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1954 Annual Report



FEDERAL CIVIL DEFENSE ADMINISTRATION

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Annual Report for 1954

FEDERAL CIVIL DEFENSE ADMINISTRATION

LETTER OF TRANSMITTAL

The Honorable, The President of the United States

The Honorable, The President of the Senate

The Honorable, The Speaker of the House

I have the honor of transmitting to you the Fourth Annual Report of the Federal Civil Defense Administration, together with pertinent recommendations for Civil Defense in our future national security structure. This report is submitted in conformity with Section 406, Public Law 920 of the 81st Congress.

Respectfully,

VAL PETERSON,
Administrator.

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CIVIL DEFENSE HIGHLIGHTS OF 1954

1. *Evacuation.* In January 1954 the FCDA issued a forecast of policy concerning necessity for planning evacuation to avoid excessive loss of life as the result of the larger areas of damage possible through use of nuclear weapons. Since that date many American cities have conducted experimental tests. Though partial, these have demonstrated the feasibility of evacuation. Other American cities are in the process of completing plans for more comprehensive tests.

2. *Public Knowledge.* Through the release of "Operation Ivy," the official film of a thermonuclear explosion at Eniwetok in 1952, the FCDA was able to furnish visual evidence to the public of some of the effects if hydrogen weapons should be used against the United States. This film was publicly shown first in April 1954.

3. *Operation Alert.* The first national and international civil defense test exercise on the inter-American continent was held June 14 and 15, 1954. The 48 States, the District of Columbia, Alaska, Hawaii, Puerto Rico, and the Virgin Islands participated as did the Canadian Government and its provinces. *Operation Alert* 1954 gave valuable training to hundreds of thousands of civil defense workers and tested certain civil defense operational capabilities.

4. *Delegation of Civil Defense Responsibilities to Federal Agencies.* With the approval of the President, the FCDA delegated 26 specific civil defense programs directly related to their day-to-day work to six Federal agencies. Delegations were made to the Department of Health, Education, and Welfare on July 14, 1954; and to the Department of Agriculture; Department of Commerce; Department of Justice; Department of Labor; and the Housing and Home Finance Agency on September 8, 1954.

5. *Relocation of the FCDA National Headquarters.* On September 1, 1954, the national Federal Civil Defense Office moved to Battle Creek, Michigan. This has increased the chances that the FCDA national headquarters will be operational in event of enemy attack.

6. *Civil Defense in Peacetime Disasters.* Increasingly in 1954 civil defense gave effective assistance in natural disasters. The contribution of civil defense was particularly evident in the hurricanes which struck the east coast in the early fall.

7. *Radioactive Fallout.* On September 28, 1954, the FCDA made public certain of the facts about radioactive fallout and provided

beginning information on civil defense measures to cope with this threat. Action was taken to make public additional data as it became available.

8. *Attack Warning.* The attack warning which is disseminated from units of the Continental Air Defense Command through the civil air defense warning system has now reached a stage of readiness whereby warnings can be disseminated and acknowledged by the majority of key points in less than 3 minutes. When all warning devices approved for purchase through 1954 are in operation, the attack warning signals will be able to reach about 80% of the people in the principal cities in target areas.

9. *Emergency Supplies and Equipment.* As of December 31, 1954, more than 130 million dollars had been provided for a Federal reserve stock of medical supplies and equipment and more than 6 million dollars for a Federal reserve stock of engineering supplies and equipment. Medical supplies on hand are sufficient to provide medical care for about 2½ million surviving casualties for 3 weeks following an attack.

As of December 31, 1954, the Federal Government had also provided almost 46 million dollars as its share in authorized programs for State and local civil defense organizational equipment and supplies. This sum has been matched by an equal amount from the States and cities.

SOME HIGHLIGHTS OF PAST CIVIL DEFENSE PROGRESS

1951—THE FIRST YEAR

1. *Organization.* All State and Territories had civil defense legislation. States, Territories, and major cities have designated civil defense directors and developed operating civil defense organizations. Twenty States completed agreements for mutual aid in a civil defense emergency. United States and Canada set up a mutual aid agreement.

2. *Volunteers.* 1,870,199 volunteers were enlisted in civil defense throughout the Nation.

3. *Public Knowledge.* In the major target cities 87% of the people knew a few of the simple things they should do to protect themselves against atomic attack as a result of messages through newspapers, radio, television, magazines, and other media, plus public service activities by industry and organizations. This was stimulated by the circulation by cities and States of over 54,000,000 copies of 9 official civil defense pamphlets and leaflets.

4. *Federal Training.* Over 1,300 civil defense officials from every State and Territory attended the Federal Civil Defense Staff College and Training Schools.

5. *Attack Warning.* The system already installed could send an alert from USAF Air Defense Control Centers to 174 key points throughout the Nation in less than 2 minutes.

6. *Medical Supplies.* Medical supplies and miscellaneous equipment were stockpiled by Federal, State, and local governments and by private agencies for civil defense emergency. Total investment was about \$90,000,000 by June 1952.

7. *First-Aid Certificates.* At the end of 1950 there were 449,000 holders of American Red Cross first-aid certificates in the country. As of September 30, 1951, there were 1,412,000, an increase of 963,000.

1952—THE SECOND YEAR

1. *Operational Readiness of States and Cities.* Nearly 2,000 civil defense exercises were conducted by cities and States. These involved 2,000,000 civil defense workers and 42,000,000 citizens.

2. *Operational Readiness of FCDA.* Under its plan for emergency operations, FCDA activated two operating emergency locations and installed emergency communications facilities. FCDA possessed the physical facilities for operating under attack conditions in close coordination with its regions and the States and with other key security agencies of government.

3. *Attack Warning.* In critical target areas, capability of giving attack warning more than doubled in 1952. An air-raid alert could be given through sirens and whistles to more than 40% of the critical target area population in a matter of minutes from the USAF air defense control centers via the civil air-raid warning network operated by FCDA.

4. *Public Knowledge.* Public knowledge of the need for survival action increased in 1952. Several million more American families undertook individual and group preparedness activities. Sixty-four million adults believed that civil defense was necessary and would be effective against atomic warfare.

5. *The "Alert America" Convoys.* During 1952, three "Alert America" convoys traveled throughout the United States. More than 1,100,000 people in 82 cities attended these traveling exhibits which served as a major means of bringing civil defense information to, and increasing public interest and participation among the 67,000,000 residents in the areas visited.

6. *Civil Defense Workers.* In 1952, the number of civil defense workers more than doubled. An estimated 4,000,000 served in the local and State Civil Defense Corps, collectively known as the United States Civil Defense Corps.

7. *Civil Defense Training.* Some 200,000 specialists and instructors were graduated from 650 local schools in courses sponsored and organized by the States and cities; 3,218 civil defense instructors and 581 officials were graduated from the FCDA training schools and staff college. During 1952, FCDA opened at Olney, Md., the first school for advanced rescue instruction, built around scientifically designed American structures simulating wartime damage conditions.

8. *Emergency Supplies and Equipment.* Through the Federal contributions program in 1952, States and localities were able to make a start in increasing readiness in attack-warning and communications equipment, firefighting equipment, rescue equipment, training and education materials and equipment, and medical supplies and equipment. A total of some \$45,000,000 was invested in these essential civil defense supplies, half of it State and local. A start was also made in 1952 on Federal reserves of engineering and medical supplies and equipment. The medical supplies, now on order or delivered, would have afforded minimum care to nearly 2,000,000 casualties for the first week.

1953—THE THIRD YEAR

1. *Peacetime Values of Civil Defense.* Communities, cities, and States throughout the Nation learned that an organized, trained civil defense was an important asset whenever and wherever natural dis-

aster struck. Civil defense became a recognized community service—a new dimension of peacetime citizenship.

2. *Greater Official Knowledge.* As part of the informed leadership program of the Administration, the White House held two special defense conferences for the Nation's governors and mayors. An important element of these conferences was the frank discussion of the problems of home front defense so that State and local officials could give local guidance and leadership based on a full knowledge of the facts.

3. *"Project East River."* The final report of more than 100 leading scientists and experts, which included more than 200 recommendations for civil defense, was submitted to the FCDA, the Department of Defense, and the Office of Defense Mobilization in January of 1953. This impartial study aided tremendously in expediting realistic civil defense planning and operation.

4. *"Operation Doorstep."* National interest and public knowledge of the practicability of civil defense preparedness were stimulated by the public atomic test on March 17, 1953. The dramatic story of typical American homes and cars subjected to an atomic blast was relayed to millions of Americans by newspapers, television, radio, newsreels, and magazines. "Operation Doorstep" demonstrated that proper preparation could save lives at home.

5. *Operational Readiness.* More cities and States than ever before held public and command post civil defense exercises in 1953. As a result, millions more Americans had some operational or training experience with civil defense.

6. *Attack Warning.* The ability of civil defense to give public warning of an attack through sirens and similar devices reached 45% in 1953.

7. *Public Emergency Radio Broadcasting.* The CONELRAD broadcast system, jointly developed with the Federal Communications Commission and the United States Air Force to assure continuity of public emergency radio broadcasting for civil defense purposes under attack conditions while denying use of those facilities as an enemy navigational aid, became operative on May 15, 1953. A nationwide test in October demonstrated that it was generally practical.

8. *Civil Defense Workers.* The number of civil defense workers actively enrolled increased by nearly 10% in 1953. States and cities reported more than 4½ million civil defense personnel enrolled and currently assigned to duty.

9. *Civil Defense Training and Education.* By the end of 1953 over 4,000 key personnel had completed one or more of the FCDA staff and instructor training courses. The number participating in special courses and conferences more than doubled that of the previous year.

10. *Functional Reorganization.* In less than one year a reevaluation of the organization of the Federal Civil Defense Administration was completed and the agency reorganized under more functional lines. In the process a personnel saving of more than 10% was accomplished.

11. *Emergency Supplies and Equipment.* In fiscal 1953 the FCDA contributed nearly 15 million dollars to match an equal sum from the States and cities, for civil defense organizational equipment and supplies. The civil defense materials purchased with these funds increased the ability of the States and cities to cope with any disaster, whether from nature or enemy attack. In 1953 an additional 19 million dollars worth of emergency medical supplies and equipment and one million dollars of engineering equipment were added to Federal reserve stocks to supplement local supplies in the event of attack. The total FCDA investment in emergency supplies since 1951 was slightly over 85 million dollars.

12. *Greater Reality in Civil Defense Planning.* In recognition of the existence of larger weapons and of the probability of somewhat longer public warning time in the next several years, a new policy of population dispersal was encouraged in the latter half of 1953.

ADMINISTRATOR'S REVIEW OF 1954 CIVIL DEFENSE ACCOMPLISHMENTS

Many significant things which affect civil defense have happened in the world in the year since the Federal Civil Defense Administration last reported to the President and the Congress of the United States on our Nation's civil defense. This is a report on the state of civil defense readiness of the Nation. It is not a report on the Federal Civil Defense Administration alone but rather a summary of the evidence that we at FCDA have of the progress and deficiencies of civil defense at all levels.

While we are all justified in looking back over the past year and checking off some solid accomplishments, we should not mistake the progress that has been made for the completion of the job of civil defense. We have a long difficult road to travel, perhaps longer and more difficult than could have been anticipated at the beginning of the year, before we can feel confident that our civil defense is adequate.

Here are a few accomplishments of 1954, in no particular order of importance:

We staged the first continental alert in history. This was one of the finest examples of teamwork on the part of local, State, and Federal people, together with our friends north of the border, that I know of.

The Washington Conference of Governors, followed by one for the Mayors in December, produced an awareness of civil defense problems among the State and municipal leaders of America and support for our objectives greater than we have ever before enjoyed.

The release of the motion picture "Operation Ivy" and the operational data which it contained was helpful both in civil defense planning and in achieving a clearer public understanding of the threat the Nation faces.

During the past year FCDA has concluded, with the approval of the President, arrangements with a number of other Federal agencies to take over certain civil defense responsibilities which, by the nature of their function, they are particularly fitted to do. This is in accordance with the provisions for delegation of civil defense authority, set forth in Public Law 920.

With the cooperation of State and local officials, a study of the traffic engineering aspects of evacuation has been undertaken in Milwaukee. A preliminary report on this study has been completed.

Another milestone of the past year was the partial evacuation tests which have been held in a number of cities.

We have enjoyed increasingly closer working relationships, both with the Canadian Government and members of the NATO countries and have held a number of conferences with the civil defense officials of these governments, both in the United States and abroad.

In FCDA's new home at Battle Creek, we are in a position to do an even more effective job, both for the States and the Nation as a whole.

Finally, we can take some satisfaction that public awareness of both the need for civil defense and what the individual American should know and do to protect himself and his family is increasing, though not as rapidly as we should like. This is clearly indicated in the results of the latest public opinion study by the Survey Research Center of the University of Michigan.

Satisfaction in accomplishments like these must be weighed against a sober appraisal of the threat this Nation faces. Weapons of greater destructiveness have been tested. There are more such weapons in the world than there were a year ago. There are better airplanes to carry them than there were a year ago. And the end of man's ability to create destructive weapons does not seem to be in sight.

We are now forced to think of weapons that will carry millions of tons of TNT equivalent. How many million, will depend upon the time and upon the choice of the enemy—whether he prefers to have some weapons of tremendous destructive ability or whether he prefers to have a larger number of smaller weapons. In terms of destructive force, these weapons can be made tremendously large.

A year ago, one of the first things we needed in civil defense was a detection system that would permit us to get up to 4 to 6 hours of warning time. Today, plans for such early detection have been made and the detection systems are being constructed. Completion is still a number of months away for it involves the coordinated use of ships at sea, aircraft flying off the flanks of the United States, land installations of radar and other detection devices, extending all the way from Hawaii over Alaska and Canada to Iceland and Greenland and down to the Azores. When we get sufficient warning time, we want to evacuate American cities which are likely to be targets.

Some people ask why civil defense talks about evacuation today when we do not yet have warning time? It is true we don't have the warning time today. We might have, depending on where you are located, an hour or an hour and a half today—maybe less in some places in the United States. We talk about evacuation now because it will take the best brains in our cities to work out plans between now and the time we get the warning time. We must study. We must not wait until we have the warning time and then start to work out the plans; that would not be prudent foresight. That is why FCDA proposes that civil defense work on this job right now.

The alternatives are to dig, die, or get out; and certainly we don't want to die. Civil defense's purpose is to see how many of us can live after an attack.

Obviously evacuation is a tough thing. There have been a lot of tough undertakings in the history of the world, but I just don't

believe that anybody knows of anything tougher than to evacuate millions of men, women, and children from 100 or more American cities in the face of a bombing raid—get the people out, get them out safely, get them out on time, and feed them, clothe them, shelter them, give them whatever they need in the way of medication, reunite families, and take care of them following an attack.

But it can be done. Since FCDA reported a year ago, there have been a number of tests, and every test that has been held in the United States, granted that it has been a preliminary test, has been successful up to the present time.

Actually we evacuate cities every day. In the Loop in Chicago there is a peak daytime population of 900,000 people. At night there are 85,000 people in the Loop. Now, the rest of that 900,000 go somewhere. They go home sometime between 5 and 6 o'clock or 6:30. They crowd the streets when they go, but they go.

Evacuation of this sort is carried out every day in every great American city. You gain certain things when you evacuate in the event of a war or in the event of one of these exercises—traffic goes one way on the streets; you eliminate cross-traffic, which is one of the real problems of traffic.

Our cities must be divided up into areas, and each one of us must know where he is going.

We must figure out some way of dividing the community up, and each one of us going to his appointed place. That is the only hope we have because time is going to be short when we try to get out of these cities.

There are three broad effects when an atomic or hydrogen weapon goes off. Each emphasizes the grave need for adding the mobility of evacuation to civil defense plans and operations. First, the blast effect. Second, the fire or thermal effect. With the larger weapons, these cover great areas.

These present two very important and very difficult problems. But the third effect is the radioactivity. There is nothing new about radioactivity. We have known always that the explosion of these bombs caused radioactivity. With air bursts, the possible harmful effects of such radiation are quite minor when compared with the blast and thermal effects. With ground bursts, especially of larger weapons, the possible harmful effects of radiation become tremendously important.

When the thermonuclear device shown in "Operation Ivy"—the official film of a test of a hydrogen device—was exploded at Eniwetok and blew a hole in the ocean floor 175 feet deep, it also blew highly radioactive dust and debris up 40, 50, 60 thousand feet in the air.

That dust and debris is carried by the wind currents that prevail in the upper air. These currents vary from day to day. That dust and debris is going to come down, which creates new civil defense problems which did not exist when it was probable that weapons would be exploded high in the air. Civil defense from now on must know much more about radiation hazards and all about the weather and all about the winds.

Radiological fallout creates another great problem for civil defense. It makes the problem tougher again. Ever since civil defense started, the scientific and military developments have constantly been making it a little bit tougher. What looks satisfactory one day just isn't good enough the next day or the next week.

Radioactive material decays rather rapidly, sometimes in a matter of hours up to a couple of days. A ready defense against the results of radiation for human beings is the equivalent of 3 feet of dirt overhead. Such shelter or cover needs a good, tight door and a filter in the air intake to keep out radioactive dust. Water, food, some sort of sanitary facilities and a battery radio to give information on what is going on in the rest of the world are also needed.

These are great problems. So are the continuing possibilities of attacks by biological, chemical and psychological warfare, by clandestine weapons and guided missiles. The FCDA does not minimize them. Yet, we are not the first people to live in troubled times. It has been more or less the history of mankind throughout mankind's existence. And I assume that there will be problems a thousand years from now or two thousand years from now.

There is reason for prudent people to get ready militarily and civil-defense-wise. There is need for calm constructive leadership which can encourage and stimulate the "ordered haste" requested by President Eisenhower. Now is the time to get ready, while there is time. We should do everything we can to insure peace in this world and eliminate such a catastrophe for the world. That is the best solution. But we should also have the strongest kind of civil defense so that we can save lives before attack actually strikes, and so that we can save lives and property after we have been hit.

CIVIL DEFENSE PLANNING AND RESEARCH

Civil defense is a basic element in the Nation's total program of national security. In his State of the Union Message to the 84th Congress, President Eisenhower declared:

Our civil defense * * * is * * * a key element in the protection of our country. We are developing cooperative methods with State governors, mayors, and voluntary citizen groups, as well as among federal agencies, in building the civil defense organization. Its significance in time of war is obvious; its swift assistance in disaster areas last year proved its importance in time of peace.

Other elements in the national security program are: action to resolve international disputes by diplomatic means; the creation and maintenance of a strong retaliatory military striking force; alliance for defense with the free nations of the world; a strong continental defense at home; and a defense mobilization program for the country which incorporates and coordinates national planning to provide manpower, stockpiling, continuity of production, internal security, and all other requirements for the successful prosecution of offensive and defensive warfare.

THE THREAT WE FACE

Each year the Federal Civil Defense Administration develops planning assumptions of the nature of possible enemy attack upon this country, based upon official intelligence reports. The assumptions are not predictions of what will happen but rather estimates of the problem posed by enemy capability as of that year. These assumptions are the basis for national, State, and city civil defense planning. Digested, the specific assumptions for fiscal year 1954 were:

Type of Attack

That a potential enemy would be able to strike any target within the United States. That if this country were attacked, a primary objective of the attacker would be to destroy our production capacity and our will to resist. That the most probable method of attaining this objective would be to attack our centers of industry, population, and government.

Since the nuclear or atomic bomb is the most effective weapon of sudden mass destruction available at present in quantity, that the enemy would rely mainly on it, and that thermonuclear or hydrogen types of weapons might be available for use against appropriate targets.

That the most reliable means of delivery of these weapons is the long-range bomber, although nuclear weapons might be delivered by

other means than aircraft, such as submarines, or smuggled into the country. Only from the point of view of warning time would the method of delivery basically affect civil-defense planning. That high explosive and incendiary bombs would be used, sabotage employed, and biological and chemical weapons used before or after atomic attack. That psychological warfare of all kinds could disrupt defense programs, impair production, create panic, and weaken our will to resist.

That measures designed to meet a nuclear weapon attack would be sufficient to meet any high explosive or incendiary attacks that might accompany the atomic blow. Special measures to meet large-scale biological and chemical attacks are a continuing necessity. Fear and panic resulting from the shock of an attack would be exploited by enemy psychological warfare activities. That we must be prepared to meet a flood of false rumors, disseminated by word of mouth, by leaflets, and by clandestine radio operating under the name of known stations.

That any type of attack would be accompanied by attempts at sabotage of industry and communications. Although the effects of such sabotage activities would probably be minor as compared with those of direct attack, the enemy capability for clandestine introduction of atomic weapons might cause serious problems.

Size of Attack

That the initial attack would be an attempted knockout blow.

That the initial airborne attack would include sufficient nuclear weapons to hit all of our 70 critical target areas, and that a large proportion of all weapons carried would be delivered on target.

That the initial attack would be followed by others less heavy.

Bomb Size and Physical Damage

President Eisenhower, in his historic address before the General Assembly of the United Nations on December 8th, 1953, said "atomic bombs are more than 25 times as powerful as the weapons with which the atomic age dawned, while hydrogen weapons are in the ranges of millions of tons of TNT equivalent." Therefore, it was assumed that any city attacked, with very few exceptions, would be virtually destroyed. Damage on this scale would substantially destroy the administrative, industrial, and commercial facilities of the city.

That in view of the constantly increasing capabilities of the enemy nuclear weapons program, in the near future, weapons in the multimegaton range would be available to him in greater numbers and that this possibility must be considered in all civil defense planning.

Probable Targets

The 70 critical target areas (listed in "FCDA 1953 Annual Report" and "Target Areas for Civil Defense Purposes") were assumed to be the most probable enemy objectives, since the return per bomb in damage and casualties would be greatest there and that each of the 92 principal cities in the critical target areas would be struck by at least one bomb of appropriate yield. Every city should, therefore, be as fully prepared as possible.

It was assumed that the daytime centers of population would be the aiming points within each city, since these centers coincide generally with centers of industrial concentration.

In addition to the 70 critical target areas for civil defense purposes, there are 123 target areas which are regarded as having a lower probability of being hit. These target areas should also be as fully prepared as possible.

Support

The destructive capabilities of nuclear and other weapons are so great that any attack, if successful, would result in damage and casualties far beyond the resources of any city. Therefore, it was assumed that any city attacked would require assistance from the outside to meet the emergency. This support must be organized in advance of an attack to be available immediately.

This assumption is a major premise in the operation of civil defense. Hence, the available resources of the entire country, outside potential target areas, as well as within them, must be made a part of the civil defense system. These resources should be organized both to move aid readily to the cities, and to receive and take care of casualties and evacuees.

Warning Time

As the development of radar networks and other protective measures progresses, the probability of complete surprise from air attack is constantly diminishing. But the possibility of surprise will never disappear entirely. Nor can there ever be complete assurance of a specific warning time in any given area. It was assumed, however, that at some time prior to July 1, 1955 our defenses would be such that Warning Yellow would be received at least one hour before Warning Red.

It was emphasized that this estimate was an assumption for planning purposes only, and would remain so until official notification that longer warning time could be given the States.

Dispersal of People

Two principal types of personal protection against nuclear weapons were assumed: distance from the explosion and adequate shelter.

Critical Target Area Total Population - 67,750,982

CRITICAL TARGET AREA & STATE	POPULATION	% TOTAL
1. Akron (Ohio).....	410,032	.6052
2. Albany-Schenectady-Troy (N.Y.).....	514,490	.7594
3. Allentown-Bethlehem-Easton (N. J.-Pa.).....	437,824	.6462
4. Atlanta (Ga.).....	671,797	.9916
5. Baltimore (Md.).....	1,337,373	1.9739
6. Binghamton (N. Y.).....	184,698	.2726
7. Birmingham (Ala.).....	558,928	.8250
8. Boston (Mass.).....	2,369,986	3.4981
9. Bridgeport (Conn.).....	258,137	.3810
10. Buffalo (N. Y.).....	1,089,230	1.6077
11. Canton (Ohio).....	283,194	.4180
12. Chattanooga (Tenn.-Ga.).....	246,453	.3638
13. Chicago (Ill.-Ind.).....	5,495,364	8.1111
14. Cincinnati (Ohio-Ky.).....	904,402	1.3349
15. Cleveland (Ohio).....	1,465,511	2.1631
16. Columbus (Ohio).....	503,410	.7430
17. Dallas (Tex.).....	614,799	.9074
18. Davenport-Rock Island-Moline (Ill.-Iowa).....	234,256	.3458
19. Dayton (Ohio).....	457,333	.6750
20. Denver (Colo.).....	563,832	.8322
21. Detroit (Mich.).....	3,016,197	4.4519
22. Erie (Pa.).....	219,358	.3238
23. Evansville (Ind.).....	160,422	.2368
24. Fall River-New Bedford (Mass.-R. I.).....	274,767	.4055
25. Flint (Mich.).....	270,963	.3999
26. Fort Wayne (Ind.).....	183,722	.2712
27. Fort Worth (Tex.).....	361,253	.5332
28. Grand Rapids (Mich.).....	285,292	.4255
29. Hartford (Conn.).....	358,081	.5285
30. Houston (Tex.).....	806,701	1.1907
31. Indianapolis (Ind.).....	551,777	.8144
32. Kansas City (Kans.-Mo.).....	814,357	1.2020
33. Knoxville (Tenn.).....	337,105	.4976
34. Lancaster (Pa.).....	234,717	.3464
35. Los Angeles (Calif.).....	4,367,911	6.4470

CRITICAL TARGET AREA & STATE	POPULATION	% TOTAL
36. Louisville (Ky.-Ind.).....	576,900	.8515
37. Memphis (Tenn.).....	482,393	.7120
38. Milwaukee (Wis.).....	871,047	1.2857
39. Minneapolis-St. Paul (Minn.).....	1,116,509	1.6480
40. New Britain-Bristol (Conn.).....	146,983	.2169
41. New Haven (Conn.).....	264,622	.3906
42. New Orleans (La.).....	685,405	1.0117
43. New York-N. E. New Jersey (N. Y.-N. J.).....	12,911,994	19.0580
44. Norfolk-Portsmouth-Newport News (Va.).....	589,427	.8700
45. Peoria (Ill.).....	250,512	.3698
46. Philadelphia (Pa.-N. J.).....	3,671,048	5.4184
47. Pittsburgh (Pa.).....	2,213,236	3.2667
48. Portland (Oreg.-Wash.).....	704,829	1.0403
49. Providence (R. I.-Mass.).....	737,203	1.0881
50. Reading (Pa.).....	255,740	.3775
51. Rochester (N. Y.).....	487,632	.7197
52. St. Louis (Mo.-Ill.).....	1,681,281	2.4816
53. San Diego (Calif.).....	556,808	.8218
54. San Francisco-Oakland (Calif.).....	2,240,767	3.3074
55. Seattle (Wash.).....	732,992	1.0819
56. South Bend (Ind.).....	205,058	.3027
57. Springfield-Holyoke (Conn.-Mass.).....	407,255	.6011
58. Syracuse (N. Y.).....	341,719	.5044
59. Toledo (Ohio).....	395,551	.5838
60. Trenton (N. J.).....	229,781	.3392
61. Utica-Rome (N. Y.).....	284,262	.4196
62. Washington (D. C.-Md.-Va.).....	1,464,089	2.1610
63. Waterbury (Conn.).....	154,656	.2283
64. Wheeling-Steubenville (Ohio-W. Va.).....	354,092	.5226
65. Wichita (Kans.).....	222,290	.3281
66. Wilkes-Barre-Hazleton (Pa.).....	392,241	.5789
67. Wilmington (Del.-N. J.).....	268,387	.3961
68. Worcester (Mass.).....	276,336	.4079
69. York (Pa.).....	202,737	.2992
70. Youngstown (Ohio-Pa.).....	528,498	.7801

There is at present no government-financed program for the construction of special shelters to be added to the privately financed construction of home shelters and protective facilities in private industry.

That any reduction in population density in a target city would reduce casualties and that dispersal from population centers, combined with taking the best shelter available on the sounding of Warning Red, was the most practical way of reducing casualties.

It was assumed that prior to July 1, 1955, most of the principal target cities in the critical target areas would have been able to plan for a partial evacuation from the areas of greatest concentration on the receipt of Warning Yellow and that (1) the public would be notified of Warning Yellow, (2) most people in the areas of concentration would be able to move an average of two miles before Warning Red was sounded, (3) adequate traffic-control plans would be worked out for the movement, (4) means of informing the public, via Conelrad radio, etc., of the emergency situation and protective action to be taken would be developed, and (5) some type of shelter would be available for those required to stay behind.

Even though such an exodus from the center of population density might cause many people to be caught with minimum, improvised protection on their way to safer areas, it was estimated that the casualty total would still be considerably less than if the normal concentration had not been partially dispersed.

It was emphasized that a sound dispersal plan could be made only on the basis of a thorough urban analysis.

MEASURES TO MEET THE THREAT

Considering the foregoing, and the planning assumptions under which the FCDA operates, the Agency must maintain close working relations with the Executive Office, the other security agencies of Government, and the civil defense organizations of friendly nations:

Public Law 920, under which the FCDA operates, places the primary responsibility for civil defense operations on our State and city governments. The FCDA has the continuing task of developing overall plans for their guidance. Such planning cuts across the whole structure of government, Federal, State, and local, and requires the development, revision and refinement of a great many working programs to assure that an attack upon this country with the weapons of modern war can be met with effective unified and immediate action at all levels.

To discharge this responsibility, the FCDA must have access to the latest information on the effects of the new weapons of mass destruction, the ability of the enemy to deliver them, and our ability to counter

them with defense measures that will enable us to continue a war to ultimate victory. There is little precedent to follow because of the rapid and continuing development of nuclear and other weapons since the last war and the speed of the aircraft that can deliver them on this country. Gathering the needed information entails continuing research and close cooperation with the other agencies of Government concerned in these fields.

It will be seen, then, that the work of the Planning Staff of FCDA falls into three broad categories, as indicated above. The following detailed summation of planning activities in 1954 is grouped accordingly.

Interagency Cooperation

SECURITY AGENCY RELATIONS PROGRAM

Much of FCDA's joint operations with the security agencies of the Federal Government is classified. This work furnishes the data for the development of the Agency's planning assumptions (such as those digested at the start of this Section) and is the basis for all FCDA program planning. Although security limits a full statement of operations in this field, an indication of their nature can be obtained from the following:

1. In 1954 FCDA took an active part in the deliberations of the Planning Board of the National Security Council and was represented on the Council when matters of concern to the Agency were under discussion. The Agency also participated in the work of the several committees and work groups of the Council and the Interdepartmental Committee on Internal Security, particularly in the field of clandestine weapons.

2. FCDA was represented on the Industrial Defense Committee of the Office of Defense Mobilization and the nine Task Forces operating within the structure of that Committee.

3. FCDA participated as a member of the Industrial Evaluation Board in identifying the Nation's facilities and resources needing special protection in time of emergency. The Agency worked with the Facilities Protection Board in the development of protection techniques for the indicated industries and facilities and also in planning to achieve order in putting the overall industrial protection program into effect.

4. FCDA was represented on the Regional Defense Mobilization Councils established in key areas throughout the country and took part in the work of the Central Coordinating Committee having jurisdiction over them.

5. FCDA met with the Operations Coordinating Board when matters of concern to the Agency were under consideration.

6. FCDA worked with the Continental Defense Committee in the development of integrated national defense planning.

7. FCDA cooperated with security agencies in developing programs with which FCDA was either directly or collaterally concerned. Among these are the Industrial Dispersal Program, Industry Protection Program, Urban Vulnerability Program, Mobilization Readiness Program, Postattack Restoration and Rehabilitation Program, and the Emergency and/or Post-Emergency Materials Control Program.

8. FCDA worked closely with the Department of Defense and the Atomic Energy Commission in the development of data on the effects of the new weapons and, with these two agencies, participated in joint test and research programs.

UTILIZATION OF OTHER AGENCIES

FCDA use of Federal resources is authorized in three sections of the Federal Civil Defense Act.

One section authorizes the Administrator to delegate, with the approval of the President, "appropriate civil defense responsibilities" to the several departments and agencies of the Federal Government.

Another directs him to "utilize to the maximum extent the existing facilities and resources of the Federal Government."

The third is operative only during a civil defense emergency. It authorizes the President, after taking into consideration the military requirements of the Department of Defense, to direct Federal agencies to provide "their personnel, materials, and facilities to the Administrator for the aid of the States."

Together, these three sections make it possible to bulwark civil defense with all the strength of the Federal Government except that which is needed more for military defense.

FCDA utilizes Federal agencies and their resources in five ways: (1) By delegation of authority and responsibility; (2) By participation under statutory authority or agreement; (3) By planning continuity of essential government functions; (4) By use of resources; and (5) By protection of Federal resources.

DELEGATION OF AUTHORITY

During 1954, the Administrator delegated to other Federal agencies authority and responsibility for 26 specific civil defense programs directly related to their day-by-day work.

Eight delegations were made to the Department of Health, Education, and Welfare, ranging from research in biological warfare to preparing to care for people in want as a result of attack.

Three were to the Department of Agriculture. They comprise combatting biological and chemical warfare against animals or crops, maintaining emergency food supplies, and rural fire fighting.

Five were to the Department of Commerce, concerning use and restoration of highways, and emergency traffic control.

Six were to the Department of Labor on manpower needs during a civil defense emergency.

The Department of Justice was made responsible for protecting penal institutions and controlling and using prisoners and facilities during emergency.

The Housing and Home Finance Agency was given responsibility for protective standards for housing, planning temporary emergency housing, and emergency restoration of housing and facilities.

Delegations are being negotiated with the Department of the Interior and the Federal Power Commission. Other delegations being considered are to General Services Administration, Veterans' Administration, the Post Office Department, and Federal Communications Commission.

During 1954, the delegation program reached about 70% of completion. By June 30, 1955, every Federal agency will be charged with all its civil defense responsibilities.

Under the terms of the Delegations of Authority, the Administrator provides the designated agencies with basic assumptions and standards, and reviews and coordinates what they do.

Each of the agencies was made responsible for coordination with other Federal agencies involved, making reports required by the FCDA Administrator, considering mobilization assignments given by the Office of Defense Mobilization, and for requesting appropriations required, after consultation with the Administrator.

Delegations do not change the basic responsibility of FCDA to the President and the Congress, or the relationship between FCDA and the States. States retain the prime responsibility for civil defense. (See appendix A & B.)

PARTICIPATION BY STATUTORY AUTHORITY OR AGREEMENT

The nature of civil defense obviously concerns practically all areas of the Federal Government. Public Law 920 requires that FCDA avoid duplicating any existing Federal activity. Consequently, in the course of any year there are daily contacts between the FCDA and practically all other Government agencies.

Many of the activities cannot be specifically reported because they involve classified information. The FCDA has received the benefit of information gathered by the various intelligence agencies in developing its long-range and short-range plans for civil defense protection.

Work with the security agencies of the Government has continued to furnish valuable bases for present and emergency operating plans.

Many activities of cooperation and coordination which took place in 1954 are discussed in other portions of this report.

The following is a list of Federal departments and agencies from whom the FCDA has received major assistance in 1954:

- Department of Agriculture
- Atomic Energy Commission
- Civil Service Commission
- Department of Commerce
 - Bureau of Census
 - National Bureau of Standards
 - Bureau of Public Roads
 - National Shipping Authority (Maritime Administration)
 - Defense Air Transportation Administration
 - Civil Aeronautics Administration
 - Weather Bureau
- Department of Defense
 - Defense Transport Administration
 - Federal Communications Commission
 - General Services Administration
 - Federal Supply Service
 - Public Buildings Service
 - Housing and Home Finance Agency
- Department of the Interior
- Department of Health, Education, and Welfare
 - Public Health Service
 - Office of Education
 - Food and Drug Administration
- Department of Justice
- Department of Labor
- Library of Congress
- Office of Defense Mobilization
- Reconstruction Finance Corporation
- Department of State
- Treasury Department
- Veterans' Administration
- American National Red Cross
- National Research Council

CONTINUITY OF ESSENTIAL GOVERNMENT FUNCTIONS

The Office of Defense Mobilization is responsible for helping each agency determine which of its functions it will have to continue during wartime. FCDA has a stake in this process from two standpoints: (1) That the agency will have the personnel required to carry out its delegations of authority from FCDA; (2) some personnel whose normal jobs are nonessential in war will be made available for other civil defense assignments.

During the year, an FCDA official worked full time with ODM on the continuity program.

USE OF FEDERAL RESOURCES

Executive Order 10346, April 1952, directs Federal agencies to consult with FCDA on plans for use of their personnel, materials, and facilities in civil defense emergencies. These plans take into consideration the essential military requirements of the Department of Defense from each agency, and the continuity of the agency's essential functions.

Under the guidance of FCDA regional administrators, most agencies with field offices have developed inventories of resources and made agreements for their use in civil defense. Such resources may be assigned to the States in which they are located. To date there is no national inventory of Federal resources which may be turned over to the States in emergency.

PROTECTION OF FEDERAL RESOURCES

The protection program for Federal resources includes heavy construction, shelter provisions, and evacuation planning.

The Public Buildings Service of the General Services Administration has been made responsible for the self-protection program within the agencies for which it provides facilities. Other agencies which do not depend on the Public Buildings Service for facilities have developed their own programs. These include Agriculture, Defense, Interior, Post Office, Justice (for Federal Prisons), Veterans', Atomic Energy, and Library of Congress.

Cooperation With Other Countries

Public Law 920 directs the FCDA to cooperate with neighboring countries in developing the overall civil-defense program. Uniform warning signals, easing of border restrictions to facilitate mutual aid and mobile support between the countries of the North American continent are essential to continental civil defense. Further, as part of the total security planning of the Federal Government, the FCDA is required, with advice and guidance from the State Department, to cooperate with friendly foreign nations in developing their civil defense systems. This requires the exchange of civil defense information, joint participation in the deliberations of international civil defense and security organizations, and other cooperative action. FCDA, through the Planning Staff, carried this program forward during 1954. A summary of the major developments follows:

CANADA

The third meeting of the full Joint U. S.-Canadian Civil Defense Committee was held in Washington, D. C., February 11, 1954. Ten working groups and subgroups were reconstituted to work out details of a joint program for civil defense action in time of emergency.

U. S. and Canadian federal authorities issued instructions to States and Provinces on methods of making State-Province civil defense agreements and several joint exercises were held to test border-crossing procedures.

A joint agreement to provide for speedy movement of narcotics across the border was reached by Canadian authorities, FCDA, the U. S. Treasury, and State Departments. Formal acceptance is now pending. This completed arrangements for easing border controls for the movement of people, equipment, and supplies across the border for civil defense purposes in time of emergency.

On September 27, 1954, a joint conference of U. S.-Canadian civil defense and military authorities at Edmonton, Alberta, finished planning for civilian evacuation of Alaska in time of emergency.

U. S. and Canadian civil defense authorities jointly produced an educational film for use in both countries. Exchange of students in training programs and exchange of films and publications continued during the year.

NORTH ATLANTIC TREATY ORGANIZATION

In 1952, the North Atlantic Council established a committee to consider problems of civil organization in time of war. Upon the Committee's recommendation, a subordinate Civil Defense Committee composed of the civil defense directors of the 14 NATO member nations was formed to:

1. Encourage national development of civil defense programs.
2. Promote the common development and free exchange of civil defense information among NATO countries.
3. Develop model civil defense agreements between nations to encourage standardization of civil defense equipment, training, and techniques.
4. Further mutual support on an international basis.

At the request of the Department of State, FCDA furnished U. S. representation for the five meetings the NATO Civil Defense Committee has held; furnished a representative for an *ad hoc* working group studying fire prevention; and provided guidance to another working group studying protective measures against toxic gases.

The Committee met twice in 1954. At the first meeting earlier work was summarized; Sir John Hodsoll, wartime director of British Civil Defence, was appointed Senior Technical Advisor, and a subsidiary special committee was formed to permit participation of the Federal Republic of Germany in considering civil defense measures for Germany and other north European areas. The special committee membership includes representatives of the United Kingdom, France, Belgium, Italy, Luxembourg, and the Netherlands. The United States and Canada were invited to participate.

The initial meeting was devoted to defining methods of operation. It was agreed that the Federal Republic of Germany be given an opportunity to study the questionnaires and reports already considered by the NATO Civil Defense Committee. It was also agreed that the German delegation would prepare reports of German experience during World War II, particularly with fire storms and the removal of rubble.

Both the NATO Committee and the Special Committee met again in November 1954. The NATO Committee continued discussion of the essential elements of civil defense, with emphasis on the need for planning measures to cope with modern weapons. Medical requirements were analyzed. Policies for industrial protective measures and the formulation and utilization of mobile columns were defined.

The activities of the NATO Civil Defense Committee are not directed toward the organization of a supranational civil defense structure but rather toward the consideration of civil defense problems in concert. This joint consideration by the 14 member nations is contributing measurably to the standardization of concepts and determination of elements of national civil defense organization which could be moved across international borders should an emergency arise. The Committee's formation has made possible joint discussion of the development of international warning systems and mutual aid compacts which would enable mobile columns or fire, rescue, and engineering teams to cross neighboring international boundaries and carry out other joint operational phases of civil defense.

COOPERATION WITH FOREIGN NATIONS

Several delegations from other countries visited the Federal Civil Defense Administration for consultation in 1954, either through arrangement with the Departments of State or Defense, or through direct cooperation.

The FCDA also maintained continuing liaison with the civil defense offices in many other countries. Policy guidance in these international operations is given by the Department of State. Following are the highlights of these operations:

Australia

At the request of the Department of State, FCDA provided the Australian Joint Services Staff with recommendations for the organization of civil defense, and technical and advisory publications are now being used by the Australian Government in the establishment of a national civil defense organization.

Brazil

During 1954, members of the Brazilian Government attended civil defense courses at the National Training Center, Olney, Maryland.

In addition, FCDA provided information on the organization and assembly of control centers which Brazil is now constructing.

Denmark

At the invitation of FCDA Administrator, Val Peterson, the Danish Director of Civil Defense spent 3 weeks in September reviewing American civil defense technical developments, planning assumptions, and the organization at national, State, and city levels. Meetings at FCDA National Headquarters included round table discussions with the FCDA technical staff, of U. S. and Danish planning, organization, and techniques. During his inspection the Danish director visited the Wisconsin State Headquarters, reviewed the evacuation studies of Milwaukee, and Philadelphia, and reviewed the New York City civil defense organization.

Egypt

At the request of the Egyptian Government, FCDA provided standard specifications for radiological monitoring, and made its facilities at the National Training Center available to Egyptian civil defense officers.

France

In May, the Inspector General of Public Works and Engineering, who is in charge of engineering aspects of civil defense for the French Ministry of Interior, visited FCDA to discuss the construction of shelters and problems relating to the ventilation and heating of shelters. FCDA provided the French civil defense organization with technical manuals and other publications.

Germany

In May, the Civil Defense Director for the Federal Republic of Germany, accompanied by 5 scientists and technicians, spent 3 weeks in the United States studying civil defense methods at the national, State, and local levels. This visit included discussions of methods and a comparison of techniques in the two countries. Subsequent to this visit, there were several exchanges of technical information, particularly concerning shelter design, blast resistant construction, and a gas mask developed by the Germans for distribution to the general public.

Great Britain

Extensive exchange of civil defense information and materials between FCDA and the Home Office continued in 1954. This included publications, films, printed material, studies of training methods, organization, and methods for maintaining the health and welfare of populations under emergency conditions. Members of FCDA utilized

attendance at NATO meetings to visit the Home Office in London and exchange views on civil defense techniques and assumptions. In September, the Assistant Under Secretary of State for Civil Defense Operations (Training and Planning) visited the United States for 3 weeks, during which he discussed civil defense in light of the effects of larger weapons, reviewed the organization of civil defense in Wisconsin, and discussed evacuation procedures under study in Milwaukee. He also inspected New York City's civil defense preparations.

Japan

In July, the Chief of the Japanese Safety Agency visited FCDA to discuss principles of organization.

Sweden

At the invitation of FCDA Administrator, Val Peterson, the Director of Civil Defense of Sweden spent 3 weeks in September in the United States reviewing civil defense technical developments, planning assumptions, and organization at national, State, and city levels. Meetings at the FCDA National Headquarters included round table discussions with the FCDA technical staff, of both U. S. and Swedish planning, organization, and techniques. During his inspection of American civil defense, the Swedish Director visited the Wisconsin State Headquarters, reviewed the evacuation studies of Milwaukee, and Philadelphia, and reviewed the New York city civil defense organization. In December, a research engineer of the Swedish Research Institute, visited FCDA to discuss radiation monitoring techniques and instruments.

Other

In 1954, FCDA continued to exchange information with other friendly nations. These included, in addition to the NATO nations, Argentina, Chile, Cuba, Mexico, China (Formosa), The Philippines, Thailand, India, Pakistan, The Union of South Africa, Hong Kong; Malta, and Singapore. In most instances, these nations are in the process of establishing civil defense offices and looked to the United States for guidance. The FCDA filled these requests, in consultation with the Department of State.

U. S. VISITS TO CIVIL DEFENSE ORGANIZATION ABROAD

During the year the Administrator, the Administrator's special advisor and other officers attended meetings of the NATO Committee on Civil Defense. A representative of the FCDA fire office represented the U. S. on a NATO Ad Hoc Working Group on fire prevention. Officials attending the NATO Committee meetings in Europe reviewed civil defense developments and conferred with officials in Sweden,

Denmark, France, Germany, and Great Britain. State and local civil defense officials with FCDA assistance, visited civil defense offices, the director for the State of Washington, several nations in the Far East, representing the Administrator on an informal basis, and members of the Maryland civil defense organizations, civil defense organizations in Germany, the Scandinavian countries, and the British Civil Defense Staff School at Sunningdale.

CIVIL DEFENSE RESEARCH AND DEVELOPMENT DURING 1954

The major FCDA research and development activities during 1954 were directed toward problems concerning evacuation of urban areas and atomic test program planning.

By the end of the year virtually all the planning for the next continental series of atomic tests had been completed by the FCDA staff. A specific program had been laid out and was in progress of execution. In addition, certain vital research projects were carried on during the year.

ATOMIC TEST PROGRAM

This program is scheduled to be held at the Atomic Energy Commission's Nevada test site during the Spring, 1955, test series. It is the most comprehensive test program yet undertaken by FCDA and consists of four major elements:

(1) *Technical Tests*.—Full-scale field tests of typical items of everyday American life, ranging from residence and industrial type buildings to tests of food, clothing, and other materials designed to obtain basic data on their behavior under exposure to atomic blast, thermal phenomena, and nuclear radiation.

(2) *Public Information Program*.—Dissemination of information from the various technical tests and demonstrations of the effects of atomic weapons on various items of everyday American life for the purposes of public information and education. Through cooperation of the various public media, the entire program is to be nationally televised and completely covered by press, radio, and newsreels. In addition, certain documentary photographic coverage is to be made for subsequent release and distribution.

(3) *Field Exercise Program*.—This program is designed basically for training civil defense personnel and for demonstrating to the public what civil defense is organized and equipped to do. It will include participation by various State and local civil defense personnel.

(4) *Industry Participation Program*.—The industry participation program is designed to:

- a. Accomplish certain technical objectives through participation by private industry in tests of particular interest to business and industry.
- b. Enable key personnel of various companies to obtain first-hand experience of the effects of atomic weapons on critical industrial installations.

- c. Make basic information available to industrial personnel and the public, generally.
- d. Train key personnel in various industries in protective remedial measures.

The entire atomic test program is built around the concept of an "open shot" to be seen and understood by the general public. It permits the accumulation and dissemination of the data obtained to State and local civil defense organizations and various segments of private industry. In participating in this program, other Federal agencies acquire basic information on the phenomena of atomic explosions and their key personnel gain valuable first-hand knowledge of nuclear weapons.

ATOMIC ENERGY COMMISSION

In its cooperative program to furnish technical advice and information to the FCDA, the Atomic Energy Commission participated in many special meetings and discussions with the Agency. A White House Conference for State Governors, arranged by the FCDA included an address by Chairman Strauss outlining AEC civil defense activities common to the national security program. Sessions were held with staff members of FCDA and the Department of Defense to determine current needs of FCDA and the feasibility of future civil defense experiments during test operations.

The AEC cooperated in all ways possible in organizing the civil effects test program. (See Atomic Test Program, above.) Staff members also reviewed design criteria for protection construction standards to be released by FCDA to Federal agencies and the public for guidance in erecting structures in or near designated target areas. Assistance was also given to the Bureau of Ships, Department of the Navy, on design criteria and materials necessary for construction of adequate shelters.

A classified briefing was held for the Civil Defense Committee of the Life Insurance Association of America to acquaint them with the responsibilities of civil defense.

Emergency Radiation Monitoring Teams

Pending establishment of civil defense organizations with definite assigned functions for radiological defense, the Commission acted in 1949 to establish emergency radiation monitoring teams in about 20 locations throughout the United States, to operate under the jurisdiction of five AEC operations offices. These teams were composed of AEC and contractor personnel experienced in radiation detection work at atomic energy installations, and stood ready to monitor any

radioactivity resulting from enemy attack or disaster, using radiation detection instruments stockpiled by the Commission.

In the period since civil defense organization and training have progressed to the point where, on January 4, 1954, after consultation with FCDA, the AEC teams were relieved of responsibility by civil defense personnel. AEC continued to serve as scientific and technical adviser to FCDA and to State and local civil defense bodies on radiological monitoring and allied techniques.

AEC also continued to make available, on a loan basis, radiation detection instruments and certain radioisotopes for civil defense radiological training use by States and cities. Loans to the following were made in the first six months of 1954 period: Texas and Arkansas—instruments; Florida and Texas—radioisotopes.

Dissemination of Information From Civil Effects Tests

Information compiled from weapons test reports of the spring 1953 series at the Nevada Test Site was issued as public information by FCDA. It included data on air-zero locators, identification tags, typical frame residences, and home shelters.

The genetics experiments in the spring 1953 test series were of particular scientific interest. Unclassified extracts from the weapons test reports were given at several scientific meetings, and 14 articles on the results of the exposures of genetic materials to nuclear radiation were reviewed for publication in scientific journals.

During the period July-December 1954 assistance to the Federal Civil Defense Administration was given by the Atomic Energy Commission in the following area: approximately 270 weapons test reports (primarily classified) were transmitted since the start of the cooperative program of AEC and the Department of Defense to furnish specific categories of effects information relevant to civil defense planning and operations; in cooperation with the U. S. Weather Bureau, a number of briefings and conferences were arranged to consider the problem of radioactive fallout; and cobalt 60 radiation sources were loaned the Oregon State Civil Defense Agency, upon endorsement of FCDA, for training and educational use in the State civil defense program.

Current data were provided the Office of Defense Mobilization on the effects of high-yield weapons for use in reevaluation of the national industrial dispersal policy.

Declassification of Operation IVY Film

The declassification and public release of "Operation IVY"—the official film of the test of a thermonuclear device at the Pacific Proving Ground in 1952—was a major contribution to national civil defense.

NATIONAL SCIENCE ADVISORY COMMITTEE

During 1954 the FCDA requested the National Academy of Sciences to organize a National Committee to advise the FCDA on scientific problems. This committee has proved invaluable in assisting FCDA on problems involving the various scientific disciplines, both physical and social.

The Committee on Disaster Studies of the National Research Council continued its administration and sponsorship of work on the recovery and rehabilitation of several communities struck by tornadoes during 1953. In addition, the committee sponsored three studies of evacuation exercises held during the year in Mobile, Alabama; Spokane, Washington; and Bremerton, Washington. By the year's end, FCDA had participated in additional evacuation exercises in Philadelphia, Pa., and Denver, Colorado, with the cooperation of the committee.

OPERATION FIRESTOP

FCDA participated jointly with several other Federal, State, and local agencies in a project designed to devise, develop, and test various methods, equipment and materials for preventing, controlling, and suppressing mass fires. The operational phase of this program, headed by the U. S. Forest Service, was conducted during the summer of 1954 in the Camp Pendleton area of Southern California. While the actual firing was done in grass, brush, and scrub forests, the conditions simulated in the field were comparable to those that would obtain in urban areas after atomic or other attack. The field phase of Operation Firestop indicated considerable promise in the development of new fire fighting techniques, equipment, and materials which present fire services are neither trained nor equipped to utilize.

