See also Malinovskii, Pravda, May 9, 1963.

<sup>11</sup>Colonel G. A. Fedorov, Major General N. Ia. Sushko, Colonel B. A. Belov, et al., eds., Marksizm-Leninizm o voine i armii (Marxism-Leninism on War and the Army), Military Publishing House of the Ministry of Defense of the USSR, Moscow, 1962, p. 256.

acknowledged, in a pamphlet published in late 1962, that a future war may "become protracted and require the prolonged and extreme exertion of all the strength of the Army and of the country as a whole."<sup>12</sup>

According to Soviet doctrine, in a protracted war victory will belong to the side best able to withstand, survive, and recover from the enemy's attacks, and to produce new weapons for winning strategic superiority over the opponent. The Soviets hope, by capitalizing on their alleged superior morale and greater dispersal of industry and population, to survive the initial phase of the war and eventually to emerge victorious. They recognize, of course, that such a war would be very destructive.

According to a Soviet ideological work:

Under these conditions the working masses will not only have to continue working in industrial enterprises, but will also have to restore the damage. The victor in such a war will be that side whose population steadfastly and courageously bears all tests, without panic or despair, and preserves its will to fight and to achieve victory.<sup>13</sup>

In the Soviet view, then, civil defense makes a major contribution to the preservation of the population and of its morale, as well as of the industrial capacity to continue the struggle. It also permits the country to mobilize new military forces in the course of the conflict.

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<sup>12</sup> Marshal Malinovskii, Bditel'no stoiat' na strazhe mira (Vigilantly Stand Guard Over the Peace), Military Publishing House of the Ministry of Defense of the USSR, Moscow, 1962, p. 26.

<sup>13</sup> Fedorov, et al., eds., Marxism-Leninism, p. 283.

In short, it helps to ensure what Soviet writers call the "survivability of the state." Marshal Sokolovskii's book has this to say about post-attack mobilization:

Civil defense is of particular strategic importance because its effective organization and functioning are a requirement not only for the defense of the home front to a great extent, but also makes possible the mobilization of the armed forces during the initial period of the war.<sup>14</sup>

It also ensures, as other Soviet publications state, "the supplying of the fighting troops with weapons and other equipment in the course of the war."<sup>15</sup> The Soviet view of the role of civil defense is summed up in a terse statement by a Soviet general who wrote in October 1962 that civil defense "will in truth have an enormous significance for the attainment of victory."<sup>16</sup>

The growing importance and scope of Soviet civil defense was also reflected in October 1961 when the MPVO or Local Anti-Air Defense was renamed more explicitly Civil Defense (Grazhdanskaia oborona). The significance of this change was explained as follows:

If earlier our cities could solve the problem of protecting the population and economic installations from enemy air attacks and deal with the damage

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<sup>14</sup> Sokolovskii, ed., Soviet Military Strategy, p. 461.

<sup>15</sup> Fedorov, et al., eds., Marxism-Leninism, p. 256. See also I. S. Varennikov and L. A. Vinogradov, eds., Zashchita naseleniia ot sovremennykh sredstv porazheniia (Protection of the Population Against Contemporary Means of Attack), DOSAAF Publishing House, Moscow, 1962, p. 67.

<sup>16</sup> Lieutenant General L. A. Vinogradov, "The 30th Anniversary of Civil Defense," Sovetskii patriot, October 7, 1962.

caused by bombardment with their own resources, under modern conditions this will require the use of far greater forces and resources....

This is why the Local Anti-Air Defense has ceased to be local and has become a nationwide system and is therefore called Civil Defense, since it requires the active participation of each citizen of the USSR.... The protection of the population, of the national economy, and of military formations must be considered one of the most important defense activities of the state.

Civil defense of the USSR is now an inseparable part of the defensive strength of the Motherland. Now being organized throughout the country, it is one of the most important factors determining the potential strength and survivability of the state under war conditions.<sup>17</sup>

Soviet officials have not always been in unanimous agreement on the value of civil defense. The Soviet press revealed that following the Soviet nuclear tests of 1961 "some comrades" adopted a "skeptical attitude" towards the feasibility of protecting the population in the face of "new superpowerful weapons."<sup>18</sup> However, these views were condemned publicly as "mistaken" and "incorrect." The controversy, if such it was, was settled at the 5th Congress of DOSAAF (Volunteers Organization for Assisting the Army, Air Force, and Navy), a mass organization charged

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<sup>17</sup> Colonel General O. Tolstikov, "An Undertaking of Great Importance to the State," Voennye znaniia (Military Knowledge), February 1962, p. 21.