DAMAGE ASSESSMENT AND REPORTING

In June 1954, FCDA entered into a contract with the Stanford Research Institute which is the first major effort made to develop, mechanize, and systematize damage assessment and reporting. This project is designed to develop a technique of rapid accumulation and appraisal of data on damage resulting from enemy attack, which is essential to adequate preattack planning and rapid cognizance of a national postattack situation as the basis for civil defense emergency action.

EVACUATION RESEARCH

The development and testing of large thermonuclear weapons necessitated a basic change in civil defense planning and policy in 1954 with the emphasis shifting from shelter to evacuation of urban popu-

lations. Evacuation planning gave rise to many problems without precedent in urban areas. Substantial effort was devoted during 1954 to developing a research program which would produce needed data for the solution of specific problems and for overall guidance in policy planning.

FALLOUT

During the spring of 1954 a series of field tests of thermonuclear devices was conducted by the Atomic Energy Commission at the Pacific Proving Grounds. Recent tests of atomic weapons indicate the importance of radioactive contamination of substantial areas through fallout. Considerable effort was directed towards study and analysis of the implications of these phenomena to all civil defense planning during 1954. Although no firm conclusions had been reached by the end of the year, considerable progress had been made in defining the nature of the problem and evaluating its possible significance to various civil defense planning and operations, including evacuation of threatened areas and protective measures of shelter and cover.

EVACUATION—1954

In January 1954, FCDA released Advisory Bulletin No. 158, the first definitive statement on evacuation developed in the United States. This bulletin defined basic considerations for States and cities in planning for evacuation. On September 23, FCDA released Supplement No. 1 to this Advisory Bulletin. This supplement, entitled *Evacuation of Civil Populations in Civil Defense*, spelled out some definitions and some specifics in the field of evacuation operations. Evacuation in civil defense was defined as "organized, timed, and supervised dispersal of civilians from dangerous and potentially dangerous areas, their reception and care in safer areas, and their return to their home communities." In addition, a series of technical bulletins with checklists for evacuation planning were in preparation at the end of the year.

The need for evacuation planning and exercises increased as the threat to the American people increased. Weapons of greater destructiveness were tested and production increased. More and better airplanes were built to carry them. While previous civil defense planning for operation in the event of an attack without warning could not be discarded, alternative plans for evacuation of civil populations from cities and target areas had to be formulated and inaugurated.

FCDA is responsible for developing national plans and programs for the guidance of the States evacuation planning; consulting with States in designating specific areas for which they should prepare evacuation plans; aiding them in selecting reception areas; assisting

in the integration of State evacuation plans with national and regional civil defense planning; and making recommendations to the States on the approval of proposed evacuation operations.

Evacuation planning is a device by which families can be protected, reunited, reestablished, and returned to rebuild community life and go on with the defense and production effort in time of attack. The key to evacuation planning is family survival—the basic concern in civil defense.

Effective evacuation depends on the amount of attack-warning time available. While there will probably never be a definite assurance of a specific warning time, warning time is increasing through the Armed Forces detection devices, the Ground Observer Corps, the ships at sea, airliners with radar, and a general understanding of the common threat.

There are three stages in evacuation. *Strategic evacuation* during a period of international tension indicating a possible attack, when certain dependent, nonproductive people may be moved away from danger areas. *Tactical evacuation* during a period of warning after enemy planes have been detected, when, if time permits, there will be a mass evacuation of people from target areas. *Remedial evacuation* during the period following an attack when all affected persons and those not needed for civil defense services may be removed.

During any of the three types of evacuation, movement may be of three kinds: *Assisted*, where, in advance of attack warning, civil defense authorities may decide to encourage and assist the voluntary movement of priority groups out of danger areas so that essential workers in defense or production may remain at their posts knowing their families are safe; *directed*, where, after attack warning, civil defense authorities may decide to move large segments of the population according to preattack evacuation plans; and *spontaneous*, where some parts of the population may feel it necessary for self-preservation, to remove themselves as rapidly as possible from an area they consider dangerous.

Spontaneous evacuation usually will be unorganized and unsupervised and may be impractical and unwise. Planning for directed and/or assisted movement which is reasonable, widely publicized, and accepted by the public will help prevent this kind of movement.

One of the first and most important steps in planning for evacuation is the preparation of a civil defense urban analysis. Upon request, FCDA assisted 11 cities in preparing urban analyses in 1954. Ten additional cities had completed an urban analysis at the end of the year, and 31 additional cities were in the process of preparing them.

During 1954 FCDA assisted more than 50 cities in planning for evacuation and in some cases conducting partial tests of these plans.

In Mobile, Alabama, FCDA staff participated in planning and conducting an evacuation test involving 480 blocks in the heart of the city. Objective evaluations of the test in Mobile and of evacuation tests in Spokane and Bremerton, Washington, were made for FCDA by teams of experts of the National Research Council.

Among the other cities which had partial or total evacuation test exercises were: Daytona Beach, Fla.; Shreveport, La.; Kansas City, Missouri; Albany, N. Y.; Erie, Pa.; and Texarkana, Texas. Weld County, Colorado, held a test exercise as a reception area for Denver.

In many cities advance planning for evacuation was underway at the end of 1954. Some of these cities were: Los Angeles, San Diego, and San Francisco, California; Bridgeport, Conn.; Miami, Florida; Atlanta, Georgia; Detroit and Grand Rapids, Michigan; St. Louis, Missouri; Buffalo, New York; Columbus, Ohio; Portland, Oregon; Seattle, Wash.; and Milwaukee, Wisconsin.

In Milwaukee, Wisconsin, in cooperation with State and local officials, a study of the traffic engineering aspects of evacuation was undertaken and a preliminary report on this study was completed.

In several States evacuation planning was developed on a statewide basis. Connecticut, Massachusetts, New York, and Rhode Island were among the States developing statewide plans.

Several States were developing reception plans in the event of evacuation from surrounding areas. Arizona, Maine, Mississippi, New Hampshire, and Vermont were among these States.

Two great problems were uncovered as a result of the evacuation tests. The first was getting the public to accept the plan and getting intergroup communication so that every segment of the public would be informed on plans and procedures. The second was the selection and preparation of reception areas for the people to be evacuated, caring for the people, supplying potable water, sanitation, food, and shelter and restoring them to their home communities as rapidly as possible. However, among the many findings as a result of the tests and planning was the fact that the minimum potential for evacuation is far greater than was originally anticipated.

Perhaps the greatest single accomplishment of the FCDA evacuation program in 1954 was the conversion of many States and cities to the acceptance of evacuation as a planning concept. Where in the past evacuation of civil populations in an emergency was considered an impossible task, the tests have shown that evacuation can be accomplished in varying degrees for every city studied.

OPERATION ALERT 1954

While there have been many local, State, and regional civil defense test exercises, Operation Alert 1954 was the first national test exer-

cise of civil defense. It was also the first continental test exercise, since Canada simultaneously tested its civil defense.

Particular aspects of "Operation Alert 1954" are included in other parts of this report. This section tells, in general, what happened in the States and cities.

The exercise started on June 14 at 11:00 A. M. During the 24 hours that followed, 2,471 political subdivisions in 48 States, the District of Columbia, the Territories of Alaska and Hawaii, the Commonwealth of Puerto Rico, and the Virgin Islands took part. Warning was actually sounded in 118 political subdivisions. Some 574 control centers throughout the Nation were activated.

Hypothetically 42 cities in the United States and 8 in Canada were struck by atomic bombs ranging from 20 kilotons to 160 kilotons of TNT equivalent—a massive attack well within assumed enemy capabilities. At the option of State and local civil defense directors, additional attack situations were created in 19 cities by high explosives, incendiaries, sabotage, biological, chemical, and psychological warfare.

Casualty reports received through civil defense command and reporting channels indicated that 9 million persons would have been killed—approximately 6 million of whom would have died the first day—an additional 4½ million would have been injured, and at least 7 million would have been homeless.

During all of World War II the military forces of Japan suffered 1,471,000 deaths. One bomb hypothetically delivered on Rockefeller Center in New York in this test exercise resulted in about that number of dead or dying. The total hypothetical death toll for this one day would have exceeded the total military deaths of all the Allied Nations in 6 years of World War II (8,863,000). It would also have been half again as many as all the military deaths suffered by the Axis powers during this same 6 years (5,870,000).

Since this was a paper exercise, the full impact of casualties on this scale was hard to grasp. The effect was more realistic in many of the cities where people could visualize an area of destruction on the ground. The national impact of Operation Alert 1954 is best measured by the widespread press, radio, and television coverage it received, the most extensive ever given a civil defense activity.

Public participation in Operation Alert.—At least 62 million Americans were in areas where they were expected to take action on June 14. Sirens sounded "Warning Red" ("Applejack" for the exercise), traffic stopped, people took shelter. Ten minutes later, "Warning White" ("Snowman" for the exercise) signaled that public participation was over. Such public exercises took place in 20 States and the District of Columbia. Only three of these, Iowa, Missouri, and Texas, were west of the Mississippi River.

Full statewide public participation in Operation Alert was confined to the industrial northeast, in Maine, Vermont, Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Maryland, and the District of Columbia. Most major cities in Ohio had public exercises; the State result, therefore, was generally comparable.

Of the 42 cities selected as atomic targets for Operation Alert, 20 conducted public exercises. Press reports indicated that the following 11 could be rated as satisfactory or good: Boston, Hartford, New York, Schenectady, Newark, Philadelphia, Baltimore, Cleveland, Washington, D. C., Houston, Kansas City. Four were rated as fair: Buffalo, Norfolk, Memphis, Chicago (first public exercise). Two were rated as poor: Fort Worth and Indianapolis.

All 17 of these cities held a 10-minute warning-shelter exercise. Atlanta had a 5-minute exercise, Wheeling a 1-minute one, and Milwaukee confined public action to the schools. Again, the concentration of public exercise cities was in the industrial northeast with 8 of the 11 rated by newspapers as satisfactory or good in that area.

What the public saw during Operation Alert.—In addition to alert exercises in which their participation was requested, citizens saw civil defense forces in action in civil defense drills. These were slightly more evenly spaced throughout the Nation than the public exercises, though most of this additional activity remained east of the Mississippi River. Of the 95 civil defense drills reported, 46 were in the industrial northeast and an additional 24 in Illinois, Indiana, Michigan, and Wisconsin.

Reported public exercises and public drills of civil defense forces when combined show that public activity took place in 233 cities, including 24 of the hypothetical atomic target cities. Eighty-five percent of this activity was within the District of Columbia and the following 13 States: Maine, Vermont, Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Maryland, Ohio, Indiana, Illinois, Michigan, and Wisconsin.

As a news event, Operation Alert made a substantial contribution to national awareness of civil defense throughout the Nation. While the greatest impact was in the industrial northeast, all urban areas and many smaller communities throughout the country had opportunity to learn about the national exercise through the press.

Many newspapers, in their editorial columns, made their own evaluations of the exercise, which, generally, was that civil defense did well in a first national test; that the result was far short of that needed in event of attack; and that future exercises were extremely desirable, especially practice evacuations.

Extent of State and local civil defense organization participation.—The following brief summaries are extracted from the newspaper reports of Operation Alert 1954:

Region 1

Maine held a statewide alert and staff exercise. The Governor declared a simulated civil defense emergency. Bangor had a second (but erroneous) alert which proved more valuable in training than the scheduled one. The town of Hallowell was standing by but did not receive the alert because of a breakdown in the alerting system. Newspapers rated the exercise effort as favorable though Augusta criticized the public response. As a follow-up, Lewiston and Auburn arranged for the air-drop of 75,000 civil defense leaflets on June 17.

New Hampshire participated mainly on the State level. Portsmouth—on the Maine border—held a successful public exercise but in Manchester the public ignored the sirens. This public indifference was the subject of an editorial in the Manchester paper. No civil defense action took place in Concord. Rochester participated to the extent of relaying the alert to six other communities.

Vermont held a statewide alert. The public response in Burlington and Brattleboro was only so-so but Rutland's was good and the people in Montpelier were complimented by the newspaper for their cooperation and worked out a successful casualty handling exercise.

Massachusetts held statewide public exercises and many local civil defense headquarters took part in a 24-hour staff exercise. Critical target area Boston concluded that their public exercise showed the need for an evacuation drill. Public alerts took place in Brockton, Fall River, Haverhill, Holyoke, Hudson, Lawrence, Lowell, Lyman, Marlboro, New Bedford, Pittsfield, Quincy, Springfield, Whitman, and Worcester. Lowell was rated "poor"; and others "fair" to "good".

Rhode Island held staff exercises in critical target city Providence and in Pawtucket and Woonsocket. There was no public participation.

Connecticut held a statewide public exercise and most or all of local civil defense headquarters took part in a 24-hour staff exercise. Governor Lodge was present at the State Control Center in Hartford and simulated the mobilization of the Connecticut National Guard. Many thousand civil defense volunteers took part in civil defense drills. Public and civil defense participation was considered good in critical target city Hartford, and in Bridgeport, Bristol, Greenwich, Middletown, New Haven, New London, Norwalk, New Britain, Stamford, and Waterbury. One Hartford editorial was concerned over the failure of Congress to participate and Middletown felt that the importance of civil defense in natural disasters deserved greater attention. Evac-

uation or dispersal of industry were lessons from "Operation Alert" emphasized in editorials in Hartford, Norwalk, Stamford, Bristol, and Middletown.

New York held a statewide alert and staff exercise. The public exercise in critical target city New York was rated good; but the exercises in the other critical target cities assumed to be hit—Buffalo and Schenectady—did not go as well. Cities rated adequate in public participation were Albany, Auburn, Batavia, Binghamton, Corning, Elmira, Hempstead, Jamestown, Newburgh, Peekskill, Rochester, Westchester, Yonkers, and Niagara Falls. Cities where public reaction was poor or indifferent were Ogdensburg, Poughkeepsie, Rome, Saratoga Springs, Syracuse, Troy, Utica, and Watertown. A few cities also held civil defense drills. The newspaper editorial appraisal was about evenly divided between favorable and mixed. Rome was unfavorable both to national and Congressional lack of participation. One Schenectady editorial indicated considerable displeasure at public indifference. Evacuation was discussed in Buffalo, and industrial dispersal in Buffalo and Binghamton.

New Jersey held a statewide alert and staff exercise with Governor Meyner taking part at the State control center. Newspaper accounts indicated that public participation was generally good in critical target city Newark, and in Asbury Park, Atlantic City, Camden, Elizabeth, Hackensack, Jersey City, Paterson, Perth Amboy, and Trenton. Newspaper evaluation in editorials was generally favorable. Only in Trenton was there criticism of public indifference but this was not directed at Trenton's own public exercise. Perth Amboy and Hackensack called attention to the need for evacuation and industrial dispersal.

Region II

Pennsylvania held a statewide public alert and staff exercise. While the press reports originated in cities throughout the State, they purported to cover countywide participation. June 14, Flag Day, is a legal holiday for a number of State and municipal workers in Pennsylvania. Apparently this was sometimes a help and sometimes a hindrance. Nevertheless, fully half of the cities and counties held civil defense drills in addition to public exercises. Cities reporting both kinds of public activity were: critical target city Philadelphia, Allentown, Altoona, Bethlehem, Chester, Harrisburg, Lewistown, Lancaster, McKeesport, New Kensington, Norristown, Reading, Sharon, and York. Of these, only Harrisburg, McKeesport, and Reading were considered poor in public participation. Reading, however, did accomplish what was reported as a successful evacuation of a hospital. In Chester, Operation Alert resulted in the dismissal of the entire auxiliary police organization over a question of

insurance against injury. Of the other cities holding public exercises, the following were rated good: Beaver Falls, Greensburg, New Castle, Meadville, Latrobe, Huntingdon, Oil City, Tarenton, Uniontown, and Williamsport. Clairton did not receive the bell-and-light signal from Pittsburgh. Hazelton and Johnstown had warning difficulties including mixed signals and lack of public interest. Public response was criticized in the following cities: Bloomsburg, Easton, Erie, Pittsburgh, Scranton, and Washington. In only 4 cities were evacuation and dispersal discussed editorially, while 3 took occasion to comment on the failure of the warning system in the Pentagon. Sharon arranged for the air drop of 1,000 leaflets during the exercise. Favorable editorial comments on Operation Alert were 4 times as many as the mixed comments and the 2 combined were 4 times as many as the unfavorable. In reported public activity, Pennsylvania led all States taking part in Operation Alert.

Delaware confined its participation to staff exercise and drills in Wilmington and Dover. The sirens were sounded for the first time in Dover but no public exercise was planned.

Maryland held a statewide public alert at 8 o'clock in the evening of June 14. Results were fair to good in critical target city Baltimore, and in Annapolis, Bel Air, Cumberland, and Salisbury. Baltimore also held a civil defense drill.

Virginia had public alerts in critical target city Norfolk where the signals were weak, in Alexandria, as part of the D. C. public exercise, and in Pulaski. Richmond took part in the staff exercise, held a civil defense drill, and tested its sirens though no public participation was requested. Other cities holding civil defense drills were Norfolk, Portsmouth, Pulaski, and Petersburg which held a comprehensive drill involving much of the town on the evening of the 14th. Roanoke reported on the planned and simulated relocation of the headquarters of the Veterans Administration in that city.

West Virginia had 4 cities reporting participation in the staff exercise: critical target city Wheeling; where there was public participation for 1 minute, Charleston which had a civil defense drill, Huntington, which tested sirens, and Fairmont. Editorial comment was scanty though favorable. The Bluefield paper discussed evacuation.

Kentucky had scattered but varied participation. Louisville assumed an H-bomb attack for its staff exercise and civil defense drill. A radio account of the simulated attack, staff exercise and drill in Lexington caused some confusion though there were frequent statements that this was all simulated. Paducah combined a traffic control and evacuation analysis with its civil defense drill. Newspapers in these cities and Ashland, Owensboro, and Richmond reported favor-

ably on the exercise with Ashland and Paducah making particular mention of evacuation.

Ohio participated widely though public exercises were at local option. In Columbus, which was not a target city for the exercise, Governor Lausche took shelter during the public alert which was rated as 60% effective. In critical target city Cleveland, public response was good and a dispersal or evacuation test in February was announced. Critical target city Cincinnati tested its sirens and held a civil defense drill. Staff exercises based on assumed atomic attack of the city were held in Akron, Canton, Dayton, Hamilton, Lima, Middletown, Springfield, Steubenville, and Youngstown. Public exercises rated acceptable were held in Akron, Chillicothe, Dayton, and East Liverpool. Lima's public exercise lasted only 5 minutes and those in Steubenville and Youngstown were not up to expectations. There were siren tests in Middletown, Springfield, Toledo, and Van Wert. Civil defense drills were held in Akron, Canton, Columbus, Dayton, Elyria, Hamilton, Lorain, Steubenville, Toledo, Youngstown, and Zanesville. Editorial evaluation of Operation Alert in Ohio was considerably mixed with 9 favorable, 11 mixed, and 4 unfavorable, primarily because of public lack of interest. Evacuation and industrial dispersal were discussed in Cleveland and Springfield.

District of Columbia held a reasonably successful public alert in Washington and neighboring counties though the failure of Congress to take part was noted there and throughout the country. The control center was active during the 24-hour exercise.

Region III

North Carolina activity was generally in the Ground Observer Corps with Durham, Charlotte, and Raleigh participating. Greensboro held a staff exercise; Goldsboro a civil defense drill; and WYAC in Asheville took part in a Conelrad test. Editorial reaction was more unfavorable than favorable with Wilmington and Winston-Salem (on which there are no reports of participation) being the only favorables. Wilmington and Durham discussed evacuation editorially.

South Carolina had Rock Hill as the only reported participating city and this was GOC activity. Charleston and Greenville editorial comment was mixed though Charleston papers concluded the solution was either peace or greater military strength.

Georgia centered its participation around Atlanta which was selected as a target for the exercise. Atlanta had a public alert of five minutes, a civil defense drill, a staff exercise, and patrols of Boy Scouts tested evacuation. They moved 6 miles in 2½ hours. Augusta, Columbus, Griffin, and Macon held staff exercises in which they simulated support to Atlanta. Savannah simulated an atomic

attack but there was no public participation because no warning system exists.

Florida had varied activity in its principal cities. In the national exercise, it was assumed that Tampa was hit by a guided atomic missile launched from a submarine. This city and its neighbor, St. Petersburg, held civil defense drills. Miami had a fair public exercise, a civil defense drill, and a staff exercise. Jacksonville tested its sirens; West Palm Beach held a staff exercise; and Tallahassee had a civil defense drill and staff exercise centered around guided missile attack from a submarine. Leaflets were air-dropped over Tallahassee. Editorial comment was preponderantly favorable with evacuation and industrial dispersal discussed in Miami and West Palm Beach.

Alabama participated in the national exercise through Montgomery, the capital, and Birmingham, an assumed target where a civil defense drill took place and the Public Health Building was evacuated in fewer minutes than expected. Of its own choice, Mobile held an all-out test public evacuation involving some 30,000 people. Newspaper comment was unfavorable and mixed. Gadsden, which did not participate, editorialized on evacuation.

Mississippi had reported participation only in Jackson, the capital, where a test took place in the Veterans' Hospital and the staff exercise centered around the reception of evacuees from Memphis. Natchez reported favorably on Operation Alert. Vicksburg and Greenville were unfavorable. None of these three reported activity in the test.

Tennessee had two assumed targets for Operation Alert—Chatanooga and Memphis. Both had staff exercises but only Memphis had public participation. Knoxville had a staff exercise; Bristol worked on a problem of mutual aid and mobile support to Norfolk, Va., and Memphis; Nashville had a "take-shelter" exercise in the U. S. Courthouse. Memphis papers made a strong point of evacuation and the Bristol paper was disturbed by the failure of Congress to participate. Both felt public interest could stand considerable improvement.

Region IV

Indiana reported staff exercises in the following 10 cities: assumed target Fort Wayne which also had a civil defense drill, tested the siren system, and simulated help from eight surrounding counties; assumed target Indianapolis where public indifference to the public alert caused the local director to add 9,000 to the assumed casualty list; Anderson; Columbus which also tested sirens; Evansville with only a fair public alert and the evacuation of the Federal Office building; Gary and Hammond with siren tests, civil defense drills, and simulated biological warfare incidents; Marion; and Richmond, South Bend and Terre

Haute which also tested sirens. Newspaper evaluation was generally favorable except in Indianapolis where public response was criticized. Evacuation was discussed editorially in Gary and South Bend.

Illinois activity was highlighted by the first public alert in Chicago. While spotty, this was reported as fairly good for a first practice. Joliet and Lockport also had public alerts while Aurora, Moline, Peoria, and Springfield tested sirens. There was a practice alert at the Rock Island arsenal which assumed attack by high explosives. Bloomington, Danville, Peoria, and Pekin held civil defense drills. GOC was active in Danville, Decatur and Springfield. Cairo used the occasion of Operation Alert to announce a future evacuation test. Editorial reaction was mainly favorable. Evacuation was the theme of a Rockford editorial.

Michigan participated only to a limited extent. Assumed target Detroit set the pattern by having a staff exercise and small firefighting drill. The only other cities reporting activity were Jackson which had a staff exercise and civil defense drill based on a simulated attack; Saginaw which had a civil defense drill; and Bay City with a staff exercise. No report from Lansing was seen but it is assumed that, as State capital, civil defense people took part in the national exercise. Newspaper evaluation was also scanty—an indication that interest as a whole was not high. Both Bay City and Kalamazoo emphasized world peace or stronger military as the solution. Escanaba, which did not take part, was alone in viewing the exercise favorably. One Detroit paper criticized the assumptions under which the test was held as "unrealistic" in view of announcements of larger weapons.

Wisconsin had one assumed target, Milwaukee. Mayor Zeidler took part in the staff exercise and his wife and daughter walked $3\frac{1}{2}$ miles to test the feasibility of evacuation on foot. A siren test and distribution of questionnaires determined that 21% of people could not hear the sirens. Public participation was limited to the schools where pupils took shelter. Staff exercises and civil defense drills took place in Green Bay, Kenosha, Racine, and Sheboygan. GOC was active in Green Bay. No activity in Madison, the State capital, was reported in the newspapers though it is assumed civil defense took part in the national exercise. The Madison paper also felt the assumptions of the exercise were unrealistic. Evacuation was discussed in Milwaukee and Eau Claire which linked it to the need for GOC volunteers.

Iowa, though not including an assumed target attempted participation in 6 cities, but ran into difficulties. Des Moines and Waterloo held public alerts with poor results attributed to public indifference by the newspapers. In Waterloo, the Flying Farmers simulated the air movement of emergency supplies. Cedar Rapids held a staff ex-

ercise, civil defense drill and tested sirens to find that their coverage was inadequate. Davenport tested sirens; Ottumwa had a staff exercise; and Sioux City had a civil defense drill and staff exercise. GOC was active in Cedar Rapids and Sioux City. Newspapers tended to be critical in these cities and Council Bluffs, though one Sioux City editorial was favorable and advocated use of "civilian survival" instead of "civil defense".

Minnesota had two assumed targets—St. Paul and Minneapolis. These were the only cities reporting staff exercises. Both assumed, for test purposes, that an evacuation had been completed. In addition to Minneapolis sirens were tested in Winona and Worthington. Mankato studied the problem of evacuation of larger nearby cities. The only editorial reaction received came from St. Cloud and was favorable.

South Dakota participated only to the extent of alerting officials in Rapid City and Sioux Falls. No editorial reaction received.

North Dakota had Jamestown, which claimed to be the only city in the State participating. This city simulated an attack and handled it by a staff exercise and civil defense drill. No editorial reaction received.

Region V

Louisiana had one assumed target city—New Orleans—where the staff exercise assumed that an evacuation had been accomplished. Alexandria and Monroe also had staff exercises and the State Civil Defense Office in Baton Rouge participated fully in the national exercise. In addition, a full public participation exercise was held in the FCDA Medical Warehouse at Lake Charles where volunteer women auxiliaries actually tabulated, manifested, and prepared shipping documents for the movement of the supplies although no actual shipments occurred. Editorial comment was good, particularly at Shreveport. Baton Rouge discussed the possibility and advisability of evacuation and had mixed reaction as to the value of Operation Alert. Several New Orleans papers had comments; one debated on the appropriateness of the use of "Lemon Juice."

Arkansas did not participate; however, the State office was fully manned and exchanged messages with the regional office. Little Rock was reported as "not ready," but Texarkana and some of the other cities participated to a limited extent.

Texas held public alerts in all of its three assumed target cities—Houston, Dallas, and Fort Worth. Houston's was rated good and activity there included a civil defense drill, a staff exercise, the evacuation of the Prudential building, a practice evacuation of a school in which the pupils were moved 4 miles, and an air-drop of leaflets. Fort Worth planned an extensive exercise and participation within

the local civil defense office was very good. However, because of the fact that no public warning facilities were available, the general public, to a large extent, was unaware of the extent of the alert. As a result, although newspapers and radio gave good coverage, one editorial commented on the apparent lack of interest within the city. The third assumed target, Dallas, held a complete and successful civil defense drill and staff exercise within its operations center. Extensive use was made of both police and amateur radio facilities and the evaluation of damage, resources, and requirements was excellent with extensive communications exchange between the city and the State Civil Defense Office in Austin. Abilene tested sirens, had a civil defense drill and staff exercise; San Angelo a drill and staff exercise; and Wichita Falls a staff exercise, due to its lack of sirens for an alert or siren test. The mayor of Galveston observed the Houston activity. Editorial evaluation was generally favorable though several reported on the public indifference in Forth Worth and San Antonio cited the failure of Congress to take part. This city, Wichita Falls, Beaumont, and Fort Worth commented on evacuation. Other cities evaluating Operation Alert, though there are no reports of their participation, were Austin, Paris, Sherman, and Tyler.

Oklahoma. Sirens were tested in Oklahoma City in conjunction with a staff exercise. Tulsa also had a staff exercise while Enid held a civil defense drill. Ardmore used Operation Alert as the occasion for a survey of the amount of civil defense assistance it could give. Newspapers were extremely favorable to the exercise. Enid, Oklahoma City, and Tulsa discussed the need for evacuation.

New Mexico reported no activity in Santa Fe itself though Los Alamos held a practice evacuation. Albuquerque participated with a staff and communications exercise. An editorial in Santa Fe was favorable to the national exercise as a whole but felt that Sandia Base should have been more active.

Region VI

Missouri reported activity in 8 cities including 2 assumed targets—St. Louis, which held a staff exercise and civil defense drill, and Kansas City, which held a public alert, rated adequate, a civil defense drill, and a staff exercise, which simulated a successful evacuation. Jefferson City also had a civil defense drill, a staff exercise, and a public alert in which the public found the warning confusing. Staff exercises were also conducted in Cape Girardeau, which added a civil defense drill; Hannibal; Mexico, which simulated an attack with high explosives for a drill; Springfield, where sirens were also tested; and St. Joseph, which simulated aid to Kansas City. Newspaper evaluation was generally favorable with one editorial in St. Joseph

also recommending use of the term "civilian survival." Another editorial in this city discussed evacuation, as did papers in Kansas City and St. Louis.

Kansas had one assumed target—Wichita, where there was a siren test, a staff exercise, and a civil defense drill involving a fair number of volunteers. Emporia and Topeka also held staff exercises. Newspaper reaction in these cities and Saline, Kansas City (Kansas), and Hutchinson was generally favorable though Hutchinson editorialized on public indifference.

Nebraska limited participation to staff exercises in Fremont and Lincoln, which worked on the problem of furnishing aid to St. Louis. No newspaper comment was noted.

Colorado had a civil defense drill, staff exercise, and siren test in assumed target Denver. Staff exercises were held in Pueblo and Greeley where the destruction of Horsetooth Dam by sabotage was assumed. Activity in Grand Junction centered in the Veterans' Administration hospital. No post-exercise editorial comment was noted.

Wyoming had staff exercises in Sheridan and Cheyenne which also had a civil defense drill and activity resulting from a simulated attack affecting the Veterans Hospital. Comment from Casper and Cheyenne was favorable though the former city's paper emphasized the military side of the solution.

Region VII

Montana did not participate though the Missoula paper commented generally on Operation Alert and industrial dispersal.

Idaho tested communications in a staff exercise in Boise and Twin Falls used the occasion for a lecture by a physicist on atomic energy and weapons. No editorial comment was received.

Utah was not active though Salt Lake City was reported as "standing by." Bountiful was cited by the State civil defense director for excellence of volunteer preparedness for the size of city. Comment in the Ogden paper was favorable.

Arizona activity reported was confined to evacuation of a large downtown office building in Phoenix in 3½ minutes. Editorial comment here and in Tucson emphasized peace and military strength as the solution.

California had no reported public participation though there were public drills of civil defense forces in Alameda, Fresno, and Richmond. The State and city emphasis was on staff exercises in assumed target cities San Francisco, Oakland, Los Angeles; and Long Beach, and San Diego, both of which assumed evacuation for exercise purposes; and Alameda, Berkeley, Fresno, Pasadena which simulated an attack, Pomona, San Bernardino, Santa Ana, and Santa Barbara. Stockton held a civil defense meeting. Newspaper coverage was

extensive and generally favorable. Evacuation was discussed in Los Angeles and Long Beach and one Oakland paper compared New York's public participation with California's lack of it as evidence of the need for strengthening the State civil defense law.

Oregon held staff exercises in Salem, and assumed target city Portland. Portland also held a civil defense drill including emergency feeding by the Seventh Day Adventists and a "block-out" estimated to have saved 90,000 casualties. In this, traffic was stopped at 21 key road junctions and leaflets were given to motorists. Newspaper comment was scant though favorable.

Washington held staff exercises in Everett, Yakima, and assumed target city Seattle where three new sirens were tested. Through a breakdown in the warning system, Olympia was not alerted. Editorial comment in Aberdeen and Spokane was mixed though both discussed the need for evacuation.

Because it was hypothetical the public impact of Operation Alert 1954 was brief. There were no casualty lists; no survivors suffered hunger, thirst, cold, or bereavement. The public, civil defense, and local, State, and Federal Governments showed a promising degree of operational readiness to meet attack should it come. Important weaknesses and deficiencies were uncovered. It pointed clearly to the necessity for more test exercises in the future.

BOMB DAMAGE ANALYSIS—1954

In June 1954, a Technical Advisory Committee on Bomb Damage Analysis was formed by FCDA to study and solve, insofar as is possible, the urgent damage prediction problems which confront FCDA and other governmental agencies.

In addition to FCDA personnel, the committee is composed of representatives of the Office of Defense Mobilization (whose representative is committee chairman); the Bureau of the Budget; the Department of Health, Education, and Welfare; the Department of Defense; the United States Air Force; the Department of Agriculture; the Operations Research Office of Johns Hopkins University; Rand Corporation; and Stanford Research Institute, which is under contract with FCDA to undertake research necessary to devise and develop a damage-prediction and assessment system that will enable FCDA to formulate methods and techniques for adequate preattack and postattack planning for national recuperative action.

In December 1954, the Technical Advisory Committee submitted a series of recommendations concerning the research program of Stanford Research Institute, which included:

1. Maximum use of the Army Map Service's series of UTM (Universal Transverse Mercator) maps which contain the UTM coordinates

and latitudes and longitudes of selected prominent landmarks of large cities in the United States.

2. The development of size codes for the location of major manufacturing plants in the country in such manner that would permit use of the data by FCDA without violation of Census confidential restrictions.

3. Creation of a pilot study model to test the validity of damage concepts and measurement techniques, to test the significance of certain types of data which measure vulnerability, to develop efficient machine procedures for programing national damage computations, and to find "short-cut" methods.

Other recommendations were:

1. The tabulation of hospital beds for each standard location (the populated area for which UTM coordinates are obtained) under the following five classifications: general; nervous and mental; tuberculosis; special (including orthopedic; maternity; eye, ear, nose and throat; and children's); and other.

2. The location of physicians and surgeons by urban place or county seat.

3. The location of FCDA's stocks of medical supplies by UTM coordinates.

4. Stocks of medical supplies carried by hospitals, including blood banks, to be estimated and allocated to standard locations (UTM) on the basis of the best information available as to normal hospital stocks.

5. Procurement of estimates of food in homes, retail and wholesale establishments, on farms, at major terminals, and in transit with the aid, in some categories, of the Department of Agriculture.

6. The identification, with the aid of the Department of Health, Education, and Welfare, of the critical points of each city's water system, the design of suitable measures of size or capacity (such as gallons, gallons per minute, diameter, etc.) to each such point, and the assignment individually of UTM coordinates to each critical point.

7. An assessment of railroad, highway, and air transportation, and port facilities which would include transportation resources essential to interregional movement of Federal civil defense supplies and personnel, food, and other localized resources the loss of which would result in a requirement for interregional action.

8. The location of various fuel sources and supplies, with emphasis on the transportation of fuels.

9. The inclusion, in damage studies, of electric power generating plants and transformers to determine postattack conditions of hospitals, transportation facilities, communications facilities, food storage centers, fuels distribution systems, and households during emergency operations.

10. A request that the Army Map Service convert the precise latitudes and longitudes of all U. S. AM radio transmitters to UTM coordinates for use by Stanford Research Institute: that the Federal Communications Commission be asked to ascertain which AM stations (a) are equipped for CONELRAD operation and (b) possess an independent source of power for emergency use; and that consideration be given, in certain areas, to the postattack use of mobile radio facilities in public safety and industrial vehicles.

11. The devising of a workable analytical procedure for computing the fallout pattern of nuclear weapons.

12. The development of further data on the vulnerability of the various forms of housing to blast, fire, and radiation.

13. A recommendation that assumptions regarding urban evacuation and warning time be made part of the damage prediction and warning time being developed. Four different evacuation-warning time assumptions were recommended by the committee, as follows: a warning received during the nighttime, with the populations in residences; a warning received during "normal working hours"; a warning received during morning or evening "rush-hour" traffic; and a warning received during daylight on Saturdays, Sundays, or holidays.

Under date of January 1, 1955, Stanford Research Institute submitted to FCDA its second interim report¹ concerning the status of development of population data, planning for advanced phases of the project, and the development of techniques to handle model building, computer problems, vulnerability factors, and other integrated studies.

Specifically, the Stanford Research program is designed to furnish data to FCDA on each of the following elements of damage in order that information may be obtained quickly for attack evaluation:

1. Cause of damage, meaning weapon size and degree of effects.
2. Distance, meaning location of populations and material resources in relation to potential weapon strikes.
3. Response, meaning the quantitative reactions of targets.

Research undertaken by SRI for attack analyses includes the selection and compilation of data concerning the location of resources essential to national civil defense; the development of vulnerability

¹ Stanford's first interim report was submitted under date of October 1, 1954, pursuant to a Letter of Agreement between FCDA and SRI dated June 28, 1954. The first interim report pointed up FCDA's primary responsibility, under Public Law 920, for Federal leadership in the field of damage reporting and assessment. The report also set forth the basic conditions on which SRI research would be predicated, these being: (a) that the United States may suffer attack upon metropolitan areas by nuclear weapons; (b) that FCDA should be prepared to coordinate the civil activities of undamaged areas after an attack so as to support a major military effort and rehabilitate damaged areas; and (c) FCDA should develop plans and source data prior to an attack to minimize casualties and preserve resources.

factors; the selection of suitable electronic computing equipment and the development of techniques for its use; the formulation and testing of computation models; and a study of such special problems as evacuation techniques, taking account of both mechanical and psychological problems involved.

According to its second interim report, SRI had accomplished the following at the end of December 1954:

1. Collected all maps and population data for geographic location work.
2. Determined 69% of UTM Grid Coordinates for location of resident population.
3. Completed a supporting study on the effect of population increase since 1950.
4. Compiled sufficient information to handle damage prediction from direct blast.
5. Completed studies on the selection of data processing equipment.

Through the end of December 1954, SRI had made progress in continuing research toward determining a means of computing evacuation effectiveness; in determining the most practical methods of computing casualties, physical damage, and hazard of radioactive fallout matter; and in promoting discussions with a privately-owned map company and interested Government agencies on the problem of obtaining local information on housing characteristics needed for damage computation purposes.

By the end of June 1955, SRI anticipates that it will complete the collection and tabulation of resources considered necessary for the fiscal year 1955 pilot model; research on variables for computing damage and casualties; have initiated computer programing, and formulated and run computing on a sample model; and scheduled various supporting studies as specified by FCDA.

CIVIL DEFENSE IN PEACETIME DISASTER OPERATIONS

The hurricanes of 1954 gave civil defense peacetime disaster operations their most severe test since the President vested FCDA with coordinating responsibility and administrative direction of the disaster program.

Disaster operations last year ranged from hurricanes to application of techniques in international situations when the Rio Grande River flooded.

Numerous communities, some never before hit by disaster, were affected by the worst hurricanes on record. Many areas had trained organizations and equipment and were able to cope with the situation. Other areas, where organizations were untrained, if existent, and which did not possess ample equipment or finances to help themselves, recovered less rapidly. While the losses both in life and property were high, these communities learned the value of preparation and organization.

Along the eastern coast, hundreds of miles of mainland were either severely damaged or totally destroyed. Millions of dollars worth of property damage was caused. Thousands were made homeless. Communications were either destroyed or so disrupted that some areas were inaccessible for several weeks. In the New England area, damage was heavy both to private and public facilities. In the southern area, damage was heaviest to private facilities.

Federal, State, and local organizations in all fields of government, as well as the American National Red Cross and private organizations, worked side by side in disaster assistance.

Techniques have been improved, rules and regulations have been expanded to meet the need, communications have been tested, stock-piled engineering equipment has been tested, more detailed plans and working arrangements have been formulated with other Federal agencies at both field and departmental levels of Government. States and local public bodies within such States have experienced disasters and in some States, where civil defense organizations were operational, damage, hardship, and suffering have been materially reduced. Lives have been saved, aid has been extended when needed, repairs and replacements have been made, and rehabilitation measures were started.

Since the issuance of Executive Order 10427 on January 16, 1953, areas in which the President declared that a "major disaster" existed under authority of Public Law 875, 81st Congress, are:

Date of Presidential declaration	Disaster area	Nature of disaster	Federal funds allocated ¹
May 2, 1953	Counties of Muscogee, Macon, Houston, Twiggs and Bibb, Ga.	Tornado	\$178, 500
May 15, 1953	Waco-San Angelo, Tex.	do	365, 000
May 29, 1953	Louisiana	Flood	424, 000
June 2, 1953	Port Huron, Mich.	Tornado	52, 036
June 6, 1953	Montana	Flood	326, 400
June 9, 1953	Flint, Mich.	Tornado	143, 718
June 11, 1953	Iowa	Flood	173, 664
June 11, 1953	Worcester, and Central Massachusetts.	Tornado	510, 000
June 19, 1953	Counties of Orange and Newton, Tex.	Flood	40, 800
July 2, 1953	New Hampshire	Forest Fire	101, 931
Oct. 3, 1953	Alaska	Severe Hardship	51, 000
Oct. 22, 1953	Florida (31 Counties)	Flood	255, 000
Dec. 6, 1953	Vicksburg, Miss.	Tornado	167, 280
Feb. 5, 1954	Angeles National Forest Fire and Counties of San Bernardino and Los Angeles, Calif.	Flood and erosion.	598, 740
Mar. 17, 1954	City of Macon & Bibb County, Ga.	Tornado	153, 000
June 23, 1954	Iowa	Flood	178, 500
July 1, 1954	Texas	Rio Grande Flood.	867, 000
July 14, 1954	Nevada	Earthquake	30, 600
July 31, 1954	Union County, S. Dak.	Flood	40, 800
Aug. 4, 1954	Nicholas County, W. Va.	Flood	\$62, 730
Sept. 2, 1954	Massachusetts	Hurricane	2, 550, 000
Sept. 2, 1954	Rhode Island	do	2, 550, 000
Sept. 13, 1954	Maine	do	1, 020, 000
Sept. 17, 1954	Connecticut	do	510, 000
Oct. 7, 1954	Suffolk County, N. Y.	do	306, 000
Oct. 13, 1954	New Mexico	Flood	51, 000
Oct. 17, 1954	North Carolina	Hurricane	566, 100
Oct. 17, 1954	South Carolina	do	306, 000
Oct. 18, 1954	Maryland	do	
Oct. 26, 1954	Indiana	Flood	178, 500
Oct. 28, 1954	Pennsylvania	Hurricane and Flood.	
Nov. 10, 1954	Alaska	Severe Hardship	

¹ Including allowance to FCDA for administrative expenditures.

1953-54—Drought relief..... \$28,000,000

1953—Drought:

States of Alabama, Arkansas, Colorado, Kansas, Kentucky, Mississippi, Missouri, Nevada, North Carolina, New Mexico, Oklahoma, Tennessee, Texas, Utah, Virginia, West Virginia, Wyoming, and Territory of Hawaii.

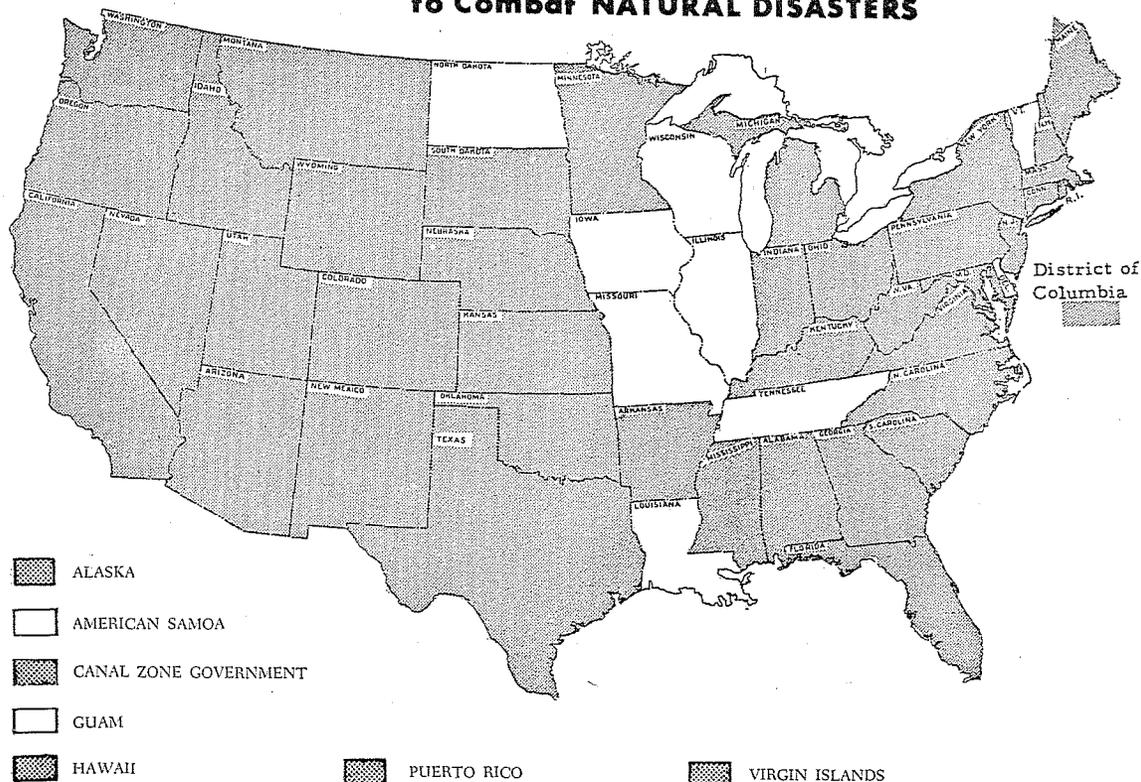
1954—Dust Bowl:

States of Colorado, Kansas, New Mexico, Oklahoma, and Texas.

1954—Drought:

States of Alabama, Arkansas, Colorado, Georgia, Kansas, Louisiana, Mississippi, Missouri, Nevada, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Utah, Virginia, and Wyoming.

Civil Defense Forces Authorized by State Law to Combat NATURAL DISASTERS



UNUSUAL PROTECTIVE MEASURES IN CALIFORNIA

In the fall of 1953, a forest fire in the Angeles National Forest in California, in the vicinity of the Mount Wilson Observatory, burned over 3,700 acres of forest land destroying the protective growth on the mountain side.

To prevent major erosion and flood damage, FCDA, in cooperation with the Department of Agriculture and the Department of the Army, worked out a protective plan which the President approved and authorized FCDA to have the Department of Agriculture carry out. This consisted of breaking up large boulders by dynamiting, cleaning debris streams, building check dams and retaining walls, and spraying by airplane the forest area with grass seed and quick-growing rye to hold back the soil. When the rainy season started, even though some damage to public facilities and local bodies did occur, the damage was reduced to a minimum.

FCDA STOCKPILES

FCDA stockpiled engineering equipment was used in many local emergency situations in 1954, particularly in municipal water shortages. These actions were administered under FCDA General Order 147, which limits the authority of Regional Administrators over FCDA stockpiled materials to "responsibility and accountability for FCDA stockpiles" in "major disasters."

IRRIGATION FACILITIES ASSISTANCE

Uniform criteria in disaster areas for irrigation facilities of the Bureau of Reclamation were developed by FCDA and the Department of Interior at the direction of the Bureau of the Budget. These criteria were used in the two Nevada earthquakes declared "major disasters."

PREDISASTER PLANNING

In conformance with Executive Order 10427, the FCDA has developed a predisaster plan with various Federal agencies which will facilitate Federal assistance in a disaster situation. Every agency of the Federal Government, with major disaster assistance capabilities, is included in this plan which, in most cases, is represented by formal agreement in "Memoranda of Understanding."

These agreements state the responsibilities of the agencies involved and outline procedures for coordinating Federal assistance through the FCDA. The plan is automatically effective upon the President's declaration of a "major disaster" and verbal notification by FCDA to the agency involved.

The Federal agencies with which these agreements have been completed are:

Department of Health, Education, and Welfare (FCDA Advisory Bulletin No. 142)

General Services Administration (FCDA AB No. 151)

Department of Agriculture (FCDA AB No. 165)

Department of Commerce (FCDA AB No. 147)

Department of the Interior (FCDA AB No. 164)

United States Coast Guard (Department of the Treasury) (FCDA AB No. 143)

Housing and Home Finance Agency (FCDA AB No. 155)

Department of the Treasury (FCDA AB No. 176)

United States Civil Service Commission

Department of Defense (The assistance rendered by all branches of the Department of Defense is by authority of AR 500-60, AR 500-60 as amended by C-1, and SR 500-60-5. These issuances of the Department of the Army pertain to the Emergency Employment of Army Resources for Disaster Relief. The Administrator of FCDA and the Secretary of Defense have agreed that all assistance necessary in disaster situations shall be on the basis outlined therein.)

Veterans Administration (Issued June 15, 1953 as "Veterans Administration Manual M 11 SF-1, Revised" and identified as "Disaster, Emergency Relief and Civil Defense Planning.")

In addition, there is now pending approval in FCDA, a memorandum of understanding with the Small Business Administration. This will be released, with minor revisions, to the Small Business Administration for consideration and, if agreed to, will constitute agreement for disaster assistance.

FCDA also has a formal understanding with the American National Red Cross. This understanding, outlined in FCDA Advisory Bulletin No. 138 and Supplements Nos. 1 and 2, describes the responsibilities of both agencies. The following tabulation briefly identifies the responsibilities of governmental authorities (local, State, and Federal) and the responsibilities of the American National Red Cross.

Government Responsibility (Financed by government agencies, local, State and Federal, and available to all persons within its jurisdiction).

1. Protection of Persons and Property
 - a. Warning of impending danger
 - b. Enforced evacuation
 - c. Rescue
 - d. Maintenance of law and order
 - e. Fire precautions and protection
 - f. Designation of hazardous buildings and areas

American Red Cross Responsibility (Financed by Red Cross and available to all disaster-affected persons).

1. Assistance in warning, voluntary evacuation, and rescue
2. Provision of emergency necessities
 - a. Supplemental medical, nursing, and hospital care
 - b. Food
 - c. Shelter
 - d. Clothing

Government Responsibility (Financed by government agencies, local, State and Federal, and available to all persons within its jurisdiction)—Continued

- g. Public health and sanitation
 - (1) Water supply
 - (2) Biologicals
 - (3) Control of communicable diseases
- h. Care of the dead (Coroner's duties)
 - i. Traffic control
- 2. Provision of usual services
 - a. Welfare and health
 - b. Public institutions
 - c. Transportation (public)
 - d. Communication (public)
 - e. Removal of debris from public property
 - f. Salvage of unclaimed property
 - g. Inspection of buildings for safety
- 3. Restoration of public property
 - a. Public buildings
 - b. Sewage systems
 - c. Water systems
 - d. Streets and highways
 - e. Other public facilities

American Red Cross Responsibility (Financed by Red Cross and available to all disaster-affected persons)—Continued

- 3. Provision of emergency services
 - a. Transportation of disaster sufferers
 - b. Transportation of supplies and equipment
 - c. Transportation and storage of household goods
 - d. Welfare inquiries
 - e. Survey of family needs
 - f. Communication facilities
- 4. Rehabilitation of families, including
 - a. Temporary maintenance
 - b. Medical, nursing, and hospital care
 - c. Repairing or rebuilding of homes
 - d. Household furnishings
 - e. Agricultural and other occupational assistance
 - f. Advisory service to individuals and families

STATE AND LOCAL PLANNING FOR DISASTERS

Disaster Relief Study

A study was made by FCDA, dated January 15, 1954, on the *Emergency Capabilities of States and their Agencies for Emergency Disaster Relief*. The report includes the Territories and contains specific information regarding their legislative authority, specific appropriations, Governor's fund, funds available by transfer, and funds available by borrowing.

Disaster Relief Project Applications

An application form was developed by FCDA in 1954 and is available for processing disaster relief projects through the Civil Defense Director, the FCDA Regional Office, the State Office of Defense and Disaster Relief, and the Office of the Governor, so that the State Comptroller may take action on payment to the applicant.