<sup>18</sup> Ibid., p. 22.

with civil defense training of the population, which met in May 1962. Not only was the congress attended by all the Soviet military chiefs and by prominent political personalities, but it was also greeted with a resolution of the Central Committee of the CPSU, published on the front pages of all newspapers. DOSAAF, said the Central Committee, "must continue...to train the population in ways and means of defense against contemporary means of mass destruction."<sup>19</sup> This constituted the highest-level endorsement of the Soviet civil defense program ever published and of course a directive that was binding on all Soviet public agencies and citizens. At the same congress, the Chairman of DOSAAF, General of the Army D. D. Leliushenko, stated: "One of the most important tasks of DOSAAF...is the training of the population in defense against means of mass destruction. The significance of this is especially great in view of the present international situation."<sup>20</sup>

As recently as April of this year, a high Soviet Officer wrote:

The Party, the soviets, and public organizations, ministries, departments, economic councils, and the entire working population are taking an active part in carrying out civil defense measures. There is every reason to consider this work, which is of great significance and enormous scope, a national undertaking.<sup>21</sup>

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<sup>19</sup>Pravda, May 23, 1962.

<sup>20</sup>Pravda, May 22, 1962.

<sup>21</sup>Colonel General O. Tolstikov, "To Improve Continuously the Training of the Population," Voennye znania, April 1963, p. 33.

This statement represents the current official Soviet view on the importance of civil defense.

Turning now to the actual Soviet civil defense program, its implementation in practice is implied, first of all, by a long series of public statements, some of which I have just quoted. These statements, addressed to domestic Soviet audiences as they are, could not have been made unless they reflected the government's policies. In support of this conclusion there is a great mass of additional evidence to indicate that the Soviet Union has been engaged for the past ten or twelve years in a nationwide, centrally directed, compulsory civil defense program. I shall describe the program, and I shall present some of the evidence for its large-scale implementation as I go along.

It is not a crash program; it seeks to improve the Soviet civil defense capability at a fairly steady rate. It is part of a continuous effort that stretches back to the 1920's. Because of this, civil defense is not a source of excitement or anxiety among the Soviet people, who view it as a routine matter. The present Soviet civil defense program was initiated in 1949 or 1950 and intensified and expanded after 1955.

According to their civil defense publications,<sup>22</sup> the Soviets expect that the timely preparation of cities and all inhabited centers, and the extensive training of the population in civil defense procedures, will significantly

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<sup>22</sup>See also Sokolovskii, ed., Soviet Military Strategy, p. 462.

reduce the number of casualties, weaken the shock effect of a nuclear attack, and ensure the continuous functioning of industrial enterprises and administrative agencies. The Soviet program therefore requires:

First, a large centrally directed civil defense organization.

Second, the training of the entire population in civil defense.

Third, the construction of various types of shelters.

Fourth, measures to disperse and harden industrial facilities and to reduce the vulnerability of cities to attack.

And fifth, the mobilization of civil defense forces and equipment capable of countering the effects of a nuclear attack so that the areas affected will recuperate rapidly.

#### Organization

According to Marshal Sokolovskii's book, "the civil defense system in the USSR is based on a principle of strict centralized direction. It is led by the all-union Headquarters for Civil Defense of the Country."<sup>23</sup> This headquarters, apparently, is under the jurisdiction of the Ministry of Defense of the USSR. Subordinate staffs are established in all the fifteen republics, in the territories, and in districts, cities, and large economic enterprises. These staffs operate various civil defense activities, such as medical, food supply, transport, warning, shelter, decontamination, and veterinary services,

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<sup>23</sup> Ibid.

which are organized on a compulsory basis. Service units coincide with municipalities and industrial enterprises. In addition, large numbers of so-called self-defense groups (now called "non-militarized formations") are organized in public and apartment buildings, as well as in rural communities. The civil defense organization is supplemented by military formations. In rural areas special rescue, decontamination, and fire-fighting units are formed to assist the urban areas in the event of attack.

There are no firm figures on the size of the whole organization. Khrushchev boasted a few years ago to some foreign visitors that there were 22 million fully trained persons serving in the Soviet civil defense organization.<sup>24</sup>

#### Training

In 1955 the Soviet government instituted a compulsory civil defense training program for the entire population. Since then a series of four consecutive civil defense training courses, totaling 64 hours of classroom work and practical exercises, have been given. All able-bodied men of 16 to 60 years of age and women of 16 to 55 must take this training, and school children as well. The training is administered and conducted by DOSAAF, a paramilitary organization with a membership of over 30 million, in conjunction with the Soviet Red Cross which is said to have over 40 million members. The training

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<sup>24</sup>H. Schellhammer, "The Problem of Civil Defense in the Atomic Age," Wehrkunde, No. 3, 1959, p. 145; Major R. E. Aksim, CD, "Survival Operations in the USSR," Canadian Army Journal, No. 2, 1960.

takes place in study groups at places of employment and residence. It deals with such subjects as weapon effects, use of individual protective devices, shelters, evacuation, fire fighting, medical first aid, decontamination, veterinary assistance to farm animals, and the protection of food, water, and fodder. There has been much emphasis, especially since 1958, on practical training.

The program pays a great deal of attention to protective measures against chemical and bacteriological weapons, including the use of gas masks, protective clothing, and individual decontamination kits, and of atropine against nerve gases. Soviet literature even describes gas masks for cattle.

The exact scope of the training program is not known. In May 1962, however, it was announced that, since 1958, "the majority of the adult population has familiarized itself with the destructive effects of nuclear, chemical, and bacteriological weapons and with the means of defense against them. Millions of toilers have completed training in civil defense study circles."<sup>25</sup>

On September 30, 1962, a new 19-hour training course was announced. Among its purposes was said to be the instruction of the population in "the location of the nearest shelter or cover, medical aid posts, and evacuation assembly points," as well as further improvement in first aid, decontamination, rescue, and other procedures.<sup>26</sup> Study groups of not less than 50 persons were ordered to complete the course in not more than four months. High

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<sup>25</sup> Pravda, May 22, 1962.

<sup>26</sup> Sovetskii patriot, September 30, 1962.

school students were to pass a three year course in decontamination work. Mass exercises were ordered to be held at least once every quarter. Wide use is to be made of radio, television, and motion pictures for training purposes. The trainees have available a large number of various types of manuals dealing with every aspect of civil defense. The Soviet press has published numerous reports and photographs on local civil defense training activities especially in connection with factories. According to a report published in April of this year, "tens of millions of persons" have been trained during 1962.<sup>27</sup>

There is no evidence that any country-wide exercises have taken place, and no city-wide exercises, to my knowledge, have ever occurred in Moscow or Leningrad. But the Soviet press has reported city-district exercises in Moscow and city-wide exercises in a number of other cities.<sup>28</sup> Travelers have also reported seeing exercises in a number of other cities. For example it was reported last year in the U.S. press that Benny Goodman and his orchestra, when they were touring the Soviet Union, saw a city-wide civil defense exercise in Tashkent (Uzbek Republic). It was said to be the second such exercise within a few weeks.

While the Soviet press claims considerable success in the training program, it also contains complaints about public apathy, poorly trained instructors, improper

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<sup>27</sup>Voennye znaniia, April 1963, p. 33.

<sup>28</sup>Sovetskii patriot, August 11, 1957, June 11, August 8, 1958, May 20, 1959; Voennye znaniia, December 1958, p. 20, March 1959, p. 31, April 1959, p. 34.

use of equipment, and other shortcomings. Attempts to rectify these failings appear to have been only partly successful.

### Shelters

Soviet authorities have stressed the need for shelters as the most effective means of defense against nuclear, chemical, and bacteriological weapons. The Soviet shelter construction program is primarily a mass shelter program which appears to have gone into effect in 1949 or 1950, with special attention to industrial plants and new housing construction. All permanent urban shelters provide varying degrees of protection against blast and a high degree of protection against collapsing buildings, radiation, fire, and chemical and bacteriological agents. They must be equipped for relatively long-term occupancy.

Soviet publications have shown the design of a variety of types of shelters. These include:

1. Very deep or heavy shelters for a large number of persons, designed to withstand in excess of 300 psi; these shelters are intended for use by members of the elite and the administration;
2. Large detached shelters for 100 to several thousand persons, and designed to withstand 100 to 150 psi; these shelters are intended for use by industrial workers as well as the public;
3. Subways in Moscow, Leningrad, and Kiev;
4. Basement shelters in public buildings and apartment houses designed for 10 to 100 psi;
5. Various types of simple fallout shelters which can be built very quickly by the population in the event

of an emergency and which will provide the principal form of protection in rural areas;

6. Suburban and rural family shelters, utilizing existing deep root cellars and other underground structures, to be constructed by the population.

7. Soviet literature has also described shelters for cattle.

The permanent shelters are equipped with double steel doors and filter ventilation units for removing radioactive dust as well as chemical and bacteriological agents. Also included are water, light, heat, toilets, bunks, and in some cases bottled oxygen. Food is apparently stored in most public shelters but not in apartment-house shelters. In the latter case the population is instructed to bring its own supplies when taking cover. Civil defense teams control the shelters and operate the equipment.