Federal-State Disaster Agreement

FCDA Advisory Bulletin No. 157 transmitted (1) a copy of a model Federal-State Disaster Agreement for disaster areas declared eligible by the President for financial assistance under authority of Public Law 875, 81st Congress, as amended, and (2) a copy of a model supplemental Federal-State Disaster Agreement to effect further Federal assistance authorized by the President. These model agreements constitute a modification of the "Disaster Interim Operating Procedures," copies of which were distributed under date of January 31, 1953.

LEGISLATION OF THE EIGHTY-THIRD CONGRESS WHICH AFFECTS THE DISASTER RELIEF ACT

Surplus Property

Public Law 134, the surplus property amendment to Public Law 875, has proven beneficial in many areas. This amendment, enacted by the 83rd Congress, provides that property, surplus to the needs of the Federal Government, may be donated or loaned to a State for use or distribution in any area in which the Disaster Act has been invoked. Such property may be used for the restoration of damaged or destroyed public facilities or for the rehabilitation of individuals.

The State contacts Federal agencies to determine the availability of surplus property. Upon request from the State, FCDA directs the Federal agency involved to release such surplus. All costs incident to transportation and handling of surplus property must be assumed by State and local governments.

Surplus Agricultural Commodities

The 83rd Congress, 2nd Session, enacted Public Law 480, "The Agricultural Trade Development and Assistance Act of 1954," to increase the consumption of United States agricultural commodities in foreign countries and to improve the foreign relations of the United States. It also provides for making maximum efficient use of surplus agricultural commodities.

Section 301 of Title III of this Act amends Section 407 of the Agricultural Act of 1949. It provides for the Commodity Credit Corporation, on terms and conditions designated by the Secretary of Agriculture, to make available any farm commodity, or product thereof owned or controlled by the CCC, for use in relieving distress in (1) labor surplus areas, and (2) "major disaster" areas.

The two areas are defined as: (1) Any area in the United States declared by the President to be an acute distress area, because of unemployment or other economic cause, provided the use of surplus in the area will not displace or interfere with normal marketing of agricultural commodities and (2) any "major disaster" area determined by the President to warrant assistance by the Federal Government under Public Law 875, 81st Congress, as amended (42 U. S. C. 1955). In this case, the CCC cannot bear any costs, except on a reimbursable basis, for making such commodities available beyond their cost to the CCC and the cost of handling and transportation in making delivery of the commodity to designated agencies at one or more central locations in each State.

The U. S. Department of Agriculture, through the Agricultural Marketing Service of that agency, makes such surplus commodity available to the eligible State. This assistance is provided at no cost

to the disaster fund and represents an important step in the advancement of the disaster program.

Drought Relief

Public Law 115, 83rd Congress, amends the basic statutory authority of the United States Department of Agriculture as vested by Public Law 38, 81st Congress. Sections 2 (b) and 2 (d) of this amendment provide for emergency assistance by the Department of Agriculture in agricultural areas determined major disasters under authority of Public Law 875.

Appropriations to carry out the purposes of Public Law 115 have been provided the Department of Agriculture under Public Law 175, 83rd Congress. The 83rd Congress also appropriated funds to the Department to reimburse the disaster fund for monetary assistance advanced during the recent drought and dust bowl situations in various States, for which the Department of Agriculture lacked authority and funds.

In those situations, the President authorized the use of disaster relief funds as temporary measures, pending congressional enactment of sufficient authority and appropriations to enable the Department of Agriculture to assume its own basic responsibility. The disaster fund has been utilized in this way three times in the past year, in amounts totaling 28 million dollars.

CONCLUSION

Many agencies of the Federal Government have statutory authority and appropriations which allow them to operate in disaster situations. Such capabilities are applied in disasters, but often the problem is of greater magnitude than can be handled by existing authority and funds. In such cases, the President may invoke Public Law 875 and provide additional Federal assistance through the FCDA to supplement State and local efforts and existing Federal authorities.

FCDA has provided training for State and local civil defense organizations and has proven that an organized, trained civil defense group is an important asset in a community. Through its disaster relief operations, particularly during the hurricanes of 1954, civil defense has become a recognized community service, thereby creating a new dimension of peacetime citizenship. The participation of civil defense organizations in natural disaster operations has increased their capacity and effectiveness to cope with situations which could occur in event of enemy attack.

WARNING AND COMMUNICATIONS

ATTACK WARNING

With the development of more powerful weapons and long-range aircraft to carry them, the need for widespread and effective systems of warning the public of enemy attack becomes increasingly vital. Thermonuclear weapons can now wipe out tens, even hundreds, of thousands of persons at one blow. People must be warned of impending attack in time to take civil defense measures to protect themselves. With evacuation of critical targets such an important measure, attack warnings must be given at the earliest possible moment to allow time for our cities to be evacuated.

As the U. S. Air Force radar net and the Ground Observer Corps continue to become more efficient, civil defense, which gets its attack warnings from the Air Force, is able to pass on the warnings to the civilian population more quickly. At the present time a maximum of 1 hour advance notice of enemy attack is the most to be expected in coastal cities and from 1 to 3 hours in inland communities. While these advance warning times can be expected, they cannot, however, be absolutely guaranteed.

Nationwide Attack Warning System

Protecting the country against enemy air attack is the responsibility of the Air Force's Air Defense Command (ADC) with headquarters at Colorado Springs, Colorado. ADC is divided into three Forces, each covering a geographical section of the country. FCDA has a liaison officer in each of these three Force headquarters. The Forces are further divided into Air Defense Divisions, the total number of which is 12, and FCDA has an attack warning officer in each Division.

When a radar outpost or a Ground Observer Corps post spots an enemy plane the information is immediately communicated to the nearest Air Defense Direction Center (ADDC). In the case of the Ground Observer, it goes through a Filter Center first. The information is then communicated to the Air Defense Control Center of the Division (ADCC) in which the plane was spotted. The division commander, on the basis of information he has about the plane or planes spotted, issues within his division either a Warning Yellow—attack by hostile aircraft is probable—or a Warning Red—attack by hostile

aircraft is imminent. At the same time he informs all other division commanders and ADC Headquarters of his action and the information on which it is based. When a division commander declares a Warning Yellow or Red, all other division commanders automatically order at least Warning Yellow in their divisions.

In each division are civil defense key points, communications centers manned 24 hours by State or local civil defense personnel, with a total of more than 200 such points across the country. When a defense division commander declares a Warning Red or Yellow, the FCDA attack warning officer in his division headquarters contacts the key points in the division and informs them of the commander's action. The key points then notify the local civil defense headquarters in their area of the warning. In some cases the warning goes through a sub-key point before being passed on to a locality. The local civil defense director, on the basis of information he has received from the key point, determines whether public action is required, and if so whether to have the people in his city evacuate, go to shelter, or resume their normal operations. The chart on page 65 gives a graphic picture of the Nationwide Air Warning system.

By means of this nationwide attack warning system any point in the Nation can be notified within less than 15 minutes of the time an enemy plane is spotted approaching the country.

The portion of this warning system from the Air Defense Control Centers down through the key points is known as the Civil Air Defense Warning (CADW) network. FCDA pays the cost of the equipment at the ADCCs and the key points and the lines of communication between the two.

The CADW networks have valuable other uses in addition to their primary function of giving the civilian population early warning of enemy air attack. They are in daily use, reporting on or assisting in searches for downed aircraft, providing information on severe weather to regional offices, and giving information on similar activities in their areas.

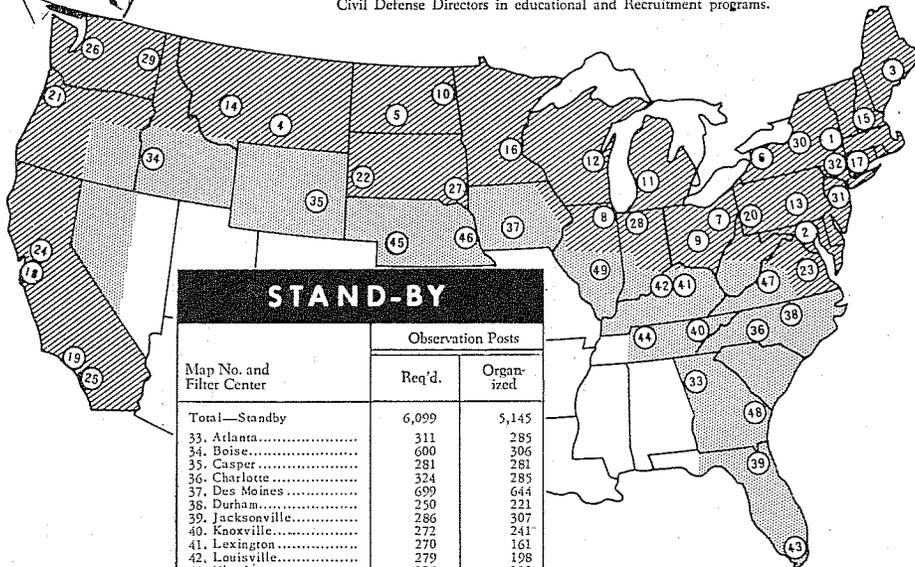
Information on natural disasters such as floods, tornadoes, and cyclones is given over the CADW networks. In one instance last year CADW provided the first reports of "Hurricane Hazel" hitting an area and in another was the only remaining source of communication with an area which had been hit. In wartime, immediate information can be given on cities hit, bomb damage, clandestine landings, and sabotage.

The warning system from the key points to the localities is a responsibility of the State, and the communications and warning equipment



Ground Observer Corps AS OF OCTOBER 31, 1954

Note: The G.O.C. is a civilian component of the Air Defense Command, which is responsible for its training and operation. Although it has no legal responsibility for the Corps, FCDA is cooperating with the Air Force and State Civil Defense Directors in educational and Recruitment programs.



Map No. and Filter Center	Observation Posts	
	Req'd.	Organized
Total—Standby	6,099	5,145
33. Atlanta.....	311	285
34. Boise.....	600	306
35. Casper.....	281	281
36. Charlotte.....	324	285
37. Des Moines.....	699	644
38. Durham.....	250	221
39. Jacksonville.....	286	307
40. Knoxville.....	272	241
41. Lexington.....	270	161
42. Louisville.....	279	198
43. Miami.....	125	130
44. Nashville.....	283	253
45. North Platte.....	165	152
46. Omaha.....	727	615
47. Roanoke.....	170	163
48. Savannah.....	587	537
49. Springfield.....	470	366

SKYWATCH-

Map No. and Filter Center	Observation Posts			
	Req'd.	Organized	Manned	
			Total*	24 hrs.
Total—Skywatch	10,366	8,060	5,056	1,411
1. Albany.....	258	215	190	80
2. Baltimore.....	192	178	157	67
3. Bangor.....	255	232	123	33
4. Billings.....	250	215	149	19
5. Bismarck.....	122	142	94	29
6. Buffalo.....	133	133	100	8
7. Canton.....	253	202	95	34
8. Chicago.....	571	409	110	22
9. Columbus.....	388	211	107	37
10. Fargo.....	225	268	103	22
11. Grand Rapids.....	557	375	175	33
12. Green Bay.....	655	635	314	78
13. Harrisburg.....	281	146	96	29
14. Helena.....	214	177	127	27
15. Manchester.....	372	335	302	110
16. Minneapolis.....	1,318	1,056	464	48
17. New Haven.....	145	140	124	16
18. Oakland.....	192	165	153	42
19. Pasadena.....	220	165	145	45
20. Pittsburgh.....	348	261	152	48
21. Portland.....	744	365	351	98
22. Rapid City.....	119	119	77	17
23. Richmond.....	123	123	98	50
24. Sacramento.....	513	279	230	113
25. Santa Ana.....	298	162	148	45
26. Seattle.....	168	200	165	59
27. Sioux Falls.....	241	185	63	31
28. South Bend.....	324	284	123	31
29. Spokane.....	458	292	233	95
30. Syracuse.....	163	153	81	13
31. Trenton.....	118	100	89	26
32. White Plains.....	149	137	120	30

 "Skywatch" Area 32 States
 and the District of Columbia
 Stand-by Area 5 States

50

Air Defense Filter Centers

* Includes posts manned 24 hours and posts partially manned

used are supplied the locality involved. Matching funds under ECDA Federal Contributions program have been made available to help States and localities pay the cost of public warning systems equipment. The program also provides matching funds for the installation of warning systems inside schools, hospitals, and public buildings.

By the end of fiscal 1955, the warning systems in cities and communities in target areas will provide approximately 77% of the protection those areas require. This estimate includes only those devices and control circuits that will have been installed and ready for operational use. The table on page 61 shows the coverage by States.

All of the principal cities in target areas have been analyzed, using population density studies, to determine general adequacy of warning systems and to insure specifically that the systems provide coverage where most needed. A technical report, *The Effectiveness of Sonic Outdoor Warning Devices*, based on a study by the Stanford Research Institute, was published and distributed to civil defense officials for their information in planning warning systems. This report included criteria for computing adequate warning coverage.

The warning chapter of the ECDA Contributions Manual (M25-1) was amended to include changes in criteria for the warning program. The list of warning equipment, published for the guidance of prospective purchasers, has been kept up to date.

Evaluation studies were made on a new type of warning device using pulse jet engines as signal sources, which holds promise of high level sound outputs at very reasonable cost. Some preliminary tests were held, and final tests are scheduled in the near future.

Federal funds were made available for the first time to convert existing single-tone sirens to two-tone sirens. This will eliminate possible confusion between sirens used for air raid warning signals and those for fire alarm purposes. It is now required that all non-directional sirens purchased for air raid warning signals be the two-tone type.

In the past year efforts were increased to develop a practicable home warning device. This is a necessary supplement to the public warning systems in order that warning can reach all homes at the earliest possible moment. Through the cooperation of a private corporation, a demonstration device has been developed and a survey made of three cities to determine the economics of a citywide installation. Suggestions from companies and private citizens have been carefully evaluated and some are being further investigated.

1954 GAINS IN WARNING SYSTEMS FOR PRINCIPAL CITIES IN TARGET AREAS

(Percentage of completion based on funds obligated by Federal, State, and local Governments)

	Through 1952	Through 1953	Through 1954	1954 Program ¹
Alabama	16	41	59	\$14, 541
Arizona	21	53	100	16, 615
California	45	63	98	528, 509
Colorado	38	45	89	2, 144
Connecticut	75	83	98	42, 592
Delaware	60	86	90	10, 453
District of Columbia	27	98	100	
Florida	40	52	68	44, 217
Georgia	21	49	99	35, 999
Illinois	26	27	82	149, 860
Indiana	12	27	67	73, 737
Iowa	6	6	60	33, 622
Kansas	54	61	94	11, 320
Louisiana	31	42	93	20, 860
Maine	72	72	100	16, 645
Maryland	78	86	100	16, 974
Massachusetts	62	67	70	75, 838
Michigan	31	33	71	22, 470
Minnesota	12	47	86	49, 532
Mississippi	4	72	100	
Missouri	44	48	100	114, 310
Montana	0	0	100	13, 014
Nebraska	53	87	89	4, 971
New Hampshire	20	20	52	2, 219
New Jersey	31	37	63	63, 242
New York	63	72	99	214, 539
North Carolina	14	15	65	26, 675
Ohio	77	84	86	28, 926
Oklahoma	0	3	100	47, 898
Oregon	64	73	80	4, 455
Pennsylvania	28	42	51	118, 079
Rhode Island	80	85	100	57, 828
South Carolina	22	22	41	12, 103
Tennessee	19	51	69	9, 679
Texas	9	15	65	153, 639
Utah	0	5	24	6, 927
Virginia	34	67	72	14, 775
Washington	79	83	91	23, 197
West Virginia	30	30	35	3, 441
Wisconsin	32	36	48	34, 882
Wyoming	0	83	100	4, 355
Alaska	100	100	100	1, 155
Guam	100	100	100	
Puerto Rico		6	100	9, 473
Canal Zone			100	1, 560
Hawaii			100	22, 761
Total and averages	42. 3	53. 2	76. 7	2, 160, 031

¹The figures in this column reflect total obligations in 1954 for public outdoor warning systems, including both principal cities and other communities

COMMUNICATIONS

Effective communication, the basic requirement of any successful group action, has become more and more a critical necessity to civil de-

fense. The scope of any enemy attack with modern nuclear weapons is so great that without adequate communications, successful civil defense measures—preattack or postattack—could not be carried out. Well-coordinated communications are needed for an effective city evacuation. Communications are needed to marshal a city's resources for postattack recovery action. Outside of target cities, civil defense communication is a must because of the wider range of nuclear weapons effects, particularly fallout, and the adoption of evacuation as a primary civil defense protective measure.

In fiscal 1954, a total of \$4,624,929 in Federal contributions was committed to communications in cities, counties, and States. This was applied to the construction of control centers, establishment and extension of communications systems, and support of leased communications facilities. In fiscal 1954, a total of \$884,269 was contributed from Federal funds for 18 State and local control centers. Additional requests for 23 control centers totaling \$1,069,471 Federal portion are being acted on this year. These control centers are being constructed generally outside of the vulnerable urban districts of the cities which they are to serve.

The FCDA program of integrating the technical and operational skills of radio amateurs into organized civil defense communications programs progressed. To date over 200 State, county, and city Radio Amateur Civil Emergency Service (RACES) plans have been approved. Conferences have been held at Federal, State, and local levels to develop uniform operational plans which will be correlated on a nationwide basis in the near future.

An increasing number of manufacturers have certified models of their radio equipment as meeting FCDA specifications. Several manufacturers, recognizing the need for additional types of equipment peculiar to civil defense communications, have developed new models at the request of FCDA.

As a member of Telecommunications Policy Committee (TPC) and its panels, FCDA is cooperating with the ODM and other government agencies in developing the communications structure under which the civil defense of the Nation would operate in wartime. The need for adequate radio channels for civil defense is still an unsolved problem. FCDA has advised TPC of this requirement and is working with the committee toward a solution.

State and Local Communications

Civil defense lines of communications within a State start from the State control center and usually go directly to the principal cities. Most communications are by means of wire facilities, including telephone, TWX, private line teletype, and Western Union telegraph.

These circuits are backed up by (1) radio communications organized under RACES, (2) public safety State networks, and (3) to a lesser degree, commercial radio services.

Some of the larger States have area or regional control centers through which communications are routed to the cities. The same types of communications as above are used from area control centers to the cities, except that since distances are usually less, more use is made of VHF radio services. In addition, radio and wire communications may be used to link fire, conservation, and law enforcement services for mutual aid and mobile support, and evacuation operations. Communications channels here are also used to organize, control, and distribute incoming material such as food and medical supplies.

Within a city, wire communications are extensively employed, backed up by radio between fixed points such as rendezvous areas, evacuation areas, and assembly areas. Radio communications are also used by means of mobile units with operational services such as fire, medical, radiological, and rescue. The chart on page 64 shows a representative city communications set-up.

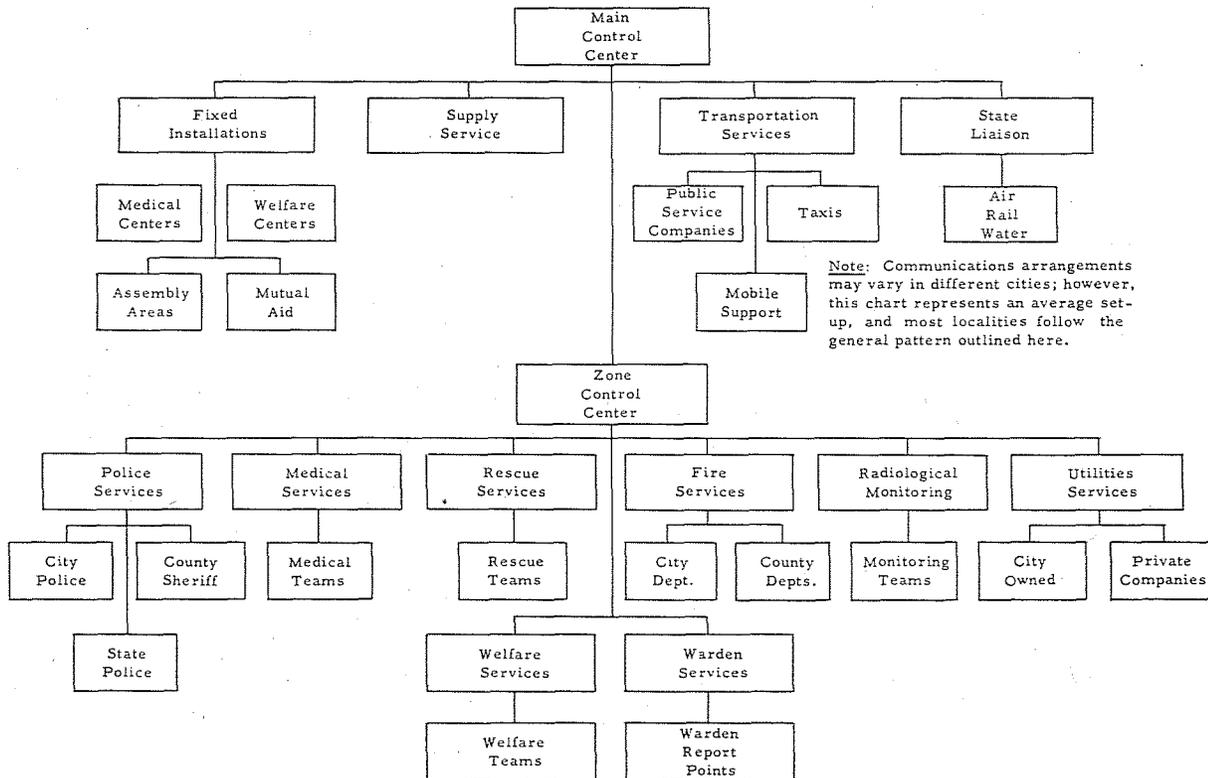
TACTICAL OPERATIONS

Civil defense tactical operations are concerned with the coordinated employment and deployment of civil defense forces to cope with disaster, especially that caused by enemy action. The Federal Civil Defense Administration continued and broadened in 1954 the specific guidance programs for such preparation for tactical operations as:

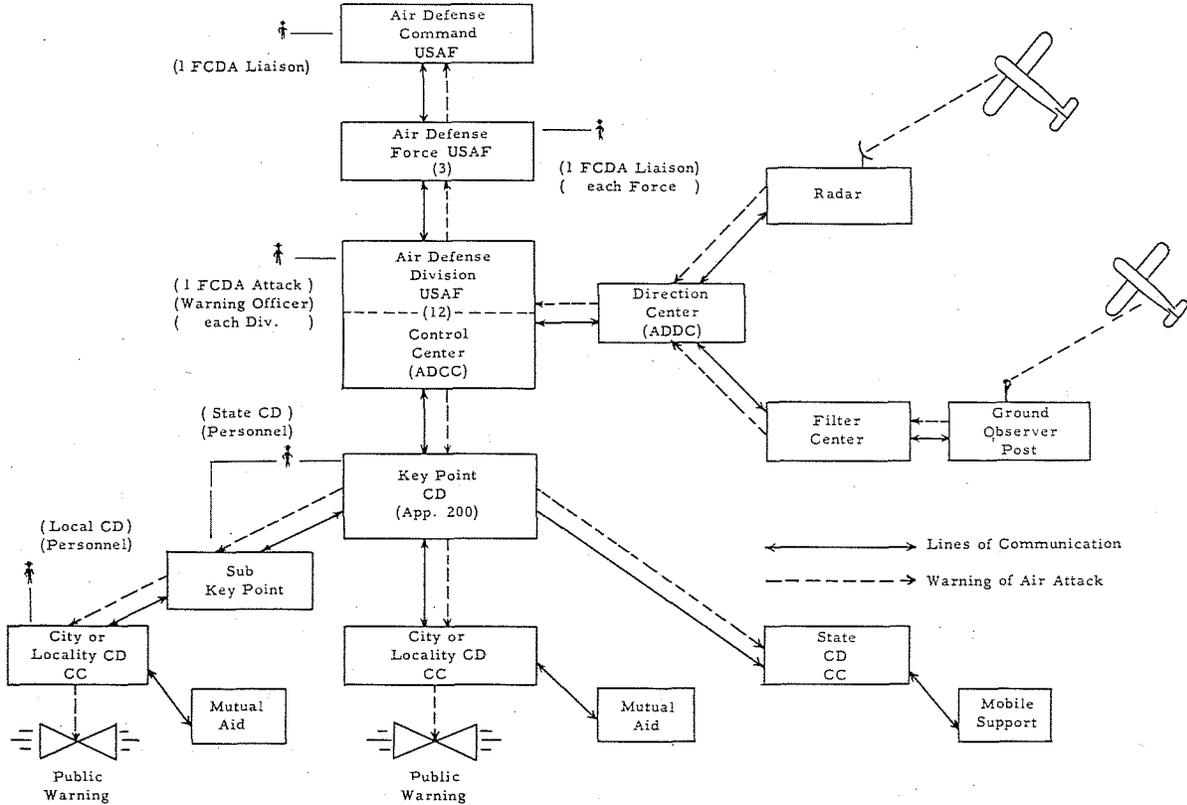
1. Civil defense urban analysis.
2. Organization of the ground. Assignment of responsibility for disaster operations in zones, sectors, and other geographic subdivisions of a city or metropolitan area.
3. Control center staff organization, functions, and operations.
4. Organization, mobilization, and direction of mutual aid and mobile support.
5. Patterns of organization and administration for local civil defense, including systems for registration and assignment of volunteers.
6. Rural and nonurban civil defense principles.
7. Operational planning for States and subdivisions.
8. Coordination of logistic and technical civil defense services at the local level in an emergency.
9. Evacuation of city populations.
10. Procedures for damage reporting and assessment.

With the issuance in January of the policy statement concerning evacuation, FCDA's responsibility for counseling States and cities on this subject became major. Assistance was given to more than 50

EMERGENCY OPERATION LINES OF COMMUNICATION
(Local Civil Defense Organization)



NATIONWIDE ATTACK WARNING SYSTEM



cities during the year, ranging from planning conferences to staff assistance in conducting evacuation exercises. In the case of Mobile, Alabama, a pilot operation, the assistance included staff participation in the planning and conduct of an actual evacuation test involving 480 blocks in the heart of the city.

Through an arrangement with the National Research Council, objective evaluations by teams of experts were obtained for evacuation tests in Spokane and Bremerton, Washington, as well as in Mobile.

A supplement to the basic advisory bulletin on evacuation policy was issued and a series of technical bulletins with check-lists for evacuation planning were in preparation at the end of the year. Regional evacuation task forces were being formed as the year ended.

Sound civil defense planning, as well as conduct of operations, at city level, depends on having the essential information about the city available in the most usable form, in a civil defense urban analysis.

The program for civil defense urban analysis has included, besides the issuance of a technical manual, *Civil Defense Urban Analysis*, TM-8-1, assistance on request to States and cities. During the year FCDA staff members conducted civil defense urban analysis workshops for two States (Ohio and Michigan) and gave requested assistance to the following cities:

Mobile, Ala.	St. Louis, Mo.
Los Angeles, Calif.	Cleveland, Ohio
Denver, Colo.	Toledo, Ohio
Atlanta, Ga.	Philadelphia, Pa.
Chicago, Ill.	Seattle, Wash.
Detroit, Mich.	

The following cities have, to date, reported completion of civil defense urban analyses, an increase of three over last year:

San Francisco, Calif.	Baltimore, Md.
Washington, D. C.	Boston, Mass.
Wichita, Kans.	St. Louis, Mo.
New Orleans, La.	Houston, Tex.
Dayton, Ohio	Milwaukee, Wis.

In addition, the following cities have reported to FCDA that they are in process of preparing an urban analysis:

Mobile, Ala.	Kansas City, Kans.
Los Angeles, Calif.	Topeka, Kans.
Oakland, Calif.	Fall River, Mass.
Denver, Colo.	Lynn, Mass.
Wilmington, Del.	Springfield, Mass.
Atlanta, Ga.	Worcester, Mass.

Kansas City, Mo.	Philadelphia, Pa.
Detroit, Mich.	Knoxville, Tenn.
Flint, Mich.	Dallas, Tex.
Jersey City, N. J.	Ft. Worth, Tex.
Rochester, N. Y.	Waco, Tex.
Akron, Ohio	Ogden, Utah
Cleveland, Ohio	Hampton Roads, Va.
Columbus, Ohio	Newport News, Va.
Toledo, Ohio	Norfolk, Va.
Youngstown, Ohio	Portsmouth, Va.
Portland, Oreg.	Seattle, Wash.

A conference was held with the Division of Safety, State of New York, on civil defense urban analysis as a basis for fire-defense planning. The same subject was presented in regional conferences at Portland, Oregon, and Atlanta, Georgia, with a combined attendance of approximately 550 fire officials.

The tactical-operations staff assisted in planning and participated in critiques for statewide control center exercises in Tennessee. Individual counsel on State control center organization and functioning was given on request in Maine, New Hampshire, Massachusetts, and Kentucky.

The impact of larger weapons was reflected in increasing need for daytime population data on smaller cities adjacent to principal cities. By contract, the Bureau of the Census worked up data on 27 cities, in addition to the data previously prepared for 92 critical target cities. These data were put into dot maps showing distribution of both daytime and resident population in these cities, and supplied to the States concerned. Day and resident population data for all of the 119 cities were developed in form for faster estimation of casualties with any given attack pattern.

Boundaries of vulnerable urban districts based on population were established for 10 cities in addition to the 31 cities for which data had previously been prepared. The necessary data for establishing vulnerable urban districts based on industrial population were being assembled at the year's end, in a cooperative effort between the Department of Labor, FCDA, the State Employment Security Agencies, and the State civil defense organizations in the 30 States affected. Industrial vulnerable urban districts had already been established in 24 cities.

Rural and nonurban civil defense was accelerated by the announcement of the evacuation policy, which added problems of caring for, housing, and feeding evacuees from the cities to those of preparing self-protection and maintaining production of food and other neces-

sities. A pilot study in the New Market, Md., area was completed, in cooperation with the University of Maryland and the U. S. Department of Agriculture.

SUPPLY

No target community can expect to have or store sufficient materials, supplies, and equipment to meet every contingency following an enemy attack. To alleviate suffering and provide needed assistance to communities during a limited postattack period, FCDA continued the establishment of reserve supplies of certain vital items. In an emergency, if essential supplies and equipment become depleted locally, they will be supplemented from these Federal reserve stocks stored in strategically located warehouses.

Based on the requirements of the States, Government standards and industrial uses, FCDA determines specifications for supplies and equipment, purchased partially or completely with Federal funds, and makes necessary arrangements for the procurement, storage, and distribution of these items for civil defense purposes. Other Government procurement agencies assisted in procuring supplies and equipment. Among these are The Armed Services Medical Procurement Agency of the Department of Defense which procures medical supplies. The Federal Supply Service of the General Services Administration procures engineering training, rescue, and other supplies and equipment for the FCDA.

Other Government agencies, such as the Department of Agriculture, Veterans Administration, Public Health Service, and the Department of the Navy are providing FCDA technical assistance in specific procurement fields, and in the development of supplementary supply sources. In some instances, these agencies furnish space for warehousing purposes.

By December 1, 1954, additional procurement orders for emergency medical supplies and equipment valued at \$31,323,276 had been placed with purchasing agencies. These procurement orders added to the previous procurements, bring the total medical supplies and equipment for stockpiling to approximately \$131,223,276, of which approximately \$92,500,000 have been delivered to Federal warehouses and other storage areas.

In addition to the medical stockpile items, FCDA has continued arrangements for storage, care, and stockpiling of certain engineering equipment at 40 locations in 39 cities, mostly on a nonreimbursable basis. This equipment includes portable generators, water purification units, water pipe and fittings, vinyl film for window closures, and other miscellaneous engineering items with a total value at the start of the current fiscal year of approximately \$6,500,000.

Three FCDA warehouses and 1 storage area providing approximately 1,006,000 square feet of space were activated during 1954, making a total of 12 FCDA warehouses and 4 storage locations in operation and providing nearly 1,776,000 square feet of storage space.

The warehouses and storage areas are situated at :

Location	Space, square feet	Location	Space, square feet
Bremen, Ind.-----	75, 000	San Jose, Calif., No. 2-----	100, 000
Carrollton, Ga.-----	44, 000	Sunbury, Pa.-----	350, 000
Ellenville, N. Y.-----	33, 000	Zanesville, Ohio-----	95, 000
Gilbertville, Mass-----	114, 000	Somerville, N. J.-----	429, 000
Lake Charles, La-----	46, 000	Mechanicsburg, Pa-----	51, 000
Marshall, Mich-----	87, 000	Clearfield, Utah-----	25, 000
New Castle, Pa-----	127, 000	Spokane, Wash-----	25, 000
San Jose, Calif., No. 1-----	48, 000	Springfield, Mo-----	127, 000

The last five of these are provided to FCDA rent-free.

An additional 625,000 square feet of space will be required for the storage of items planned for purchase under the fiscal year 1955 appropriations. In addition to the warehouse space and the 42 engineering equipment locations, FCDA has continued to retain, on a non-reimbursable basis in the States, 41 locations for commercial cold storage warehousing of blood derivatives.

Representative quantities of medical supplies and equipment have also been stockpiled at Honolulu, T. H., and San Juan, Puerto Rico.

In addition to the Federal stockpiles, FCDA has continued assisting the States in the procurement of medical supplies and equipment valued at approximately \$19,494,000, which are stockpiled for civil defense use. FCDA has also continued assisting the States in the procurement of other items, such as fire-fighting, rescue, and training equipment, and other miscellaneous supplies for civil defense purposes, worth approximately \$6,151,400.

Portions of the medical supplies and equipment delivered to FCDA storage locations are now being packaged into functional units for issue, according to type and quantity of components. These units, for use in operations, or in replenishing supplies for first aid stations or hospitals, are described as follows :

1. FCDA Replenishment Unit No. 1 (first aid) designed to provide supplies for emergency care of 1,000 casualties at first aid stations for a period of 24 to 48 hours.

2. FCDA Replenishment Unit No. 2 (200-bed hospital) designed to provide supplies and equipment required for the first week of operation at an existing, or, improvised 200-bed hospital.

3. FCDA Replenishment Unit No. 3 (blood collection) designed to provide necessary supplies and equipment for collection of 1,000 units of whole blood.

4. FCDA Replenishment Unit No. 4 (intravenous solutions) designed to provide sufficient intravenous solutions and sets for 100 hospitalized patients for one week.

The stocks not packaged in units will be available for bulk issue to the States as required.

The purchase and assembly of 731 200-bed improvised hospitals is currently under way and a considerable number of these will be delivered to storage locations during the current fiscal year. These improvised hospitals will be made available to target areas by automatic issue.

A nationwide plan for integrating Federal, State, and local civil defense supply operations in an emergency continues as previously set up, and the development of potential resources is still in process. The majority of the States are adopting FCDA principles and criteria in organizing their supply activities. Technical experts, representing the various industries, suppliers, and Government agencies are consulted at Federal and State levels to obtain assistance in preparing the Nation to meet any emergency and to determine the degree and depth of required support at all levels of civil defense.

TRANSPORTATION

In January 1954, the President, in his message to Congress on the State of the Union, said: "The ability to convert swiftly from partial to all-out mobilization is imperative to our security. This Nation is at last to an up-to-date mobilization base—the foundation of a sound defense program. Another part of this foundation is, of course, our continental transport system. Another indispensable part of our continental security is our civil defense effort."

In recognition of the need for transportation preparedness and the coordination of heretofore intermittent and uncoordinated efforts the Director of the Office of Defense Mobilization in September 1954 appointed to his staff a coordinator of Defense Transportation. In July of 1954 the President established, within the Cabinet, a transportation committee.

Under the leadership of the Office of Defense Mobilization, industrywide planning for the mobilization and emergency use and operation of the national transportation complex continues to progress. Participating Federal agencies include Defense Transport Administration, Defense Air Transportation Administration, National Shipping Authority, Department of Defense, other claimant agencies, and FCDA. The civil defense organization structure at regional, State,

and local level has been accepted as the common meeting ground for the continuance of the development of transportation preparedness. The Federal agencies have assigned field staff representatives to meet with civil defense and industry for planning and action purposes.

Under FCDA guidance, State and local civil defense organizations are continuing with the enrollment of the transportation industry and preparations for organizing and operating in an emergency. National, regional, and State test exercises have been participated in by the transportation groups and the findings from evaluation of such exercises applied to emergency planning. Government agencies and the Industry Advisory Committee in each regional office of FCDA are continuing with and improving operational planning for transportation.

Under the guidance of the recently established ODM Transportation Coordinator FCDA will continue its participation with other Federal agencies in the establishment of emergency plans for the wartime regulations of transportation.

Aviation

FCDA in cooperation with the Defense Air Transportation Administration has prepared plans for the nationwide mobilization and emergency operation of all types of civil aircraft. There are more than 96,000 of these, with a replacement value of 9¼ billion dollars. The mobilization and emergency operational planning is based on the assumed need for large volume concentration of aircraft, utilizing civil owned transport-type aircraft, for emergency airlift pattern of operation. Continued planning and refinement of plans in this field will be conducted by FCDA, industry, and Government agencies.

Under the guidance of ODM, FCDA will continue planning with other Federal agencies for emergency use of Government-owned aircraft and facilities.

Statements of understanding of the role of civil aircraft in the national plan are in development.

Highway

Our National highway transport systems have a replacement value of over 100 billion dollars and include more than 10 million commercial vehicles.

In July, the trucking industry signed an agreement designating its Independent Advisory Committee as an advisory committee for highway transportation to the FCDA. The committee is responsible for civil defense planning for the trucking industry.

In compliance with the Federal Civil Defense Act FCDA has delegated the responsibility for the establishment of a National highway net to the Federal Bureau of Roads. FCDA regional and State civil

defense highway nets are being established and integrated into the national net through the Federal Bureau of Roads.

The trucking industry has expanded the original American Trucking Association's plan. A national group, representative of the for-hire trucking interest, the private fleet operations, the manufacturers, and labor, has been organized and authorized as spokesman for the industry. Progress on a national plan for emergency operation of commercial vehicles is well under way.

Water

The Nation's water transport systems operate more than 60,000 commercial vessels. In addition there are more than 400,000 small craft of less than 5 tons displacement in operation. These vessels represent a replacement value of approximately 20.5 billion dollars.

The 1953 agreement between FCDA and the U. S. Coast Guard established a pilot model organization to provide guidance in planning for the emergency utilization of small craft. The plan is now in use as a pattern for establishing similar activities in all port areas where emergency mobilization of small craft may be necessary. Distribution of this plan is a joint United States Coast Guard—FCDA project. Supported by the Coast Guard and the United States Power Squadrons (composed of owners of private small craft), organizations for small craft operations are now being established by State and local civil defense officials.

To promote water transport preparedness and to meet civil defense emergency needs, statements of understanding between FCDA and such organizations as the American Waterways Operators Association, the Great Lakes Carriers Association, the Association of American Port Authorities, and the Ocean Shipping Associations, have been prepared and signed or are in process.

Railroad

Our national railroad systems represent a replacement value in excess of 60 billion dollars. Continued cooperation of the Association of American Railroads with FCDA is based on a statement of understanding signed by both parties in November of 1954. Under this agreement the member railroads and the Association are furnishing advisory and planning assistance to civil defense at national, regional, State and local levels. A pilot model transportation gateway area organization has been formed to develop emergency operating plans and procedures. From the experience of the pilot model organization, plans for use by the railroad systems throughout the Nation will be prepared and submitted to all interested parties. These plans will also furnish guidance to State and local civil defense officials. Several railroads have already established a civil defense

program in their respective systems to protect life, property, and operational capability. These programs are being continued and other systems are following the pattern.

Test Exercises

Representatives of all modes of transportation in the industry participated in the 1954 local, State, regional and national command post exercises. The experience gained is being applied to future exercises and emergency operational planning.

EMERGENCY OPERATIONS

FCDA responsibilities in a civil defense emergency are of two kinds: (1) conducting a continuing program of preparation for attack throughout the country; and (2) coordinating damage control and emergency rehabilitation of cities that have been attacked. Under point (2) FCDA must analyze and report the emergency situation; coordinate the utilization of national resources; advise other Government agencies; provide assistance to the States; and maintain a current record of the emergency situation. These responsibilities are carried out through 2 national and 7 regional emergency operations control centers, other Federal agencies, and State and local governments.

The staff at the primary national emergency operations control center is responsible for establishing broad policy, making major decisions, disseminating civil defense information, and coordinating overall civil defense emergency actions with the President and the heads of security and mobilization agencies. The staff at the secondary national center (now located at Battle Creek, Michigan) is concerned with overall operations, including decisions made by the President and the Administrator.

FCDA regional emergency operations control centers are concerned chiefly with logistical support and coordination of aid and assistance across State and regional lines. FCDA does not engage directly in civil defense operations within a State.

FCDA emergency operating plans are activated in one of three ways: (1) on receipt of actual civil defense attack warnings; (2) on issuance of instructions by the President; or (3) on issuance of a civil defense emergency proclamation as defined in Public Law 920, 81st Congress.

To test the degree of readiness of emergency operations, including communications facilities, and provide realistic training for civil defense workers, the first national civil defense test exercise, "Operation Alert," was held on June 14-15.

Although FCDA developed attack assumptions for the exercise, State and local civil defense authorities prescribed the details to be

carried out by their organizations, as well as the extent of public participation.

During the test public exercises or drills were held in 233 cities, 85% of them in the industrial Northeast. Ten States participated on a statewide basis, all also in the Northeast. Mobile, Alabama, although not one of the "attacked" cities, evacuated its downtown population by automobile, an activity to which FCDA sent observers.

In addition to educating the public and training civil defense organizations, the test pointed up the overall civil defense problem, the extent of national readiness, the Federal Government's responsibilities in a national emergency, and the need for improved organization and procedures for emergency operations.

As a result of the exercise, changes were made in the emergency communications system, requirement for operational data from the field, requirements for action by national headquarters, training of FCDA personnel, and the method of holding civil defense exercises.

Most far-reaching of the changes was that involving the communications system. FCDA, working with representatives of commercial landline communications companies, developed an entirely new communications network to replace the original national TWX network. The new system, which is a combined TWX, private line teletypewriter and telephone network from national headquarters to FCDA regions to State civil defense emergency control centers, provides greater capability of continuity of service following enemy attack.

The outstanding feature of the new system, known as the FCDA National Communications System No. 1, is the use of voice-frequency circuits on a major portion of the leased circuitry. These permit routing between any two points for which a telephone circuit is available. Either voice or teletypewriter signals can be placed on them at the flip of a switch. Although the equipment will be available at all times, circuits are on a standby basis and are activated only on demand. Such an arrangement meets the needs of FCDA emergency operations without the large expenditures required for full-time circuits.

The new communications system is expected to be completely installed and operative by April 1, 1955 to permit training of FCDA and regional personnel before the next nationwide exercise scheduled for June.

[A detailed summary of State and local participation in Operation Alert is given in a previous section of this report, page 36.]

CIVIL DEFENSE EDUCATION & INFORMATION

In the Federal Civil Defense Act of 1951 the intent of the Congress with respect to civil defense education and information is clearly stated: to "publicly disseminate appropriate civil defense information by all appropriate means." Such education and information must extend not only to the Nation's leadership but also to 162,000,000 Americans as individuals and members of families.

National survival in a large measure depends upon the individual survival of the maximum number of these 162 million Americans prepared, as guardians of their freedom, to withstand the effects of modern weapons. Civil defense preparedness is of the people; it is spiritual as well as material and is composed of the individual will to resist enemy force and the knowledge and means to act constructively and decisively in our national defense.

To be prepared against natural and man-made disasters, Americans must know what to expect and what to do. To these ends the Federal Civil Defense Administration devoted a major share of its efforts and funds to the development of an alert, informed, and trained citizenry.

These programs moved forward along three lines:

1. A program of public civil defense education and information designed to stimulate individual and family participation in those activities which may be grouped under the heading of self-protection.
2. A program of training guidance for the organized civil defense services and civil defense leadership.
3. A program of technical guidance to civil defense leadership as new scientific data and plans are developed.

In telling the people what to expect and what to do, FCDA has reported new scientific facts on weapons effects and their countermeasures. In an age of ultra-rapid developments civil defense has remained adaptable to changed requirements without having to cast out completely earlier policies. Preparedness is the sum of many bits of information and everything learned saves lives even though new information may point to new approaches to civil defense operations.

THE AMERICAN PEOPLE AND CIVIL DEFENSE

In talking to the mayors a year ago President Dwight D. Eisenhower said, " * * * this great problem lies in one that is really outside

the realm of money and the material preparation. It is in conviction and belief, in readiness and discipline—of those things that need to be done by the population to save itself.”

The true strength of civil defense is in the mental, emotional, and spiritual preparedness of all Americans. It is not easy to measure these things in the same way that one measures material things. Indicative measures, however, can be obtained by the use of modern techniques of independent research.

In March 1954 the Survey Research Center of the University of Michigan completed a fourth study of public knowledge and attitudes concerning civil defense.

The findings of this study gave evidence of civil defense progress. More importantly, perhaps, they gave indications of the size of the job remaining.

“When the effort is to avoid, minimize, and/or, recover from an attack causing widespread death and material destruction, the initial steps that seem to be required are not psychological. People’s attitudes or information do not stop a bomber in flight or turn a bomb into a dud. One rather thinks of the performance of the military in providing an early warning, the efficiency of the military in reducing the intensity of an attack, the reduction of target vulnerability through spacing and construction standards, the stockpiling of needed materials for medical treatment, emergency housing, feeding, and so forth. These are matters of legislative, administrative, organizational and logistical preparedness.

“Many of these technical matters have psychological aspects. The distinctive feature, however, of the civil defense effort is that, if civil defense is to work, the preparedness must have worked its way down to individuals and groups of individuals. Survival is still to a large extent a matter of individual behavior during the period of crisis and danger even when warning, direction and a certain amount of defense and protection are provided. The effective execution of the best plans and the efficient use of the most ample resources can be materially reduced if the populace, at large, does not carry out the most adaptive behavior possible during the time of disaster. Civil defense thus requires a program of information, guidance, education, and training that results in motivation, insight, confidence, and skill on the part of the public in carrying out its assigned task.

“Even taking just this psychological point of view, the scope of civil defense is still staggering. It requires that to a certain extent people must live with uncertainty. It means that they must prepare for a day that may never come. It involves the difficult approach of facing the unwelcome possibility of widespread destruction, with the remedial and protective steps offered seeming, in many minds, to be

of questionable efficacy." *4th Survey of Public Knowledge and Attitudes concerning Civil Defense*—pages 1 and 2.

"The general findings of this report indicate that, while progress has been achieved in many areas, one cannot say that the whole frontier of preparedness has been pushed forward. There are still areas in which misinformation is prevalent and there are developments in preparedness that are not well known by the public.

"But, there is a clearly discernible increase in interest in the topic of civil defense. Interviewers, most of whom had worked on other civil defense studies, reported that respondents were more interested in the study than previously. Respondents asked more questions and some contacted local authorities, after the interview, for information on civil defense. These things had been exceedingly rare on the first studies for the Federal Civil Defense Administration.

"The reader of many of the interviews came away with the impression that the public is not at all disdainful of the topic. People are not necessarily accepting civil defense but they are more adjusted to living in a world with nuclear weapons. They are not as fearful as they once were but they still evidence considerable concern. They do not expect war as imminently as they did two or three years ago. Nevertheless, they do report interest in preparedness and defense information. They want help, but there is no lessening in the usual time involving commitments and competing interests that restrict voluntary attempts to get information and severely hamper personal participation in local efforts." *Ibid.* Introduction.

Here are some of the more significant questions and answers shown with comparisons with past findings wherever they are appropriate.

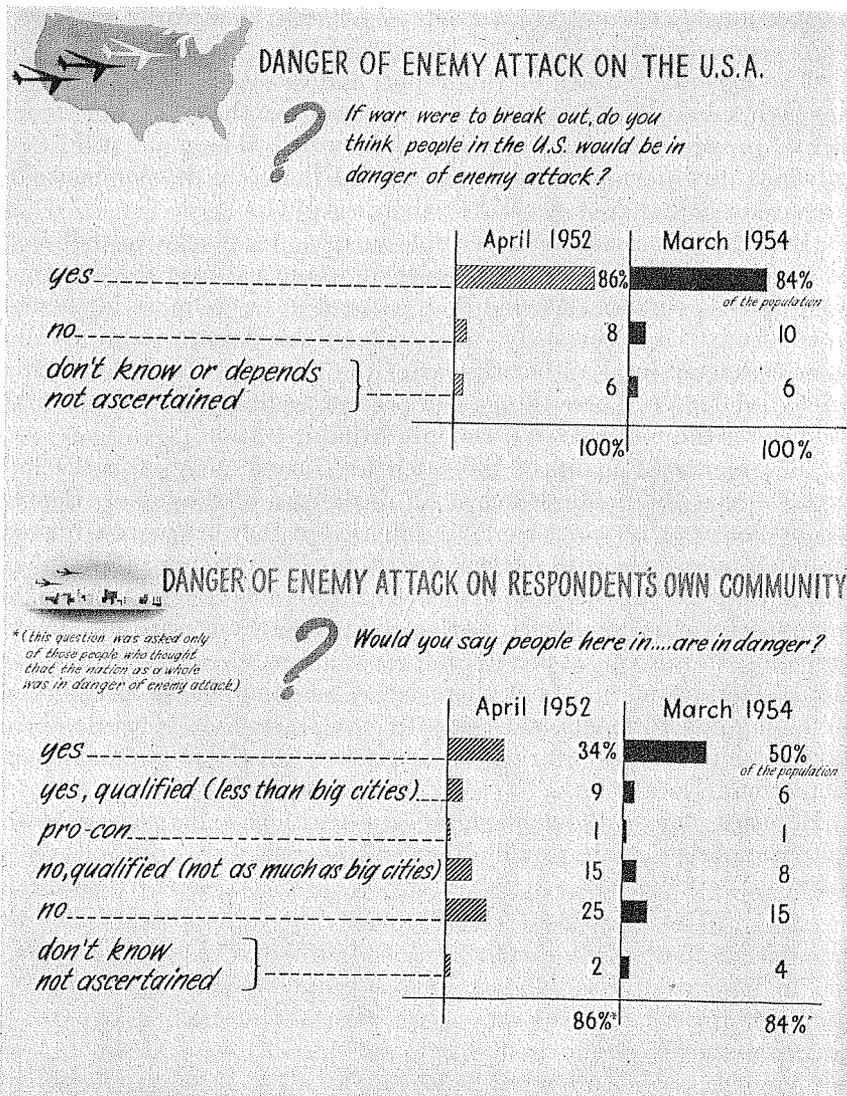


Chart 1: Danger of Enemy Attack on U. S. A.

Since April 1952 there has been no significant change in the realism with which the American people accept the fact that intercontinental bombers and nuclear weapons have brought the continental U. S. into danger of enemy attack if war should break out. That about 85 per cent of people recognize this danger demonstrates that there is little wishful thinking on this particular subject. In addition, as far as the individual communities of the country are concerned, there is growing recognition of the probable increase in danger to those communities.



MORTALITY RADIUS OF A-BOMB

? If an atomic-bomb hit a large city, how far away from where it fell do you think almost everybody would be killed?