No precise information on the total amount of ready shelter space is available since the Soviet authorities keep it secret. Since shelters are not marked, foreign observers have found it difficult to identify their location unless familiar with Soviet shelter design characteristics. However, the Soviet authorities have not really tried to hide the existence of shelters. Soviet manuals and domestic broadcasts have instructed people to familiarize themselves with the location of shelters nearest to their place of work and residence. The Soviet press has published reports and even photographs citing the existence of factory and basement shelters in some twenty cities located in all parts of

the Soviet Union.<sup>29</sup> For example, Sovetskii patriot of March 24, 1963, cited the use of shelters in a training exercise held at the "Barikada" Machine Building Plant in Stalingrad.

On my trip through the Soviet Union I found numerous shelters in all the nine cities I visited.<sup>30</sup> I was usually able to verify the correctness of my observation by conversations with Russian citizens. Other travelers have made similar observations. The easiest and most reliable way for a foreign observer to identify Soviet shelters is by their emergency exits, which are located far enough from buildings to avoid being buried by debris and are recognizable by their design. Unobtrusive in appearance, they are easily overlooked even by the professional traveler. Thus, they remained undetected by many American news correspondents in Moscow until 1962 when several of these newsmen visited the permanent Civil Defense Exhibit in that city and saw training films showing shelters. As a consequence of this visit, Seymour Topping of the New York Times reported in March 1962:

The above ground extensions of shelters now identifiable have been found to be numerous in Moscow. Travelers have seen them in other Soviet cities too....  
These installations can be seen in Moscow

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<sup>29</sup> Among the cited locations were Moscow, Leningrad, Riga, Minsk, Tashkent, Stalingrad, Fergana, Yerevan, Elektrostal', Rostov, Simferopol', Mytishy, Makeevka, Zhdanov, Stepanakert, Pereslavl'-Zalesskii.

<sup>30</sup> Leningrad, Moscow, Kiev, Kharkov, Stalingrad, Rostov, Baku, Tbilisi, and Tashkent.

in court yards and at various distances from public buildings.<sup>31</sup>

Similarly the Reuters correspondent reported that:

The exhibits and films suddenly provided Western visitors with the opportunity of learning how to recognize the tell-tale signs of underground shelters -- above ground air vents and escape hatches.

The exhibition showed that in a construction program after the war an extensive system of shelters in basements of office and apartment buildings was laid out.<sup>32</sup>

A similar problem of identification has arisen in connection with the concealed blast doors in the Soviet subways. I have published photographs of these doors in my papers and book and have obtained additional photographs since then. As in the case of the shelter exits, American newsmen in May 1962 saw a film which showed how "steel doors would be lifted into place by hydraulic jacks to seal off arched entrances to the platforms."<sup>33</sup>

There is some evidence that Soviet authorities have discontinued the construction of basement shelters in buildings made of precast concrete sections. I was told by Russians that "better shelters were being built elsewhere." This may have been a reference to dual-purpose shelters, such as underground garages and motion-picture theaters, which were mentioned in a Soviet article in

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<sup>31</sup>New York Times, March 23, 1962.

<sup>32</sup>Washington Post, March 25, 1962.

<sup>33</sup>New York Times, March 23, 1962.

1962.<sup>34</sup> In any case, current Soviet emphasis on informing the population of the location and use of shelters suggests that some form of shelter construction is continuing. This appears to be confirmed by travelers who have visited the Soviet Union during the past year.

Although it appears to be considerable, the present ready shelter capacity is unlikely to be sufficient for the majority of the urban population. Soviet civil defense publications, however, claim that the existing shelter system can be very rapidly expanded in an emergency by simple fallout shelters that can be built in about 24 hours at presurveyed sites. The primary objective of the Soviet shelter program appears to be to provide relatively heavy shelters for urban workers. According to Soviet doctrine, the non-essential population is to be evacuated, if time permits, to rural areas and small towns.

#### Urban Planning, Dispersal and Industrial Hardening

Soviet publications place great stress on reducing industrial and population density in the cities, limiting the danger from spreading fires, dispersing and hardening industrial power and communication facilities, and stocking critical raw materials, supplies, and equipment.

Relatively little is known about what measures have actually been taken in these matters. Some attempts have been made to control urban growth. A substantial number of satellite towns are being built 30 to 50 miles outside the major cities. These are bisected by avenues, 300 feet and more in width, which are said to serve as firebreaks,

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<sup>34</sup>Voennye znaniia, February 1962, p. 22.

evacuation routes, and to provide easy access to rescue teams.