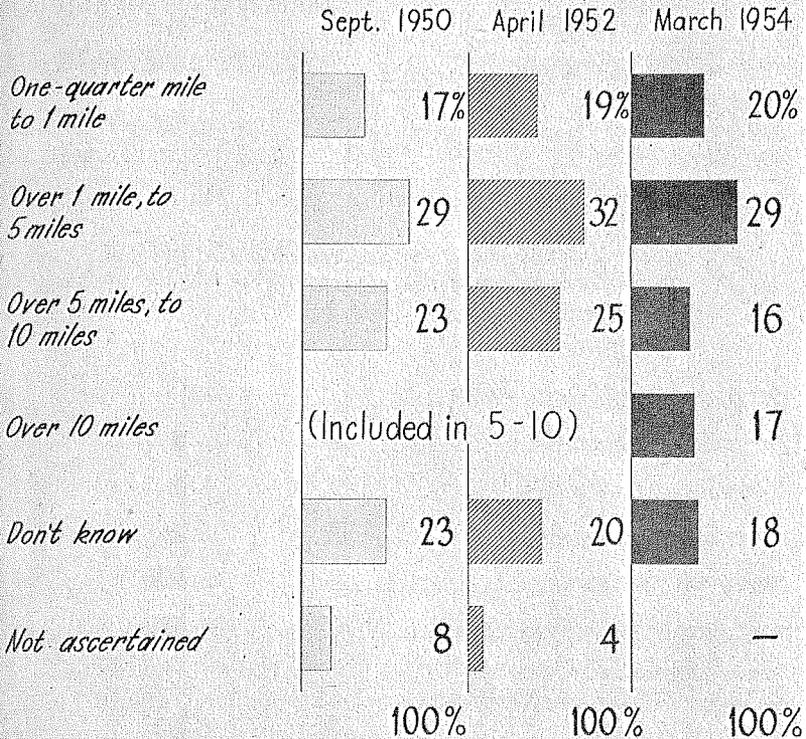
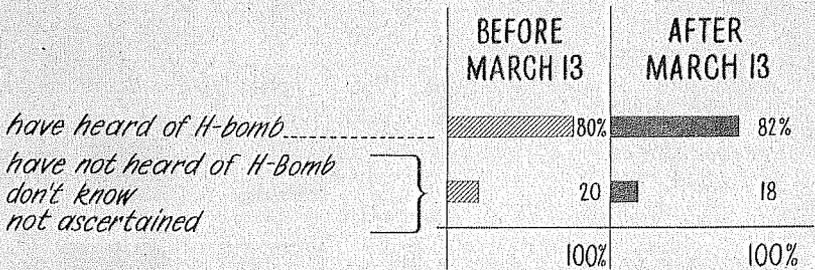


Chart 2: Mortality Radius of A-Bomb

To determine how realistic Americans are in estimating the destructiveness of the A-bomb, the figures for 1950, 1952, and 1954 must be related to the published facts about bomb sizes in those years. In 1950 those who estimated destructiveness at 1/4 mile to 1 mile could be considered realistic. By 1954 this group, plus the group estimating 1 to 5 miles, is in the realistic area. Some progress, therefore, has been made in giving people a relatively accurate picture of atomic destructiveness. However, the 33 percent in 1954 who believed almost everybody would be killed 5 or 10 miles away from an atomic bomb represent a major civil defense problem. Experience shows that people who greatly exaggerate destructiveness are the very ones who

INFORMATION ABOUT THE H-BOMB

? Have you heard about an H-bomb?
(Hydrogen bomb)



? If an H-bomb hit a large city, how far
away from where it fell do you think
almost everyone would be killed?

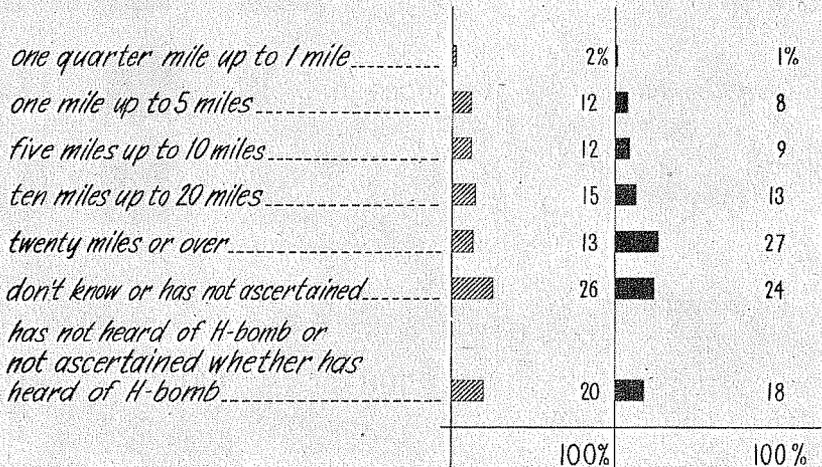
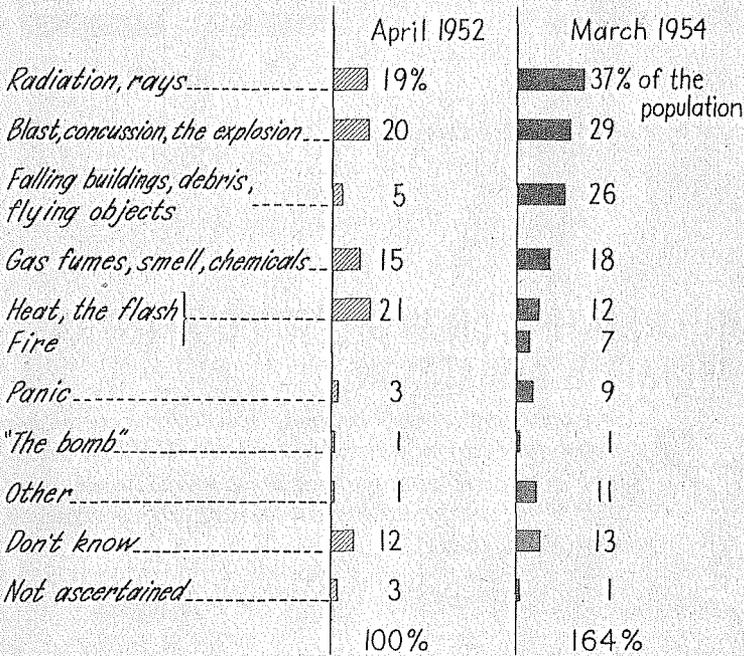


Chart 3: Information about the H-Bomb

All of the information in this chart was obtained before "Operation Ivy," the official Government film on a thermonuclear device, was released. The tabulation is divided between interviews before March 13 and those subsequent, because that was the date on which the Japanese fishermen incident was widely released to the American people: This event caused a significant increase in the number of people who felt that an H-bomb would kill almost everybody 20 miles or over from its target.

CAUSES OF DEATH IN AN ATOMIC ATTACK

? *From what you've heard, what causes most of the deaths in atomic attack?*



Comments: 72% of those who mentioned one cause mentioned a second cause.
 64% of the total population mentioned two causes.
 (Double mentions were not coded on the 1952 study)

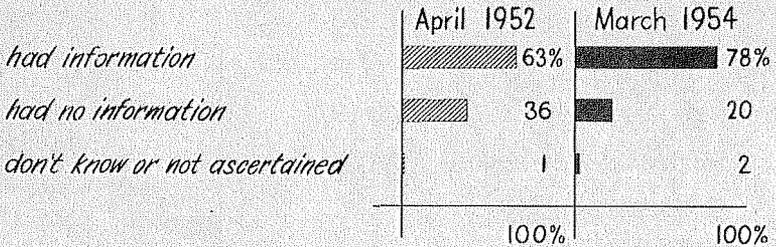
Chart 4: Causes of Death in an Atomic Attack

While the American people naturally do not use scientific terms for the causes of death, they generally have an accurate though vague understanding of its effects. Many recognize that a combination of effects has importance.

INFORMATION ON WHAT TO DO IN AN ATOMIC BOMB ATTACK



Have you heard or read anything about what a person ought to do for his own safety and his family's safety if there were an atom bomb attack?



INFORMATION ON WHAT TO DO AFTER AN ATOMIC BOMB ATTACK



Have you heard or read anything about what a person ought to do to take care of himself or his family AFTER an atomic bomb attack? What do you know about what a person ought to do for his own safety and his family's safety after an atom bomb attack?

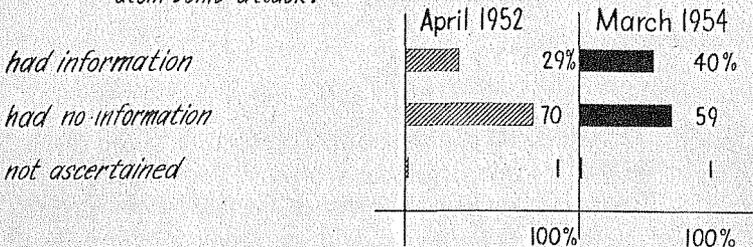
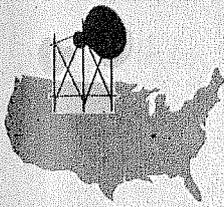


Chart 5: Information on What To Do During and After an Attack

In the two years since April 1952 there was a large and healthy growth in both of these important survival areas. The 15 percent increase in the top part of the chart represents approximately 15 million people who have begun to learn these measures of survival. The lower part of the chart represents an increase of about 10 million. Neither represents adequate individual and family preparation either in terms of numbers of people or in terms of extent of knowledge.



KNOWLEDGE OF WARNING SIGNALS



Do you know what the warning signal is which tells people that enemy planes are headed for your city (town)? What is it? Do you know the signal that says the danger has passed? What is it?

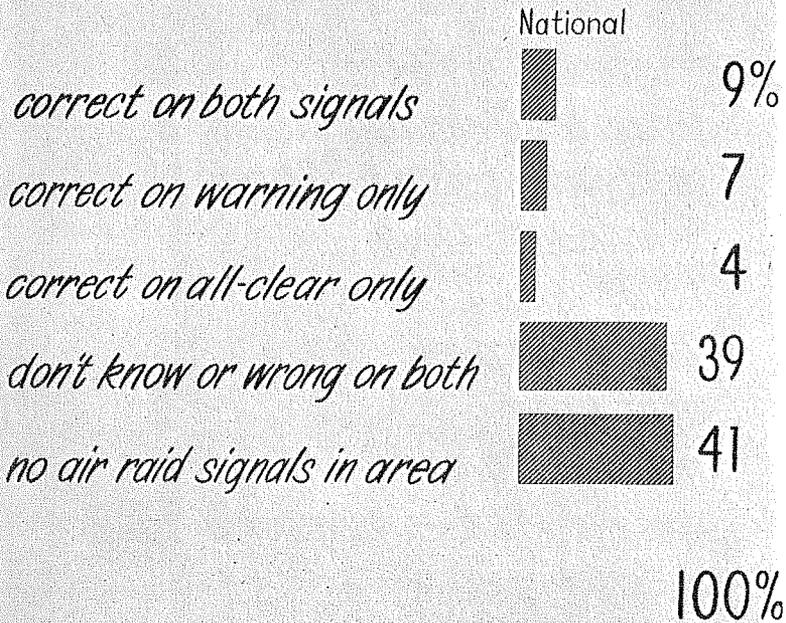
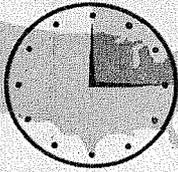


Chart 6: Knowledge of Warning Signals

At the time of this national survey approximately 41 percent of people were in areas which did not have public warning devices. Even so, not enough of the remaining nearly 60 percent were clearly informed on public warning signals in March 1954, since the best interpretation would be that one-third of the people knew the signals. It should be noted, however, that warning devices had only recently been installed in some of the areas covered by this survey.



EXPECTED AMOUNT OF WARNING



*If you heard the warning signal,
how much time do you think you
might have before planes
reached here?*

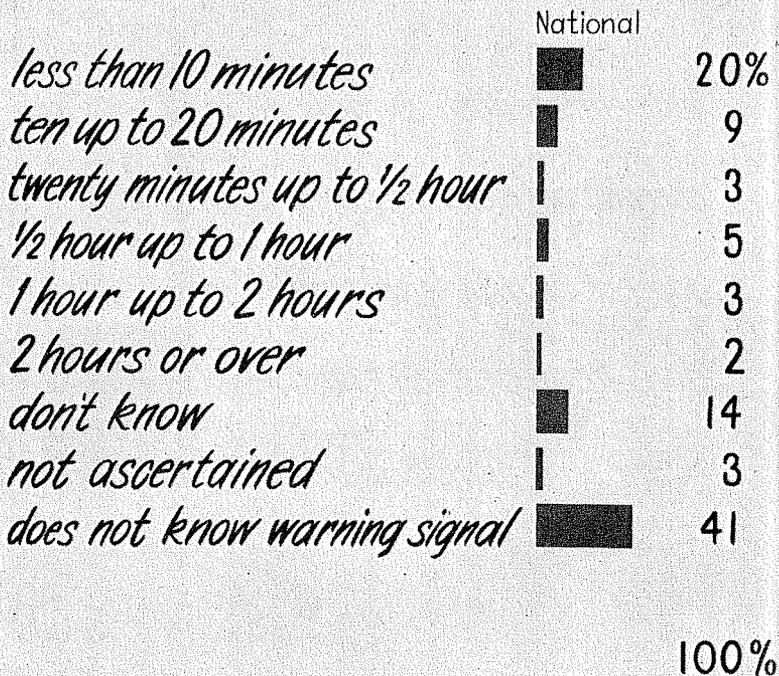


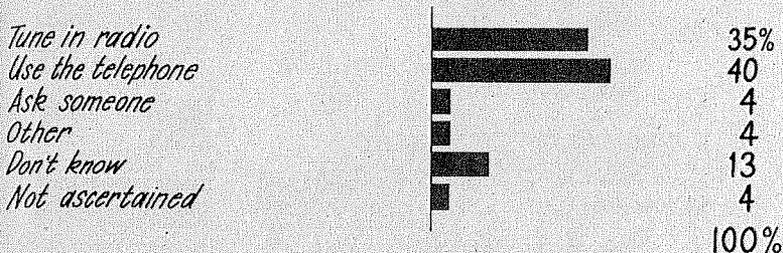
Chart 7: Expected Amount of Warning

This question was not asked in the areas where there were no warning devices (the 41 percent shown as "Does not know warning signal"). At the time of interviews there was no considerable exaggeration of the amount of warning time which could be expected in most of the cities of America.

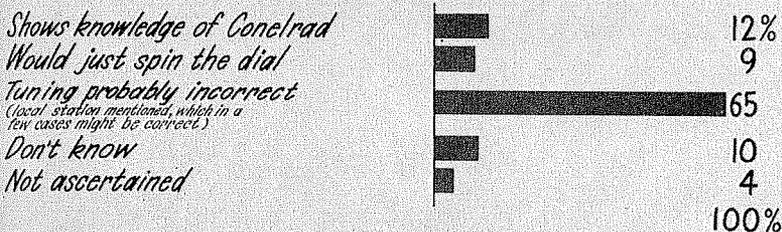


SOURCE OF EMERGENCY INFORMATION

? *If you heard a warning and wanted to get some more information about what was going on and what to do, where would you try to get it?*



If you tried a radio, where would you tune in?



Among those using radio for information?

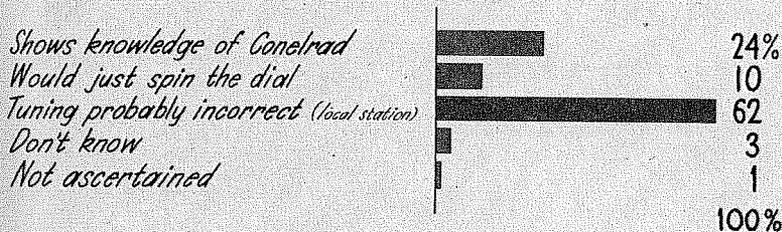


Chart 8: Source of Emergency Information

In somewhat less than two years considerable progress has been made in getting people to know something about the CONELRAD system of emergency broadcasting. The extent of information is still inadequate and even the 35 percent who plan on tuning in their radios are somewhat hazy on where to tune. There are also too many people who plan on using the telephone at a time when these facilities would be needed for official emergency use.

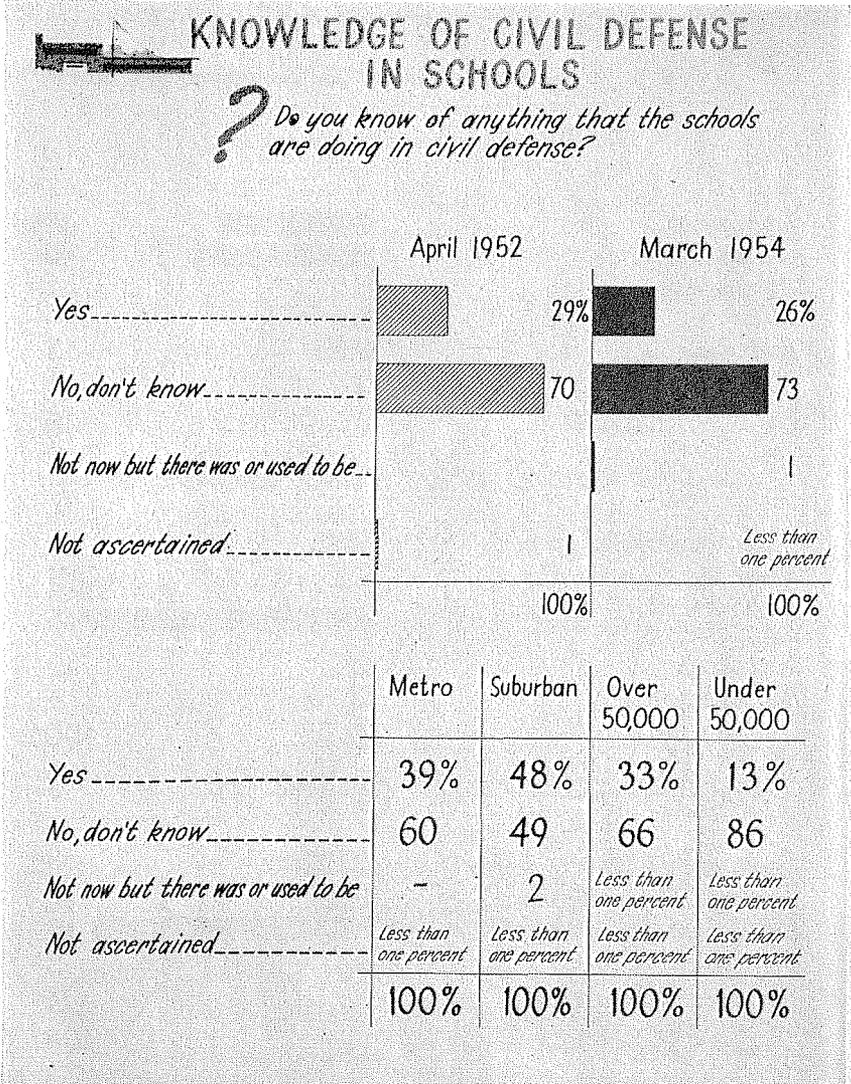
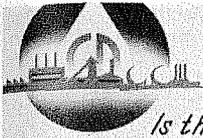


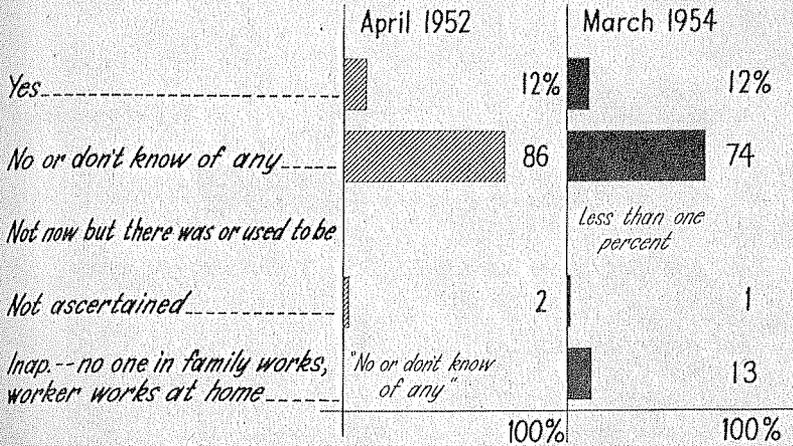
Chart 9: Knowledge of Civil Defense in Schools

Knowledge of school activity civil defense barely held its own in the two years between 1952 and 1954. This knowledge was greatest in suburban areas where nearly half the people were aware of school activity and weakest in the smaller towns and rural areas.



KNOWLEDGE OF CIVIL DEFENSE AT WORK

Is there anything going on in civil defense where you or any member of your family works?



	Metro	Suburban	Over 50,000	Under 50,000
Yes.....	20%	27%	12%	6%
No.....	71	64	79	75
Not now but there was or used to be.....	Less than one percent	-	-	-
Not ascertained.....	Less than one percent	Less than one percent	Less than one percent	2
No one in family works, or worker works at home.....	8	8	9	17
	100%	100%	100%	100%

Chart 10: Knowledge of Civil Defense at Work

Though this was tabulated somewhat differently in 1954 than in 1952 there is no discernible improvement in these two years. This, like the previous chart, gives a national figure and does not mean that local activity may not be much greater or much less. Here again the best showing is in the suburban areas.

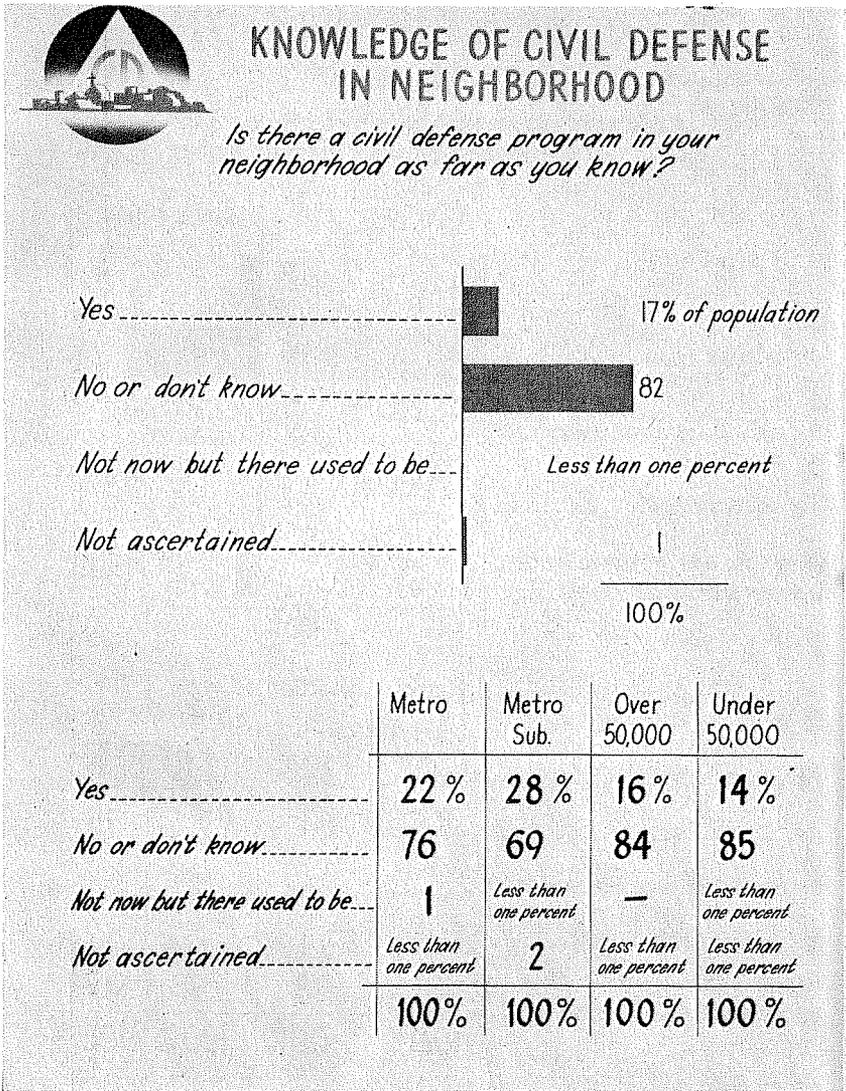


Chart 11: Knowledge of Civil Defense in Neighborhood

The information shown here is an example of considerable evidence that, averaged across the nation, civil defense does not have specific local community meaning. There is an awareness of the activity, but it tends to become more vague as it gets right down to the local level. The differences between various population groups are not as large on this count as they are on some others, though again the suburbs are slightly more aware of activity.



WILLINGNESS TO PARTICIPATE IN CIVIL DEFENSE

? If you were asked to sign up to give 2 or 3 hours a week for at least six months learning about civil defense, would you do it?

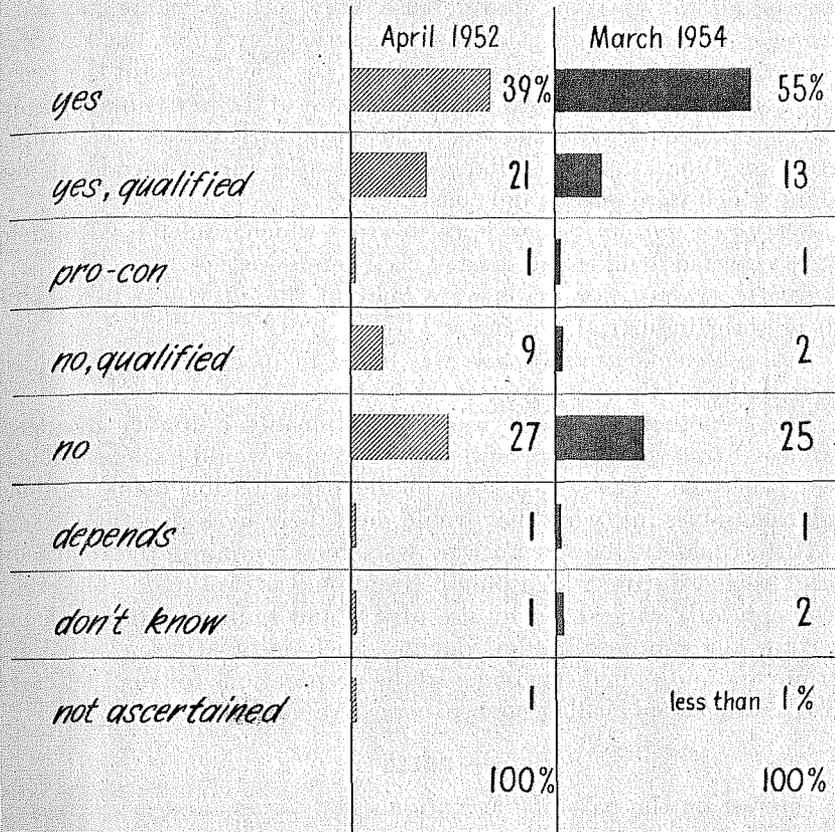


Chart 12: Willingness To Participate in Civil Defense

There has been an encouraging increase in willingness to serve during the past two years. This should not be interpreted to mean that a call for volunteers would result in this proportion of the population standing up to be counted. It perhaps indicates only that there is a growing recognition that civil defense involves personal service.

OPERATION ALERT—JUNE 14—15 THE FIRST NATIONAL CIVIL DEFENSE TEST EXERCISE

From the standpoint of public awareness, there are indications that Operation Alert was the most effective training device which the Federal Government has yet sponsored:

As a news story, more column inches were devoted to Operation Alert than any previous civil defense story. The accounts may have lacked some of the impact of the "Operation Ivy" film, but this was more than offset by the manner in which the Alert brought the problem home to each individual city and to most of the individuals within the cities affected. Newspapers in 301 cities in 47 States covered the event on June 14 and 15. Papers in 200 cities ran editorials, almost all of which were serious and constructive.

Sixty-two million people were in areas which, under local option, were expected to take some kind of civil defense action.

Public exercises or drills were held in 233 cities—85 percent of them in the industrial Northeast.

Full statewide participation was noted in 10 States—all of which were in the northeastern part of the Nation.

The hypothetical attack was unquestionably a highly dramatic event—if this were not so, newspaper coverage would have been much less generous. The widespread public participation made millions ask themselves just what they would do if there were an actual attack.

Unfortunately, too few answers were forthcoming in the relatively brief period during which public attention was captured. The event was not fully capitalized by use of TV and radio to hammer home certain key concepts in civil defense, such as preattack evacuation, group and individual survival. In the preparations for the 1955 exercise, arrangements will be made to correct this condition.

PRESS

Interest on the part of the Nation's newspapers and magazines in Civil Defense in 1954 was equal to, or greater than in the previous year. An estimated one million news stories, articles, editorials, cartoons, reviews, letters to the editor, and advertisements were devoted to civil defense.

Most significant in this attention on the part of the press was a manifest shift in emphasis. In 1953 the chief topic discussed in roughly 50 percent of the items carried was the *need* for civil defense. In 1954 it became a concern over mass evacuation and how the Nation can survive super bombs, if they come.

Of overwhelming importance in setting the tone for such articles was the release in April of pictures and information on "Operation Ivy," the world's first known explosion of a thermonuclear device.

Stories on the explosion captured the attention of millions of readers, and the interest of the news media was so keen that far more column inches of newsprint were devoted to "Operation Ivy" than to any other single story in FCDA's history to that date.

Despite the attention gained by "Operation Ivy," the number one continuing civil defense story was the growing emphasis on evacuation of target cities. This emphasis was augmented not only by "Operation Ivy" but also by publication in January of a forecast that increased warning time would permit dispersal and the release in September of the first official information on the hazard of radioactive fallout.

Second to "Operation Ivy" as the single incident getting the most attention from the press, was the first continental civil defense exercise, *Operation Alert*. This exercise held June 14-15 combined the forces of Federal, State, and local civil defense organizations and Canadian Civil Defense.

Other major news stories during the year included:

1. A series of week-long conferences of State and city civil defense leaders with FCDA.
2. The first public demonstration of FCDA's new 200-bed improvised hospital.
3. FCDA's 1955 planning assumptions.
4. The new sky glow illumination control plan.
5. A warning of the dangers of biological warfare and instructions on how to combat them.
6. The tour of the United States by two British women leaders in civil defense.
7. Federal, State, and local civil defense contributions to minimize casualties and damage from hurricanes Carol, Edna, and Hazel, and their part in aiding stricken areas.
8. The Washington Conference of Mayors of the United States on civil defense and other subjects.

In addition to these major stories, a continuing public information program covering FCDA's National Civil Defense Training Center at Olney, Maryland, technical programs, and other agency projects and business was carried on through newspapers, magazines, trade journals, and house organs.

More than 500 general and special releases were issued by FCDA offices during the year in addition to the thousands distributed by State and local civil defense offices. Requests by media representatives for assistance were answered on more than 2,000 occasions. Approximately 90 information bulletins, totaling 350,000 copies, were distributed. Articles on FCDA policy and progress were supplied to seven major encyclopedias.

Among the national magazines which carried articles from material supplied by FCDA were Collier's, Ladies' Home Journal, Life, U. S. News & World Report, Pathfinder, Parade, and The Farm Journal. Hundreds of other articles on civil defense were carried in professional and technical journals and house organs.

NATIONAL ORGANIZATIONS

National organizations continued their indispensable support of civil defense throughout 1954. Recognizing it as a major element in national preparedness, hundreds of organizations publicized civil defense in their magazines and newsletters, provided time for speakers and exhibit space at their conventions, and adopted resolutions. In these and other ways they encouraged their members to inform themselves on the need for civil defense, to take the actions which lead to individual and family self-protection, and to participate in organized local civil defense activities.

A few concrete examples will serve to illustrate the scope and nature of the support contributed by national organizations to homefront defense.

The American Legion recruited over a thousand Post rescue teams and volunteered their services to their respective local civil defense directors. Some of the Posts equipped their teams.

The AMVETS pushed the recruitment of rescue teams.

The Veterans of Foreign Wars adopted a resolution at their annual convention formally committing the organization to enlistment of welfare teams.

The Catholic War Veterans circulated *Home Protection Exercises* to all Posts with a strong letter from the National Commander urging the neighborhood use of these exercises.

The National Association of Insurance Agents formally made civil defense one of the responsibilities of its Fire Safety Committee and carried on a continuing campaign to keep members fully informed of developments in civil defense, with particular emphasis on natural disasters and the prevention and control of fires.

The Boy Scouts of America continued to encourage the members of local Troops to participate in local civil defense in filter center work under the Ground Observer Corps, in mass feeding and emergency housing programs, in messenger service, and most of all in first aid and other means of family and individual self-protection.

NATIONAL BLOOD PROGRAM

FCDA continued during the year to cooperate with the Office of Defense Mobilization, the Department of Defense, and the American National Red Cross in operation of the Donor Information Office of

the National Blood Program. At the end of the year FCDA assumed the chairmanship of the committee.

With the cooperation of The Advertising Council the group released 2 newspaper kits and 2 magazine ads, one television kit, one radio kit, and one newspaper cooperative ad to all the Nation's newspapers, magazines, radio, and television stations.

The Donor Information Committee produced and issued 2 posters, 3 16-inch electrical transcriptions for radio use, 8 TV spot announcements, and one pamphlet. In addition, 6 one-minute TV films and one 16-inch electrical transcription for radio use were produced for distribution during the year.

The Committee worked with the American Association of Blood Banks, The American Medical Association, and the American Hospital Association to broaden the scope of the National Blood Program. It initiated a program of cooperation with mass-membership organizations to increase the public knowledge of blood and its uses.

TELEVISION

Television continued to be an increasingly valuable medium for the dissemination of public information on civil defense throughout the year. Stations on the air continued to increase during 1954 making television accessible to almost the entire population. As each new station came on the air, FCDA supplied it, at the station's own request, with a basic kit of civil defense information. These included slides, spot announcements, and films. Each new station was also supplied with a series of civil defense movies on a temporary loan basis. These films: "School for Survival," "U. S. Civil Defense in Action," "Operation Doorstep," "The House in the Middle," "Trapped," "Operation Ivy," "Operation Scat," "Rescue Street," a Conelrad TV Kit and a recruiting series, were exhibited on all network and most local stations and reached a combined audience of many millions of people with a continued message.

Public service time contributed to civil defense by the Nation's television stations would be valued at many hundreds of thousands of dollars if it were billed at commercial rates. More than 26 special network programs were devoted to civil defense subjects during the year. Many more civil defense programs were carried by local stations. Most of these required special material in the form of scripts, film clips, slides, art work, exhibits, and props prepared and supplied by FCDA as part of its television service to stations. Television and newsreel coverage of the 1952 thermonuclear tests in the Pacific, as depicted by "Operation Ivy" was carried by every television station in the United States. As an example, the film was shown on the 4 national television networks 9 times the first day of its release. The film has been shown by local television stations several hundred times.

RADIO

During 1953 the Nation's radio stations and networks continued their impressive public service contributions to mass civil defense education. FCDA officials and technical specialists appeared on more than 50 nationwide and regional radio network programs during the year. Most of these programs, scheduled during the early morning and afternoon when the radio listening is at its peak, reached an audience numbering into the millions.

The American Women in Radio & Television, an outstanding professional organization of women in the broadcasting industry, voted unanimously to continue the civil defense project in 1954. This was the second successive year that they have accepted civil defense as a basic project. Special radio-TV kits for AWRV have been issued. The most recent of the series covers evaluation. AWRV sponsorship of this program has resulted in a measurable increase of public interest in the civil defense program. This has been partially determined by the unprecedented request for civil defense publications "mentioned in broadcasts." In New England the AWRV chapter has unanimously adopted a resolution to accept the invitation to serve as public information officers of civil defense in their respective States. A monthly script service, "Civil Defense News for Women," written especially for Radio-TV women broadcasters, is being distributed by request to over 300 women broadcasters. As an example of the impact of these scripts, over 5,000 requests for a booklet were received by the FCDA as the result of an announcement in a single script.

The FCDA has continued the development of emergency broadcasting plans for programming and operations for the Conelrad Emergency Broadcasting System. A sustained program of public education has been carried on by the Nation's broadcasters to acquaint the listening public with the two emergency frequencies—640 and 1240. Every major radio manufacturer in the U. S. is now marking the dials of all new radio sets with the civil defense symbol at 640 and 1240 kilocycles to denote the two Conelrad frequencies.

Indicative of the importance of broadcast radio in a civil defense emergency are the findings of a national survey of household radio and television sets last spring. The FCDA cooperated with the Advertising Research Foundation in this work. During the period May 3 to May 28, personal interviews were completed in 11,020 households in 140 counties.

The FCDA participated in this project by providing letters of introduction for use by interviewers, as well as descriptive leaflets about CONELRAD. In return, Advertising Research Foundation included in the questionnaire two basic questions to determine the public's knowledge of civil defense plans for the use of radio in cases

of emergency. This information is not included in the formal copyrighted report, but was furnished to FCDA. The Advertising Research Foundation believes that a large measure of the interviewing success—91.8 percent of all households selected for interviewing—was due to FCDA participation.

The report (copyrighted 1954 by the Advertising Research Foundation) disclosed that 96.4 percent of United States households have radio or television sets in working order.

It reveals that 45,020,000 homes—94.7 percent of all U. S. households—have a total of 100,920,000 radio sets in working order. These include 26,180,000 radios in family automobiles. It also reports that 27,600,000 homes—58.1 percent of all U. S. households—have a total of 28,450,000 television sets in working order. These estimates do not include radio and television sets located in public places, business establishments, and quasi-households such as hotels, college dormitories, and Armed Forces installations.

MOTION PICTURES

“Rescue Street” and “The House in the Middle—Revised,” the first civil defense films sponsored by industry and produced with the cooperation of the FCDA were released in 1954 to television and group audiences, initiating what is becoming a unique and highly successful film program. Script and photography were completed for “The Meaning of Panic” sponsored by The Institute of Life Insurance. “Conelrad,” and “The Time of Disaster,” both financed with private funds, were released to all television stations in addition to civil defense groups. The script was completed for “To Live Tomorrow” to be sponsored by a national institute and negotiations were completed for private sponsoring of films dealing with the role of small boats in an emergency and rural civil defense.

Through the utilization of the bulk of existing funds for print purchases rather than film production, these sponsored civil defense films are reaching an estimated audience of 20,000,000 persons per subject at a cost of approximately \$.001 per person reached—considerably less than the cost of a page ad in a national magazine. FCDA also released “Operation Ivy,” the first film of a test of a thermonuclear device produced by the Atomic Energy Commission, to television stations, civil defense and other groups.

FCDA produced two short subjects for television—“A New Look At The H-Bomb” which explains radioactive fallout, and a “Bert The Turtle” one-minute spot on Conelrad. These films were widely distributed through all television outlets. Other “Bert The Turtle” spots are in the planning stage. FCDA completed the production of three 13½-minute public information subjects designed for both

television distribution and civil defense meetings; "Frontlines of Freedom" was produced in cooperation with the civil defense organization of Canada; "Let's Face It" is based on Nevada Test Site test information related to civil defense; and "Target You" was aimed especially at the American housewife and family groups.

WOMEN'S PARTICIPATION

The FCDA National Women's Advisory Committee met in Washington, D. C., on October 26 and 27. This committee is composed of the leaders of women's organizations with memberships totaling some 26,000,000, other nationally known women leaders, the FCDA regional directors of women's activities, and women's activities leaders from several of the States.

The purpose of the October Conference was to assist FCDA with the evaluation of the overall civil defense program, to advise the agency on its relations with national women's groups, and to increase the contribution of these groups to the national security program with particular reference to civil defense.

The success of these conferences has been such that nearly all States have formed Women's Advisory Committees consisting of representatives of statewide volunteer organizations. The pattern is also being followed in many cities.

As a part of the continuing program for the exchange of civil defense information between the U. S. and Great Britain, two British experts representing the Women's Voluntary Services attended and addressed the Conference. They also visited many civil defense organizations throughout the Nation.

There were other important meetings of women during 1954:

In February, members of the American Legion Auxiliary from 40 States, Hawaii, Alaska, and Panama attended a 5-day course at the National Civil Defense Training Center.

In March FCDA regional directors of women's activities and their State counterparts conferred in Washington for 3 days. This was a general orientation and planning session with special emphasis on *Home Protection Exercises* and the *Home Nursing Course*.

In November, 90 National Home Demonstration Council leaders met for one day with FCDA staff members at the National Civil Defense Training Center, Olney, Md.

As an example of an activity conducted entirely under the sponsorship of a national organization, the Veterans of Foreign Wars Auxiliary is holding a national essay contest on "What Civil Defense Means to Me."

In line with the trend of previous years, women were well represented in the classes at the FCDA National Civil Defense Training Center with a total of 100 in attendance during 1954.

As programs most representative of women's interests, responsibilities and activities special emphasis during 1954 has been placed on:

Home Protection Exercises

Home Nursing

Youth Program

Emergency Mass Feeding

Warden's Services

Sending of Students to CD Schools

COOPERATIVE PROGRAMS

The Joint Public Education program on Air Defense, first undertaken by FCDA and the U. S. Air Force in the summer of 1952, was continued.

Primary aims of the program are (1) to make people of the United States aware of the immediate need for an adequate air defense, and (2) to assist State civil defense organizations with their Ground Observer Corps recruitment campaigns.

FCDA directed its main effort toward GOC recruitment. Through an advertising campaign supplied by the Advertising Council, with the support of national, civic, fraternal, patriotic, and other organizations, and by utilizing normal publicity channels, State and local civil defense organizations enrolled more than 55,000 volunteers, raising the total in the corps to well over 375,000.

While this campaign was under way, the Continental Air Command was drawing plans to expand the GOC to all 48 States, with further plans for participation of all States except Colorado (the hub of the air defense wheel) in "Operation Skywatch"—24-hour duty of GOC observation posts and filter centers. July 1955 is the date set for activation of the Corps in the new areas, and plans are being drawn to meet this timetable.

EXHIBITS

With increased public interest and participation in civil defense the demand for exhibit materials grew. At the National Office over 250 requests were received for displays to be shown at major national organization conventions, State and county fairs, and at meetings of civic, religious, fraternal, women's, economic, medical, industrial, labor, and agricultural groups. By careful scheduling and routing, FCDA was able to respond with exhibits for 175 of these. In all, the exhibits were viewed by an estimated 5.5 million Americans.

Highlights from the exhibit program:

In keeping with the theme of "Partners in Defense," FCDA joined with the U. S. Air Force in developing a large summer-long display at Chicago's Riverview Park, one of the larger amusement parks in

the Nation. The FCDA portion of the exhibit depicted the results of a sneak attack and emphasized the need for a trained, alert citizenry prepared to withstand both man-made and natural disasters. Extensive use was made of official FCDA and military films to round out the picture of the bond between air defense and civil defense in national security. This exhibit drew over 432,000 spectators.

FCDA's 200-bed improvised emergency hospital was erected at the national convention of the American Hospital Association, attended by some 7,000 hospital administrators.

The U. S. and Canadian civil defense organizations combined forces to participate in the large National Plant Maintenance Engineering Exposition. The joint exhibit featured industrial facilities self-protection programs applicable to plants on either side of the border.

At a number of outstanding State Fairs, the civil defense story was told by exhibits to audiences totaling 2.5 to 3 million.

A cooperative exhibit at Atlantic City showing atomic blast effects and protective measures was viewed by more than 575,000 persons.

The value of exhibit space contributed to FCDA during the year exceeded \$125,000.

At the AFL Union Label Industry exposition in Los Angeles the civil defense exhibit drew 753,000 people and 150,000 pieces of literature were distributed. Again FCDA participated jointly with Canadian civil defense.

CIVIL DEFENSE TECHNICAL INFORMATION AND GUIDANCE

Through its publications program, the agency in 1954 developed and distributed a number of new publications and visual aids to provide civil defense technical information and guidance to States and cities, a basic responsibility under Public Law 920.

Publications distributed in 1954 totaled more than 4½ million copies, exclusive of those obtained through the Contributions Program.

A new poster series was inaugurated as a result of an agreement with the Post Office Department for the display of civil defense posters.

Sweeping changes in the distribution patterns of specialized FCDA publications were made possible as a result of the delegation of certain responsibilities to other Federal agencies. Booklets of particular interest to the Nation's farmers, for instance, were distributed for the first time through the facilities of the Department of Agriculture.

An intensification of distribution of the agency's printed output was undertaken, utilizing the 6,882 public libraries and hundreds of parochial libraries in America.

As a result of the revision of policy concepts, such as the change in attack warning signals, new problems created by radioactive fallout and abandonment of the "duck and cover" principle, a complete review

of the agency's publications was undertaken. This showed 36 booklets in need of substantial revision or rewriting; 4 were dropped completely.

As the gaps in the 3-year-old publications program were being plugged, it became increasingly clear that a major portion of FCDA's effort in the publications field must be aimed at keeping its technical guidance up-to-date while simultaneously continuing to develop new materials.

In addition to the wide distribution of its own publications, FCDA in 1954 disseminated to the Nation's civil defense structure a number of on-the-spot reports of vital concern to the developing program of preattack evacuation. Examples were comprehensive reports of Operation Scat in Mobile, Alabama, and of the unprecedented evacuation traffic studies in Milwaukee.

During 1954 the Publications Office produced 3 handbooks, 2 instructor's guides, 14 technical bulletins, 3 technical manuals, 1 technical report, 1 filmstrip, 1 filmograph, 4 exhibits, 4 posters.

Following is a list of publications produced in 1954:

Handbooks:

Before Disaster Strikes—What the Farmer Should Know About Biological Warfare, Pub. H-11-2, 1954, 19 pp. Gives general principles applicable to BW defense and to the everyday problems of disease that confront the American farmer.

Home Protection Exercises (A Family Action Program) Booklet, 1954, 39 pp. Suggests ways in which the family can prepare to meet some of the more common disaster problems.

Civil Defense and Atomic Warfare, Pub. H-25-1, 1954, 48 pp. A selected reading list.

Instructor's Guides:

Skills Training Films (Rescue, Fire Fighting, Emergency First Aid), Pub. IG-3-1, 1954, 163 pp. Presents 11 lesson plans and related filmstrips outlining practical exercises for neighborhood groups using equipment and material normally available in the neighborhood.

Venipuncture and Intravenous Procedures, Pub. IG-11-1, 1954, 14 pp. Presents two lesson plans to help train nurses and others in venipuncture and intravenous procedures.

Technical Bulletins:

Civil Defense First-Aid Kit, Pub. TB-11-12, 1954, 2 pp. Lists first-aid items for a family of four or less; gives items to be stocked, quantity substitutes, and uses.

New Check Valve and Priming Instructions for FCDA Centrifugal Pumps, Supplement to TB-13-5, 1954, 2 pp.

Interim Design Standards for Protective Construction in Industrial Structures, Pub. TB-5-1, 1954, 4 pp. Provides minimum standards and criteria for the design of protective construction for (a) essential and vulnerable industrial structures or portions thereof; (b) personnel shelters serving these structures; and (c) essential equipment, machinery, and records in these structures.

Technical Bulletin—Continued

Minimum Potable Water Supply Requirements in Civil Defense Emergencies, Pub. TB-11-16, 1954, 2 pp. Recommends minimum estimated requirements for the quantity and quality of potable water to be provided during a civil defense emergency.

Phosphate Glass Dosimetry, Pub. TB-11-15, 1954, 4 pp. Describes phosphate glass dosimeter and dosimeter reader.

Restoration of Gas Facilities in Civil Defense Emergencies, Pub. TB-13-9, 1954, 6 pp. Describes gas utility operation under enemy-caused and natural disaster conditions and explains how these activities are integrated into the civil defense program.

Revised Instructions for Shipping Blood, Pub. TB-11-14, 1954, 2 pp. These instructions supersede those previously published in FCDA manual, *Blood and Blood Derivatives Program*, TM-11-5.

Sewage Works Facilities in Civil Defense Emergencies. Pub. TB-13-10, 1954, 7 pp. Outlines operational responsibilities and an operational plan for the restoration and maintenance of sewage works facilities in civil defense emergencies.

The FCDA Clinical Laboratory Assembly, Pub. TB-11-13, 1954, 4 pp. Describes Emergency FCDA Clinical Laboratory Assembly designed primarily for use in improvised hospitals. (Stockpiled by FCDA.)

The Role of the Warden in Panic Prevention, Pub. TB-7-1, 1954, 5 pp. Describes panic and the causes and summarizes what the warden can do to prevent or minimize it.

Training Program for First-Aid System Personnel, Pub. TB-11-17, 1954, 11 pp. Recommends training program as a guide for medical officers and civil defense officials responsible for organizing and operating first-aid stations.

Utilization of FCDA Stockpiled Flexible Vinyl Film, Pub. TB-13-7, 1954, 2 pp. Describes the materials and manpower that would be required for installing FCDA stockpiled flexible vinyl film as emergency closures in the window and door openings of essential buildings immediately following attack.

Utilization of FCDA Stockpiled Mobile Chlorinators, Pub. TB-13-8, 1954, 6 pp. Describes the operation and use of the FCDA mobile chlorinator and should be used for training water utility personnel.

Utilization of FCDA Stockpiled Portable Water Purifiers and Storage Tanks, Pub. TB-13-6, 1954, 6 pp. Provides instructions for civil defense personnel assigned the task of operating these emergency portable generator sets.

Technical Manuals:

Training Courses for Civil Defense, Pub. TM-3-1, 1954, 59 pp. A guide and reference for those responsible for civil defense training. Presents a preliminary list of training courses, projects, and conferences, the majority of which are eligible for Federal matching funds.

Clearance and Restoration of Streets and Highways in Civil Defense Emergencies, Pub. TM-13-3, 1954, 42 pp. Aids civil defense authorities at State and local levels in developing plans for restoring highway facilities to a serviceable condition in event of enemy attack.

Registration and Information Services, Pub. TM-12-1, 1954, 52 pp. Outlines essentials to serve as framework for all civil defense planning on registration and information.

Technical Report:

The Effectiveness of Sonic Outdoor Warning Devices, Pub. TR-4-1, 1954, 5 pp. This technical report is limited primarily to problems involved in the use of the siren, the conventional air-raid signal device.

- Filmstrips:
 Improvised Hospitals.
- Filmograph:
 Improvised Hospitals.
- Exhibits:
 Attack Warning.
 Blood Program.
 Training and Education.
 Industry.
- Posters:
 Fiddling's Fun—If Your Work Is Done.
 They Serve to Protect.
 Go Join CD.
 Civil Defense—Part of Our Tradition.

Publications distributed in 1954 exceeded 4¼ million copies (exclusive of those obtained through matching funds) and represented approximately 500 types. The following is a breakdown of the distribution:

PUBLICATIONS DISTRIBUTED AND ISSUED IN 1954

Administrative Guides.....	52,900
Handbooks.....	239,199
Public Booklets.....	562,266
Technical Manuals.....	139,526
Technical Bulletins.....	149,000
Training Bulletins.....	64,543
Volunteer Manpower Booklets.....	27,998
Miscellaneous pamphlets and leaflets.....	3,135,332
Total.....	4,370,764

In addition, at the year's end 1 technical manual, 1 technical bulletin, 1 program guide, 1 instructor's guide, and 1 special booklet were at the printer and will be distributed early in 1955.

TRAINING AND EDUCATION

To understand more clearly the purposes and accomplishments of the training and education program of FCDA for the year 1954, a brief summary of preceding events is appropriate. This report is intended to reflect the changes in planning in the training field as the international situation changes, as our national goals are achieved, and as experience dictates different approaches to the problem of providing essential self-protection knowledge to the 162 million U. S. citizens.

The 1952 and 1953 activities were highlighted by the effective functioning of the National Civil Defense Training Center and Western Technical Training School which turned out several thousand students from points throughout the United States and territories, qualified in civil defense administrative duties, some with rescue and fire-fighting skills. As these people made their home towns conscious of the great

need for local civil defense organizations, a demand for more advanced training was created.

Through the repetitive impact of State conferences led by training and education staff members and through their participation in educational meetings, a gradual but ever increasing need for training and education became apparent. Training materials became available. Technical conferences were conducted by the regional offices in such subjects as rescue, warden facilities, self-protection, police, engineering, welfare, and communications. But, by the time "Operation Ivy" became public knowledge, FCDA was moving its training sights upward. Most certainly now more people would need to know more about civil defense so plans were made not only for expanding the usefulness of the National Civil Defense Training Center but for carrying the Staff College to the people. More specifically, training and education was charged with the responsibility of providing a national master training plan, of extending the Staff College instruction to the States and municipalities and at the same time continuing the successful operation of resident courses at the Staff College.

FCDA Staff College

By the end of 1953 more than 4,000 key civil defense personnel (from States and local communities) had completed staff and instructor training courses conducted by FCDA. Over 50% of these students were graduates of the Staff College Administration Course and were ready for operational training. An additional group of key civil defense personnel in the States and municipalities had been sufficiently instructed in basic civil defense and were now ready for more advanced training.

To meet this need, the first Operations Course in Civil Defense was held at the Staff College in February 1954. In all, six of these courses were conducted during the year attended by more than 200 State and city directors of civil defense, chiefs of the various civil defense services, control center personnel and others who had experience in civil defense equivalent to that gained in the FCDA Administration Course.

The one-week Operations Course consists of two phases. The first is based on a map problem of a hypothetical city in which urban analysis, operational planning, and service solutions are studied by the students. The second phase is a control center exercise in which the classroom is set up to simulate a metropolitan area control center during an emergency. The students assume staff positions and act on messages as they are fed into the control center. Special emphasis is placed on the coordination of the civil defense services and the type of decisions that must be made in a control center under emergency conditions. The demand for the Operations Course has increased and it is planned to continue it during 1955.

The Administration Course was continued through 1954. This one-week session is primarily an orientation course in civil defense designed for key officials such as mayors, State, county and city civil defense directors and others who have responsibility for organizing and directing a civil defense program. This course consists of a review of the international situation, methods of assessing the vulnerability of a community, organization in support areas, the role of civil defense in peacetime disasters, civil defense operation problems, and methods of establishing civil defense training programs.

During 1954, the Staff College at Olney, Maryland, trained 487 State, Federal, and municipal officials in the Administration and Operations Courses. In addition approximately 370 persons attended special courses and conferences and 363 were trained in the Rescue School. With a total of 1,221 graduates in 1954, the grand total since April 30, 1951, was 10,606 at the end of 1954.

Traveling Team Administration Course

Although a number of State and municipal officials have completed the Staff College Administration Course, there remains an even greater number of civil defense personnel who still require this training. It was concluded that this type of training should and could be conducted at institutions of higher learning with FCDA assistance and guidance during the initial stage. The first Traveling Team Administration Course was presented at Ohio State University in August 1954. This was followed by courses in Connecticut and Florida. Civil defense directors from several other States have expressed an interest in having the course conducted in their areas.

These traveling team courses, which are presented with some FCDA financial assistance, effectively increase the number of trained key civil defense personnel. In bringing the course to the States this program overcomes the obstacle of the cost of travel of students to the National Civil Defense Training Center from the more distant parts of the nation, and serves as a start in the development of State civil defense training schools.

Special Courses and Conferences

Throughout the year a number of special courses and conferences were conducted at the Staff College. Among these were representatives of groups such as the American Legion, Home Demonstration Units, and the Department of Health, Education, and Welfare. Conferences for other professionals, such as dentists and school teachers, were held. A decided interest in civil defense is being taken by these and other groups and plans are being made for additional conferences.

To fill out the overall program, training courses, along with course outlines, were developed for the several civil defense services. These

courses are designed for personnel at the local level and include such subjects as civil defense administration, health and welfare, rescue operations, auxiliary police training, fire fighting, radiological defense, emergency sanitation, and the warden service. A technical manual TM-3-1, *Training Courses for Civil Defense*, was prepared to give a preliminary listing of the courses and serve as a guide and reference. Thirty-four of these courses are eligible for matching funds under FCDA's Federal Contributions Program.

Educational Relations

A primary responsibility of training and education is to stimulate greater participation of schools and colleges in civil defense. In working toward this objective, FCDA has benefited from the assistance rendered by the Department of Health, Education, and Welfare, Office of Education, and by contact with national educational organizations. The Office of Education has undertaken, under delegation, workshop studies to determine how best civil defense can be integrated into the curricula of the schools and colleges.

As members, consultants, program contributors, or invited guests, staff members also represented FCDA in connection with activities of such groups as the:

National Education Association; American Council on Education; National Association of Secondary School Principals; American Association of School Administrators; Association for Higher Education; American Association for Junior Colleges, and the Adult Education Association of the U. S. A.

Increased educational interest in civil defense has been evidenced by a constant flow of requests for civil defense information from school administrators, teachers, parent-teacher groups, and educational organizations representing the elementary, secondary school, and higher learning levels.

By cooperative arrangement, the American Council on Education prepared and distributed a policy statement, "Civil Defense and Higher Education." This report embodies principles and suggested procedures for the guidance of college and university administrators and others having civil defense responsibilities.

Preliminary arrangements were made with the National Education Association in connection with a publication, *Civil Defense in Elementary and Secondary Education*. This statement will be given appropriate distribution as was the statement from the American Council on Education.

Financing the Training and Education Program

During the 1954 fiscal year approximately \$666,000 of Federal funds were matched by an equal amount of money from 39 States, the

District of Columbia, and 3 Territories for the purchase of training materials and equipment. This was an increase of \$225,000 over the previous year. This increase is due to greater interest in civil defense, broader State training programs and increased participation in training exercises.

For the 1955 fiscal year, a partial shift from an item basis to a program basis has been initiated in the training and education portion of the Federal Contributions Program. On a program basis, the training projects and courses conducted by the State are matched on the basis of the number graduated from the training course or project rather than on an itemization of the costs of the specific materials or equipment. Because it places the emphasis on production, i. e., the trained civil defense worker, it is anticipated that the training project-course approach will encourage greater interest in civil defense training and a larger number of graduates. Those political subdivisions having training equipment will benefit by receiving financial aid on the per graduate basis, thus receiving financial assistance toward operating expenses. Others starting their training programs can receive aid based on the number graduating as well as for certain training equipment requiring considerable capital outlay.

Continuing Training and Education Programs

Fundamental to civil defense preparedness is the continuation and expansion of civil defense training at the State and local levels. In keeping with the concept of providing leadership and guidance from the national level, the training and education office will use all means to establish an overall training program. Steps leading to this objective are:

- (1) Maintenance of close liaison with the States and municipalities through FCDA Regional Offices in the development of a national training program,
- (2) utilization of the facilities of recognized national educational and professional associations, trade groups and similar organizations,
- (3) assumption by States and political subdivisions of training responsibilities normally carried out by FCDA and
- (4) establishment of responsibilities of the military departments and staff agencies in the Department of Defense in certain areas of civil defense.

HEALTH SERVICES

CASUALTY CARE

In view of the larger weapons available for use against the civilian population, casualty care in 1954 assumed even greater importance. The recruitment, organization, and training of professional and non-professional personnel to adequately care for large numbers of casualties continued to be a problem of first magnitude.

While progress in the procurement of emergency medical equipment and supplies has been made, some States have procured more than estimated requirements, while many have obtained little and some none.

A similar pattern was evident in organization and training for operational readiness.

During the year detailed lesson plans for the training of first aid system personnel were begun, according to a revised outline (TB-11-17). An instructor's guide for teaching venipuncture and intravenous procedures was issued (IG-11-1). Other publications have been revised (TM-11-7; TM-11-9).

The development and assembly of the first 200-bed improvised hospital was completed and the hospital was exhibited in Washington and Chicago. Procurement and assembly of 200 of these units will be completed during the fiscal year and 531 more are on order. The States have ordered 92. This total is only a modest start towards the 5,000 or more estimated to be needed.

This improvised hospital has been designed to provide part of the answer to what President Eisenhower has called "the awful arithmetic of the atomic bomb."

The 70 critical target areas now have only about 650,000 registered hospital beds in all categories—not enough even for day-by-day requirements. Many of the hospitals are unsuitable for casualty care because they are limited to the care of tubercular, neuropsychiatric, or criminal patients. Many of them are located within the areas of concentric zones of complete destruction from an A- or H-bomb. For this reason alone, civil defense planners should be prepared to discount most existing hospitals in attacked cities. At best, the hospital beds available after mass attack could not possibly care for more than about a million casualties.

The most practical immediate answer is the improvised hospital.

This 200-bed unit is intended to provide early hospitalization of seriously sick and injured casualties as close as possible to the stricken area for lifesaving, initial, and reparative treatment, and emergency surgery. The improvised hospital can also be used in a natural disaster as well as after an enemy attack.

The 200-bed improvised hospital weighs about 131½ tons, occupies about 2,000 cubic feet, consists of about 450 separate packages, crates, and bundles, and is transportable in a single van.

The hospital can be set up in any suitable building, such as a modern school, gymnasium, or public buildings of not more than two stories, with or without a basement. Approximately 15,000 square feet of space are required for the hospital. It may be set up in about 4 hours by some 30 professionals and semitrained auxiliaries, with untrained volunteers helping. The hospital may be relocated if secondary enemy strikes make this necessary.

Manning the hospital would require a team of 10 physicians, 20 graduate nurses, 125 trained auxiliaries (such as nurses' aides), and 75 untrained auxiliaries.

The 200-bed size is considered best for civil defense purposes because of its mobility, efficiency, and economy of personnel and equipment. It is patterned after the 60-bed Mobile Army Surgical Hospital (MASH) which in Korea provided superior surgical care for nontransportable battle casualties as close as possible to the front lines.

The hospital includes some 288 different types of equipment, such as 5 folding operating tables, a portable field X-ray unit, 200 folding canvas cots, plus sheets, blankets and pillows; surgical knives, forceps, probes, retractors, scissors, sponges, sutures, anesthesia, antiseptics, antibiotics, bandages, dressings, tourniquets, etc. Enough expendable supplies, such as drugs, medicines, and dressings, are included for the first 36 to 48 hours of operation. These would be replaced from nearby sources.

All items are procured through the Armed Forces Medical Procurement Agency. The total cost of the 200-bed hospital complete is \$26,435.

When set up in a building, the hospital includes a triage room, for classification of casualties, a shock treatment ward, three operating rooms, sterilizing room, central supply room, pharmacy, laboratory, and the usual wards. It also has an X-ray room equipped to turn out 60-second X-rays, with its own portable generator and transformer.

The hospital is the result of a comprehensive study of the problem by medical, nursing, hospital, and supply experts of the Armed Forces, the FCDA, and State civil defense agencies.

A color film of the hospital has been produced for information, promotion, and recruitment purposes.

Emphasis was placed on (1) inclusion of nursing in disaster in basic nursing programs, (2) training in first aid and home nursing, and (3) teaching self-help and neighbor help.

There was an increase in the number of schools of nursing including nursing in disaster in the basic curriculum. Assistance was given in revision of the manual *Nursing in Disaster*, a guide for instructors in schools of nursing. In a number of schools first aid is now being given early in the course as part of civil defense preparedness.

Plans by FCDA and American Red Cross for home nursing classes have been formulated in two FCDA regions and groundwork for initiating programs is in process. First aid training by the American Red Cross was continued and the number of trained first aid personnel available was increased greatly.

Civil defense nursing plans in the States and Territories received more emphasis this year. As a result, there was evidence of much greater awareness of the necessity for detailed local plans. In many States nurses are receiving their assignments to first aid stations, mobile units, improvised hospitals and in several States plans for provision of nursing personnel in disaster are completed in detail.

SANITATION MEASURES TO PREVENT EPIDEMICS

The major problems related to prevention of epidemic outbreak of diseases among evacuated and dispersed population groups have been given primary consideration in 1954. As past experience has shown, an urban population group will be highly susceptible to communicable diseases with which it will be faced while living under overcrowded primitive sanitation conditions in such areas. Normal sanitation facilities and services would be completely overtaxed in the event of mass evacuation to suburban and rural locations. Major problems being given study include: (1) means by which bare subsistence quantities of drinking water of safe sanitary quality can be furnished to these evacuated people, (2) minimum requirements necessary for prevention of respiratory disease outbreaks in improvised housing, through adoption of minimum space and ventilation requirements, (3) prevention of food contamination and spoilage at mass feeding centers and adoption of minimal emergency food sanitation requirements for commercial eating establishments, (4) institution of emergency rodent control measures, particularly in areas in which such diseases as murine typhus fever or bubonic plague are endemic in the rodent population, (5) control of insect vectors of disease, (6) adoption of emergency methods of waste disposal to prevent transmission of disease.

Progress

An operational plan of sanitation services for local civil defense is in preliminary draft stage. A technical bulletin, TB-11-16, *Minimum Potable Water Supply Requirements in Civil Defense Emergencies*, has been released.

The delegation of specific civil defense responsibilities to the Department of Health, Education, and Welfare has been followed up by sanitation program discussions and the preparation of guide lines for the implementation of sanitation activities under the delegation. Program consultations have been held with Food and Drug Administration officials on research and training projects related to food inspection and control. Similar consultations have been held with Public Health Service officials on measures required for protection of water, food, and air against biological and chemical warfare and on the emergency sanitation measures necessary to control epidemic disease under evacuation and dispersal conditions. This program involves research, training, operational planning projects, and prototype studies. In collaboration with the Public Health Service, a paper has been prepared for publication entitled *Biological Warfare Against Public Water Supplies*.

Planning for the handling of sanitation problems in connection with the civil defense test exercises scheduled to be carried out in Nevada in connection with the next series of nuclear explosions is underway. Arrangements have been made for industry participation in the civil effects test program related to utilities, services, and associated equipment exposed to nuclear explosion.

At the request of FCDA regions, disaster aid on sanitation problems and rehabilitation of sanitary engineering facilities was given in areas affected by the Rio Grande flood in Texas, and by hurricanes, Carol and Edna, in Rhode Island.

Five training course outlines on civil defense sanitation subjects have been prepared and included in the contributions program.

EMERGENCY MEDICAL SUPPLIES AND EQUIPMENT

With certain exceptions, particularly the basic equipment for improvised hospitals, medical supplies, and equipment provided for by appropriations through fiscal year 1955 for federally stored medical reserves and the Federal Contributions program will, in general, be sufficient for the emergency medical care for approximately 2½ million surviving casualties over a period of 3 weeks.

Total supplies for the Federal reserves program made available by a total of 133 million dollars appropriated through fiscal year 1955 are as follows:

Program	Item	Amount
Casualty	Reserves of medical and surgical supplies and equipment (82 items).	For 2,500,000 casualties (3 weeks' treatment).
	200-bed improvised hospitals (supplies and equipment).	732 units.
Blood and shock therapy	Equipment and supplies for collection and transfusion of whole blood.	2,059,796 sets.
	Blood derivatives (bottles of plasma and serum albumin).	1,557,808 units.
	Plasma volume expanders.	3,852,506 units.
	Intravenous solutions, 1,000 cc. bottles.	11,334,066 liters.
Biological warfare defense.	Specially required antibiotics.	1,395,000 doses.
	Sulfadiazine	60,000,000 tablets.
	Equipment for rapid emergency production of animal vaccines as required.	88 pieces.
	Survey meters	2,000 meters.
Radiological defense	Dosimeters	6,000 units.
	Dosimeter chargers	1,000 units.
	Atropine injection	500,000 doses.
Chemical warfare defense.		
Postattack health	Vaccines and antitoxins for public protection.	25,050,000 doses.

RADIOLOGICAL DEFENSE

Radiological defense assumed a new importance in 1954. The radiation hazard is nothing new nor are we without any defense against it.

Attention is invited to two documents of the Atomic Energy Commission—*The Effects of Atomic Weapons*, as revised September 1950, and to *Major Activities in the Atomic Energy Programs*, January–July 1954—for a fuller discussion.

The following quotations are extracted from those documents:

The Fall-Out¹

2.29 When the radioactive, metallic oxide particles in the cloud collide with the particles of dirt, which are in general considerably larger, they adhere. Consequently, the dirt particles in the cloud become contaminated with radioactivity. When the violence of the disturbance due to the bomb has subsided, the contaminated dirt particles gradually fall back to earth, giving rise to the phenomenon known as the *fall-out*. The extent and nature of this fall-out will be determined by the combination of circumstances associated with the height of the explosion, with the nature of the surface beneath, and with the meteorological conditions. It is possible that if the height of the bomb burst exceeds a certain value, there will be no detectable fall-out since no extraneous particles will be sucked into the cloud.

¹ *The Effects of Atomic Weapons*, pp. 33–35.

2.30 The importance of the fall-out in the present discussion lies in its radioactivity. It may be stated at the outset that only in exceptional circumstances would the intensity of the activity be great enough to constitute a hazard upon reaching the ground. The evidence from the Hiroshima and Nagasaki atomic bomb explosions, where the height of burst was about 2,000 feet, is that casualties ascribable to the radioactive fall-out were completely absent. However, if the bomb burst occurred relatively close to the ground, . . . and considerable amounts of dirt and other debris were sucked into the radioactive cloud, the fall-out would have to be considered as a danger. The fall-out, consisting mostly of water drops, would also be important if the detonation took place at a low level above the surface of water; and the presence of salt in the water would enhance the hazard.

Radiation Exposures in Recent Weapons Tests ²

Prior to the recent weapons tests a danger zone was established surrounding the proving grounds; within this area a hazard from radiation might exist to shipping or aviation. Appropriate notices on the boundaries and the establishment of the danger zone were carried in marine and aviation navigational manuals. Before each shot of the series, a careful survey was made of the winds at all elevations up to many thousands of feet, and survey aircraft searched the area for shipping. The purpose was to take every precaution against radiation exposure of inhabitants of the area, the task-force personnel, and crew or passengers of vessels or aircraft.

During the tests, radiological monitoring teams were set up and the monitoring network of stations as usual was in operation to collect and measure fall-out—radioactive particles from the explosion descending to the lower atmosphere, the sea, or the earth. Measurements were made of airborne, ground, and water activity. The only fall-out of consequence was that which followed the first detonation of March 1, when a shift of the winds occurring after the detonation carried radioactive particles toward the islands of Rongelap, Rongerik, and Utirik. Thirty-one American test personnel, and 236 Marshallese were exposed to radiation. A Japanese fishing trawler, the *Fukuryu Maru* (Fortunate Dragon) was also in the path of fall-out.

Evacuation of Test Personnel

The 31 Air Force, Army, and Navy test personnel were evacuated . . . for physical examinations and observations. None of the men experienced any symptoms of radiation illness, and medical observations to date do not indicate that any permanent harm has resulted. All of the men included in this group were returned to military duty following complete physical examinations * * *.

Inhabitants of Marshall Islands

The Marshallese from the islands of Rongelap and Utirik within the area of fall-out following the first detonation were evacuated promptly * * *. It was found that of the 236 evacuated, 74, all from Rongelap, experienced radiation burns, principally on the scalp or the neck. These burns are now almost completely healed. Hair from the heads of about 39 of these had fallen out in patches. However, normal hair regrowth is taking place. Urinalysis tests for radioactivity indicated that the exposed persons had inhaled or ingested small amounts of fission products. Preliminary data show that in no case did the body burden for the various radioactive isotopes exceed the permissible limits.

² *Major Activities in the Atomic Energy Programs*, pp. 51-54.

Japanese Vessel Exposed to Fall-out

The Japanese fishing vessel, *Fukuryu Maru*, was reported by its captain as being located at approximately 50 miles northwest of Rongelap Island ($11^{\circ} 53\frac{1}{4}'$ North latitude and $166^{\circ} 35\frac{1}{4}'$ East longitude) at the time of fall-out in that area. Following return of the ship to Japan on March 14, a report by the Japanese authorities stated the crew members were ill and showed skin burns from radiation. Japanese physicians gave the crew members medical treatment. Medical assistance was offered the Japanese by the United States through the American Embassy at Tokyo. The Japanese have not yet called for such assistance. However, they did request United States aid in making chemical analyses of some urine samples. These were performed at Commission laboratories. The injured men are reported by the Japanese physicians to be improving satisfactorily.

It is regretted that the crewmen of the *Fukuryu Maru* were injured as the result of being exposed to radiation from the first detonation of the recently concluded series. The welfare of the patients will continue to be of interest to the United States, and the negotiations for settlement of this incident are being handled through the Department of State and the American Embassy in Tokyo. * * *

Fall-out in the United States

Following nuclear detonations, radioactive debris is distributed by normal air currents over large areas and with sufficiently sensitive instruments may be found to encircle the globe. Small amounts were deposited widely over the United States during the Pacific tests and in some areas result in transitory rises of the normal background radiation levels.

Transportation of the radioactive materials to the United States took only several days. Thus some of the shorter half-life radioisotopes, such as iodine 131 (8-day half-life), were still present in the fall-out. * * *

* * * The levels of activity from fall-out, outside the area surrounding the Pacific Proving Ground, have been far less than any required to produce detectable injury either from the radioisotopes within the body or from external radiation, or from a combination of the two.

In addition, Dr. John C. Bugher, Director of the Division of Biology and Medicine of the AEC, in September made public these significant facts.

When the detonation is such that the fireball rests upon the ground, great amounts of earth are drawn into the rapidly rising fireball, resulting in coarse, highly radioactive particles which tend to fall rapidly while being carried along by the wind. In such cases, there is an area of highly radioactive fallout in which the maximum intensity may be lethal following an exposure of only a few hours * * *. The dimensions and shape are determined by the whole complex of wind patterns, but characteristically there is a narrow fan in which the area of highest contamination has a somewhat elliptical shape. Up-wind and cross-wind contaminations are limited in extent and are far less spectacular in intensity.

In general, Dr. Bugher continues, our previously published figures of 50 percent lethality at approximately 500 roentgens of immediate gamma radiation from the bomb still seem accurate * * *. In the case of local radioactive fallout in the vicinity of a bomb exploded on the surface, about one-half of the total possible radiation dose is delivered within the first 24 hours. Measures taken

to prevent or limit such exposure must therefore be undertaken promptly if they are to be effective.

We must face the tremendous medical and social problems involved in atomic warfare. Not only must we be prepared for blast and thermal casualties on a scale never before conceived in warfare, but we must recognize that these weapons may also be used for their radiological effects to deny the continued use for appreciable lengths of time of large areas outside the zones of immediate damage.

As a result of the possible increased hazards from radiological contamination, the FCDA in 1954 has emphasized the importance of:

1. The need for more detailed weather data in which it has worked closely with the Weather Bureau of the United States Department of Commerce and has disseminated to State and local civil defense directors an advisory bulletin together with data from the Weather Bureau.

2. The need for considering radiological contamination as an additional factor in plans for evacuation.

3. The desirability of providing cover or shelter, since almost any kind of cover or shelter can reduce the danger appreciably. An ordinary frame house outside the area of blast and fire, for instance, will afford some protection. A basement shelter will provide even more. A simple underground shelter with 3 feet of earth cover will give virtually complete protection from lethal radiation.

In addition to these general considerations, the following activities in radiological defense took place in 1954.

A radiological defense conference was held in Region III. This is the second conference which has been held. The attendance, interest, and participation by State and local people emphasizes the importance of this method of information exchange.

Although no tests were held at the Nevada test site, a great deal of effort has gone into planning for continued and expanded participation as tests are scheduled, with particular emphasis on the Spring 1955 tests.

With the signing of Delegation No. I specific discussions of a technical nature defining the implementation of the radiological aspects of this relationship have been held. Under this delegation the Public Health Service will conduct training, assist the States and localities in conducting training, and will prepare training materials for the use of State and local civil defense organizations.

The first radiological defense instruments (medium range survey meters) manufactured to FCDA specifications were delivered during the year. They have been made available to the States on a property accountability basis for the purpose of aiding in the general development of radiological defense programs, and especially in training. Purchase orders have been placed for low range survey meters and for

two ranges of dosimeters and dosimeter chargers. At the writing of this report these items are being tested for acceptance and it is expected that delivery will be completed during this calendar year. During the year an engineering development contract was let for the high range survey meter.

The National Bureau of Standards has continued its program of evaluation of radiological instruments for civil defense. This program includes testing of instruments for acceptance as well as providing testing and advice to aid manufacturers and encourage development of instruments for civil defense use.

In accordance with the arrangement with AEC announced last year whereby States could under certain conditions obtain high intensity sources of Cobalt-60, one such source has been installed. This installation has been inspected by a member of the Field Advisory Staff of the AEC who reports favorably on the physical facility and the procedural safeguards connected with its use.

COMMUNICABLE DISEASE CONTROL AND BIOLOGICAL WARFARE DEFENSE

Stockpiling of antibiotic, biologic, and chemotherapeutic preparations has been increased to provide for treatment of biological warfare casualties.

Close liaison has been continued with the Department of Defense, the Department of Health, Education, and Welfare, the Department of Agriculture, the Central Intelligence Agency, and other Federal agencies, on biological warfare defense problems. In addition, the Department of Defense has declassified manuals and informational material, and has made them available for civil defense use. Much of this material has been distributed to the States and their political subdivisions.

The Agricultural Research Administration, U. S. Department of Agriculture, has continued to provide technical assistance to FCDA in preparing its emergency programs. That Department has continued to expand and strengthen its activities in disease prevention and control resulting in the improved defense against possible biological warfare attacks against animals and crops.

Numerous papers and addresses by members of the FCDA staff, on biological warfare defense, have been presented at professional meetings, published in professional journals, and distributed at operational civil defense levels.

The American Public Health Association Manual on *Control of Communicable Disease* has been reissued. A request for funds to purchase copies with a FCDA cover has been made. This publication is revised every 5 years. It is planned that the special problems of the

control of communicable disease under emergency conditions will be included in the next edition due to be published in 1960.

FCDA during 1954 prepared and distributed a handbook—H-11-2, *What the Farmer Should Know About Biological Warfare*. A second publication, *The Veterinarian in Civil Defense* was prepared for distribution early in January 1955.

Additional movies on unusual or foreign animal diseases have been and are being developed through the cooperation of FCDA, U. S. D. A., and the Department of Defense. These are technical films and are made available for instructional purposes to veterinary colleges and veterinary groups. Several short TV strips have been made from some of the films by the Office of Information, USDA. These films are provided to TV station libraries in agricultural areas for use if an emergency should appear.

The United States Livestock Sanitary Association Committee on Exotic Diseases has developed information for a booklet *Handbook on Foreign Animal Diseases*. This booklet will be printed and distributed to veterinary practitioners, State and Federal regulatory officials, as well as veterinary colleges, medical, and public health schools.

A plan has been devised and agreements entered into with pertinent Federal, State, and local health agencies, establishing channels of morbidity reporting and investigation for unusual incidence of disease in man, animals, and crops.

Auxiliary health personnel is now a new need faced by FCDA. Technically trained individuals should be recruited to assist local health departments in emergencies.

Beginning in November of this year, all veterinary colleges will be visited with the object of encouraging each school to incorporate instructions in emergency operations relative to national defense. The publication *The Veterinarian in Civil Defense* is the basis for these discussions.

FCDA has recently delegated certain responsibilities for development of defense against biological warfare to the Department of Health, Education, and Welfare and the Department of Agriculture. Details of programs and relative spheres of activity are being determined and implemented by technical representatives of the three agencies concerned.

CHEMICAL WARFARE DEFENSE

The Army Chemical Corps has completed the development of a prototype of the noncombatant protective mask adopted by the FCDA as its organizational protective mask. With the permission of the Department of Defense, it is now procuring for FCDA, approximately 8,000 of these masks ordered by the States under the Federal Con-

tributions Program. FCDA has recently distributed one each of these masks, loaned by the Chemical Corps on memorandum receipt, to each regional and State civil defense director for display purposes to stimulate local requisitions of this item.

It is expected that satisfactory prototypes of the light-weight civilian protective mask and infant protector, under development by the Chemical Corps, will be completed soon. Their adaptability for use by the individual citizen is under consideration, together with related problems and policy on manufacture, procurement, and distribution.

Stockpiling of atropine self-injection devices for treatment of chemical warfare casualties is being continued.

Other protective devices and materials, detection equipment, and gas casualty treatment items are under consideration for inclusion in FCDA stockpiling and matching fund programs.

The Department of Defense has declassified and made available to FCDA several technical and field manuals dealing with defense against chemical attack. These are of great value for civil defense purposes, and FCDA has purchased and distributed a large number of each to regional, State, and local civil defense organizations.

At the request of FCDA, the Army Chemical Corps conducted a pilot course in chemical warfare defense training for civil defense personnel at the Chemical Corps School at Fort McClellan, Alabama. About 25 individuals from various States and Federal agencies attended. The results were so successful that it is hoped the course can be given repeatedly in the future.

Our chemical warfare defense consultant has attended numerous technical conferences of Federal and nonfederal organizations and societies on chemical warfare defense problems, and has participated in the discussions and presented papers dealing with Federal civil defense planning in this field.

Close liaison has been maintained between FCDA, DOD, Central Intelligence Agency, and Department of Health, Education, and Welfare, on chemical warfare defense problems. Chemical warfare defense plans and problems were frequently discussed with groups of the North Atlantic Treaty Organization, and with civil defense representatives of friendly countries. In addition, such nonfederal organizations as the American Chemical Society, the American Medical Association, and the Armed Forces Chemical Association have been most cooperative in assisting FCDA to develop the chemical warfare and biological warfare defense programs. They have been particularly helpful in publishing pertinent material and inviting FCDA representatives to attend their meetings.

FCDA has recently delegated certain responsibilities for development of civil defense against chemical attack to the DHEW. Plan-

ning of programs and relative spheres of activity at working levels are being determined by technical representatives of FCDA and DHEW.

A staff study on FCDA plans for a national defense program against chemical warfare was prepared, and an FCDA task force was appointed to consider all aspects of the problem and submit recommendations for an action program. It is hoped that its report will give fresh impetus to establishing an effective program for civil defense against chemical warfare.

EMERGENCY WELFARE SERVICES

Attack will destroy at least temporarily many of the complex economic and social arrangements through which people maintain themselves with food, housing, clothing, transportation, communication, employment, and other necessities of life.

The job of civil defense welfare services is to provide immediately temporary substitute arrangements that will assure that no one goes without at least the minimum of food, clothing, shelter, and other services necessary to maintain life and the strength and will to continue producing and supporting the Nation's defense effort. In addition, a registration and information service that will help families reunite is necessary, as is a family rehabilitation service that will help individuals and families to start reestablishing family life and the return to work. This includes the provision of temporary financial aid, rehousing, and other types of individual care. Reception care for people who are forced to leave their homes permanently or for a long period of time will have to be provided in other communities, and special provisions for the aged, handicapped and institutionalized persons, and unattached children will be necessary.

The *mission* of emergency welfare services is the temporary care of people in emergency need, as described above. The *objective* of emergency welfare services in the FCDA is the establishment, development, and maintenance of organizations in States and localities prepared to provide for everyone who will be in need of such care and unable to provide it for himself.

ORGANIZATION

Plans for the organization of welfare services initially contemplated reliance on fixed, existing, and improvised facilities in the outlying sections of target cities, around the periphery of damage, and in adjacent fringe areas. Larger weapons and the prospect of longer warning periods have caused a shift to dispersal and evacuation of people from target areas as basic protective measures. These changes have a number of implications for the organization of emergency welfare services:

1. Successful dispersal assumes fewer casualties, and, therefore, larger proportions of persons in attacked areas will require welfare services.

2. Larger areas of damage will result in larger numbers of homeless persons who will need care.

3. Substantially less reliance can be put on the resources of outlying and peripheral areas of target cities.

4. Organization for the provision of welfare services must shift outward.

5. This shift outward means fewer and more scattered resources.

The same services will be provided and the same kinds of surviving facilities will be used as originally planned, but the bulk of the services must now be organized around existing or improvised facilities beyond the peripheral and adjacent communities, in the surrounding support or reception areas, and in the more distant rural areas where the mass exodus will thin out and terminate. An influx of survivors that will double and triple the normal population of these areas can be expected.

Installations within the periphery, originally sought as welfare centers providing a variety of welfare services, will be used instead as assembly, stop, or rest points with only elementary, en route service, while facilities in outlying areas must be prepared to provide more adequately for a longer period, until people can return to their homes or make other, more permanent arrangements.

These changing concepts have been accompanied by the further development of preparedness measures already underway, which in their future application to operational readiness will be adapted accordingly.

For example, the delegation of certain welfare responsibilities to DHEW during 1954 has materially advanced State and local welfare planning. Generally, State and local welfare agencies have assumed greater responsibility for leadership and direction of this program. Likewise, the delegation to the Housing and Home Finance Agency of certain aspects of emergency housing opens the way to full utilization of its peacetime resources and its competence in preattack planning for the purpose of achieving operational readiness. This is a significant development because the resources of both public and private welfare agencies, including their personnel, materials, facilities, and services constitute the framework upon which local civil defense welfare organization must depend.

PROGRESS

The work of the National Advisory Committee on Emergency Feeding has resulted in greater participation of the members of the various business, industrial, and governmental agencies in local programs. The establishment during the year of a National Advisory Committee on emergency housing and reception care, and additional committees on registration and information services and family rehabilitation planned for early next year, will likewise result in broader representa-

tion and accelerated activity by professional associations and numerous other commercial and governmental organizations.

The Emergency Mass Feeding Instructor Training Program emphasizing improvisation and the use of field equipment, which was responsible for training about 2,000 instructors in 1953, was improved and continued actively during 1954, when a far greater number of instructors was trained in numerous communities throughout the country. A Pilot Instructor Training Program for registration and information services was also developed during the year, which, after try-out in one FCDA region, will be refined and given in the other regions and localities. These training programs in emergency food preparation and registration and information have been developed in the National Office and implemented through the regional offices toward the objective of preparing neighborhood groups to meet some of the problems of survival after attack.

Further progress was made in the program concerned with locating separated family members and reuniting families, namely, (1) sample registration and welfare inquiry forms were obtained for training and for testing their efficacy in civil defense exercises; (2) coordination was advanced between the U. S. and Canadian programs; (3) a technical manual was published and distributed to approximately 1,200 local private family and child welfare agencies for the information of their staffs and boards and for general stimulation of interest and participation; and (4) an important self-help scheme, called *The Family Meeting Place*, was published and circulated to national organizations concerned with welfare and home life, for inclusion in their periodicals which reach 32 million American homes.

Studies have been made also in developing evacuation plans which have as their objective not only saving lives, but, as well, care of evacuees in support and rural sections.

Some progress has been made in determining welfare requirements and the resources that will be available nationwide to meet the needs of people. Considerable testing—some on a large scale—of State and local plans has been made to improve them and to achieve a greater degree of operational readiness.

A close working relationship has been maintained with all of the national professional social work associations and progress has been made in mobilizing their membership in the civil defense effort. A draft of their forthcoming publication on *The Social Worker in Civil Defense* has been completed, as has been a pamphlet on *The H-Bomb and Social Work*, which was published and widely distributed to the profession during the year.

An increasing number of national, regional, and State conferences was attended, where addresses were made, display booths exhibited

and the welfare story generally and effectively disseminated—with the visual aid of new hand-out material and art work. Many house organs, such as the US *Quartermaster Review*, and trade journals, such as *The Steward* published illustrated feature articles on one or more of the welfare services. Film on emergency feeding operations was produced for the eventual development of comprehensive training and promotional sequences and a contract was negotiated—in cooperation with the American Can Company—for the production of a 30-minute film story on this subject.

Training material for both beginners and advanced students or volunteers has been developed and used to the benefit of the welfare program throughout the country, for operations as well as organizational phases of civil defense. This has taken the form of welfare operational problems and solutions for course-content at Staff College and three training courses as part of the Contributions Program; namely, for welfare services as a whole, registration and information, and emergency feeding.

The welfare office developed plans for testing liquefied petroleum gas equipment (essential emergency feeding items) at the forthcoming AEC Tests in Nevada and also completed arrangements for two special demonstrations during the test program, for feeding 1,500 participants and observers with breakfast on shot-day and luncheon on the day following.

There is a growing awareness and understanding generally on the part of what people must do for themselves and for others if the country is to survive and continue the war effort after atomic or hydrogen bomb attack. Emphasis of the program has been on developing self-help neighborhood and intercommunity cooperation programs.

ENGINEERING SERVICES

During 1954, FCDA's engineering staff continued to provide technical advice, consultation, and leadership in the field of weapons effects upon structures and facilities and the application of engineering techniques and resources in minimizing damage to them. In addition, the staff provided technical guidance, assistance, and coordination of Federal, State, and local plans for the organization, operation, equipping, and training of engineering and construction forces required to effect emergency operations and repair in a civil defense emergency or subsequent to a natural disaster.

Designs were completed, drawings and specifications prepared, and construction started on the dwelling and shelter structures to be incorporated in the 1955 test program at the Nevada Test Site of the AEC. The Housing and Home Finance Agency cooperated in the preparation of drawings and specifications of the dwellings.

Lehigh University completed and submitted the final report under FCDA contract study involving atomic weapons effects, structural design methods and procedures, and the analysis of the blast resistance of two types of structures at varying distances from an atomic explosion. Analysis of this report for application to civil defense protective construction problems is underway.

Consultive advice on the incorporation of protective construction into the design of buildings and structures has been given in numerous instances to States, cities, industries, and individuals by means of technical correspondence and technical meetings.

Through correspondence and conferences, technical assistance and data were obtained from the Army Chemical Corps that will enable FCDA to furnish technical guidance to States, cities, industry, and individuals on protective ventilation systems for control centers, shelters, etc., which may be subject to radiological, chemical, or bacteriological contamination as well as blast.

To obtain the greatest value at the earliest practicable date from the building components test data resulting from the last FCDA participation in the atomic test program, an analysis and evaluation contract was awarded to Ammann & Whitney, Consulting Engineers, New York City. This firm is expected to complete their work early in 1955.

In order to formulate plans for an underground shelter for 50 persons or more which could be recommended to cities or industry, and which would be proof against nuclear radiation and blast in high pressure regions of a nuclear weapon explosion, a series of conferences was held between FCDA engineers and engineers and scientists of other

Government agencies having the greatest competence in this field. As a result of these conferences a shelter plan was developed which gives promise of being highly effective and independent of orientation to the blast. The contract awarded to Ammann & Whitney called for the preparation of structural design and detail drawings and specifications, and actual shelters based on this design are under construction at the Nevada Test Site of AEC for testing. As a result of these tests it is anticipated that a design for a proof-tested underground shelter capable of protecting 50 to several hundred persons, according to its chosen length, will be available to recommend to cities and industry for use in anticipated high pressure blast and nuclear radiation regions. Through the cooperation of the Army Chemical Corps, these shelters are also being equipped with protective ventilation to guard against chemical, bacteriological, and radioactive dust hazards.

PROTECTION DIVISION

The shelter program has placed primary reliance on the maximum utilization of existing buildings and other facilities, home shelters and the construction of a minimum number of specially built shelters. Since the use of evacuation techniques has permitted a shift in requirements for shelters to outlying areas, minimum facilities of this type will be more effective. While the objective of evacuation is to remove everyone from hazardous areas, standby shelters for use in case of emergency are essential. These may have to be supplemented by a number of specially designed shelters for those unable to move as well as lighter structures in fringe areas for evacuees caught in the process of movement.

The advent of larger weapons and the increase of radiation hazards from the fallout of contaminated material has served to emphasize the desirability of shelter protection. Practically all sections of the country are now faced with some radiation hazard and FCDA is urging the general selection of shelter areas and the construction of home shelters. In this connection, it is important to recognize that, because of the low energy release from contaminated material, the amount of shielding material needed to protect against radiation from fallout is considerably less than that needed to protect against initial radiation. Greater protection against the introduction of contaminated material into shelters is desirable.

Industry has been encouraged in planning new construction to incorporate protective facilities so that efficient utilization of the structure would be possible both in peace and in war. Provision has been made for extending accelerated tax amortization privileges to cover the cost of protective construction in certain essential defense producing facilities. Five projects for the installation of shelters and other protective features in industrial plants have been approved under

this program. Other industrial organizations have utilized protective construction in their building programs without the incentive of tax amortization benefits.

To establish sorely needed Federal leadership in the protection of essential facilities, FCDA has established standards for structural protection and distance from probable targets—defense by space. In providing Federal funds to assist in control center construction, conformance with structural protection-space standards is required and plans for over 50 projects have been modified to provide greater operational readiness. In certifying the civil defense need for making Federal loans for the construction of facilities, protective requirements have been enforced. Ten such projects providing additional hospital facilities have been approved for loans.

FCDA has been providing technical guidance and reviewing plans for new construction. Included have been facilities for the Veterans Administration, Old Age and Survivors Retirement Building, and some military facilities.

Continued encouragement has been given to the completion of shelter surveys in principal cities and satellite communities. Although only 55 critical target area cities of over 50,000 population out of a total of 134 have indicated survey work in accordance with FCDA standards, many others have designated shelters.

Supplementing this work has been the continual emphasis in the construction of home shelters. Some householders have provided protection for their families. Shelter kits are being marketed, and in a few cases, builders are providing protective facilities in new residential construction.

Continuous research is being conducted to determine the amount, kind and location as well as to improve the protective qualities of shelter against modern weapons.

EMERGENCY RESTORATION OF FACILITIES

During 1954, 100 percent of the FCDA engineering stockpile had been delivered to storage sites. There are now 45 10-mile units of FCDA engineering equipment and supplies stored in 40 storage sites near 39 cities. This represents approximately 10 percent of the estimated total of the national program needs. Commencing July 1, 1954, additional engineering equipment and supplies in short supply will be procured by the States and their political subdivisions under the matching funds program. Principal items in short supply are: lightweight pipe, large capacity mobile water pumps, portable generators, water purifiers, and chlorinators.

Technical publications dealing with emergency restoration of facilities, and utilization of engineering stockpile items have been completed and distributed to the States and municipalities.

FCDA engineering equipment and supplies have been used on an increasing scale for training, and to alleviate natural disaster situations. Ten cities have borrowed training units. Nine States have used equipment to alleviate critical water shortages created by drought conditions. In the States of North Carolina, South Carolina, Georgia, and Alabama, three complete 10-mile pipe units have been used for natural disaster relief.

For the purpose of developing uniform intrastate, interstate, and regional operational plans, the FCDA engineering office proposed tables of organization and equipment, and a usable inventory of available manpower, equipment, materials, and supplies required for clearance of streets and highways, emergency water supply for firefighting operations, building repair and reconditioning, reception area construction and maintenance, mass burial, and restoration of water, sewer, gas, and electric services. These requirements and resources have been sent to all the States for study and comment. Seven States have adopted this proposal with few modifications.

New inventory tables of engineering equipment currently available throughout the country were extrapolated from information obtained from 18 out of 22 counties canvassed. This inventory disclosed an adequate supply of equipment such as trailers, cranes, shovels, bulldozers, air compressors, welding equipment, saws, and trucks required for emergency restoration subsequent to an enemy attack or natural disaster.

Specifications were developed for several new items of engineering equipment which have been added to the Federal Contributions program. These consist of 8-inch aluminum pipe with grooved ends, 8-inch aluminum pipe with couplings, 8-inch low alloy steel pipe, 8-inch flexible fabric hose, and a 4½" x 8" adapter fitting for connecting 8-inch flexible fabric hose between fire hydrants and the suction intake of 1,500 GPM centrifugal pumps. Other items which are being considered for inclusion in the matching funds program and being coordinated with industry are: 1,500 GPM centrifugal pumps with 150 psi discharge pressure, 8-inch flexible metal hose, 8-inch plastic pipe, polyethylene film and adhesive, and polyester film with adhesive.

Revised specifications for couplings include an 8-inch snap joint coupling complete with gasket which can be assembled on a pipe without tools. Revised specifications for 1,500 GPM include pneumatic tires in lieu of steel rim wheels.

Several demonstrations showing the ease and speed with which 8-inch aluminum pipe with couplings can be assembled and put in actual use were held at the National Training Facility, Olney, Md. One of these demonstrations was in May 1954 before approximately 1,500 members of the National Fire Protective Association.

Personnel from the FCDA engineering office assisted in making surveys and damage estimates of areas in which natural disasters have occurred. These surveys and estimates were used as a basis for determining the amount of Federal aid which was to be dispensed in a particular area.

DISPERSAL PLANNING

In furtherance of FCDA's desire to furnish factual data to State and local civil defense offices and encourage the planning for evacuation, as outlined in FCDA Advisory Bulletin No. 158 and Supplement No. 1, contracts were executed with the best available authorities to study the traffic engineering and traffic supervision potentials and limitations of the city of Milwaukee, Wisconsin. This city was selected because (1) it is reasonably typical of most of the major cities of the Nation which front on a major body of water, (2) a considerable amount of traffic and evacuation data were already available and (3) both the metropolitan area and the State as a whole were desirous of proceeding with such a study. The contract requirements included (1) a determination of the evacuation capabilities of the metropolitan area with existing facilities and varying weather and time of day conditions, (2) a determination of manpower, procedures, organization, and location of traffic control and supervision needs of the metropolitan area, (3) recommendations on physical improvements which could increase the effectiveness of evacuation and an estimate of the cost of such a program, and (4) development of a prototype for traffic engineering evaluation which may be utilized by any city.

The surveys indicate that 80% or more of the 1,010,000 inhabitants of the Milwaukee metropolitan area can be removed from the evacuation area, roughly a circle 20 miles in diameter centered in the heart of downtown Milwaukee, in from 3 to 7 hours, depending on varying weather conditions. If approximately one third of the total population, presumably the old, the young, and the infirm, were removed by strategic evacuation on the basis of developing international tension and prior to any probable enemy attack, the above 80% evacuation could be effected in from 1 $\frac{3}{4}$ to 4 $\frac{1}{2}$ hours.

Further studies of time saved by construction improvements indicate that relatively minor improvements totaling less than \$325,000 would result in a saving of one-half hour or more in total evacuation time. More extensive improvements amounting to \$6,625,000 would save one hour or more and a system of freeways extending beyond the evacuation area would save more than 2 hours. This latter construction cost would, however, total some 78 million dollars and would not be justified on the basis of normal traffic needs alone.

The traffic supervision portion of the study indicates that some 1,325 police and auxiliaries would be required to man 593 point control and highway traffic control posts.

RESCUE SERVICE

The objective of the rescue service is the establishment of a properly equipped force of trained workers, capable of removing disaster victims heavily trapped in the wreckage of damaged or collapsed structures. Personnel must be trained until each target city in the country is assured of the number of rescue teams adequate for its civil defense needs. It is the further responsibility of the rescue service to provide organization and equipment for the Nation's mobile support operations, which it does by providing technical guidance and financial support to State and local civil defense organizations.

PROGRESS

Technical guidance is effective only where local interest is stimulated through promotional efforts. To this end a number of rescue seminars were held in 1954 to assist local civil defense officials who organize, train, and equip the rescue forces in their communities. More than 1,200 persons in 6 FCDA regions have attended rescue seminars to date. The usefulness of such conferences was immediately evident in increased activity in all phases of the rescue program.

A colored film on rescue training sponsored by the Reo Motors Company, Incorporated, showing rescue training operations at Olney, Md., was distributed. Several filmstrips on specific rescue techniques were prepared and a program for motion picture filming of the more specialized rescue techniques is under way. The technical manual on *Rescue Techniques and Operations* has been so widely accepted as a textbook in this field that it was necessary to print additional copies.

Promotion of the rescue program by various national organizations has been most helpful. The Massachusetts Department of the American Legion, for example, sent a large group of students to Olney, Md., for rescue training in what has been the only "one State" class to be graduated.

The Federal Contributions Program continues to provide a major stimulus to the rescue program since equipment and training facilities are essential to the training and operational readiness of all rescue squads. To date, 423 rescue trucks have been secured by the States and localities and approximately 65 rescue schools have been set up throughout the Nation.

Because of the large number of persons wishing to attend the Rescue Training School during the year, it was frequently necessary to re-

schedule students interested in obtaining the 2 weeks' Rescue Instructor Training provided by the Rescue Instructor School at Olney, Maryland.

In 1954 the school initiated a second course, "Refresher and Advance Rescue Operations," for previous graduates who wish to learn new and improved rescue techniques and to keep abreast of equipment developments. This course embraces operational problems and more difficult rescue situations that may have to be faced as a result of new and higher yield weapons.

Rescue service concepts have been reviewed in the light of the evacuation policy and megaton range weapons. Since the rescue program has achieved less than 25% of its minimum requirements, minimum program objectives have not as yet been revised. Emphasis is placed on the expandability of the rescue forces organized to date. For the next few years, however, it will be necessary, in the event of emergency, to provide untrained workers to assist the relatively few well trained in this field.

FIRE SERVICES

The mission of the FCDA fire office is to develop and recommend emergency procedures in the field of prevention, containment, and extinguishing of fires in disaster conditions.

PROGRESS

Progress in 1954 was evidenced by the increased amount of organization and training toward this end by the fire services of the Nation. This has been influenced markedly by regional conferences which have alerted local fire services to the increased needs resulting from the threat of attack with modern weapons. Large scale fire exercises have been held in critical target areas designed to develop not only the coordination necessary with other services, but the use of support fire forces over large distances.

Training guidance in the National Office has kept pace with the increased knowledge of and the greater hazard from the newer weapons, and has been reflected in the courses given at the Civil Defense Training Center in both administrative and operational fields. A visual aid for the instruction of both training groups and the general public, a 13-minute version of the motion picture "House in the Middle," was reproduced in color in 1954 and sponsored by the Paint Up, Clean Up, Fix Up Association of the Paint and Varnish industries. A further picture showing the coordination of the fire services with other civil defense services, such as engineering, warden, and rescue services was prepared. This picture shows exercises and tests carried on at the "Rescue Street" set at the Civil Defense Training Center. Recommendation and utilization of a film entitled "Using Water Wisely," produced by the Western Actuarial Bureau is bringing to the fire services vital information on the best utilization of water for extinguishing certain types of fire.

The fire office participated with an ad-hoc group in NATO, in association with England, France, and Italy, in the preparation of a basic report on fire defense for all NATO countries. Continued and close liaison was maintained with the National Fire Service organizations and governmental agencies involved in studying and advocating better methods of procedures for fire defense activity.

The threat of greater destruction and damage from the hydrogen bomb and the problems raised by FCDA's evacuation policy brought about a reappraisal of the fire problem, which has been the central topic of discussion at Regional Fire Conferences.

To increase awareness of the need for service monitoring for nuclear radiation hazards, the fire office has cooperated with, and assisted the International Association of Fire Chiefs, in the production of a revision of the manual *Radiation Monitoring Fundamentals for the Fire Services*.

Realizing the need for exploring new and extraordinary methods of fire fighting in the light of the threat, and realizing the need for greater information on the behavior of fires, the fire office supported "Operation Firestop."

The fire office cooperated with the U. S. Forest Service of the Department of Agriculture in a study of characteristic American cities designed to learn more about the inception of fires in interiors of buildings resulting from the effects of modern weapons.

Regional office activities in the fire field have been designed to assist the States to develop statewide operational fire plans, inventories of equipment, and to complete urban analyses of fire susceptibility.

Under the delegation of responsibility for rural fire fighting to the Department of Agriculture the fire office has assisted the Department in coordinating plans for research needed in the fields of both urban and rural fire fighting.

POLICE SERVICES

The primary objectives of the police services are to:

1. Conduct necessary research and provide police and other responsible officials with technical information and guidance on matters involving police activities not required in normal police functions but which are necessary for civil defense planning and large scale emergency operations.

2. Insure maximum utilization of existing police resources, supplemented by sufficient numbers of volunteer auxiliaries, to cope with the abnormal problems and expanded requirements which would be created by an enemy attack.

3. In cooperation with the engineering and transportation services, conduct research and develop techniques, procedures, and requirements necessary to provide practical plans for (1) supervision and regulation of traffic to expedite movement of the populace in pre-attack evacuation and necessary postattack movement of essential vehicles and personnel and for (2) obtaining maximum utilization of highway transportation in support of operations essential to civil defense, industrial, and military activities under extreme emergency conditions.

To accomplish these objectives in 1954 the police services division:

1. Constantly utilized the Civil Defense Committee of the International Association of Chiefs of Police, consisting of active police executives of nationally recognized ability from various sections of the Nation, to solicit advice and assistance in furtherance of the technical program, and to obtain the cooperation of professional groups in civil defense matters. In cooperation with this committee a program of police participation in civil defense and natural disasters was prepared and presented at the Annual Conference of the International Association of Chiefs of Police at New Orleans, September 27-30, 1954, which made up approximately 20% of the entire conference program.

2. Participated in extensive research to develop techniques, procedures, and requirements in the police services for planning and executing preattack evacuation of potential target areas.

3. At the invitation of regional and State civil defense authorities, provided technical assistance and guidance in conducting Emergency Traffic Control Courses in the States of Louisiana, Michigan, and Ohio.

4. Through a contract with Northwestern University Traffic Institute, work is continuing on development of a manual covering the entire Emergency Traffic Control Course including principles for use in population dispersal or evacuation planning.

5. At the invitation of regional and State civil defense authorities, provided technical advice and assistance in conducting Police Institutes in the States of Connecticut, Georgia, Alabama, North Carolina, Arizona, Delaware, and Maryland. The objective of these Institutes was to promote civil defense readiness of police agencies through top level instructions and to provide an opportunity for discussion of problems and techniques by national, regional, State, and local civil defense police personnel.