Concerning dispersal, Khrushchev has claimed that "our territory is immense and the population less concentrated in major industrial centers than in many other countries."<sup>35</sup> At the same time Soviet publications stress that in a war:

Despite the heavy destruction, a part of the industrial facilities and other economic installations will survive, especially if they are dispersed over a large territory and are placed underground.<sup>36</sup>

It is to be remarked, however, that such dispersal and hardening applies primarily to new industries. For example, it is asserted in Marshal Sokolovskii's book that "we are now speaking primarily of the proper distribution of newly built installations and the partial and gradual dispersion of existing ones."<sup>37</sup> The same book also states that "the most valuable equipment is being placed in very strongly constructed premises under concrete cover."<sup>38</sup> However, it notes that "it is beyond the means of any, even the most powerful state, to shelter a considerable portion of the industrial facilities underground. Therefore, such shelters are provided only for the most important installations; for the rest only hardened

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<sup>35</sup> Pravda, January 15, 1960.

<sup>36</sup> Fedorov, et al., eds., Marxism-Leninism, p. 256.

<sup>37</sup> Sokolovskii, ed., Soviet Military Strategy, p. 451.

<sup>38</sup> Ibid.

underground control points are built."<sup>39</sup> It is recognized in current Soviet military publications that the survival of vital parts of the industry must further be ensured by the use of anti-aircraft and anti-missile defense.<sup>40</sup>

#### Post-Attack Rescue, Repair and Recuperation

Soviet civil defense doctrine calls for a massive effort to deal with the effects of an attack: to reduce casualties, to limit damage and, where possible, to restore production in the disaster areas. The plans include wide use of manpower, including the trained citizenry, and of all types of simple as well as heavy equipment. Soviet publications report the existence of a wide variety of special equipment issued to civil defense forces: radiation measuring instruments, chemical detector kits, mobile laboratories and hospitals, mobile decontamination units for dealing with radioactive, chemical and bacteriological agents, various types of rescue, fire fighting, and heavy construction equipment. My own observations in the Soviet Union appear to confirm these reports.

#### Conclusion

The Soviet civil defense program is far from complete and suffers from a variety of shortcomings. Apart from the notorious inefficiency of Soviet administration, there is the relatively short time that many persons will be

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<sup>39</sup> Ibid., p. 452.

<sup>40</sup> Fedorov, et al., eds., Marxism-Leninism, p. 256; Colonel P. I. Trifonenkov, Ob osnovnykh zakonakh khoda i iskhoda voyny (On the Fundamental Laws on the Course and Outcome of a War), Military Publishing House of the Ministry of Defense of the USSR, Moscow, 1962, pp. 53-54.

able to remain in shelters, especially in basement shelters, because of limited food supplies. Great crowding and absence of cooling equipment will force large numbers of them to evacuate their shelters via contaminated areas while the radiation level may still be fairly high. There is considerable reliance on lengthy advanced warning of an attack, and the expectation of conducting massive rescue and rehabilitation operations may not be realistic. Soviet civil defense authorities themselves acknowledged in 1962 that "at the present time, however, the problems of protecting the population are not solved in a fully perfected manner."<sup>41</sup>

The Soviets do not expect, however, that civil defense will be so perfect as to prevent significant losses or casualties. Their leaders and writers have repeatedly stated that a future war would cause enormous destruction and, according to a recent publication, that the Soviet Union would lose "tens of millions of people."<sup>42</sup> They therefore recognize that the effectiveness of civil defense and thus the possibility of surviving the attack and eventually winning the war will depend to a great extent on their ability to blunt or weaken the enemy's attack. This is why Soviet doctrine, in addition to stressing civil defense, also emphasizes pre-emptive attacks as well as the importance of anti-aircraft and anti-missile defense. In this connection it may be worthwhile to note the recent reports in the American press concerning

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<sup>41</sup>Voennye znaniia, February 1962, p. 22.

<sup>42</sup>Fedorov, et al., eds., Marxism-Leninism, p. 4.

the appearance of what are said to be anti-missile-missile launch sites around Leningrad.<sup>43</sup>

Despite the present inadequacies of Soviet civil defense and the growing destructiveness of modern weapons, the Soviet leadership believes that the preservation of the Soviet state and society in the event of a war merits considerable efforts and the expenditure of relatively scarce money and resources. The high-level public endorsements which Soviet civil defense has received in the past year appear to indicate that the importance of civil defense has if anything increased. In my opinion, the available evidence leaves no doubt that the Soviet Union is engaged in an extensive civil defense program and that it believes it to be worth further efforts and continued investments.

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<sup>43</sup> Evening Star (Washington, D.C.), March 14, 1963; The Sun (Baltimore), March 15, 1963.