6. Participated in conferences with regional and State civil defense authorities for the purpose of developing uniform categories and units of measure to provide a practical system to inventory police resources and potential requirements for tabulation and exchange of information between States and between FCDA regions.

7. Developed outlines and criteria for auxiliary police training courses and, in cooperation with education services, a matching fund program for conducting these courses.

8. Continued the matching funds program for expanding existing police communications systems to meet civil defense requirements and to tie them in with civil defense control centers.

9. Continued study of emergency traffic supervision, regulation, and control, and research and development of techniques to provide technical guidance to States and municipalities in evacuation planning.

INDUSTRY OFFICE

Generally, the work of FCDA's Industry Office in 1954 was advisory on methods of organization for self-protection in industrial plants, large institutions, commercial, and business facilities in time of emergency. Such self-protection plans were promoted under the title of *Civil Defense Facilities Self-Protection*, and have been based upon the principle that most large facilities should be able to perform for themselves those functions necessary for survival and continued operation in time of disaster.

The 1954 experience shows that the success of the entire civil defense program depends in large measure on the interest, participation, and influence of industrial organizations, business and commercial establishments, and institutional organizations which maintain large facilities. Also, an effective industry defense program consists of more than merely organizing and training for self-protection in plants.

The need for a comprehensive industry defense program is apparent when facts regarding geographic location of our plants and effects of new weapons are reviewed. Progressive developments in the production and delivery of mass destruction weapons make it evident that action must be taken to reduce the vulnerability of industry to enemy attack. The United States is an urban Nation, drawing its economic and military strength from the productive power of its industrialized cities. Two-thirds of the population and three-quarters of all persons employed in manufacturing are city people.

To emphasize:

1. The greater proportion of the Nation's industrial production is now concentrated in a few score major cities.
2. More than one-half of all persons employed in manufacturing live in the 40 largest metropolitan areas.
3. The degree of concentration in these areas is steadily increasing.
4. Four-fifths of the Nation's current growth is taking place in metropolitan areas.
5. Fifty-six percent of the total growth is concentrated in the 40 areas that already contain more than one-half of all the factory workers.

This concentration of industrial production creates ideal targets for modern weapons of mass destruction. Big cities are easy to find, easy to hit, and easy to destroy with weapons that measure their lethal area in dozens of square miles. Therefore, advance planning and protec-

tion programs for industry must include, in addition to the establishment of self-protection programs in plants, action to reduce vulnerability through methods of deconcentration, dispersion, protective construction, protection from sabotage and espionage, planning for continuity of management, and planning for emergency repair and restoration.

Such a comprehensive program must, to the maximum extent feasible, be developed and administered with the aid of and through the facilities and resources of a large number of executive departments and agencies of the Federal Government.

THE NEW FCDA INDUSTRY OFFICE

In recognition of the above need, a new office was created in FCDA on February 9, 1954—the Industry Office. Generally, it is assigned primary responsibility for providing technical advice and guidance on civil defense to regional offices, States, localities, industries, and large facilities for the protection of industrial and commercial resources and manpower; for establishing objectives and preparing and interpreting plans and programs for the guidance of the Government agencies in the development and administration of civil defense programs in Government installations for the protection of facilities and personnel; for working directly with the FCDA Industry Advisory Committee and the FCDA Labor Advisory Committee on matters pertaining to industrial and manpower self-protection; and for cooperation with the Facilities Protection Board of ODM, the Industry Evaluation Board of the Department of Commerce, the Inter-Departmental Committee on Internal Security and other interdepartmental committees, and groups involved in nonmilitary defense in developing of plans and programs for establishing protection standards and promoting and applying these standards to industrial and commercial enterprises.

Experience indicates that where programs of civil defense are accepted by industrial, business, commercial, institutional, and labor organizations—the places where people work—the problem of getting civil defense into the home and neighborhood is considerably lessened. These groups are easily informed and trained, and are considered worthy of the very best efforts of all civil defense organizations.

INDUSTRY DEFENSE PROGRAM

Many Federal agencies have a share in the responsibility of assisting industry with programs of self-protection. Among the problems of special concern that must be solved is the need for reducing multiple Federal contacts with industry to lessen the variety of programs and activities being urged for industrial defense. It is of major importance that an understanding be accomplished among agencies re-

garding the total content of the industry defense program, and each agency must understand the nature and extent of its responsibility for each part of the program.

In promoting the industrial defense program, parts of all civil defense self-protection and self-help techniques and services should be included. Therefore, the minimum content of an adequate industry defense program includes the following:

1. *Planning, Organizing, and Training for Civil Defense Self-Protection in Plants During Emergencies (Facilities Self-Protection)*. Planning for self-protection in plants is done in close consultation with local civil defense authorities and is coordinated with the plans of neighboring plants and the community in general. The plant self-protection organization is ordinarily made up of typical civil defense services such as warden, fire, police, casualty, engineering, and welfare. Appropriate warning and control systems are also provided.

2. *Industrial Security*. This includes precautions which may be taken in plants and other large facilities against espionage and sabotage, such as the security indoctrination of employees, safe-guarding of classified security information, and protection of vital documents. With regard to employees, these measures include preemployment screening, finger-printing, and the discharge of security risks. Plant property is protected by the establishment of restricted areas, the limitation of access to these areas by employee and visitor identification and control, the establishment of adequate guard forces, and the use of fencing and other anti-personnel barriers.

3. *Protective Construction*. These measures include alteration and strengthening of existing plants and other buildings and inclusion of protective features in design of new construction. Under certain conditions industrial firms are eligible for 100 percent fast tax write-off as an incentive for extraordinary construction to provide special shelters for personnel and equipment.

4. *Planning for Continuity of Management*. This includes the selection and equipping of alternate company headquarters, establishment of personnel succession lists, preparation and preservation of written descriptions of company activities and processes, duplication and safe storage of vital legal and accounting records, development of emergency accounting and auditing systems, and the establishment of emergency financial arrangements.

5. *Emergency Repair and Restoration*. This planning for industrial plants must include the establishment of a damage assessment system, selection of alternate plant sites and suppliers, maintenance of reserve stocks, advance programs of engineering construction and alternate equipment designs, and appropriate warehousing storage and inventory arrangements.

6. *Deconcentration of Production.* This is the deployment of production of critical items to the extent that all of one critical item will not be manufactured in one location.

7. *Industrial Dispersion.* This is the employment of the military measure of using space for defense against attack—the movement of old plants or the establishment of new plants in locations at a safe distance from the area of possible enemy attack.

Progress and Methods of Accomplishment

1. *Field Training Conferences.* During the past year many target cities have taken positive steps toward organizing for self-protection in their large industries. Civil defense industrial coordinators have been added to many city civil defense staffs. Industrial Civil Defense Advisory Committees have been selected to assist in the planning and pursuing their respective local industrial defense programs.

Much of this action is the direct result of industrial civil defense training conferences in which members of the FCDA Industry Office have participated. Such conferences have been arranged through FCDA efforts and involve training in the procedures needed to plan, organize, and operate self-help programs in plants.

Complete instruction is given on organization structure, including the activities of such civil defense services as warden, fire, rescue, police, and welfare. Special attention has been given to the problems of evacuation of industrial plants. Attendance has been composed of plant superintendents, plant safety directors, general managers, representatives of organized labor, and a variety of plant protection personnel.

Training conferences were conducted in Buffalo, St. Louis, Denver, Philadelphia, Cleveland, and Cumberland, Maryland, during 1954. More than 2,400 industrial officials have participated in such conferences during the past 3 years. Several States and cities have also conducted such conferences with advisory assistance from FCDA.

2. *National Industrial Institutes.* Plans have been made to conduct a regular series of industrial institutes. These institutes consist of 5-day courses of instruction at the FCDA Staff College. The instruction will include all parts of the industry defense program and considerable general instruction in all other aspects of civil defense. This instruction is more comprehensive than is included in the field training conferences and attendance is drawn from all States rather than from a limited geographic area. It meets a special need for State and city industry defense coordinators, industrial safety directors and others who have the responsibility for directing industry defense programs and conducting civil defense training in plants, institutions, and other large facilities.

3. *General Training.* Industrial officials were urged to attend the FCDA Staff College at Olney, Maryland, to become thoroughly acquainted with the overall objectives of civil defense. Those who attended learned the importance of coordinating industry defense programs with local civil defense organizations and services. Further, more than 300 officials from industrial and labor organizations enrolled in the Staff College Administration Course, the Staff College Operations Course, and the Rescue School for periods of one and two weeks' attendance.

4. *Training Materials.* Training materials have been furnished to States and cities for use in conducting training conferences of industrial officials. These materials include course outlines, lesson plans, technical publications, and training aids necessary for training in industrial protection.

A series of five sound filmstrips which may be used as training aids have been developed and are in process of clearance for distribution early in 1955.

5. *National Organizations.* National industrial and labor organizations and certain professional organizations have cooperated in sponsoring civil defense activities through their membership. Such organizations have included appropriate speeches, movies, and exhibits as a part of their national, regional, and local meetings and conventions. This has proved to be an effective means of bringing the industry defense program to the attention of effective groups.

Events in which industry office personnel participated include the National Plant Maintenance Show in Chicago, the First International Basic Materials Show in New York City, the Union Industry Show sponsored by the Union Labor and Service Trades Department of the American Federation of Labor in Los Angeles, a special civil defense meeting of industrial officials sponsored by the U. S. Chamber of Commerce in Washington, D. C., a Regional Industry Defense meeting in Denver, the national conventions of the Armed Forces Communications Association in Washington, D. C., the Armed Forces Chemical Association in Washington, D. C., the national convention of Congress for Industrial Organization in Cleveland, the New Jersey State Federation of Labor Convention in Atlantic City, the Fire Fighters International Convention, Miami, Florida, American Federation of Labor Convention in Hartford, Rhode Island State Federation of Labor Convention in Providence, National Fire Protection Association Conference in Washington, and other meetings.

6. *Advisory Committees.* The FCDA Industry Advisory Committee consisting of outstanding leaders from American industry has been furnished with complete information regarding the organization and activities of the FCDA industry office. Members of the com-

mittee have been influential in urging participation in civil defense activities by numerous industrial organizations. They have encouraged the formation of industry working committees in each target area to cooperate with State and local civil defense authorities in advancing civil defense preparedness, both in industrial plants and in the community at large. The members have also undertaken to apply the principles of civil defense preparedness in their own plants, facilities, or associations.

The FCDA Labor Advisory Committee, which is composed of outstanding leaders from major labor organizations, met with FCDA officials on February 17 and again on April 19, 1954. It considered especially steps that must be taken to keep pace with the tremendous progress which has been made in atomic weapons, and considered the type of plan necessary for the protection of workers on the job during emergencies. This committee has also urged that representatives of labor unions in States and localities participate with local civil defense officials in developing plans for protection of workers in industrial, commercial, business, and institutional organizations. Resolutions encouraging and approving participation in civil defense have been adopted by many State labor organizations.

7. *Capitol Protection.* During 1954 two protection specialists from the industry office devoted considerable time to the development of protection programs for certain of the buildings located on Capitol Hill in Washington. Under their guidance self-protection organizations have been established in all buildings in the Capitol Hill group, including the Capitol Building itself, the Senate Office Building, the House Office Buildings, the Supreme Court Building, and the buildings of the Library of Congress. Shelter areas have been selected and appropriately designated and warning systems installed. Instruction cards have been posted in all rooms and key personnel have received instructions. Numerous employees have completed first aid training and participated in civil defense drills and exercises. Training programs have been prepared for members of the 84th Congress and their staffs. Evacuation plans are in process of development in cooperation with the District of Columbia Office of Civil Defense.

8. *Incentives to Civil Defense Participation.* Federal assistance, although limited, has served as a stimulus for the incorporation of protective features in privately-owned industrial structures. Under FCDA certification of civil defense necessity, RFC loans have been granted to date for the construction of 10 hospitals in which provisions have been made for approved shelters and the protection of essential operating facilities.

Another incentive to industrial organizations for providing emergency protective features is approval of accelerated tax amortization.

This is approved where extraordinary construction is done by private organizations. Accelerated tax amortization on the additional cost of protecting personnel and key facilities has been approved as necessary in the case of two defense supporting plants. There is need for a greater variety of incentives for encouraging industrial deconcentration of production and plant dispersion.

9. *Evacuation Drills.* Participation of industrial plants in local evacuation drills and exercises has been generally limited to those firms which can close down their activities for a short period at small cost. Large stores and small shops which sell or deal directly with the consumer have cooperated in such drills wholeheartedly.

However, in the case of manufacturing firms the physical shutdown of a plant is often very costly or almost impossible because of production processes. This is especially true in such processes as iron and steel, nonferrous metals, glass, and plastics manufacture. The cooling of these molten materials in plant machinery would result in considerable damage to the plant and equipment. Many such industrial plants have participated by "paper exercises."

Because much of the need for civil defense is based on protection of American productive capacity, it is important that industrial plants be experienced through drills and exercises in self-protection. Means of further encouraging such participation are being explored by the industry office.

10. *Preparedness for Self-Protection in Federal Government Facilities.* Work has gone forward in the establishment of self-protection organizations, designating alternate operation locations, protection of vital records, and other measures necessary for continuity of operations during emergency. FCDA has continued to advise with certain agencies, especially the Public Buildings Service of General Services Administration which is responsible for supervising civil defense self-protection activities within Government agency facilities under its jurisdiction. Some of the other agencies and departments having supervision over their own facilities have created and improved their self-protection programs. In the Washington metropolitan area, agencies have generally planned and established facilities protection programs. However, outside the Washington area, governmental agencies have done very little towards organizing, training, and equipping for self-help in emergencies.

Much remains to be done in both the departmental and field services of the Federal Government. Means of encouraging immediate and full cooperation in completing civil defense programs in Federal facilities are being explored by the industry office. This is an area in which the Federal Government can set the example of compliance with civil defense principles and thus further stimulate favorable action by industrial, business, commercial, and institutional establishments.

11. *Industry Office Organization.* The industry office lost a number of its employees when the agency moved from Washington to the new headquarters location at Battle Creek. New employees have been recruited and are being trained to carry on the great variety of advisory services necessary to a successful industry defense program.

Although industrial plants must work in close cooperation with local civil defense organizations, it is often difficult for local civil defense officials to obtain the full participation of industries. The FCDA industry office is, therefore, planning for methods to stimulate large decentralized industrial organizations in installing self-help programs and taking other appropriate action to provide maximum protection. Conferences between FCDA and officials of private organizations are being planned as a means of accomplishing this objective.

WARDEN SERVICE

Most notable accomplishment of the warden service in 1954 was the revision and updating of operational plans to conform to the agency's new policy on evacuation. A continuing series of studies and conferences was held at all echelons of civil defense under the general guidance of FCDA. From these, and as information on the effects of the latest nuclear weapons was disclosed, a new concept of the role of the warden emerged, particularly in evacuation areas. Necessary modifications in the overall plan were made without, however, major disruption of the existing warden program.

The chief changes involved the new responsibility of the warden in evacuation areas to educate the people under his jurisdiction on the need for evacuation and the actual mechanics of it—when, how, and where to evacuate when ordered—and the increased importance of warden activities in billeting evacuees in reception areas. By the third quarter of 1954 the training program of the warden service throughout the country reflected this new concept.

Mobile, Alabama, redesigned its warden structure according to FCDA plan following "Operation Scat," a partial evacuation of the city on June 14. This exercise pointed up the need for wardens trained in evacuation techniques, particularly in congested areas. As a result, the city hired a professional recruiting and training counsel to reorganize and build up the warden service and expand the warden training program to include evacuation. The new organization proved so effective that it is being used by the Urban Life Research Institute of Tulane University to conduct a poll of individual reactions and attitudes to evacuation exercises.

Later in the year, wardens played a prominent part in Albany, New York's evacuation exercise "Operation Go Home." They instructed people on evacuation routes, escorted them to transportation, directed traffic, and kept the control center informed on the progress of the evacuation.

During the year increased emphasis was put on family survival training, and neighborhood self-protection for residents of nonmetropolitan areas was developed. In addition, late 1954 saw the beginning of studies on the effect of fallout and possible changes in the warden's role in the areas affected.

A series of three warden training conferences was held at the FCDA Staff College in Olney, Maryland, with warden service personnel from

more than 100 communities of the northeastern regions and States attending. Emphasis was on training of the warden in his new evacuation duties and suggestions on how this could be integrated into the current training program. At the instigation of FCDA, three similar regional conferences were held—two in Region III and one in Region IV.

The warden training aids program moved steadily forward in 1954. At the close of the year work was nearing completion on three new film strips in color with sound recordings and accompanying lesson plans. These stress evacuation as it affects the neighborhood, family, and handicapped persons. Plans were also completed for three black and white skills training film strips with accompanying lesson plans. All such training aids will be available to States and cities on a matching funds basis. A technical bulletin describing the warden's role in panic prevention was distributed in November.

Exercises developed by the warden service for Operation Alert are now being used as a regular part of the operations course at the Staff College, Battle Creek, Michigan. This material includes not only wardens' operations, but also forms, maps, and problems to coordinate activities of all FCDA technical services.

Representatives of the warden service continued to work with representatives of other Government agencies on mutual civil defense problems involving wardens. Outstanding example was the development, in cooperation with the Department of Defense, of CONILLUM national emergency lighting control plan. Late in the year a comprehensive report was begun on standard lighting procedures for areas liable to attack.

CIVIL DEFENSE FUNDS AND OPERATIONS

The Congress appropriated to FCDA \$46,525,000 for expenditure for civil defense purposes during fiscal year 1954 (July 1, 1953, through June 30, 1954). Of this amount \$8,525,000 was for operations; \$10,500,000 for Federal contributions to the States; and \$27,500,000 to increase reserves of emergency supplies and equipment.

For fiscal year 1955 Congress has appropriated \$49,325,000: \$10,025,000 is for operations; \$13,300,000 is for Federal contributions to the States; and \$26,000,000 is for additional necessary increases in emergency supplies and equipment.

The \$13,300,000 for contributions represents appropriations of new money to the extent of \$12,000,000 which are to be available on a two-year basis and a reappropriation of \$1,300,000 in fiscal 1954 for the specific purpose of contributions for attack warning systems. Table A shows the relationship between fiscal 1954 and fiscal 1955.

OPERATIONS

Table B shows the actual obligation of funds for operations during fiscal 1954, together with an estimate for fiscal 1955 by civil defense program.

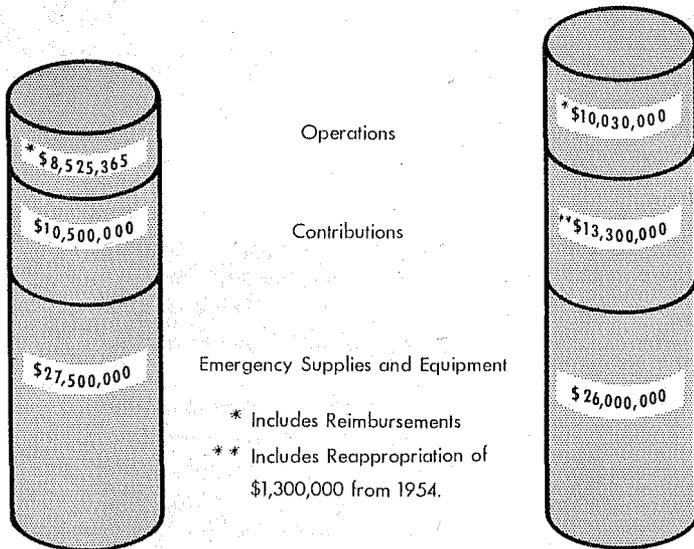
Table C shows the same operations funds by object classification.

FEDERAL CONTRIBUTIONS TO STATES

The primary objective of the contributions program is to provide financial assistance to the States in accordance with the provisions of Title II, Section 201 (i) of Public Law 920. In providing this assistance, FCDA attempts to encourage and give priority to those programs which are determined to be the most essential to the overall needs of national defense.

Under this program the Federal Government shares with the States and Territories the cost of procuring certain civil defense supplies and equipment. Federal contributions for such equipment may not exceed 50 percent of the total acquisition cost, except for Alaska. The appropriated contributions funds are allocated among the States and Territories in the proportion which the population of each bears to the total population. A separate allocation, however, has been set aside for the warning device systems which continues to have the highest priority. This money, in fiscal 1954, was divided according to the remaining requirements of target area and critical target area cities within the States.

APPROPRIATION OF FEDERAL FUNDS — 1954



1954 Total Available \$46,525,365.

1955 Total Available \$49,330,000

(TABLE A)

Programs and projects for which the States request matching funds must be approved by FCDA before Federal contributions funds can be obligated. Criteria for eligibility of civil defense projects have been specified in Federal Regulations, Part 1701, and in the Federal Contributions Manual M25-1. If a State does not use all or any part of its share of the contributions funds, the unobligated funds may be reallocated. States having additional funds available for use on a matching basis are then eligible for an increased allocation.

State and local administrative costs, such as salaries of regular civil defense workers, rents, utilities, and travel, must be paid by the State or municipality. Matching funds cannot be used for these purposes.

Early in the 1954 fiscal year, the Administrator allocated the \$10,500,000 contributions appropriation among the States and Territories. Of this sum \$9,160,590 was obligated, matching an equal obligation by the States. Therefore, this amount represents a total of over \$18,300,000 which was invested in civil defense supplies and equipment or otherwise used in accordance with the standards governing contributions.

Up to June 30, 1954, about \$89,000,000 had been invested under the contributions program—half Federal and half State.

For the 1955 fiscal year, \$13,300,000 has been allocated to the States for matching fund purposes. This includes a carry over of approxi-

mately \$1,300,000 unused 1954 attack-warning funds to be obligated by June 30, 1955.

The benefits derived from the contributions program are:

1. The encouragement of civil defense preparedness in the States and municipalities by providing funds, on a matching basis, for approvable projects.
2. The maintenance of a balance among programs by setting aside funds for priority programs.
3. Assistance to States in obtaining a maximum of preparedness in persons trained as well as items of civil defense equipment.
4. The improvement of standards for equipment best able to do the job. Through standardization of civil defense materials, facilities, and equipment, mutual aid and mobile support plans are more effectively implemented.
5. Practical cooperation between the Federal Government and the States in matters pertaining to civil defense.
6. Assistance to communities which normally could not afford needed programs.
7. The maintenance of good public relations between the citizens and their Federal Government in matters pertaining to civil defense by helping them initiate their own programs.
8. Better knowledge of preparedness in the States through analysis of partially and wholly completed civil defense projects.

Table D shows the data on Federal contributions by program areas up through and including fiscal 1954. Table E compares fiscal 1954 with estimated expenditures for fiscal 1955. Table F gives detail on Federal contributions by States and territories.

During fiscal year 1954, over 3,400 individual projects were approved by FCDA for Federal contributions. Of this number approximately 525 were for warning devices; 1,835 for communications systems; 725 for training and education; 135 for health and special weapons; 155 for rescue service; and about 50 applications were received for emergency welfare.

All States and cities were advised early in the fiscal year of the standards, regulations, and criteria that would be used in determining the eligibility of programs and projects for Federal matching funds. These instructions appeared in FCDA Manual M25-1, Revised, *Federal Contributions*.

EMERGENCY SUPPLIES AND EQUIPMENT

During the fiscal year FCDA stockpiled slightly over \$27,000,000 worth of medical supplies and obligated a small amount for maintenance of engineering equipment. The sums invested augmented approximately \$86,000,000 worth of emergency supplies and equipment

contracted for in previous fiscal years. Table G gives detail on this investment and relates it to the fiscal 1955 estimate.

DISASTER RELIEF FUNDS

Fiscal 1954 was the second year in which the Federal Civil Defense Administration was responsible to the President for controlling the Disaster Relief Funds of the Executive Office of the President and for administering the bulk of the Federal funds available for disaster relief. The functions are exercised in accordance with Public Law 875, 81st Congress, as amended, and Executive Order 10427 dated January 16, 1953. FCDA financing becomes available after the President has declared the existence of a major disaster in any State or area and the requirements of the law are complied with. During the period July 1, 1953 and June 30, 1954, funds in the amount of \$1,373,829 were made available for natural disasters. Table H indicates the distribution of the funds.

TABLE B

The Following is a Comparison of Fiscal Years 1954 and 1955 Showing Major Categories of FCDA Expense

Operations:	1954 actual	1955 estimate
Planning.....	\$233, 043	\$193, 200
(a) Research.....	417, 366	750, 000
Education Services.....	1, 211, 033	2, 016, 678
Operations Control Services.....	2, 608, 635	3, 422, 200
Technical Advisory Services.....	874, 574	765, 305
Field Representation.....	1, 182, 563	1, 252, 900
Executive Direction.....	244, 823	244, 375
General Administration.....	1, 312, 510	1, 385, 342
 Total operations.....	 1 8, 084, 547	 1 10, 030, 000
Funds appropriated but not used.....	440, 818	-----
	<hr/> 8, 525, 365	<hr/> 10, 030, 000

¹ Includes reimbursements.

TABLE C

OPERATIONS APPROPRIATION

Obligations by Object Classification

	1954 actual	1955 estimate
01 Personal services.....	\$4, 723, 780	\$4, 296, 900
02 Travel.....	285, 124	257, 700
03 Transportation of things.....	46, 839	51, 800
04 Communications.....	954, 909	1, 148, 827
05 Rents and utility services.....	6, 903	52, 600
06 Printing and reproduction.....	141, 406	627, 000
07 Other contractual services.....	1, 769, 831	3, 430, 328
08 Supplies and material.....	110, 540	96, 900
09 Equipment.....	27, 889	45, 500
13 Refunds, awards and indemnities.....	191	500
15 Taxes and assessments.....	11, 724	15, 945
Other.....	5, 411	6, 000
 Total obligations.....	 8, 084, 547	 10, 030, 000

TABLE D
FEDERAL CONTRIBUTIONS TO STATES
(Obligations by Program for Fiscal Years 1951-54)

Program Area	Total 1951-54	1954 (obligated)	1953	1951-52
Engineering				
Training and Education	\$5,557,389	\$665,394	\$809,110	\$4,082,885
Communications	8,847,601	4,556,829	2,585,929	1,704,843
Warning Devices	5,642,297	2,160,031	983,828	2,498,438
Welfare Services	186,082	115,423	70,659	
Fire Services	9,465,868		6,862,505	2,603,363
Health	12,752,619	1,015,462	2,258,244	9,478,913
Public Safety Services	1,757,659	647,451	670,268	439,940
Other	151,861		151,861	
Total obligations	44,361,376	9,160,590	14,392,404	20,808,382

TABLE E
FEDERAL CONTRIBUTIONS—ACTUAL, ESTIMATE

FEDERAL CONTRIBUTIONS:	1954 actual	1955 estimate
Attack warning	\$2,160,031	\$2,600,000
Communications	4,556,829	2,000,000
Public safety	647,451	850,000
Medical supplies and equipment	1,015,462	2,850,000
Education services	665,394	1,500,000
Mass care equipment	115,423	500,000
Engineering supplies and equipment		3,000,000
Subtotal	9,160,590	
Available for reappropriation	¹ 1,339,410	
Total contributions	10,500,000	13,300,000

¹ Up to \$1,300,000 Reappropriated for 1955 by 83d Congress.

TABLE F
FEDERAL CONTRIBUTIONS BY STATES
(Obligated Funds)

State, Territory or Possession	Total 1952-53-54	1954	1953	1951-52
Total.....	\$44,361,376	\$9,160,590	\$14,392,404	\$20,808,382
Alabama.....	365,698	105,106	172,749	87,843
Arizona.....	101,318	49,921	21,553	29,844
Arkansas.....	81,314	65,552	14,972	790
California.....	7,284,378	1,359,334	2,138,552	3,786,492
Colorado.....	186,460	74,217	23,986	88,257
Connecticut.....	920,012	216,680	373,449	329,883
Delaware.....	464,795	30,735	307,344	126,716
District of Columbia.....	168,815	1,210	59,349	108,256
Florida.....	189,301	91,227	38,888	59,186
Georgia.....	608,848	253,226	328,364	27,258
Idaho.....	13,565	13,565	-----	-----
Illinois.....	1,623,801	468,375	723,639	431,787
Indiana.....	450,402	111,175	221,472	117,755
Iowa.....	120,658	56,698	44,103	19,857
Kansas.....	318,201	47,470	99,726	171,005
Kentucky.....	140,920	10,505	61,584	68,831
Louisiana.....	462,001	151,691	178,872	131,438
Maine.....	141,923	58,298	52,054	31,571
Maryland.....	1,077,072	158,109	396,447	522,516
Massachusetts.....	1,812,295	201,648	434,448	1,176,199
Michigan.....	1,243,475	266,943	195,277	781,255
Minnesota.....	459,581	74,134	214,235	171,212
Mississippi.....	114,069	84,465	29,377	227
Missouri.....	740,301	321,317	179,895	239,080
Montana.....	36,159	19,416	15,994	749
Nebraska.....	150,646	59,708	54,154	36,784
Nevada.....	18,294	-----	233	18,061
New Hampshire.....	68,443	28,109	20,628	19,706
New Jersey.....	1,482,759	270,168	596,779	615,812
New Mexico.....	-----	-----	-----	-----
New York.....	9,664,395	1,303,126	2,834,265	5,527,004
North Carolina.....	100,352	43,326	23,525	33,501
North Dakota.....	22,037	-----	-----	22,037
Ohio.....	2,652,198	387,270	767,932	1,496,996
Oklahoma.....	378,687	143,333	221,309	14,045
Oregon.....	577,206	231,217	138,541	207,448
Pennsylvania.....	4,854,806	870,818	1,614,743	2,369,245
Rhode Island.....	279,492	97,383	83,592	98,517
South Carolina.....	80,377	70,928	87	9,362
South Dakota.....	7,855	7,077	778	-----
Tennessee.....	622,474	64,760	316,721	240,993
Texas.....	879,225	546,360	268,759	64,106
Utah.....	137,820	80,597	30,188	27,035
Vermont.....	47,826	5,886	31,492	10,448
Virginia.....	583,716	141,236	282,780	159,700
Washington.....	838,764	78,895	321,638	438,231
West Virginia.....	37,458	17,505	8,557	11,396
Wisconsin.....	630,140	299,028	77,830	253,282
Wyoming.....	28,718	16,303	8,921	3,494
Alaska.....	416,182	12,206	74,172	329,804
Guam.....	21,768	-----	10,305	11,463
Hawaii.....	300,545	39,189	68,875	192,481
Puerto Rico.....	346,544	53,140	204,590	88,814
Virgin Islands.....	996	395	-----	601
Canal Zone.....	6,291	1,610	4,681	-----
American Samoa.....	-----	-----	-----	-----

TABLE G

EMERGENCY SUPPLIES AND EQUIPMENT—ACTUAL, ESTIMATE		
	1954 actual	1955 estimate
Emergency supplies and equipment:		
1. Medical supplies & equipment.....	\$27, 447, 727	\$26, 000, 000
2. Engineering.....	24, 721	
Unobligated balance.....	27, 552	
Total emergency supplies and equip- ment.....	27, 500, 000	26, 000, 000

TABLE H

ALLOCATION OF DISASTER RELIEF FUNDS OF THE EXECUTIVE OFFICE OF THE PRESIDENT

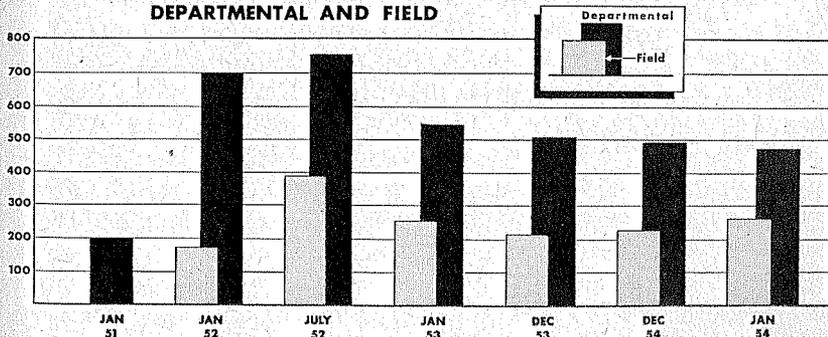
(During Fiscal Year 1954)

Area	Amount
FCDA for administration.....	\$26, 937
Louisiana.....	200, 000
Texas, Orange & Newton Counties.....	40, 000
New Hampshire.....	50, 000
Michigan (additional).....	11, 800
Michigan (additional).....	15, 900
Iowa (additional).....	70, 259
Department of Agriculture.....	
Alaska.....	50, 000
Montana.....	70, 000
Georgia.....	175, 000
New Hampshire (additional).....	99, 933
Mississippi.....	164, 000
Florida.....	250, 000
Georgia.....	150, 000
Total allocations.....	1, 373, 829

PERSONNEL

As of January 1, 1954, there were 720 employees on duty, 507 of these were at FCDA Headquarters in Washington and 213 were in the field. Approximately these same figures were in effect at the beginning of July when the move of the National Office to Battle Creek, Michigan, was announced. As of September 10, 1954, shortly after the effective date of the move, 251 of the previous Washington Head-

FCDA EMPLOYEES ON DUTY
DEPARTMENTAL AND FIELD



quarters employees had either moved or were soon to arrive at Battle Creek. By December 31, 1954, the National Office employment figure had been restored to 396, which compared with an approved ceiling figure of 450 for that office. There were 268 employees on duty at other locations, making a total employment figure of 664 for the agency as of the end of 1954.

SECURITY

The security provisions contained in Sec. 403 (a) of Public Law 920, as modified by executive orders issued subsequent to that date, have at all times been complied with by this agency. Appropriate regulations and adequate facilities have been provided to assure the proper safeguarding of classified security information and the proper administration of the personnel security program. The move of necessary classified security information to the new National Office at Battle Creek was accomplished in September.

FCDA REGIONAL OFFICES

The regional offices of the FCDA operate under authority of Sec. 401 (c) of the Federal Civil Defense Act of 1950 (P. L. 920, 81st Congress). They help the Administrator carry out the provision of the Act that "The Federal Government shall provide necessary coordination and guidance" to the States, counties, and cities which, under the act, have primary responsibility for civil defense.

FCDA prepares national plans and programs for the civil defense of the United States. States and cities may accept and execute these programs, adapt them to their particular requirements, or reject them—as they choose.

FCDA regional administrators have delegated authority from the Administrator to help the States plan, organize, train, and operate their civil defense systems. They are responsible, also, for integrating existing State systems into regional operating systems, which constitute national civil defense.

The seven FCDA Regions approximate geographically the regional commands of the Armed Forces.

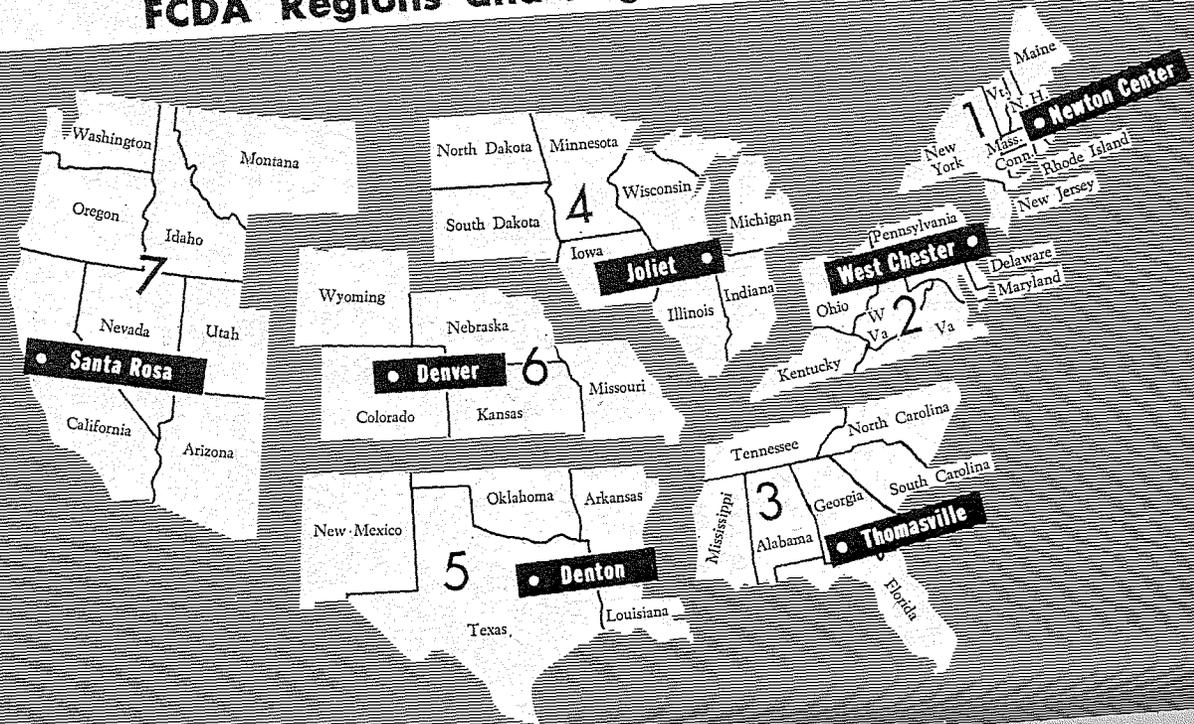
Geographical differences, and economic and social diversities, create different civil defense problems, region by region, and within each region.

Generally, sea-coast States are more civil defense conscious than interior States. Heavily industrialized States realize the need for civil defense perhaps more than do predominantly agricultural States. Hawaii still remembers Pearl Harbor. Communities close to major military bases understand the meaning of their nearness to such logical enemy targets.

Despite these different attitudes and degrees of realization of the need for civil defense, 1954 was a year of increasing awareness among Americans everywhere of the universality of peril—awareness that a bomb-drop on California would have repercussions in Maine, that an all-out assault would sweep aside State lines and city limits, that, as happened during Hurricane Edna, three (or more) FCDA Regions would be concerned with one disaster.

In 1954 FCDA regional administrators were delegated additional authority and responsibility in making financial contributions to the States within their regions. They were authorized to approve, modify, and amend project applications for civil defense equipment for amounts within those allocated by FCDA to approved State pro-

FCDA Regions and Regional Offices (During 1954)



grams. They were delegated the responsibility of determining the sufficiency of project applications, amendments to them, and their compliance with requirements and criteria established by FCDA.

MOVES OF REGIONAL OFFICES

By the end of 1954 all but one of the regional offices, Region VI in Denver, had been moved to safer locations in keeping with the national office policy of locating civil defense headquarters outside areas of expected heavy damage. Three such moves were made in 1954. Early in the year Region III moved its office from Atlanta to Thomasville, Georgia, an important crossroads for telephone communications. In April Region V moved from Dallas to the campus of Texas State College for Women in Denton. In mid-August Region VII transferred its office from Berkeley to the Naval Auxiliary Air Station at Santa Rosa, California.

TERRITORIES AND POSSESSIONS

In the third quarter of 1954, administrative responsibility for the various territories and possessions was removed from National Headquarters and assigned to the FCDA regional office nearest the territory or possession. Later Alaska was returned to the jurisdiction of national headquarters. American Samoa, Guam and Hawaii continue to be served by Region VII, and the Canal Zone Government, Puerto Rico, and the Virgin Islands by Region III.

NATURAL DISASTERS IN THE REGIONS

Significant progress was made in 1954 in the field of natural disasters, with hurricanes, tornadoes, floods, and drought testing civil defense organizational and operational readiness, and bringing an awareness to the public of the role of civil defense in emergencies. In several instances disasters cut across regional lines, notably Hurricane Hazel which struck Regions I, II, and III in mid-October.

Tornadoes took their usual toll during the summer months, in various sections of Regions III, IV, V and VI. In some cases action by regional offices was not required; for example, damages resulting from tornadoes in Kansas, Missouri, and Nebraska, were not extensive enough to require Federal aid. Conversely, financial assistance for debris clearance and restoration of public buildings was afforded Macon, Ga. and Bibb County under a major disaster declaration after a tornado struck that section.

Floods of major proportions occurred in several areas. In July the greatest Texas flood on record involved hundreds of miles along the Rio Grande and Pecos rivers. Region V mobilized a task force immediately and moved to the area. After meetings with local officials and

the State task force, project applications totaling \$1,517,272 were processed, of which \$664,230 were found eligible by the end of the year.

Region V's second major disaster occurred in New Mexico in October when floods struck from Roswell to Carlsbad. An initial allocation of \$50,000 was made immediately to permit speedy repair of publicly owned facilities.

In Region VII a flood of disaster proportions struck Los Angeles County in January, causing \$3,000,000 damage. Reimbursement requests for Federal funds totaling \$587,000 were initiated during the year.

Drought conditions particularly in Regions II and VI, were alleviated in many cases by the loan of federally stockpiled pipe, pumps, and other engineering equipment. Usually such assistance was provided following a survey of the regional engineer to determine whether the condition could be met locally.

In all instances where regional offices were involved in requests for assistance, experience gained in previous disasters proved valuable in setting emergency mechanism in operation without delay.

REGION I—REGIONAL OFFICE, NEWTON CENTER, MASS.

States: Maine, Vermont, New Hampshire, Connecticut, Massachusetts, Rhode Island, New York, New Jersey

The population of the region is 30,071,000 based on July 1, 1953 Bureau of the Census estimates. Its 18 critical target areas are concentrated in 5 States and include New York and Boston.

During the year efforts to attain a state of readiness for total emergency were intensified and the following activities were stressed: support—intrastate, interstate and interregional; evacuation planning, and testing. Meanwhile, natural disasters—notably Hurricanes Carol, Edna and Hazel—tested the entire region's state of readiness, revealing strengths and weaknesses, demonstrating the value of civil defense, and stimulating activity at all levels.

Compacts

Supplemental agreements on interstate compacts signed in 1954 include one on water transportation between New York and Connecticut in October, and one on public information between New York and Massachusetts.

Federal Resources

Arrangements for the utilization of Federal resources progressed along three lines; (1) by regional supplements to national agreements; (2) by interim regional plans pending national agreements;

and (3) by detailed intraagency and interagency plans and instructions based upon agreements, supplements or general interim plans.

Significant supplements were added to National Memoranda of Understanding with the General Services Administration and the Civil Service Commission Regions. The Civil Service Commission Supplement establishes key plans for emergency action under enemy attacks and natural disasters whereby the Civil Service Commission, acting for the FCDA regional administrator, will do the following: (1) contact source agencies for personnel according to needs and locations determined by FCDA, either in accordance with prior arrangements in FCDA-agency plans, or with needs beyond prior arrangements as developed by the specific emergency; (2) arrange for the detail of personnel located from the source agencies; (3) arrange and reassign detailed personnel according to needs and locations determined by FCDA; (4) terminate details when needs terminate; and, (5) handle necessary correspondence.

In addition, significant inventories or other data, including interim plans, have been set up for the following Federal agencies: Department of Agriculture; Weather Bureau; Department of Health, Education, and Welfare; Housing and Home Finance Agency; Immigration and Naturalization Service; Post Office Department; Coast Guard; Customs Service; Bureau of Public Roads; Department of Defense; Department of Interior; Bureau of Employment Security and Manpower Administration; Small Business Administration; and Veterans Administration; and with Headquarters First Army.

The following points concerning Federal agency planning for natural disasters were summarized verbally to the Regional Defense Mobilization Committee that:

(a) Information needs to be exchanged more rapidly and fully, with FCDA providing manpower and facilities; also that agencies should realize the implications to other agencies of information which they have and the other agencies may not have.

(b) Each agency needs to tell governors and other State officials what it can and cannot do for them.

(c) Agencies should give a high priority to disaster assistance and indicate available resources and personnel in their plans.

(d) Plans for use of personnel and resources should provide for their availability as long as needed, rather than for a definite time period.

Coordination of Federal Agencies

Progress continued in planning for effective Federal assistance in emergencies, both enemy-caused and natural disasters. More than 50 Federal establishments designated liaison officers to deal directly

with the regional office in its coordination of Federal activities in emergencies.

Personnel for augmentation of the regional staff in exercises and actual emergencies were recruited chiefly from other Federal agency offices in the region. Some 200 Federal employees from other agencies worked during Operation Alert.

The regional office participated regularly in activities of the Regional Defense Mobilization Committees for the New England and New York-New Jersey areas. At the January 20 meeting of the New England committee, a subcommittee was appointed to advise and coordinate activities in identifying and solving defense mobilization problems and planning and executing nonmilitary defense activities.

In the Metropolitan Boston area in the fall of 1954 a Federal committee on civil defense, cochaired by representatives of the Civil Service Commission and Region I office, was established. Other members include representatives of the Post Office Department, Veterans Administration, Watertown Arsenal, First Naval District, Boston Naval Shipyard, Bureau of Internal Revenue, General Services Administration, and Air Force Research Center. The committee is developing a pilot program for suggesting action which the Civil Service Commission and other Federal agencies can take to further emergency plans. Expansion of agency representation on the committee, and the committee's program to other areas, is anticipated.

Natural Disasters

Three hurricanes struck the northeast States within 2 months, driving thousands of persons from their houses in shore areas and causing hundreds of millions of dollars' damage. Carol, on August 31, caused great wind and sea-water damage, particularly in Rhode Island and Massachusetts. Downtown Providence was inundated. Edna, on September 11, caused mostly flood damage as the result of heavy rainfall. Seven inches of rain fell in some areas of Maine during this hurricane. Hazel, on October 15, caused mostly wind damage in New York State. The 3 hurricanes gave civil defense organizations at all levels valuable experiences. Carol caught some segments unprepared but everyone was better prepared for Edna and Hazel.

The staff was placed on 24-hour active-duty status for the emergencies. Personnel were called in from other Federal agencies, particularly for task forces assigned to Rhode Island, Massachusetts, Connecticut, Maine, and New York. Included were representatives of the Department of Defense, including Army Corps of Engineers; Department of Health, Education, and Welfare; Small Business Administration; Housing and Home Finance Agency; Department of Agriculture; Civil Service Commission; Veterans Administration; and General Services Administration.

Liaison personnel from Headquarters First Army operated at the regional office for 2 weeks, coordinating the use of Armed Services resources. The Armed Services provided troops for clearing debris, trucks, bulldozers, generators, power saws, power shovels, pumps, and pipe and floodlights. Damage surveys were made with the assistance of Army Engineers.

FCDA equipment made available from engineering stockpiles included 8 generators, 2 pumpers, and pipe.

A tremendous health problem developed in downtown Providence which was flooded by the high tides of Carol. The problem was the rapid collection and disposition of some 15,000 cubic yards of polluted and contaminated foodstuffs, canned goods and perishables from the stores and warehouses in which salvage was impractical. Federal Food and Drug and Sanitary Engineers of the Public Health Service assisted city and State health officials in the prompt development of a landfill operation to dispose of the material. Through civil defense channels, 30 vehicles—dump trucks, earth-moving equipment, etc.—were obtained from the Armed Forces and enough drivers to man the operation continuously. This equipment was supplemental to that available locally which was insufficient for the operation.

The material was disposed of in a 7-day period at the landfill site, where a 1,000-foot long trench, 15 feet deep and 25 feet wide, had been excavated. Most of the affected premises were disinfected and enabled to resume operations within the interval.

The Department of Agriculture released surplus food stocks for mass feeding operations conducted in coastal localities by the Red Cross and/or local civil defense organizations.

Arrangements were made for the transportation of dry ice by plane from New Jersey to Massachusetts during Carol. Emergency distribution points, set up by Massachusetts after Carol, were ready in time for Edna.

Federal funds were allocated to the States in Region I as follows:

Connecticut	\$500, 000
Maine	1, 000, 000
Massachusetts	2, 500, 000
New York	300, 000
Rhode Island.....	2, 500, 000

Legislation

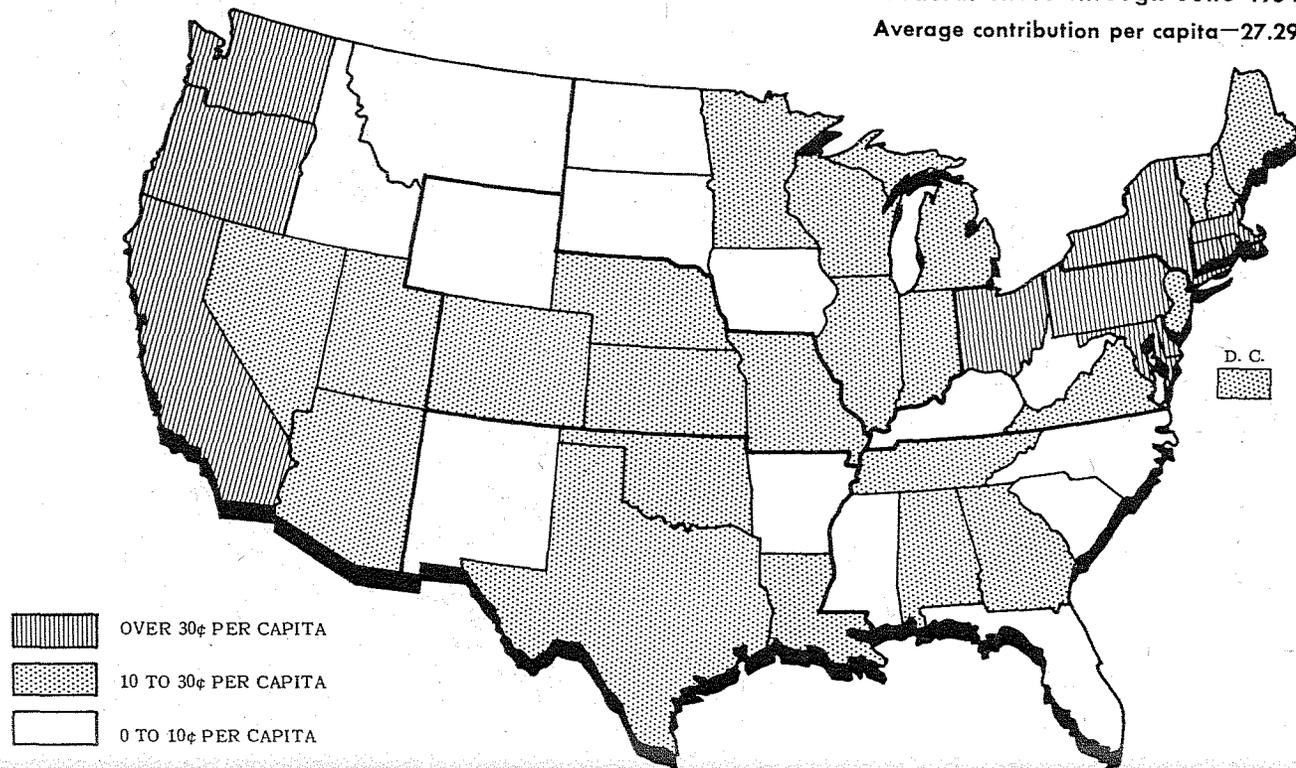
An act was passed at a special session of the Massachusetts General Court authorizing a \$12,000,000 bond issue for damages caused by Hurricane Carol.

An act was passed by the Maine Legislature authorizing the expenditure of \$1,000,000 for damages caused by the hurricanes.

CIVIL DEFENSE CONTRIBUTIONS PER CAPITA MATCHED BY STATES

Federal share through June 1954

Average contribution per capita—27.29



A bill was filed again in the Connecticut Legislature to reimburse localities for installing shelters.

In view of the recent hurricane experiences, the Governor of Rhode Island has prepared new legislation on civil defense for submission to the next session of the Legislature.

The Governor of New Hampshire, by proclamation, set aside the 10-day period, May 14-24 for special observance of civil defense.

On June 3rd, a Delegation of Responsibility was issued by the Vermont State Director of Civil Defense to all State Department Heads.

Legal opinions were issued by General Counsel of the New York State Civil Defense Commission—No. 2, On the Use of Minors in Civil Defense, and No. 23, Authority of Civil Defense Officials over Fire Personnel and Equipment.

Evacuation

Acceptance of the need for evacuation planning has been marked throughout the Region during 1954. Connecticut has moved ahead rapidly, and has enlisted the Department of Public Works and Engineering resources to aid its study. Massachusetts has completed a reorganization of its State civil defense structure, which should materially assist local communities in developing evacuation plans in close coordination with the State's. In New York City a study program on evacuation was set up with assistance from the Rockefeller Foundation. Buffalo will do one of the most extensive plans and tests seen in the country during 1955. Albany, New York, conducted a trial evacuation in November. Providence, Rhode Island, has submitted an evacuation plan for approval by the State Defense Council.

In addition, Maine, New Hampshire, and Vermont have developed their reception plans during the year. Tristate meetings of the women's advisory groups and the welfare groups have assisted in developing uniform planning. During 1955 a tristate meeting of the entire staffs is planned to coordinate information on reception. It has become increasingly evident that the target States and the reception States must plan jointly, if routes are to be kept open for evacuating the population.

At the regional level, every staff member has been given a responsibility in developing the evacuation program, working closely with the States on the augmentation of their plans.

Warning and Communications

By June 30, 1954, an estimated 38 of the region's 59 target and critical target cities had adequate warning and communications coverage or would have it on completion of approved projects. This was an increase of more than 100% over the 15 cities with similar coverage early in the year.

The high proportion of attack warning and communications projects in the 1954 Federal contributions program is indicated by the fact that allocations for these activities accounted for \$1,412,621 or 64% of the total; while applications accounted for 592 or 75% of the total.

In addition, 6 overall State and 116 interstate plans were approved for RACES (Radio Amateur Civil Emergency Services).

Supply

Nearly \$25,000,000 worth of medical supplies, ranging from blood sera to improvised hospital equipment, were stockpiled at 3 Federal warehouses as of September 1954.

Engineering equipment, including pipe, pumps, generators, water purifiers, and storage tanks for emergency use, was stockpiled in 10 locations and used during the year in training programs and emergency operations during the hurricanes.

Emergency use of liquified petroleum, especially in connection with mass feeding operations, was studied at two regional fuel conferences during the year.

Emergency operating plans, involving transport of supplies interstate or interregion, were completed for the FCDA warehouses at Gilbertville, Mass., and Ellenville, N. Y., with Somerville, N. J., in the process of completion. Local volunteers have been assigned specific duties and are being trained.

Agreements were reached at a regional supply conference on July 16 on terminology and units of measure. A summary of resources to develop uniform inventories of essential and critical items of supply within the States was accepted and a method of damage assessment, which makes possible preattack estimate of the need of these resources, was agreed upon.

Transportation

Four groups composed of State transportation officers, representatives of Federal agencies and the transportation industry, and a "working group," which would operate at regional headquarters in an emergency, were set up.

Regional work with the States in exchanging regulations and methods of vehicle identification and traffic control continued throughout 1954 as did the joining of civil defense routes from State to State.

An inventory of transportation equipment was requested from all the States, and by late 1954 one, Connecticut, had reported a completed inventory.

A conference on transportation resources was held December 9.

Safety

Groundwork for the solution of problems involved in postattack restoration of port facilities was laid at Port of New York conferences between regional, State, and city officials. Plans for the ports of Boston and Philadelphia are being made.

The New York conferences considered progress in determining:

1. Areas and extent of possible damage, assuming the most vulnerable ground area.
2. Jobs which must be performed to open and restore the port to activity after such damage.
3. Responsibility for the specific performance of each job.
4. Assignment of responsibility where initial study reveals conflict or unassigned jobs.
5. Plans by each responsible level or agency for specific performance.
6. Whether State Directors can identify any specific areas requiring FCDA action at this time.

Fire

More realistic methods were being developed and adopted by the fire services to determine equipment and personnel requirements and to measure more accurately all existing resources.

Much of the task of inventorying resources of the fire services has been completed. Final agreements are being reached for the use of uniform measurements and terminology to enable the fire services to collect and exchange inventory data and elements of information essential to effective interstate operation under wartime conditions.

Police

Inventories completed and under way show that existing resources of personnel and equipment are far short of anticipated emergency requirements.

As with the fire services, more realistic methods are being developed and adopted to determine requirements. As a result of a regional conference held November 4, uniform measurements were agreed upon for the inventorying of personnel and equipment of the police services and exchange of information at State and regional levels. Much of the inventorying of resources at local and State levels has been completed.*

Rescue

There was steady growth of the rescue program in 1954 throughout the region. This included broadened plans of recruitment and training as well as the setting up of additional training facilities.

Basic rescue has been made a part of the required training for all newly appointed police officers passing through the New Jersey Police Training School at Trenton. Area officers of the State police are responsible for conducting basic and rescue operation courses for volunteers in two areas of New Jersey where rescue training facilities have been provided.

In Rhode Island, communities having volunteer rescue workers to train are being encouraged to utilize facilities provided by that State.

Good progress is also reported in the States of Connecticut and Massachusetts.

In the three northern New England States, regarded as support areas, interest in development of the rescue service is less intense but not neglected.

Industry

Further progress in integrating industry into the civil defense program was made at the conference on plant protection held March 11-12 at Buffalo.

Under the auspices of New York City's Bureau of Buildings Defense, four 2-day industrial defense conferences were held, with regional, State, and city civil defense officials participating. Cooperating were representatives of the New York Life Insurance Company, Metropolitan Life Insurance Company, Equitable Life Insurance Company, Bronx Real Estate Board, and New York Hotel Association.

Measures have been taken to preserve public records. Some companies have developed plans for succession of executives in event of death or injury from attack. Ridgefield, Conn., has a storage place for records. Some New York City banks have sent records there. The mountains in New Hampshire have been considered as practical storage places by one insurance company.

Medical

Progress continued in packaging first aid station supplies and their distribution to local civil defense storage locations. This program is essentially complete in Connecticut, Maine, Massachusetts, New Hampshire, and New Jersey.

New Jersey and New Hampshire completed a series of orientation institutes for nurses. The institutes were held in every district in the State and were attended by members of the nursing profession from industry, hospitals, and health and voluntary nursing associations.

Members of the regional medical advisory council have been of special assistance in securing the interstate support of their counterparts in civil defense. They have strengthened programs for the

participation of medical, dental, and hospital personnel in several fields.

Through the development of an emergency staff for regional operations during the National CPX of June 14-15, working relationships were further extended with Federal medical service units in the region, and especially with the Public Health Service of the Department of Health, Education, and Welfare, and with the Veterans Administration. Also, more specific manuals were developed, both for emergency operations and for the training of the emergency staff.

Of a series of 8 articles on medical civil defense published and given wide distribution by the American Medical Association to its 165,000 members, 2 outstanding articles were contributed by physicians of Region I.

The States of this region have led in programing for stockpiling the 200-bed improvised hospital, which is now in procurement.

In conference, the State representatives reached general agreement for organizing medical service units for interstate support. The personnel components of two services were agreed on, the one for the first aid casualty services, and the other for emergency hospital service. Two types of teams, a smaller personnel cadre for management purposes, and a larger operations group to provide direct service to casualties were defined. General procedure for supplies, transportation, and related requirements were agreed on. In addition, considerable progress was made in securing agreement on the requirements of the blood program for interstate operations.

The training institutes for medical aides developed in New York State are most successful in the recruitment and training of medical aides, and for the development of completely organized first aid casualty services in communities.

Welfare

Fulltime paid emergency welfare directors were appointed in Maine in January and Rhode Island in May, bringing the total of such officers to 5 in Region I.

Two FCDA-Department of Army Emergency Mass Feeding Instructor Courses were held at Fort Dix, N. J., during August and October. Seventy-two persons from State and local civil defense units, State departments, and private professional organizations attended. Eighteen applications are on file for the 1955 series as a result of highly favorable reports to State directors by the 1954 class groups. Publicity highlight was a feature story with pictures in The New York Times of September 2. During the year, Vermont, New Hampshire, Massachusetts, and New York started State training ses-

sions or local demonstrations based on the content of the 1953 Mass Feeding Instructor Course held at Fort Devens, Mass.

In May the Maine deputy director in charge of welfare and the Dean of the University of Maine executed a compact calling for the training in 500 Maine communities of 15,000 women in the mass feeding program.

New Hampshire and New York combined to test out interstate operations of mobile welfare teams in September. A 6-man mobile feeding team in 2 vehicles was dispatched from Concord, N. H., to support the Schenectady, N. Y., welfare unit on September 25, during the State-directed test held there. The New Hampshire unit brought its own kitchen equipment and food supplies and prepared and served a hot meal to 150 persons.

In addition, the welfare office participated in planning and conducting a joint test on natural disaster preparedness measures with the Corps of Engineers, New England Division, and the city of East Hartford in April.

The 8 State Emergency Welfare Directors met on July 12 with the regional and national staff to reach agreement on uniform team makeup needed for intrastate and interstate support operations. Followup action by the region and FCDA is now going forward.

Women's Activities

During this year it was possible to channel women's organizations into specific responsibilities as a result of educational programs carried out earlier. Emphasis was on cooperation between local clubs and local civil defense directors to fill volunteer needs from organization membership. A 15-minute skit on home protection was widely used by Parent-Teacher Associations and the Federation of Women's Clubs. In Maine, the Daughters of the American Revolution and the Auxiliary of the Veterans of Foreign Wars are cooperating with the Retail Grocers Association to impress on every family the need for a 3-day emergency food supply.

Women civil defense leaders of the three support States, Maine, New Hampshire, and Vermont, met in June to discuss problems involved in receiving and caring for evacuees. In September, the New England Chapter of American Women in Radio and Television passed a resolution offering its services to the public affairs committee in each State. It was further suggested that each State set up a 1-day training program for the AWRT members to increase their basic knowledge of civil defense within their own States. The first of these programs was held in Massachusetts on November 20.

Nationwide interest has been aroused by the experiment in Connecticut of teaching first aid by television in a series of 26 broadcasts. The program, arranged by civil defense, has been developed in co-

operation with the Red Cross, and women's organizations throughout the State have both publicized the course and joined in developing groups to listen to the program.

By the end of the year, 6 of the 8 States in Region I had full-time directors of women's activities on their staffs.

Home preparedness was emphasized through women's advisory groups and women's organizations in both target and support areas. Emphasis on home protection was then used to develop interest in the warden service.

A new pattern for signing up volunteers was set in Brooklyn, N. Y., where more than 25,000 civil defense publications were distributed at 1,351 polling places during registration for elections, with special booths for enrollment of volunteers.

Public Affairs

Regional conferences of State public information officers concentrated increasingly on postattack operations. Of the 7 8-State conferences held to date, the last 5 were devoted almost entirely to various aspects of emergency operations.

The first regional emergency information plan was developed. New York was responsible for at least five State firsts: State emergency plan, information supplement to an interstate compact, State civil defense radio network, civil defense-press-radio agreement, and emergency newspaper editions.

Public acceptance of civil defense increased during 1954 as a result of the good work done by many civil defense organizations during the hurricanes.

Six of the 8 States had State civil defense public information officers at the end of 1954 as compared with 5 at the end of 1953. Only New Hampshire and Rhode Island lacked State PIO's. Four States—Connecticut, Maine, New Jersey, and New York—augmented their staffs during Operation Alert with information officers from other State departments. They were following an emergency procedure initiated by the region 2 years earlier when the public affairs office began using regional information officers of other Federal agencies in CPX's.

Training and Education

State-directed training exercises were held in all States; in some, nearly every community participated. The Police Institute held in Connecticut is considered outstanding.

The new Operations Course at the FCDA Staff College built around the New York State map exercise-problem combined with a control-center CPX, was formed with assistance from Region I. The Administration course, which was put on wheels in 1954, was given at the

University of Connecticut for a week; a 20-hour course in civil defense, with degree credits, was given again this year by St. Anselm's College in New Hampshire; Massachusetts sent 26 Legionnaires to attend the Rescue School at Olney as a unit.

In New York City all boroughs had command post exercises and field demonstrations twice a month except from January through March because of inclement weather; 679 air raid warning sirens were set off for detection of mechanical failure on August 9 in New York City.

New York State began its fourth year of State-directed exercises, and on June 23-25 a statewide exercise was held to test plans and preparedness. In addition, the State directed 10 city exercises during the year.

The test program was revised to place greater emphasis on local command structure, with a review of emergency plans, and training of the civil defense personnel in the field. As in previous exercises, the public was required to take shelter.

During the year a training course for high school juniors was initiated at the State Rescue School at Albany under the auspices of the Civil Defense Commission, the State Department of Education, and the State Department of Safety.

On May 14, the New Hampshire State civil defense office tested its air raid warning system by alerting cities and towns. Civil defense personnel were activated and traffic was halted successfully throughout the State. On March 1, a program for the recruitment and training of a mobile support unit in each community in New Hampshire was instituted. In Nashua about 3,000 persons attended a civil defense demonstration by the State public works mobile battalion. Rescue services participated and fireworks and aerial bombs were used.

Massachusetts held a statewide test on February 1. On April 24, Massachusetts Region 5 (Greater Boston), had a regionwide air raid test, requiring the public to take shelter, with an estimated 2,000,000 taking shelter; civil defense personnel participated in a mock bombing of Everett; the State participated with Region 5 in a CPX on May 3. A rescue institute school was conducted by the State from May 3 through 14, and a 2-day instruction course in the use of auxiliary water pipe was given at Springfield in October.

At Brown University in Providence, R. I., the Provost was appointed as civil defense coordinator.

In Vermont, in April, the State civil defense office conducted a civil defense training course, in which regional office personnel assisted.

Beginning in October, Connecticut instituted a limited control center exercise for State, area, and local control centers to be held on the second Monday of each month. In East Hartford on May 18, a

flood fighting test was conducted with the Corps of Engineers and Region I participating.

Maine has had three statewide tests, one of which was unannounced. State associations of school committees in Maine and Massachusetts passed resolutions that local school committees should develop programs of civil defense and that their courses of physical education and civics should encompass civil defense.

REGION II—REGIONAL OFFICE, WEST CHESTER, PA.

States: Pennsylvania, Delaware, Ohio, Virginia, West Virginia, Maryland, District of Columbia, Kentucky

The population of the region is 31,214,000, based on July 1, 1953 Bureau of the Census estimates. Five of its critical target areas have more than a million population—Baltimore, Cleveland, Philadelphia, Pittsburgh, and Washington.

At the beginning of 1954, the total objective for Region II was operational readiness.

During the year, the regional office worked steadily towards this goal by: (1) conducting 3 meetings of the State civil defense directors; (2) conducting 2 regional alert exercises; (3) conducting a series of technical conferences on regional, statewide and, in certain instances, state-area bases.

In addition, 13 calls for Federal aid in natural disasters were received. Ten of these required Federal aid of varying degree, but 3, it was felt, could be handled either locally or on a State basis.

As a result of such regional activities during the year, considerable progress was made toward operational readiness.

A few other examples: The State of Pennsylvania completed installation of a statewide system of bell and lights warning. Maryland established a system of statewide alerting procedures, which was tested and found effective. Kentucky organized mobile support units. Ohio began activation of its fifth mobile support unit and increased activity in its 4 existing mobile support units. New Castle County, Delaware, inaugurated a civil defense recruitment program in late 1954, which, as the year closed, gave indication of every success. The District of Columbia discovered during 1954 that only a small percentage of its believed 5,000 trained wardens was active. As a result of this investigation, the chief of warden services was replaced, and, as the year closed, the District was moving forward in expanding its block warden program.

Region II held its first surprise air raid alert exercise on November 8. All states participated except Pennsylvania and Maryland. Pennsylvania had held a statewide alert on October 25, and the State civil

defense director deemed it unwise to conduct a second one on November 8 (the Pennsylvania exercise is covered elsewhere in this report).

Maryland withdrew from the regionwide alert after it became necessary for the District of Columbia to withdraw from the public participation phase. Baltimore City and the five surrounding counties, however, participated to a limited extent.

The main purposes of the regional alert exercise, "Operation Quick Kick," were (1) to test alerting procedures; (2) to test communications facilities; (3) to ascertain the time required to mobilize operative civil defense forces at regional and State levels without prior notification.

When reports from all the States participating were in, it was determined that the alerting procedures which were established under the guidance of Region II were effective and adequate. It was determined, so far as communications were concerned, that too much emphasis was placed on TWX and not enough on radio communications. Every State control center and all of the target area control centers participating were manned and operational within one hour after the yellow alert.

During Hurricane Hazel, the regional office went on a 24-hour manned basis, effective at 8:30 a. m. on October 15, and remained on 24-hour operational basis until midnight on October 21. The office then established a 24-hour alert system, whereby various staff members were available on a 24-hour basis if needed.

Regional Office

Throughout the year, the regional office conferred with various other Federal agencies on activities under Public Laws 875 and 920 and Executive Orders 10346, 10427, and 10529.

Early in the year, at a joint meeting of representatives from Regions I and II, Pennsylvania, New Jersey, Delaware, Philadelphia, Camden and adjoining areas, a general committee was set up to function in emergency repairs for the Port of Philadelphia in event of disaster. Three meetings of the overall committee were held during the year. The regional administrator was named to the general policy and supervisory committee. As the year ended, working committees were being named.

Five meetings were held with the regional defense mobilization committee in Philadelphia, and one with the regional defense mobilization committee in Cleveland. Conferences were also held with the Department of Labor and Ohio civil defense officials in Columbus to implement a policy of cooperation previously adopted.

Among the Federal agencies with which the regional office held conferences were the Housing and Home Finance Agency, Bureau of

Immigration, U. S. Department of Health, Education, and Welfare, Department of Labor, Veterans Administration, Civil Service Commission, and Small Business Administration.

Fifteen conferences were also held with the Commanding General, Second Army, and his staff.

Early in the year, a program of inspection of equipment purchased under the contributions program, was inaugurated and inspection of Federal equipment in stockpiles and on loan to provide assistance to the States in disasters, such as water shortages, etc.

Conferences were held with the Mayor of Wilmington and a newly appointed Wilmington civil defense director on a program of civil defense for Wilmington.

Natural Disasters

As the year opened, the regional office had made available stockpiled pipe, pumps, and filters to the Borough of Bedford, Bedford County, Pennsylvania, after the Governor of Pennsylvania had requested Federal aid to alleviate a water shortage.

At the same time, Federal stockpiled pipe and other engineering equipment were loaned to Pennsylvania to alleviate a water shortage at the Somerset State Hospital.

On January 13, the Kentucky office notified the regional office that a serious water shortage existed in Walton, Kentucky, and requested Federal assistance. On January 15, the regional engineer was dispatched to Kentucky to survey the situation. As a result of this survey, State and local officials agreed to explore alternative methods of relieving the shortage. On June 2, Kentucky again requested assistance, the alternative methods having failed to remedy the shortage. An FCDA pump and pipe were installed to provide water from an alternate source.

On February 18, 3 pumps and 2 miles of pipe were made available to the city of Altoona, at the request of Pennsylvania, to alleviate a water shortage.

On February 23, the Kentucky office notified the regional office that the city of Owenton faced an acute water shortage. After an investigation, FCDA pumps were installed, along with necessary pipe and couplings.

On February 25, the regional office was requested by FCDA to investigate street cave-ins at Wilkes-Barre. It was determined that the situation did not require a declaration of major disaster.

On June 29, a water shortage was reported at Williamstown. At the request of the Governor of Kentucky, the FCDA, through the regional office, made two pumps and pipe available to the town to alleviate the water shortage.

On July 6, the office investigated a water shortage at Jackson, Ohio, on July 7 a similar situation at West View, Pa., and on July 12, at Adams Township, Ohio. It was determined that the situations could be handled locally, and no action was taken.

On July 16, two staff members were dispatched to Chestertown, Md., following an explosion at the Kent Manufacturing Company. It was determined that earlier reports of heavy damage and many casualties were erroneous. Civil defense rescue trucks from 3 surrounding counties and 1 from Delaware were dispatched to the scene. Additional rescue trucks and crews were on a stand-by basis at the FCDA National Training School, Olney, Md. The Chestertown disaster did not develop into major proportions.

On July 19, a staff member was dispatched to Richwood, W. Va., after the eastern area director of the American National Red Cross reported a serious flash flood in Nicholas County. On August 4, following a preliminary investigation, the President declared Nicholas County a major disaster area, at the request of the Governor of West Virginia. The regional office followed through under Public Law 875.

On July 19, the Kentucky Office notified the regional office of impending water shortages at Alexandria, and Lancaster, Ky. Kentucky supplied data on the shortage and measures being taken to reduce water consumption, along with maps and other data relating to the proposed means of alleviating the shortages through the use of FCDA equipment. On August 13, Kentucky formally requested authorization to transfer a part of the FCDA pipe and pumps on loan to Owenton, Ky., for use in alleviating the shortage at Alexandria. This authorization was given and the equipment was moved to Alexandria. On August 26, Kentucky formally requested authorization to transfer equipment on loan to Owenton and Williamstown, for use at Lancaster, Ky. This authorization was given and the equipment transferred.

On July 20, the Maryland State office requested Federal assistance to alleviate a serious water shortage at Bel-Air., Md. On July 21, a survey was made of the situation and as a result, FCDA pumps, water purifiers, and pipe were furnished to Maryland.

On October 14, the regional office was advised by Region III that Hurricane Hazel was expected to hit the South Carolina coast on the morning of October 15, following a path which would take it through the eastern part of Region II. The staff was alerted to stand by for emergency duty until hurricane danger had passed. Region I and the State civil defense offices of Virginia, Maryland, Delaware, Pennsylvania, and the District of Columbia, were advised of the situation. On October 15, the regional office went on a 24-hour emergency operational basis, which was continued until October 20.

Throughout October 15, contact was maintained with the Philadelphia Office of the Weather Bureau, and the FCDA liaison officer at the 26th Air Division (Defense), to obtain reports on the progress of the hurricane.

The information obtained was relayed to the National Office, Region I, and the State directors in the eastern part of the region. Personnel from the regional office were dispatched to the Maryland and District of Columbia civil defense headquarters to stand by in the event the services of the region were needed.

The hurricane followed a path from the North Carolina border on the south to the New York border on the north. The center moved slightly west of Richmond, Va., Washington, D. C., and passed near Harrisburg, Pa. Hurricane force winds extended approximately 100 miles to the north and east of the center, and 40 miles to the south and west. Because of the passage of the hurricane, a storm moving across the Ohio Valley from the west was held up, and the resulting rains caused flooding conditions in the western part of Pennsylvania and eastern West Virginia.

On October 16 the Governor of Maryland wired the President, asking that the Eastern Shore and southern Maryland be declared a major disaster area. A man was immediately dispatched to Dorchester County, Md., on October 16, and two other personnel, on October 18. The affected areas of Maryland were declared major disaster areas by the President.

The greatest damage was to the Maryland oyster fleet, poultry farms, and tobacco barns. Some 600 boats of the oyster fleet were washed ashore in Somerset and Dorchester Counties. Through the military district of Maryland and with the cooperation of the Second Army, heavy cranes and equipment were moved to the stricken area to return the boats to the water.

On October 21 the Governor of Pennsylvania wired the President, requesting that western Pennsylvania be declared a major disaster area, because of damage caused by the hurricane and subsequent floods. Two members of the regional staff were immediately dispatched to western Pennsylvania. On October 22 the President declared the affected areas of Pennsylvania a major disaster area. Subsequently, additional personnel were dispatched to western Pennsylvania, and to the Wilkes-Barre-Hazleton area, to advise local authorities on Federal assistance available under Public Law 875. The assistance in Pennsylvania was expected to consist primarily of the extension of credit through the Federal Housing Administration and the Small Business Administration.

Throughout the emergency period, contact was maintained with the Red Cross and Federal agencies which might be called upon for as-

sistance in a disaster situation. The cooperation of these agencies was good, particularly in the case of the Second Army, and Regions II and III of the Department of Health, Education, and Welfare.

Exercises

On June 14-15 the entire region participated in the national civil defense test exercise, Operation Alert. The Second Army, operating in the same geographical area as Region II FCDA, rendered full cooperation in this exercise and tested its domestic emergency plan at the same time. Participating agencies and organizations at the regional control center included 21 Federal agencies, 6 industries, and 8 other service organizations. Public warnings, demonstrations, and exercises were conducted in all States except Kentucky.

The regional staff was augmented by 115 auxiliaries and volunteers throughout the 24-hour period of the exercise. Communications facilities consisted of teletype, telephone, and radio (including MARS and RACES). A total of 966 messages, incoming and outgoing, was handled by the message center.

The Second Army furnished liaison officers and a detachment of approximately 50 men from the 313th Signal Battalion. Seven mobile communications units were furnished to serve each of the seven cities hit. The Army also furnished helicopters and low-speed, fixed-wing aircraft to perform reconnaissance duties over the cities attacked. As a result of the exercise, Headquarters Second Army recommended that all key army personnel be oriented thoroughly in civil defense organization and functions.

"Operation Quick Kick."—On November 8, the first surprise alert exercise, "Operation Quick Kick" was held, at the request of the State directors. The following States held public participation exercises in conjunction with the test: Ohio, Virginia, and West Virginia.

The Delaware State office participated on a CPX basis, although the city of Wilmington held public participation.

The State of Maryland did not participate. Baltimore City and five surrounding counties conducted an all-out public participation exercise.

The regional office was fully manned by staff personnel within 58 minutes after the yellow alert. In addition, some 40 volunteers were called in. Cooperation from other Government agencies, particularly Second Army, was excellent.

It was concluded, following the exercise and on receipt of preliminary reports, that in the event of emergency, civil defense forces and control centers can be activated without prior notice within an hour.

Pennsylvania Statewide Exercise.—Pennsylvania staged its first statewide surprise alert exercise on October 25. The purpose was

threefold: (1) to test communications and alerting procedures; (2) to ascertain the time required to mobilize civil defense forces without prior notice; (3) to test public cooperation in CONILLUM.

The communications and warning system proved adequate, as a result of bimonthly training exercises in which all control centers are activated and operated. These include the State control center, 3 area control centers, and 150 county and local control centers.

Mobilization plans, drawn up early in 1954, were put to the test in the surprise alert.

Pennsylvania took its first step toward enforcing CONILLUM in the October exercise. Reports indicate that in the small communities and rural areas the cooperation ranged from 85 to 95% good. In the metropolitan areas, there was partial cooperation but as a whole it was felt that the larger cities emitted too much skyglow.

Erie Evacuation, October 17, 1954.—One thousand auxiliary police and wardens (uniformed) cleared evacuation highways. Four thousand automobiles from the metropolitan area were used to evacuate people. Rain and bad weather interfered. People assembled in the downtown area and were evacuated by cars.

"Operation Scram."—On November 23 a civil defense dispersal exercise was held in Philadelphia, involving a "walk out" of approximately 30,000 people from the central city business district.

Progress by States

Delaware.—A State control center was dedicated and a statewide attack warning system was completed.

District of Columbia.—As a result of increased appropriations granted by Congress in 1954, the District of Columbia Office of civil defense recruited additional personnel and was making considerable progress at the end of the year. The District in 1954 continued a series of weekly training conferences, which included: (1) basic orientation in civil defense and (2) specific training for services.

Kentucky.—Increased interest in civil defense was manifested by the State director, who also is the adjutant general. A new civil defense director was appointed in Louisville late in the year. Kentucky showed great progress in mobile support organization, particularly in Lexington.

Maryland.—Continued to emphasize training in rescue and fire control. In the city of Baltimore an average of 25 training sessions was being held weekly throughout the winter. In the summer, these were reduced to 10. Maryland also developed and put into use an effective public affairs program.

Ohio.—Activated its fifth mobile support unit and undertook an extensive training program. The first FCDA field course presented by the staff college was given at the Ohio State University, in Co-

lumbus, the week of August 9. Faculty members of Ohio State University took the course, and held the second administration and operations school in December. Plans were made to conduct three training courses during 1955.

Pennsylvania.—Completed statewide installation of the bell and light warning system to all towns over 5,000 population. More than 1,000 individual receiving stations were in operation as the year closed.

Pennsylvania has packaged and stored at Indiantown Gap, emergency medical supplies for 1,650 frontline firstaid stations, capable of caring for 1,000 casualties each. Trucks and manpower are available at Indiantown Gap to transport the medical equipment anywhere in the State on a moment's notice.

A series of special one-day courses for all school principals (both public and private) and administrators was held during the year. Eight hundred and fifty took this course.

In 1954, Pennsylvania completed its industrial training program, which began in 1952. This included a 3-hour orientation course for top management, followed by a 2-day course for safety engineers and plant managers. Representatives of more than 1,500 Pennsylvania industries took these courses.

To date, the State Civil Defense Training School at Ogontz Center has conducted 135 classes in rescue and home fire fighting (instructor course). More than 7,000 students have graduated.

Virginia.—Some progress was noted on a statewide basis in spite of a limited staff, although two additional State coordinators were employed during the year. In northern Virginia, much progress was shown in all phases of civil defense. This is true also of the Norfolk-Portsmouth-Newport News area, and scattered small communities.

West Virginia.—General progress was made in 1954, although the State office is still handicapped by lack of personnel. In certain areas of West Virginia, the civil defense program is progressing rapidly. In other areas, it is lagging.

Technical Services

On September 8 eight technical conferences were held in Charleston, W. Va., to arrive at common nomenclature, methods of inventory, and interstate aid. These conferences were conducted in engineering, police, fire services, rescue, medical, welfare, transportation, and supply. Results of the individual conferences were approved by the State directors of Region II and forwarded to FCDA Headquarters.

Warning and Communications

The status of attack warning systems in the critical target areas of Region II at the end of the year was:

Delaware.—An adequate system for Wilmington was approved under the 1954 Federal Contributions Program.

District of Columbia.—An improved system was being installed.

Kentucky.—Covington, Lexington, and Louisville were still without proper systems.

Maryland.—Baltimore was doing additional work to get an adequate system.

Ohio.—Canton, Cleveland, Cleveland Heights, Columbus, Dayton, Hamilton, Lakewood, Lima, Springfield, Toledo, and Youngstown had adequate systems. Akron and Loraine still had some work to do. Cincinnati still had no adequate system.

Pennsylvania.—Allentown, Altoona, Erie, Reading, and York had adequate systems. For Philadelphia and Pittsburgh, project applications for adequate additions required were approved and work is under way. Still without adequate systems were Bethlehem, Chester, Harrisburg, Johnstown, Lancaster, McKeesport, Scranton, and Wilkes-Barre. Agreement was reached with Bethlehem for an adequate system in 1955.

Virginia.—Portsmouth and Roanoke had adequate systems. Hampton, Norfolk, and Richmond expect to make adequate project applications in 1955 and Alexandria in 1956.

West Virginia.—Charleston, Huntington, and Wheeling were still without adequate systems.

Under the CONELRAD system, applications for program circuits or changes in such circuits were reviewed by the regional communications officer, approved, and forwarded to the Federal Communications Commission, in:

Maryland.—Pikesville and Baltimore.

Ohio.—Dayton and Portsmouth.

Pennsylvania.—Altoona and South Williamsport.

Virginia.—Richmond and Roanoke.

There was no CONELRAD activity in Delaware, District of Columbia, Kentucky, and West Virginia.

RACES plans or amended plans were approved after review and completion of revisions, and forwarded to FCDA for proper action, in:

Maryland.—Baltimore and Maryland State.

Ohio.—Barberton, Summit County, Zone B, Canton, Stark County, Toledo, Lucas County, Youngstown, Mahoning County, and Ohio State.

Pennsylvania.—State.

West Virginia.—State.

Two successful 2-day communications conferences with State and city representatives were conducted, one at Columbus, Ohio, and one at Pikesville, Maryland.

An analysis of the relative ability of 12 kinds of communications facilities to carry these message loads between States, regions, and FCDA headquarters under normal conditions and immediately following a 100-city attack with and without extensive jamming and sabotage was completed, together with recommendations for lines of action indicated by the results of this analysis.

As a result of amateur participation at the Pikesville communications conference in September, special attention was given to: (1) single side band suppressed carrier phone transmission; and (2) radio teletype transmission.

Plans were made for a civil defense trial of amateur radio teletype transmission in December. This form of transmission may well offer a backup of wire teletype on a national scale, particularly if it proves practicable to use combined circuits having new short VHF and UHF and links and present microwave long haul middle links, with the long middle links on an engineered rather than a full-time basis.

Supply

The major accomplishments in the supply program during 1954 included: (1) agreements reached at the supply service conference in Charleston, West Virginia, on September 8; and (2) action taken to induce all States in the region to establish an emergency procurement plan.

Every State headquarters was visited during the year and meetings were held one or more times with supply officers of critical target areas throughout the region and the supply officers in numerous target areas.

During the year a supply officer was appointed by the Kentucky State civil defense organization and the Pittsburgh-Alleghany county civil defense council. This brought to full force the supply officers in the seven States and the District of Columbia in Region II and the critical target areas.

During the year, the regional supply office inspected Federal stockpiles, assisted FCDA headquarters in developing a plan for construction of a dehumidified hut in Baltimore and arranged, in cooperation with the Baltimore City civil defense office, for the construction, without cost to the Federal Government, of a warehouse for Federal supplies in Baltimore.

In addition, the installation of auxiliary power at Federal supply warehouses and emergency operational plans was discussed with local civil defense officials.

Transportation

The following highlighted transportation activities:

Appointment of four transportation branch heads—air, rail, highway and water—in the State of Delaware to serve under the State Chief of Transportation.

Development of a State traffic control plan for Maryland.

Appointment of a transportation officer from the Second Army and Military District of Washington to the regional transportation advisory committee.

Appointment of a representative of the National Shipping Authority to the regional transportation advisory committee.

The regional emergency rail plan and the regional trucking branch plan were reissued. A regional air plan was issued.

Two regional transportation conferences were conducted during the year.

Numerous conferences were held and progress was made toward a more comprehensive transportation plan in each State.

The District of Columbia began work on the highway transportation plan and the dispersal plan.

A Coast Guard officer was assigned to the regional transportation advisory committee.

The city-county rail organization plan was revised.

The Commonwealth of Pennsylvania named a transportation coordinator.

The City of Cleveland appointed a director of transportation for civil defense.

The regional transportation advisory committee began a series of meetings with the Joint Land Transportation Agency of the Armed Forces in anticipation of complete coordination in disaster.

Public Safety

Through the efforts of the regional public safety office, the entire safety program throughout the region showed considerable progress during 1954.

An intensified training program in Pennsylvania for auxiliary police was developed.

Industrial protection programs were expanded in West Virginia, Pennsylvania, Ohio, and Maryland.

Rescue service activities increased in Maryland, District of Columbia, West Virginia, and Ohio.

Auxiliary police services were expanded in the District of Columbia, West Virginia, Delaware, and Ohio.

Increased interest in the warden service was shown in West Virginia, Maryland, and Pennsylvania.

Closer coordination of fire services was developed in Pennsylvania, Ohio, Maryland, and Virginia.

Engineering

Urban analyses were begun or expanded in the following cities in 1954: Akron, Cleveland, Columbus, Toledo, and Youngstown in Ohio; Hampton, Newport News, Portsmouth, and Norfolk in Virginia;

Philadelphia in Pennsylvania; Baltimore in Maryland; and Wilmington in Delaware. Although the District of Columbia had completed an analysis in 1951, a review and expansion of the original analysis was undertaken in 1954.

Numerous field investigations in connection with water shortages and natural disasters were conducted, and stockpiled engineering equipment at Baltimore, Louisville, Dayton, Toledo, and Pittsburgh was inventoried. Inspections were made of engineering equipment returned to stockpile after use in alleviating water shortages.

During the year liaison was established and maintained with the Corps of Engineers, District Offices at Baltimore, Md., Huntington, W. Va., Louisville, Ky., Pittsburgh, Pa., and Washington, D. C. Technical guidance was furnished to the State of Virginia in developing control center plans for Norfolk and Richmond.

During the year State civil defense engineering officers were appointed at Delaware, Virginia, and West Virginia.

The following conferences were held: regional engineering services conference at Charleston, W. Va., in August, adopting organization of 19 teams; conference with officers of the Louisville District of Engineers and Kentucky State civil defense office on engineering stockpiles; conference with Delaware State civil defense director, New Castle County, Delaware civil defense director and engineering representatives of the State and county on development of engineering teams and survey of engineering resources in Delaware.

Field training with stockpiled engineering equipment was promoted at Dayton, Cleveland, and Columbus, Ohio; Baltimore, Md.; Allentown, and Pittsburgh, Pa.; and Norfolk, Va.

Welfare

A member of the staff of the regional welfare office conducted and participated in a welfare conference in Roanoke, Virginia, met with the Delaware State Governor's Civil Defense Advisory Board, the State Welfare Board and the State welfare officials, and attended numerous other local and State meetings throughout the region.

Assistance was given the Philadelphia Civil Defense Council in setting up an emergency feeding program and the Second Army in the Emergency Mass Feeding Course at Fort Meade on October 5.

Medical

Early in 1954, the regional office appointed a regional medical advisory committee, which met on June 23 and developed a broad program looking to the cooperation of all medical associations and affiliated groups, such as pharmaceutical and nursing associations. They adopted 3 major resolutions: (1) recommending group conferences at regular intervals called and conducted by each State Health

Commissioner; (2) recommending the assignment of public health officials to the civil defense program; (3) calling upon the presidents of all medical and allied medical associations and their components to designate a specific period on the agenda of each regular meeting for the discussion of civil defense.

Five organized groups were addressed, one on urban analysis in relation to the medical program and the others on the regional medical program. At the request of the editor of the West Virginia Medical Journal, an article was prepared "The Physician in Civil Defense," which appeared in the Journal. A program was developed to integrate the medical services in the States of Region II with the overall civil defense program.

The medical program status State by State in Region II is as follows:

Delaware.—The Governor's civil defense advisory committee recommended that a full-time person in the medical program be added to the State civil defense staff.

District of Columbia.—Although the District has a good paper organization, recruitment and training await the active interest of a qualified person who will take the job as a primary task. The district civil defense director asked the Medical Society of the District to designate a full-time person to the civil defense program.

Kentucky.—A program for organizing medical services on a community basis was submitted to the State civil defense director and State medical officer. Kentucky devoted most of its efforts to mobile battalions, organized on a statewide basis. These battalions would provide only a small part of the medical aid that would be necessary in event of a strike on Louisville or Cincinnati.

Maryland.—This State is well organized at all levels, and a sound medical program is being carried out. Steady progress was made during the year in the development of first aid and hospital teams. The Maryland State Medical Association gave added support to the program during the year.

Ohio.—A program for initiating mobile support on a statewide basis for the critical target cities was proposed to the State civil defense director. Most of the cities in Ohio are relatively well organized in medical services, but there has been little planning for support from the surrounding communities in the medical division.

Pennsylvania.—There has been no activity on a statewide basis in the medical division the past year. On an area and countywide basis, the medical programs showed progress. The eastern area inaugurated a medical program involving mutual aid and mobile support to the critical target areas of Philadelphia, Wilkes-Barre-Hazleton, Reading, and Allentown-Bethlehem-Easton.

Virginia.—The medical program in Virginia made little progress on a statewide basis, although in certain areas the program has moved forward. This is particularly true in the northern Virginia area, adjacent to Washington, where a recruitment and training program was underway as the year closed.

West Virginia.—Here, too, the medical program is somewhat spotty. The State civil defense director requested the State medical association to name a medical advisory committee to assist the State medical officer in developing a broad program. In the State's only critical target area, Wheeling, little has been done in the medical program. As the year closed, however, the regional medical officer was working with both the State and Wheeling civil defense offices in an effort to bolster the medical program.

Women's Activities

The services of the American Association of University Women were enlisted in civil defense in all of the States and the District of Columbia. The civil defense office of the District inaugurated a program utilizing the services of women's organizations.

Status of the women's activities program as the year closed :

Delaware.—Improvement and advancement during the year as a result of interesting women's organizations in civil defense.

District of Columbia.—Progress made, although more women could be active in civil defense.

Kentucky.—Great interest on the part of women is shown, although lack of leadership at State level has somewhat curtailed the program, except in some local communities.

Maryland.—Interest was stimulated in Maryland, particularly through an all-girl rescue team, which made appearances and gave team demonstrations at various cities in the State.

Ohio.—The State civil defense director appointed a director of women's activities in midyear, and progress was made on a State level after her appointment. In all of the critical target areas except Akron, considerable activity on the part of the women was noted. Akron's program will get under way as soon as the Mayor names a director of women's activities.

Pennsylvania.—Women are given much responsibility and are accepting it willingly. The State council of civil defense carries 3 women on its rolls; 1 assigned to the western area, 1 at headquarters to serve the central area; and the third at eastern area headquarters. The State director of emergency welfare, who also coordinates women's activities, visited the presidents of the Federated Clubs with excellent results. Virtually the entire welfare program in Pennsylvania is being handled at all levels through women's organizations.

Virginia.—Considerable progress was made during 1954, especially in home nursing and first aid training. There is unusually keen interest among women, especially in the Norfolk area.

West Virginia.—The program here is progressing, but, owing to a limited State staff, the progress has been somewhat slow. In areas such as Weirton, Huntington, and Parkersburg, women's organizations are taking an active part in civil defense, particularly in welfare, mass feeding, first aid, and home nursing.

Public Affairs

The main objectives of the regional information office for 1954 were :

1. To create a public awareness of the need for civil defense on the part of every person in Region II.
2. To develop emergency operations plans at all levels of civil defense, State, area and local.

To accomplish these objectives, the regional information office conducted 14 public affairs seminars in 3 States, reaching a total of 403 key personnel in civil defense, industry, media of mass communication, advertising, retail merchants, schools, and city and county officials. These seminars included :

1. The basic principles of a public affairs program.
2. Emergency operations for newspapers and radio.
3. Civil defense emergency information in relation to the psychological impact and morale effect of attack on the people of the United States.

Seminars were conducted at: Weirton, Parkersburg, Huntington, and Wheeling, W. Va.; Columbus, Steubenville, Cincinnati, Dayton, Cleveland, and Youngstown, Ohio; Erie, Butler, and Allentown, Pa.

In 1954, the following States and critical target areas had full-time, part-time, or volunteer public information officers: *Delaware*—State and New Castle County; *District of Columbia*—where the deputy director for operations doubled in public information, with assistance of a part-time volunteer; *Maryland*—State, Baltimore, and all counties except Prince Georges had voluntary public information officers; *Ohio*—State, where the public information officer also handles facilities self-protection and safety programs, Canton, Cincinnati, Cleveland, Columbus, Dayton, Toledo, Youngstown, and Steubenville; *Pennsylvania*—State public information officer, who also is public information officer for the National Guard, Eastern Area, Erie, Lancaster, Philadelphia, Pittsburgh, Reading, Wilkes-Barre-Hazleton, and York; *Virginia*—Norfolk-Portsmouth-Newport News only; *West Virginia*—State deputy director handled public information; *Kentucky*—at the year's end, the regional information officer was conferring with the State civil defense director and his deputy regarding the appointment of a public information officer.

Public affairs promotions during the year included:

Pennsylvania.—Pittsburgh public information officer issued emergency spot announcements for radio, in event of enemy attack. State public information officer sent out suggested radio and TV announcements in connection with Operation Alert.

Ohio.—Developed series of portable exhibits for use in conventions and large meetings. Also had outstanding civil defense exhibit at the Annual State Fair in Columbus, utilizing panels from the FCDA "Alert America" convoys. Cincinnati conducted a 13-week radio and TV campaign for volunteers. Local radio and TV stations provided scripts and talent. All TV and radio stations carried the opening show simultaneously.

Delaware.—Initiated "Make the Public Conscious of Civil Defense" program, utilizing newspaper columns, feature stories, radio and TV programs and FCDA posters throughout selected areas of State.

The regional information officer and FCDA deputy director of public affairs met with Maryland publishers and civil defense officials in Baltimore on July 23, 1954. As a result of the meeting a committee on mass media of communication was set up. This committee includes publishers of dailies, the Maryland State Press Association (weeklies) and representatives of the Maryland-D. C. Broadcasters Association. At the year's end plans for emergency operations were well under way.

As a result of public affairs seminars in late 1953, and guidance on the part of the regional office, 22 of Maryland's 23 counties now have volunteer public information officers.

Training

In March, the regional office conducted a 2-day training and education conference at Ogontz Center, Pa., seat of the Pennsylvania State Civil Defense Training Center. This conference was attended by 45 training and education officers on State and local levels.

As a result of this conference, training activities throughout the region were given considerable stimulus.

Through the U. S. Department of Labor, Bureau of Apprenticeship Training, the entire staff of Region II took the Job Instructor Training Course. As a result, the staff was given better preparation for overall instruction to the States and political subdivisions during the year.

The first course of the FCDA Staff College in administration and operation was given at the State University of Ohio, in Columbus, the week of August 9. Instructors from the Ohio State University took the course and conducted a similar school in December. As the year closed, plans were for Ohio State University to continue the civil de-

fense courses no less than three times a year, and more if the demand warrants.

Maryland increased its training courses in fire and rescue during 1954, with one all-day Rescue Refresher Course at the University of Maryland, and numerous area and county rescue courses.

Pennsylvania continued its intensive training course at the State Civil Defense Training Center at Ogontz Center, Pa.

As a State, Delaware emphasized training in explosive ordnance reconnaissance and in police and fire services. A new civil defense director was appointed in New Castle County, which includes all of the county except Wilmington. In midyear, an intensive program to train instructors was started, and late in the year a public recruitment campaign to enroll civil defense personnel was conducted.

The District of Columbia continued its training course for wardens, welfare workers, and other personnel.

REGION III—REGIONAL OFFICE, THOMASVILLE, GA.

States: Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Tennessee, Canal Zone Government, Puerto Rico, Virgin Islands.

The population of the region based on July 1, 1953 estimates released by the Bureau of the Census, August 6, 1954, was 24,263,000. Critical target areas are: Atlanta, Ga.; Birmingham, Ala.; Chattanooga, Knoxville, and Memphis, Tenn.

Progress was made during 1954 toward achieving civil defense objectives, especially in the fields of natural disaster, training and education, test exercises, and communications. There was also marked improvement in public participation and acceptance of civil defense.

The peacetime worth of civil defense planning, organization, and equipment, was proved in combating the effects of two major disasters and a serious drought.

Hurricane Hazel struck North Carolina and South Carolina, October 15, reduced beachfront buildings along a 60-mile stretch, killed 18 persons, disrupted communications and powerlines, and damaged property in wide areas in both States. Loss of life was held to a minimum mainly by the civil defense warning network which relayed weather bulletins from FCDA region to State civil defense offices and then to local communities. Many hundreds of persons were evacuated from danger points to places of safety by civil defense, Red Cross, police, and other local groups. National news commentators gave civil defense preparedness credit for the small loss of life experienced here in comparison to that of other sections hit by the hurricane, especially the Canadian provinces.

A long-range economic threat to the region was the serious and extended drought which still exists in certain areas. More than 35 miles of emergency engineering equipment and 17 pumps were used to prevent water famines in 13 cities where normal sources of water failed. In many other communities, especially in Georgia, fire pumpers and hose were used as improvised emergency measures under supervision of civil defense officials to prevent complete shutdown of municipal water systems. Farmers were assisted by a limited major disaster declaration which FCDA requested the U. S. Department of Agriculture to administer, but the FCDA pipeline assistance was handled under local disaster declarations by the governors of the States involved.

Statewide disaster meetings were held in Florida and South Carolina during which Public Law 875 was thoroughly explored, resources of Federal and State agencies were earmarked, and State operational plans were inaugurated. Both meetings, well attended by city, county, State and Federal representatives, afforded local officials their first opportunity to coordinate disaster planning with Federal personnel stationed within the State.

Favorable editorial comment and extended news coverage of FCDA's role in peacetime disasters resulted in a more thorough public understanding of civil defense.

Test. Exercises.—Operation Alert June 14-15, elicited one test exercise which attracted nationwide attention. This was "Operation Scat" at Mobile, Ala., during which the first successful movement of downtown population by automobile was achieved. While only a partial evacuation, "Operation Scat" was the forerunner of selective evacuations preparing for a citywide exercise. The evacuation of about 29,000 school children and a complete evacuation are planned early in 1955.

On November 7, Tennessee staged a communications and command exercise similar to Operation Alert. No public participation was sought, but full regional staff assistance was given. The chief objective was to give further training to State and local staffs in communications, mutual aid and mobile support, and to test the State's emergency communications networks.

Daytona, Fla., staged an evacuation exercise November 3 and Chattanooga, Tenn., is planning a citywide public observance test before the year's end.

Greenville, S. C., observed a Civil Defense Week, November 7-13, during which downtown buildings were evacuated and a general recruitment and public information program was conducted.

Florida conducted a successful Civil Defense Week observance April 18-24, with a varied program in the cities ranging from public observance of traffic control tests to general education campaigns.

Training and Education.—Successful training schools and conferences were held throughout the region covering the various services. Several of the training conferences were regionwide in scope, and were initiated chiefly by the regional staff with the cooperation of city and State civil defense organizations.

During the year the following training activities were conducted: three statewide police institutes; one regional and one statewide warden's institute; one regionwide rescue institute; a regional radiological conference; a regional communications conference; a regionwide fire conference; one statewide leadership conference; one regional women's conference and a regionwide mass emergency feeding school which proved so popular that two courses were required. At least two States held statewide women's conferences.

Excellent attendance and favorable reaction were observed in each of these activities, and coverage by newspapers, radio, and television multiplied many times the audience for civil defense programs.

Another great stride forward was the development and incorporation of civil defense into the curricula of the educational program by Tennessee. Under auspices of the State civil defense division and the State Department of Education, a committee of educators representing all levels of education prepared an excellent manual which was furnished all schools and colleges under sponsorship of the governor.

Liaison With Other Agencies.—Close contact was maintained with other Federal agencies in carrying out the recent delegations of civil defense responsibilities.

Move of Regional Office.—During the early part of the year, the regional office was moved from the outskirts of Atlanta to Thomasville, Ga., some 200 miles distant. While this resulted in the loss of some personnel, the enlistment and training of new personnel was accomplished quickly and efficiently for many competent clerical workers with previous experience in Government were available at the new location.

Additional Administrative Responsibility.—During the year the Commonwealth of Puerto Rico, the Virgin Islands, and the Canal Zone Government were added to Region III for administrative purposes. The regional administrator personally visited this new territory and conferred with the governors, civil defense, and Armed Forces officials, and other officials of Government. He also participated in civil defense exercises and reviewed plans and preparations. Arrangements were made with the Army for transmitting operational messages via the military radio network.

Changes in State Directors.—New State directors were appointed during the year in Florida, Georgia, and North Carolina, and highly cooperative working relationships were established with them.

Interstate Compacts

Alabama has interstate compacts with 24 States, Florida with 8, Georgia with 4, South Carolina with 1; and Tennessee with 3. Puerto Rico and the Virgin Islands completed a compact. The Canal Zone indicated interest in interstate compacts with Puerto Rico and the Virgin Islands, and possibly with the States. Alabama is the only State in the region which has notified all other States and Congress of its willingness to compact universally. Only North Carolina has no authority to enter into interstate civil defense compacts. Compacts filed by Idaho with Florida and Tennessee were in abeyance because the Florida and Tennessee compacts do not cover natural disasters.

Liaison was maintained with regional directors and other designated liaison officers of all Federal departments and agencies serving areas in FCDA Region III.

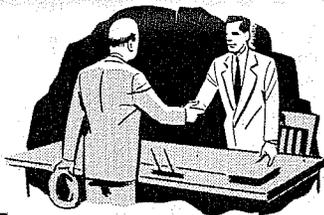
Fifty representatives of 22 Federal Departments or Bureaus and the Armed Forces participated as FCDA staff auxiliaries or agency liaison officers at the FCDA regional office in Operation Alert. The exercise proved the necessity of an auxiliary staff furnished either by other Federal agencies or other sources.

Twenty of the agencies were subsequently requested to make formal designation of personnel to serve as FCDA staff auxiliaries. To date, only the Civil Service Commission, Bureau of Labor Statistics, Internal Revenue Service, U. S. Forestry Service, National Labor Relations Board, and the Small Business Administration have made formal designations. Several of the others indicated that personnel cannot be spared in the event of military attack.

The U. S. Civil Service Commission, Region III, became the third Federal agency to develop plans in accordance with Executive Order 10346. The others were the Department of Health, Education, and Welfare, and the Veterans Administration. The Civil Service Commission not only designated a staff to augment the FCDA regional office, but to assist in State civil defense offices, and offices of the major cities in several critical target areas. The U. S. Post Office at Atlanta forwarded critical records for storage and use at the FCDA regional office in the event of disaster.

Federal agencies participated cooperatively in public civil defense exercises in Mobile, Ala.; Volusia County (Daytona Beach) Fla.; Greenville, S. C.; and in a statewide exercise in Tennessee.

The General Services Administration, with assistance of State and metropolitan civil defense organizations at Atlanta, Georgia, spearheaded a buildingwide training exercise involving all Federal agencies occupying the Federal Office Building in Atlanta.



INTERSTATE CIVIL DEFENSE COMPACTS

AS OF DECEMBER 31, 1954

LEGEND

31 STATES HAVE THE MODEL INTERSTATE CIVIL DEFENSE AND DISASTER COMPACT IN EFFECT.

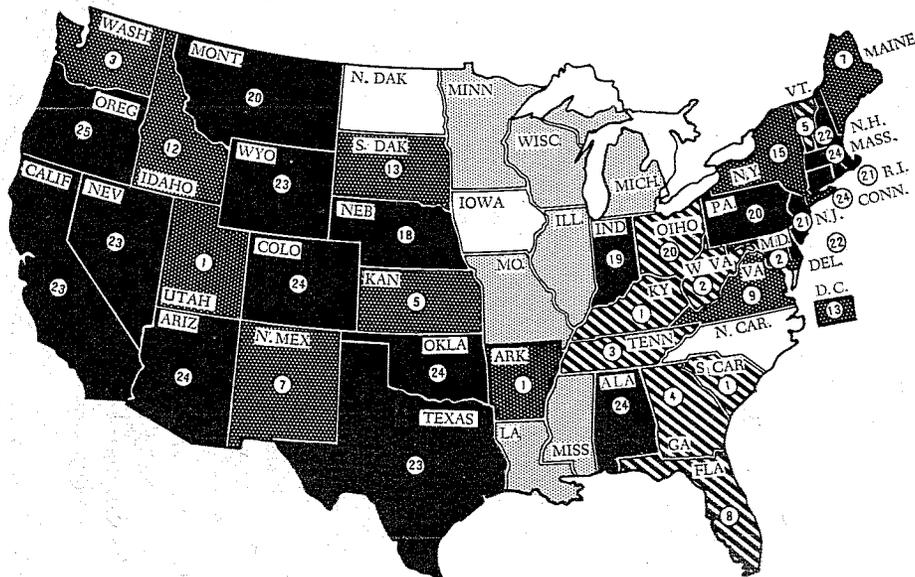
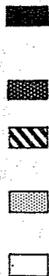
19 States have indicated they are willing to enter into such compacts by sending copies to all other States and so notifying Congress.

12 States have not sent copies to all other States.

8 STATES HAVE COMPACTS IN EFFECT WHICH HAVE ONE OR MORE MAJOR VARIATIONS FROM THE MODEL COMPACT.

7 STATES HAVE AUTHORITY TO MAKE COMPACTS BUT HAVE NOT FILED WITH CONGRESS.

3 HAVE NO STATUTORY AUTHORITY TO COMPACT.



OUTSIDE CONTINENTAL U.S.

Puerto Rico

WITH

Virgin Islands



① Number indicates the number of states with which compacts are in effect.

Puerto Rico has filed with Congress a Model Compact with the Virgin Islands.

The Third Army conducted 2 mass-feeding training courses at Fort Benning, Ga., attended by 120 trainees from 5 States and Puerto Rico. A number of representatives of the Veterans Administration took the course. Other Federal agency personnel were present, either as staff members or students at all regionwide civil defense training conferences and at many State civil defense conferences.

Natural Disasters

Civil defense forces in Alabama, Florida, Georgia, Mississippi, North Carolina, Puerto Rico, and the Virgin Islands are authorized by law to combat natural disasters. The State civil defense director is the disaster coordinator in all States and Possessions in the region except Mississippi (adjutant general), South Carolina (no appointee) and the Canal Zone (Caribbean Command).

Conferences of representatives of each State or regional office of Federal departments and agencies in the State, with representatives of their counterparts and State agencies, and representative local officials, were conducted in Florida and South Carolina to discuss mutual responsibilities in natural disasters. Broad representation of agencies of all levels of Government attested to the interest in preparing to combat natural disasters under Executive Order 10427 and Public Law 875. Systematic disaster relief operations in South Carolina, as required following Hurricane Hazel, and in Florida, following flood conditions, proved the worth of this planning for disaster emergency.

Members of the regional staff conferred with the Governor's staff and State Department officials in Florida, Georgia, Mississippi, North Carolina, and South Carolina with reference to the application of Public Law 875 in connection, respectively, with the Florida floods, Vicksburg, Miss., and Columbus, Ga., tornadoes of 1953, and the Macon, Ga., tornado, and Hurricane Hazel of 1954.

Members of the staff conferred from time to time with liaison officers of Federal agencies having statutory authority to assist in disaster relief. Cooperation and response to requests for assistance were promptly received when requested. Typical examples were the loan of two engineers and a motor vehicle by the Department of Health, Education, and Welfare, to assist in the evaluation of Hurricane Hazel's damage in South Carolina, and the loan of a Bureau of Public Roads engineer to help evaluate flood damage in Florida.

Investigations, reports, and recommendations were made on 1 hurricane (Hazel), 3 tornadoes (Macon, Vicksburg, and Columbus), 1 flood (Florida), and the general drought situation. While natural disaster declarations were not requested, the drought situation in the Carolinas, Georgia, and Alabama, was serious enough to justify approval of requests from the respective State Governors for loans of

FCDA stockpiled engineering supplies. To avert water famines in 13 cities, FCDA pipe, pumps, and a chlorinator were used. The communities served were Greensboro, Graham, Roxboro, Wilson, Gastonia, and Thomasville, in North Carolina; Anderson and Ninety-Six, in South Carolina; Eatonton, Commerce, and Dahlonega, in Georgia; and Auburn and Tuskegee, in Alabama. Rains from Hurricane Hazel relieved the situation in parts of North Carolina, though the drought continued acute in Alabama, Georgia, and South Carolina. The program is still operating with the final reports yet to be made.

Warning and Communications

Twenty-four of the region's 29 target and critical target cities were actively engaged in procurement, installation, and testing public warning devices. Adequate warning coverage was estimated for 22 cities upon completion of approved projects. An additional 13 cities not classified as targets were installing public warning projects.

Six cities installed the bell and lights air raid warning system.

For use in case of normal communications system failure, equipment was installed for transmitting air raid alerts by radio directly from the regional office through the Georgia State Highway Patrol communication system. Agreements were initiated for similar installations in the other States of the region.

Emergency communications planning was centered around the existing city and State police, fire, forestry-conservation, highway maintenance, and special emergency services. Georgia and Mississippi completed and commissioned mobile control units and began establishing highway maintenance-civil defense communications systems similar to that almost completed in Tennessee.

By June 30, 1954, allocations for warning and communications projects accounted for \$651,353 or 83% of the region's total 1954 Federal contributions.

Present at the Regional Communications Conference held at the regional office on October 20, 21, and 22, 1954, were 44 representatives from all the States in the region, the Public Safety Radio Services, the Military Services, and the amateurs. Better planning and coordination of existing facilities was concluded to be the greatest communications need.

Several local and one State plan for RACES (Radio Amateur Civil Emergency Services) were approved. State and city officials realized the need for more means of communication and recognized that only one amateur is needed to organize a system. The evacuation exercise "Operation Scat" held in Mobile, Alabama, in June emphasized the importance of specifying communications needs.

The CONELRAD system was improved by obtaining more lines for control centers. Some problems encountered were the procurement

of safe telephone lines, emergency powerplants, and participation of a few radio stations insisting upon funds for frequency conversion.

Supply

At each of the three 10-mile units of engineering equipment stored at East Point, Georgia, Birmingham, Alabama, and Memphis, Tennessee, all motorized equipment was placed in operational readiness, necessary repairs were made, and arrangements were completed for moving equipment out of storage quickly.

Emergency loans of stockpiled materials were made to 13 cities in drought-stricken areas during September and October. The loans consisted of 179,300 feet of 8-inch lightweight pipe, accessories, pumps, and other equipment. Of this equipment, 2 pumps and 25,000 feet of pipe were secured from an adjoining region.

Plans were completed for emergency operation of the FCDA medical supply warehouse at Carrollton, Georgia. An emergency distribution program was set up. Arrangements were made for emergency transportation, use of local material, and equipment handling. Recruitment of volunteer labor and warehouse operating personnel was initiated.

In addition, critical target cities recruited and provided for supply services in their organizational plans.

Transportation

All principal cities initiated evacuation plans. In Knoxville, Nashville, and Chattanooga, Tennessee, and in Mobile, Alabama, the regional office assisted in developing plans for integrating evacuation routes, traffic control, and available transportation for evacuation purposes.

All State highway networks for the region were completed and network maps were distributed to other States, Third Army, Regional Bureau of Public Roads, and FCDA. In addition, these States completed annexes to accompany the maps.

The regional transportation plan was improved by arranging with rail and trucking industries for automatic release of equipment to the medical warehouse at Carrollton, Georgia, during a national emergency.

To integrate State transportation into national planning, Tennessee began a study of the national transportation program.

The high interest in transportation problems was indicated by the transportation officer's opportunity to address and otherwise participate in 14 State and regional gatherings with an aggregate attendance of almost 1,500 persons.

Engineering and Rescue

Organizational plans for engineering and rescue were complete in all States by the end of the year, and staff selections were confirmed in Georgia, North Carolina, and Tennessee. The Florida, North Carolina, and Tennessee plans included an engineering team for each mobile support battalion. The cities of Chattanooga, Knoxville, and Memphis, Tennessee, completed plans and made staff selections, and additional cities where plans were completed were Tampa and Miami, Florida; Greensboro, North Carolina; Nashville, Tennessee; and Savannah, Georgia.

Applications processed for Federal aid in natural disasters included 32 for floods, 6 for tornadoes, 23 for drought relief, and additional ones for hurricane damage. Drought relief materials were loaned to 13 cities and natural disaster applications for Federal reimbursement of emergency costs exceeded \$1,700,000.

Work on urban analyses was continued in Atlanta, Georgia, and begun in Birmingham, Alabama.

Shelter surveys were held in abeyance pending development of evacuation plans.

Experience in emergency drought relief resulted in training engineering squads in loading, unloading, laying, and operating pipe and pump units. Over a 10-mile distance the time for making up one pipe joint was reduced from about 3 to less than 1 minute. Six truck lines became experienced with stockpile locations and emergency procedures, and are now available for immediate service.

One regional seminar on rescue techniques was held at Nashville, Tennessee. Georgia procured 7 rescue vehicles under the Federal contributions program, and gave 3 public demonstrations of rescue vehicles and equipment.

For Operation Alert the regional engineering services had almost a complete operations staff with liaison and volunteer personnel from 8 Federal agencies.

Health

At a Radiological Defense Conference held on July 8-9, 1954, at the Georgia Institute of Technology, Atlanta, the groundwork was laid for expansion of radiological monitoring and defense training. In attendance were 100 persons, including radiological representatives from each State in the region.

Arrangements were made for locating and training a staff for FCDA-owned improvised hospitals to be assigned to the region.

The regional advisory committee at a meeting held in Atlanta on October 7, 1954, decided that an implementation committee was needed to expand the health services program in each State. This committee

was formed at a meeting held in Atlanta on December 15, 1954. Its membership consists of State directors for health services, one representative from each State medical, hospital, dental, and nurses association, 5 members from U. S. Public Health Service of Region IV, 3 members from the southeastern region of the American National Red Cross, and 3 members from the present advisory committee representing veterinary medicine, pharmacy, and morticians.

Women's Activities

On a statewide basis, the women's organizations adopted the *Home Protection Exercises* as a means of bringing civil defense preparedness to every home and family. An aggregate membership of 500,000 women was represented in this action. For example, 12 statewide organizations were active in Georgia and 14 in North Carolina. In each State all local units of the Federation of Women's Clubs promoted the project, and in Georgia and Tennessee the Home Demonstration Clubs did likewise.

The Georgia Federation of Women's Clubs made civil defense their major work project. In the fifth district almost 100 clubs with 4,500 members reported a specific civil defense project underway.

Women's groups spearheaded the development of civil defense organizations in communities where none existed. They brought together business, industrial, and Government leaders and encouraged better local leadership for civil defense. They promoted attendance at and participation in civil defense courses and meetings. In Alabama and Georgia, women's groups took an active part in urging State financial and legislative support of civil defense.

Progress was made in extending the pattern of the State Women's Advisory Committee to the local level, especially in Alabama, Georgia, and Tennessee. In South Carolina a State and a dozen county coordinators of women's affairs were appointed. An increasingly large number of organizations integrated civil defense into their organizational structure which assured civil defense the attention of a committee chairman.

Women's activities in civil defense were represented at 15 statewide meetings or conferences with an aggregate attendance of about 3,825 persons. A great deal of civil defense publicity, organizational and operational material, and participation resulted from these meetings. One member of the Johnson City, Tennessee, United Daughters of the Confederacy devoted 330 hours teaching home nursing. A campaign was launched in Alabama to make first aid and home nursing a project in every woman's club and a public school course for all students in the ninth grade or above. In Georgia, plans were under consideration for the home demonstration clubs to sponsor mass feeding instruction.

Public Affairs

Much of the preliminary work in selecting personnel for regional emergency operations was completed. The regional plan was prepared and submitted to National Headquarters.

Civil defense experienced marked improvement in public acceptance and participation in the region as a result of "Operation Ivy," the decision and discussions about evacuation, and concrete examples of progress in operational and organizational development. Civil defense objectives and policy were more fully made known to the public by publicizing test exercises and the role of civil defense in combating effects of natural disasters which occurred in the region. Spot news developments were used to stimulate interest, and participation in civil defense. Each State issued periodical newsletters providing civil defense information.

City directors were assisted in developing local scripts and visual materials for radio and television programs now regularly available to many of them.

Regional meetings, fairs, and other activities featured civil defense exhibits. Two of the largest fairs, the Southeastern at Atlanta and the North Carolina State Fair at Raleigh, showed exhibits on rural civil defense. A display of welfare art work was shown at the Regional Conference of the Child Welfare League of America and at a series of statewide assemblies of the Seventh Day Adventist Church.

Training and Education

The interest in civil defense training and education was indicated by the response and cooperation which the States and cities gave the following conferences initiated by the regional office:

Date	Nature of Conference	Attendance
Feb. 25-26, Chattanooga, Tenn.	Sectional Leadership Conference	80
Mar. 30-31, Atlanta, Ga.	State Police Institute	100
Apr. 6-8, Montgomery, Ala.	State Police Institute	110
May 27-29, Birmingham, Ala.	Regional Wardens' Conference	150
July 8-9, Atlanta, Ga.	Regional Radiological Defense Conference.	100
June 23-24, Chapel Hill, N. C.	State Police Institute	95
July 29-30, Nashville, Tenn.	Regional Rescue Institute	120
Sept. 13-14, Raleigh, N. C.	State Wardens' Seminar	54
Sept. 21-24, Fort Benning, Ga.	Two Courses in Emergency Mass Feeding, Regionwide.	111
Nov. 4-5, Atlanta, Ga.	Regional Fire Conference	275
Nov. 15-19, Miami, Fla.	State Staff and Administrative Course.	75

State and local leaders increasingly took the initiative in developing training programs. In Alabama, about 100 persons were trained in emergency mass feeding courses conducted in 5 districts by per-

sons who had completed the Fort Benning course. With Army assistance, emergency mass feeding courses were scheduled by the Tennessee Home Economics Association and civil defense officials of Savannah, Georgia. In Tennessee, a committee of educators from all parts of the State prepared a plan integrating civil defense into the curricula. The State civil defense division and the State Department of Education sponsored the plan, the governor endorsed it, and it was generally well received.

In Miami, Florida, 1,000 persons participated in a dispersal demonstration at the Riverside Elementary and Little River School. Mobile, Alabama, prepared plans for evacuation of school children as part of a scheduled future citywide evacuation.

Educational associations recognized the importance of civil defense. The Florida Education Association at its State convention in Miami, April 7-10, 1954 discussed "The Role of the School in Civil Defense." The Southern Association of Colleges and Secondary Schools published in its May issue of *The Southern Reporter* an article entitled "Schools Must Disperse." At the Association's annual convention in Memphis, Tennessee, the "Blacklight Exhibit" was presented to 500 persons. In addition, civil defense was represented at the National University Extension Association Conference, Gatlinburg, Tennessee, and was the subject of an address at the Alabama Conference of Social Work, Birmingham, April 22-24.

REGION IV—REGIONAL OFFICE, JOLIET, ILL.

States: Illinois, Indiana, Michigan, Wisconsin, Iowa, Minnesota, North Dakota, South Dakota

Twelve of the 70 critical target areas are in this Region. Regional population was estimated at 30,445,000 by the Bureau of the Census as of July 1, 1953.

Summary of Activities and Accomplishments

Regional aid was extended during 1954 in combating flood conditions in Iowa, South Dakota, Chicago, and the northern Illinois area; for the alleviation of water shortages in several southern Illinois communities; and for tornado damage in Michigan.

Critical target area surveys made by civil defense organizations within the region during the year resulted in the production of civil defense maps of the cities of Minneapolis, St. Paul, Milwaukee, Chicago, Peoria, Rock Island, Davenport, and East St. Louis.

The home nursing program was advanced by both the medical office and women's activities. Training courses in fire, police, rescue, warden and other emergency services were established in Illinois,

Indiana, Michigan, Minnesota, and Wisconsin communities under their public safety programs.

A civil defense exhibit attracting several hundred thousand people was staged in Chicago, and warning coverage in the region was improved to the extent that coverage of all regional critical target areas is not less than 70% and in two States (Iowa and Wisconsin) was 100% at the end of 1954. Target area coverage remained low, however, in Iowa, Michigan, and Wisconsin, with none in Indiana, North Dakota, and South Dakota.

RACES (Radio Amateur Civil Emergency Services) went forward in the region with exception of North Dakota and South Dakota, as did progress in city control centers in Chicago, Detroit, and Milwaukee and State centers in Indiana, Michigan, Minnesota, and Wisconsin. Recruitment of volunteers for the regional control center was also effective.

Welfare accomplishments included acceleration of the delegation of responsibilities to State and local levels; the establishment of mass-feeding schools in cooperation with the Army; and the development of working agreements among States and localities with the American National Red Cross.

In the field of transportation, Region IV progressed in plans on movements from and to FCDA medical warehouses in its area, and with State transportation plans in Michigan and Wisconsin.

Practice exercises were held in November and December 1954 to test warning and control center operations; urban analyses were undertaken for critical target cities in Michigan and Minnesota; and evacuation study and planning undertaken for cities in Wisconsin and Michigan.

The regional supply office expedited loans of engineering and other equipment to areas suffering water shortages or floods in the area, and instituted plans for three additional medical warehouses in the region.

Test Exercises

Participating organizations in the test exercise, Operation Alert, held June 14, 1954, included: FCDA, Region V; Fifth Army Headquarters; Ninth Naval District; Tenth Air Force; Department of Labor (Div. of Employment Security); American Red Cross (volunteers); the civil defense organizations of Illinois, Indiana, Iowa, Michigan, Minnesota, North Dakota, South Dakota, and Wisconsin; Corps of Engineers, U. S. Army, Ohio River Division; The Department of Health, Education, and Welfare; Illinois Public Aid Commission; General Services Administration; Regional Defense Mobilization Committee; and Underwriters Laboratories.

A practice exercise in control center operation was held in the regional control center, Joliet, Illinois, on November 18, 1954, to train volunteer control center personnel and improve the quality of the control center operation.

A further regional test exercise, "Operation Smoothout," was held December 8, 1954, to correct weaknesses discovered during the conduct of Operation Alert in June. All State civil defense offices participated, as well as many city and county organizations. Mobile support operations were stressed in Minnesota; evacuation in Wisconsin; and problems caused by near misses falling in rural areas in Indiana.

Urban Analysis

Urban analysis was approved by all three critical target cities in Michigan (Detroit, Flint, and Grand Rapids), and preliminary work on financing and staffing was begun. The State of Michigan civil defense office agreed to assist these cities in financing the cost of an urban analysis. Grand Rapids plans to enlist local industry to furnish personnel to complete its analysis.

The State Director of Minnesota planned a joint meeting of the FCDA regional office, Michigan, and Minneapolis, St. Paul, and Duluth to consider urban analysis as an undertaking by the three cities.

Evacuation

A study was made by the Wilbur E. Smith Associates and the Traffic Institute of Northwestern University on the evacuation of Milwaukee, particularly techniques of movement of large groups of people, methods of expediting evacuation, and traffic control and supervision.

Evacuation planning was also started in Grand Rapids with the operations officer participating in preliminary planning. Main exit routes have been mapped out, and work has been started on the problem of reception and care of evacuees in the rural areas.

Operational Planning

State civil defense offices were visited to make arrangements for the completion of both urban analyses and operation plans in critical target areas. Detailed evacuation plans are to be included in operational planning. The regional operation plan was also being revised and brought up to date.

Warning and Communications

Attack warning systems in the target areas and critical target areas of the States in Region IV reached estimated percentages of completion in 1954 as follows:

	Estimated percentage of completion	
	Critical target area	Target area
Illinois-----	90 %-----	93.3 %
Indiana-----	85 %-----	Zero
Iowa-----	100 %-----	60 %
Michigan-----	70.6 %-----	28.9 %
Minnesota-----	86 %-----	100 %
North Dakota-----	(No CTA)---	Zero
South Dakota-----	(No CTA)---	Zero
Wisconsin-----	100 %-----	35 %

RACES State Communications Plans were approved in Illinois, Michigan, Minnesota, and Wisconsin, with several city and county plans in these States and Indiana and Iowa either approved or pending.

Following are examples of progress in aiding, through the matching funds program, in the establishment, installation, and operation of communications equipment in civil defense control centers in States and cities in Region IV.

Chicago has one main control center and is constructing two alternate control centers. It is also equipping two specially constructed buses which will be used as mobile control centers.

Michigan is altering a building in Lansing to provide suitable control center space. Detroit is completing a main control center incorporating a number of protective features.

Wisconsin is building a State control center in an outlying section of Madison. Milwaukee has constructed a main control center and an alternate control center in specially constructed basements.

Minnesota has a State control center in operation and is equipping an alternate control center in a less vulnerable area.

Indiana uses two State highway police stations as State control centers.

Recruitment: During the latter part of 1954, 33 volunteers were recruited for various duties in the regional communications control center such as the operation of TWX teletypewriters; logging of messages; message handling; monitoring of messages; and message routing.

In addition, a number of local radio amateurs not already committed to local civil defense work were recruited on a voluntary basis to handle backup communications during civil defense exercises or during a civil defense emergency.

Supply

Engineering equipment stockpiled in the region was used during the past year to combat severe drought conditions in southern Illinois. Many communities suffered serious water shortages, community health was endangered, and small industries threatened.

In October 1954, during the heavy floods in Chicago, the power plants of the Union Station were completely inundated and the huge station was left without power or lights. Region IV promptly loaned four 40 kw generators from its Hammond, Indiana, stockpile, and these were of great assistance in restoring the station to normal operation in a relatively short time.

Engineering equipment was also loaned for demonstration and instruction purposes for a training exercise held by the Detroit office of civil defense.

Both FCDA medical warehouses in the region, Bremen, Indiana, and Marshall, Michigan, were stocked to approximately 100 percent capacity. In each of these small communities plans have been made to operate them with volunteer labor if the need should arise. A training program for each has been written, and volunteer labor has been recruited. In each community, local industry has been most cooperative and has agreed to furnish whatever material-handling equipment and skilled operators may be available.

Current planning includes the activation of three more medical warehouses during this fiscal year and a continuing survey is being made to secure suitable warehousing facilities.

Transportation

In the medical warehouse in Bremen, Indiana, transportation plans were completed with the exception of three minor details. In Marshall, Michigan, transportation planning was begun along lines similar to Bremen.

Michigan.—A reorganization of the State transportation staff was completed and decided progress is being made.

Illinois.—The State aviation transportation for civil defense began review of its operation plans and organization to keep pace with current national changes.

REPORT OF SUBCOMMITTEE ON CIVIL DEFENSE TRANSPORTATION— TSC-81

All States in Region IV were provided with ODM TSC-81 and were in various stages of progress to meet conditions imposed therein at the end of the year. Appointments were also made to the Regional Industry Advisory Committee for all divisions of transportation, and the committee began functioning.

In addition, appointments to the Regional Interagency Advisory Committee were completed, and this committee began considering matters of priority for regional transportation; the selection, clearance, and training of a regional staff for transportation operation was begun; and all States were requested to establish and staff a State civil defense traffic center as well as necessary local civil defense traffic centers within the State.

DEPARTMENT OF COMMERCE, BUREAU OF PUBLIC ROADS, ADVISORY
BULLETIN 167

One of the first steps in the development of a national network of civil defense emergency routes is the submission by each State of its highway route system to the appropriate office of the Bureau of Public Roads. All States in Region IV were so notified and three have reported maps submitted to the Bureau.

Public Safety

Numerous visits to various State and city headquarters were made by this office during 1954, as well as 18 speeches on civil defense delivered before fire, police, and civic organizations in Illinois, Indiana, Michigan, and Wisconsin communities.

A Regional Warden Instructors Training Course was arranged and conducted in Joliet, and FCDA exhibits were installed and manned by the office at the National Plant Protection Show and a meeting of the National Venetian Blind Association in Chicago, a meeting of the Minnesota State Dental Association in St. Paul, and the Farm Progress Show in Camden, Indiana.

Conventions and meetings attended included those of the Federal Safety Council, the National Safety Council, the Veterans of Foreign Wars, the Minnesota State Civil Defense Fire Conference, and the Regional Civil Defense Conference.

Extensive contacts were made with other Federal agencies at the regional level to discuss their cooperation with FCDA and assist them in planning internal civil defense.

Civil defense training courses in fire, police, rescue, warden, and industrial self-protection were established with the cooperation of the regional training officer at East St. Louis, Park Forest, Rock Island, and Springfield, Illinois; Marion, Indiana; Bay City, Flint, and Grand Rapids, Michigan; Minneapolis, Minnesota; and Madison and Manitowoc, Wisconsin.

A total of 32 rescue matching funds applications submitted during the year were processed following conferences with State and city civil defense officials on matching funds procedures and problems.

The regional safety office worked with seven Federal agencies to obtain their cooperation with FCDA and to help them plan internal civil defense. The agencies are: Small Business Administration, U. S. Coast Guard, Treasury Department Bureau of Public Debt, Interior Department Bureau of Mines, Securities Exchange Commission, Reconstruction Finance Corporation, and Federal Reserve Bank.

Engineering

In the northwest Iowa floods final inspections were made of approved projects for Sioux City, Orange City, Dickinson County, Osceola County, and O'Brien County.

In the Michigan tornado disaster final inspections were made of approved projects for Port Huron, Genesee County, and Beecher School District.

Water shortages occurred in some areas of southern Illinois which do not have available underground water supplies and depend on surface storage in impounding reservoirs. Owing to scantier precipitation in the past few years, storage has been depleted and water shortages have occurred. Beginning in March and continuing into the summer, requests were received from 18 communities either for the loan of engineering stockpiled material and equipment or concerning procedure to obtain the loans. Loan requests were supported by reports of the State Sanitary Engineering Division and requests of Governor Stratton.

Investigations were made at 10 locations, and loans of material and/or equipment were approved for 6 locations. The city of Sparta construction was done by contract, but the other major construction projects were done locally either partially or wholly through volunteered donations. The regional engineer supervised the original installation at Olney, Illinois, with representatives from other affected communities in attendance. Inspections were made of the installations, and they were found functioning satisfactorily with one exception which required replacements in pump unit assemblies.

The loans were made for 6 months' duration. However, owing to continuing drought, 3 municipalities have requested and been granted extensions of 6 months with the proviso that the pumps and pipelines be properly protected during the winter period.

In June torrential rains inundated the middle third and part of the northwest section of Iowa. Protective work done on the Floyd River by the Corps of Engineers, U. S. Army, since the 1953 disaster saved that section from another disaster in 1954.

The critical section this year was the Des Moines area, but major disaster here was averted by levee work done since the 1948 flood and emergency protective work done as the flooding of the Des Moines River progressed.

Damages to crops and agricultural land were very large, but damages to essential public facilities were not considerable because of protective work.

Damage surveys were made in or reported from 40 counties. Assistance in the preparation of applications has been given the counties and municipalities eligible for Federal aid, applications have been reviewed, and these have either been approved by or are pending before the Iowa flood disaster committee and Governor Beardsley.

A June flood in South Dakota affected Union and Clay counties in the southeast part of the State across the Sioux River from Sioux City. Union county requested assistance in repairing damage to highways and about 50 bridge structures. Damage survey following the request was made; application approved following review; final inspection completed; and request for reimbursement is pending.

The flood-affected counties in northern Indiana were declared a major disaster area by President Eisenhower on October 26, 1954. No allocation of funds has been made pending completion of submission of applications for Federal assistance on eligible projects.

A member of the staff of Region IV spent 4 weeks in Rhode Island in September, and 3 weeks in Connecticut in October, following Carol and Edna hurricanes, assisting the task forces in Region I on disaster activities under Public Law 875.

Inspection and inventory of the engineering stockpiles in Hammond and Indianapolis, Indiana; Minneapolis, Milwaukee, and Detroit were made in company with the regional supply officer.

Industrial workers concentration surveys were made in the following critical target areas: Minneapolis-St. Paul, Milwaukee, Chicago, Peoria, Rock Island-Davenport, and East St. Louis. In most instances maps were prepared by the regional office from material submitted by the State or city or information secured on field trips. In the case of east St. Louis population lists were sent to the Missouri civil defense agency at the request of Region VI for inclusion in the St. Louis survey. In Michigan the State civil defense office plans to prepare rough drafts of maps for the three critical target areas as soon as the workload permits.

Federal Assistance in Natural Disasters

IOWA

June 1954 Floods.—Floods on the Cedar, Iowa, Des Moines, Raccoon, Maple, and Little Sioux Rivers affected 40 counties, with extensive damage to agricultural lands and crops. Federal assistance under Public Law 875, 81st Congress, was given or is pending for 6 cities and 3 counties for protective work, debris clearance, sanitation measures, repairs, or restoration.

SOUTH DAKOTA

June 1954 Floods.—Floods on the Vermilion River, Brule Creek, and tributaries affected two counties in the southeastern part of the State.

A Federal allocation of \$34,300 was granted to Union county for repairs and replacements of highways and highway structures having a total estimated cost of \$104,300.

ILLINOIS

October 1954 Chicago Flood.—A loan of one-half mile of pipe and fittings was also made to Lovington, Illinois. The flood caused the Chicago River to reverse itself and overflow its banks, flooding basements along the water front, including the union railroad station.

Four 40 kw generator sets were loaned the Chicago Union Station Company from the Hammond engineering stockpile to provide emergency power and lighting.

Medical

A medical officer was assigned to Region IV four months during the year. Visits were made to all States and critical target areas for the primary purpose of orientation with State programs. The regional office, in cooperation with the regional office of the Department of Health, Education, and Welfare, is assisting in a study of sanitary facilities required for evacuees in the event of an attack. This is a followup of a specialized phase of the Milwaukee evacuation study. A plan was also developed for the activation of home nursing training jointly with the midwestern area of the American National Red Cross and with the States concerning implementation of the plan.

A number of regional and national meetings concerned with natural and war-caused disaster medical problems were attended. Outstanding among these activities were conferences with the Red Cross; public health service agreements on medical problems in natural disasters; and the annual meeting of the American Hospital Association, where the 200-bed improvised hospital was on exhibit.

An operational staff for the regional office medical section was appointed by the regional office of the Department of Health, Education, and Welfare and participated in 3 training sessions and 2 exercises during the year.

The delegation of civil defense medical and special weapons defense service to State and local public health service was accelerated during the year. All the States in Region IV have adopted this pattern, and the delegation of responsibility has been concluded by written agreements signed by State civil defense directors, public health department directors, and governors in some of the States.

General interest in the improvised hospital program also has been accelerated. A survey of the number of these units which might be stored in each State and properly manned indicates that 200 can be used.

Interest in increasing home nursing training in local civil defense has resulted from the cooperative efforts of the regional office, State civil defense, and the American National Red Cross. Cooperative programs are underway in Wisconsin, Illinois, and Michigan, and other States have the plan under consideration.

Welfare

A total of 73 field visits to States, local communities, and cooperating federal agencies were made by regional welfare during the year, and three regional welfare training conferences were conducted. One conference concerned the organization and operation of emergency welfare services. In addition, two mass feeding schools were conducted jointly by regional welfare and the U. S. Army.

Other activities of regional welfare included participation in 23 meetings, and assistance in planning 12 training schools and conferences conducted by States or local communities, 3 of which were out of the region. An operational staff for the regional office was appointed from the regional office Department of Health, Education, and Welfare and the American National Red Cross. The staff attended 4 training sessions and 2 civil defense exercises during the year.

The delegation of civil defense responsibility for welfare services to departments of public welfare at State and local levels has been accelerated during the year. These actions have been formalized in some States by written delegations signed by the State Department director of public welfare, the State director of civil defense, and the governor. All States have adopted this pattern on the State level and 4 of the 8 States have appointed full-time staffs to coordinate planning, while 2 other States are in the process of securing full-time staffs.

A number of critical target areas also have employed full-time staffs to coordinate welfare planning and, while the pattern of the delegation of organizational responsibility on the local level is not as complete as on the State level, the trend is toward giving this responsibility to public welfare on the local level. Typical of this trend is the State of Minnesota, where local public welfare supervisors have been appointed to coordinate civil defense welfare planning in all but three counties of the State.

The States and local communities have given a great deal of attention to working relationships of the American National Red Cross chapters during the past year which has resulted in the development of State and local working agreements between civil defense and the

Red Cross, and the development of an excellent cooperative working relationship.

As a direct result of the two FCDA Regional-U. S. Army Mass-Feeding Schools conducted in the region, in which 167 instructors were enrolled, 21 State and local schools have been organized in which 3,461 instructors were trained. A number of public demonstrations of mass feeding techniques were held, in one of which 12,000 people were fed at 4 sites in the Chicago and Cook County area during a 4-hour period. It is estimated that 30,000 people have been served food from mass feeding facilities constructed by civil defense feeding personnel in Region IV during the past year.

The use of liquefied petroleum gas as an alternate fuel for natural gas has been demonstrated in the new schools, and active cooperation between civil defense feeding personnel and the Liquefied Petroleum Gas Association, Inc. on the local level became an accomplished fact during the year.

Under the general coordination of civil defense welfare services a large number of professional feeding personnel have been organized into the mass feeding program. These professionals have included civil defense feeding in their national and regional organizational conferences.

Nine State and local conferences were held in the region, patterned after a conference on the organization and operation of welfare services.

Training and Education

During the summer months, a joint exhibit by Chicago, Cook County, Illinois, and FCDA was maintained at Riverview Park in a new building erected to house the exhibit. Each Sunday, a special group was invited to the park to attend the civil defense program. Most programs were partially broadcast, and some were recorded in part for use on the "Voice of America."

The average Sunday attendance was approximately 4,000. Although no official record was maintained of those viewing the exhibit, it is estimated that the total numbered several hundred thousand and that on some days more than 10,000 persons went through the exhibit hall.

School programs through all departments of education were pursued in a number of the States. Michigan, Illinois, Wisconsin, Indiana, and Iowa were especially active in expanding school activities and the integration of civil defense materials in the school curriculum. Illinois, Michigan, Minnesota, and Wisconsin also have completed preliminary planning for establishing State staff colleges for testing administrative and operational courses in civil defense for State and

local civil defense leaders. In each instance assistance will be given by FCDA in the establishment of the schools and the initial conduct of courses.

Women's Activities

Principal objectives in 1954 were to stimulate civil defense action through women's organizations; assist organizations in planning civil defense programs; organize women's committees for civil defense offices to be followed later with appointment of State directors of women's activities, volunteer or paid; arrange speaking engagements and a regional women's conference; and work with States in planning implementation of the home nursing program.

ILLINOIS

The first women's conference in the State was held in February with 93 women, representing all of the statewide and some of the Chicago clubs. The program featured a panel discussion of *Home Protection Exercises* in which the State presidents of seven organizations participated. At the close of the year, a women's advisory committee was being set up in the State. In Park Forest women's groups were active in organizing a warden corps.

IOWA

In late 1954 a women's committee was being organized.

WISCONSIN

A women's advisory committee of 14 members met for the second time in April. In nine counties a home nursing program was set up in cooperation with the Red Cross.

NORTH DAKOTA

Women made up more than 75% of the 15,876 volunteers for the Ground Observer Corps.

INDIANA

The organization in East Gary, Indiana was made up entirely of women. Seventy percent of women's organizations in the State participated actively in civil defense. Women were appointed to head registration, in-service training, warden, nutrition, nursing, and emergency care programs.

MICHIGAN

A *Home Protection Exercises* conference was held at East Lansing on September 29. Cooperating organizations began promoting the exercises in their communities following a proclamation by the Governor in November.

MINNESOTA

Under the general coordination of the welfare services, women played an important part in county civil defense organizations. In St. Paul two projects, "Operation Doorbell" and "Operation Survival," were undertaken. Both were sponsored by civic associations, had trained block workers calling on each home, were followed by test alerts, and utilized a model lean-to shelter display.

Women from all eight States in the region attended a special course for the American Legion Auxiliary at the FCDA Staff College, Olney, Maryland from January 31 to February 5.

REGION V—REGIONAL OFFICE, DENTON, TEX.

States: Texas, New Mexico, Oklahoma, Arkansas, Louisiana

The population of the region is 16,100,000, based on July 1, 1953 Bureau of the Census estimates. Three of the region's critical target areas are in Texas; Houston, Dallas, and Ft. Worth; the fourth is New Orleans, La.

A permanent regional office headquarters was opened in Denton, Texas, on April 1, 1954, following movement of personnel and equipment from Dallas. The move was in keeping with the national policy of moving regional offices from critical target areas. The office's new quarters are in Brackenridge Hall, a former dormitory on the campus of Texas State College for Women.

Outstanding among developments of the year was the growth in planning for the evacuation of cities. Among critical target cities, probably the most ambitious test was that held in Houston in June, when several hundred downtown blocks were completely evacuated of vehicles within approximately 8 minutes.

The first extensive walkout was Shreveport, Louisiana's "Operation Hotfoot," on June 11. Here, 500 persons took part in an exercise to determine whether walking evacuees could get out of the Shreveport business district. It was proved not only that most could do so, but that 350 of the 500, including the Mayor and the State civil defense director, walked a distance of 4.3 miles in one hour.

On September 26, the first interstate evacuation was held when the Texarkana civil defense organization evacuated two pre-designated areas on the Arkansas and the Texas sides of the city.

The first evacuation of school children was included in a test in Port Neches, Texas, in which 3 public schools, 1 parochial school, and 4 plant buildings participated on October 5, 1954. Such tests occupy an increasingly important place in the region's civil defense program.

Natural Disasters

As in 1953, Region V was beset in 1954 by numerous natural disasters, including tornadoes, water shortages, explosions, and floods. Two of these were declared major disasters under terms of Public Law 875. In July 1954, the greatest Texas flood on record involved hundreds of miles along the Rio Grande and Pecos rivers. Profiting from lessons learned in the Waco tornado and in other disasters of 1953, the regional office immediately mobilized a task force, including many Waco "veterans," and moved to the area. After meetings with local officials and the State task force, project applications were processed which totalled \$1,517,272.71. Of these, a total of \$664,230.99 has been found eligible to date, and other pending applications will equal or exceed the \$850,000 presently allocated by the President.

A second major disaster occurred in New Mexico in October, when floods struck the Rio Hondo and Pecos valleys from Roswell to Carlsbad. Here an initial allocation of \$50,000 was made to permit speedy repair of publicly owned facilities, and further requests were being processed.

Operation Alert

In June all the States participated in the national test exercise, Operation Alert. The regional office force of 19 was supplemented by its auxiliaries and counterparts from various Federal agencies to a total of 116 workers in order to make possible 24-hour operation. A conspicuous feature of the operation was the support given by those Federal agencies, which sent key personnel as well as their most skilled clerical workers. The regional operations control room was fully organized during the test period. Reports from the region, States, and cities rated the test as thoroughly successful in improving organizational details, revealing deficiencies, and stimulating interest.

"Operation Ready"

A surprise exercise, "Operation Ready," was held during the week of December 6-10. To provide a true and realistic test of operational readiness and to highlight the importance of a system of alerting key civil defense personnel, not only within the target areas but also in the outlying support areas surrounding the target cities, the exact time and date of the exercise was determined by chance, by utilizing a number of sealed envelopes containing possible dates and times. These envelopes were then opened by the liaison officer at the headquarters of the 33rd Air Defense Command who was the only person in the region to know the time of the alert. The warning was implemented at the indicated time over the facilities of the CADW network, and was disseminated over the local fan-out system by the utilization of the police

and sheriff radio network. In addition, arrangements were made to have all commercial radio stations broadcast spot news announcements which took the place of CONELRAD to give the information to the general public. A series of incidents was prepared and furnished to the civil defense directors of target areas with instructions to open at a specified time after the LEMON JUICE alert and to proceed with emergency action as indicated by the type of incident revealed.

This exercise proved exceptionally successful in demonstrating certain lacks in communications to key civil defense personnel and to strategic support areas. Reaction and publicity of this test proved extensive and beneficial in all States in the region.

Relationships With Federal Agencies

A significant development of the past year was the rapid growth of a closer relationship with other Federal agencies. At the request of the regional office, all key Federal agencies within the Dallas-Fort Worth area designated a civil defense liaison officer to meet with the regional staff for orientation and briefing sessions and to lend aid and guidance in interagency planning. As a result of the increased tempo of the interagency program, the region recommended, and secured approval for, the employment of a full-time liaison officer to be added to the staff. The liaison officer was secured in early November, and this will result in a more stable relationship with the Federal agencies and an increased contribution by the agency personnel to the regional office activities and community civil defense.

Warning and Communications

The attack warning program during fiscal year 1954 was improved over the preceding year to the extent that the following additional target cities now have installed, or have signified their intentions of installing through the medium of approved project applications, siren systems recommended by FCDA: Oklahoma City, Oklahoma; Waco, San Antonio, San Angelo, Amarillo, and Beaumont-Port Arthur, Texas.

The communications program during fiscal year 1954 was improved to the extent that in all States except New Mexico, systems were expanded for civil defense purposes by procurement of FCDA certified radio equipment under the Matching Funds Program. As a result systems were strengthened locally and it was possible to realize a further and desirable integration of various systems into State and political subdivision cooperational plans. The following RACES plans were submitted and approved by FCC during fiscal year 1954: State plans, Louisiana and Oklahoma; city plans, Houston, Texas, and Tulsa, Oklahoma.

Supply

Texas, Louisiana, and Arkansas have designated State supply officers and Oklahoma has given assurance that one will be designated in the near future.

All States except New Mexico have included a place for a supply annex in their overall civil defense plans. Louisiana is now preparing a supply plan and Oklahoma has requested assistance in writing a plan.

All four critical target cities in the region have appointed supply officers and indicate that they will have a supply plan soon.

Steps were taken to set up a regional supply advisory committee, with a deputy director of General Services Administration as chairman.

An emergency operating plan for the medical warehouse at Lake Charles, Louisiana, was prepared, and about 100 volunteers were enrolled and trained, and have participated in 2 test exercises.

Transportation

The regional advisory committee for transportation was completed with representatives from industry, truck and bus lines, commercial airlines, the Association of American Railroads, and the Civil Aeronautics Administration. In March 1954 a transportation meeting was held with approximately 45 leading transportation men in attendance. Presented for consideration and discussion were the problems of the FCDA transportation organization and the functions of the regional and State transportation committees.

State transportation advisory committees were formed in Oklahoma, Louisiana, and Texas. Arkansas partially completed its committee, but New Mexico did not take any action.

Evacuation plans were developed in Dallas and Houston, Texas, and those for El Paso and San Antonio, Texas, were reviewed. In addition, New Orleans formulated a plan for evacuation by watercraft, and representatives of Texas undertook the development of a similar plan in applicable cities.

In Arkansas, Louisiana, Oklahoma, and Texas, emergency highway systems were developed.

With help of the Regional Civil Aeronautics Administration and the 33rd-34th Air Divisions, preliminary SCAT (Security Control of Air Traffic) plans were initiated, in the States of Texas and Louisiana.

Closer relationships with the Civil Air Patrol were developed through a regional meeting of its component groups and squadrons of the Texas Wing.

In addition, civil defense was represented at 14 meetings where transportation problems were under consideration throughout the region.

Public Safety

Rescue service work projects in 1954 included: continued discussions with the States looking to the appointment in each of a State chief of rescue; assisted State chiefs of rescue in determining the number of rescue teams needed in each State, and in writing annexes to State and critical target area plans; counseled with and assisted the State chiefs of rescue and critical target area rescue chiefs in planning training and training facilities; and held rescue conferences, such as those in Baton Rouge, Louisiana, and Houston, Texas.

Warden service work projects consisted of the following: continued to urge the States to appoint State warden service advisers; assisted the States in determining warden service requirements, both as to personnel and equipment; urged the appointment of a nucleus of chief wardens, zone wardens, and district wardens in critical target areas; urged the attendance of civil defense personnel at National Civil Defense Training Schools for Warden Services, which is a continuing project.

The fire services work projects were: appointment by the States and critical target areas of full-time fire coordinators; establishment of State fire services advisory committees; States' and critical target areas' inventory of manpower and material requirements for the fire services.

Police services advocated the appointment of a State coordinator of police and was successful in Arkansas, Louisiana, Oklahoma, and Texas.

A manual for use of regional personnel, in time of disaster, was 90% completed.

A 2-day industry program was held in Forth Worth in July, with 184 persons attending. Later in the month approximately 55 attended a similar meeting in Baton Rouge. In the public safety field Region V continued to aid the States and critical target areas in preparing and implementing organizational and operational plans or annexes for the various services.

Engineering

In Texas several cities are conducting analyses of locations and buildings for possible relocation of control centers beyond hazardous areas.

Louisiana began an inventory of engineering equipment in the State, both public and private.

Interest in urban analysis was apparent throughout the region, analyses are being conducted in several locations in Texas, and basic data are being prepared for Oklahoma and Louisiana.

Problems of evacuation, both for target and support areas were discussed at a workshop in Louisiana and plans made for the develop-

ment of evacuation operations in the coming year. Coordination of public utilities capabilities in target and support areas was also discussed, with emphasis on combating sabotage. Plans for similar meetings in other strategic areas are underway.

Following the Texas and New Mexico floods of midsummer, extensive surveys were made and estimates of cost and damage reports were prepared.

Health

A plan for training dentists as auxiliary civil defense medical personnel was presented to State civil defense offices and State dental societies in New Mexico, Oklahoma, Arkansas, and Louisiana. The blood program was presented to State health officers in Texas, Oklahoma, and New Mexico, and will be developed in these States.

The regional medical officer prepared an estimate of hospital beds which could be made available to the four critical target areas in time of disaster or enemy attack. The estimate included facilities across State and regional boundaries.

Women's Activities

Training for home preparedness was a major theme of the women's program for 1954.

The Texas Congress of Parents and Teachers made civil defense a major project for the year ending in the summer of 1954, published a civil defense manual, and held State, district, and city workshops on the subject. To obtain instructors, city PTA Councils financed trips of their members to the Oklahoma Civil Defense School.

The Agricultural Extension Service stressed home protection techniques. At a workshop held in the fall at Prairie View A&M College for Negroes, county and district agents demonstrated techniques from the booklet *What You Should Know About Emergency Sanitation in the Home*, including water purification, outdoor cooking, disposal of waste and garbage. Numerous meetings have employed this theme.

In Louisiana a 2-day workshop near Alexandria was the first to present an entire program composed of practical demonstrations by women's teams, including home fire fighting, home sanitation, emergency lighting, and home nursing.

Methods of television presentation of home nursing and other programs were worked out in Fort Worth and Dallas and are being prepared for national use by the Red Cross.

Women's organizations in the various States continued to include civil defense in their programs, and their members enrolled for volunteer work. A meeting in Texas in October revealed that groups with a total of over a million members were participating.

In general, women's organizations, having passed the orientation stage, sought specific projects during 1954. In Louisiana, a mimeographed "organizational participation" program, listing specific courses of study and text-training aids, was set up. A list of suitable projects for women's groups, with texts listed, was mimeographed and distributed by the regional office in answer to a strong demand for such a publication.

Public Affairs

Probably the most significant development in the information program of civil defense during 1954 was the flow of information concerning the effects of new weapons.

Proof of the value of keeping the public informed was the great increase in requests for publications, exhibit material, and films received from areas far removed from critical target areas or target areas. Through cooperation with the national office, free exhibit space was utilized at national meetings and conventions held in the region during the year. Space was provided and exhibits placed at two international conventions. There were more requests for posters, exhibit material, and publications for use at State meetings than in any year previous.

The film, "Operation Ivy" provided the impetus for a greater number of television station requests for civil defense films. The Rio Grande river disaster brought cameramen and radio representatives in from the southwest. Civil defense headquarters and the facilities at the headquarters were made available to all representatives.

Newspapers gave more space both newswise and editorially to civil defense. A number of newspapers assigned a reporter to civil defense activities and in many cases the reporter also covered the activities of the military.

Prior to Operation Alert representatives from other Federal agencies and the Denton Record Chronicle were selected to act as counterparts during the exercise. Now assigned to the information office are two Federal agency people and a wire service representative to assist in an emergency.

The State of Arkansas today has a full slate of advisory members on the State civil defense information board. These members have been recruited from newspaper, radio, television, and public relations fields. Two States have one representative of each media in an advisory capacity.

Because of the number of natural disasters, particularly tornadoes, the State of Oklahoma printed and distributed a tornado warning pamphlet. The publication gave this office an opportunity of suggesting ways of disseminating the information. A pilot outlet was

devised and television was used as the media to release the information. All types of civil defense publications are now being written in this area. Many of the publications are based on actual experience gained in civil defense and disaster work in the region.

Two natural disasters during the year gave opportunity to further develop the Disaster Information Plan for disseminating disaster information. Eliminating flaws from the plan used in the Waco disaster, it was possible for the first time to brief all news media and, as a result, every story filed from the Rio Grande flood disaster area carried correct information in every instance. This planning also enabled the service further to solidify relations with local, State, and national press, radio, television, and photographic bureau personnel.

Training and Education

In each of the region's five States civil defense training was stimulated in the public school systems. The training included evacuation drills in some cases and protection of the children and other school personnel in shelter areas. Four of the States have developed plans for the integration of the civil defense concept in the curriculum as a "way of life". The plans in each case have resulted in the publication of brochures.

The region has been well represented in the various courses conducted at the Staff College at Olney, Maryland. The experience gained there has been put to good use as various training programs in the States and cities have been developed by the graduates.

The Oklahoma civil defense agency worked extensively with the PTA in the State. This has done much to create a strong civil defense attitude in Oklahoma. Eleven 2-day civil defense seminars were held in the colleges and universities of the State. These seminars culminated in a 2-week graduate credit course in civil defense at the summer session of Oklahoma A & M College.

The Oklahoma Civil Defense Training School at Stillwater conducted courses each month. These developed light rescue techniques and presented basic civil defense concepts.

Louisiana conducted a Civil Defense Staff College attended primarily by city mayors and directors. The civil defense districts of the State established training programs designed to meet the varying needs of each district. Of particular interest were the seminars held in Monroe. Here a series of meetings were held to train the personnel of the cities and parishes of the district by services. As a result the various services developed preliminary operational plans and are instructing personnel to carry them out.

Interest in civil defense training in the cities has increased greatly. Each of the four critical target cities is carrying on a comprehensive

instruction program. Exercises and tests indicate the effectiveness of the training.

Texas and Oklahoma sponsored well attended emergency mass feeding courses in cooperation with the U. S. Army. As a result of these courses there have been similar courses taught by some of the graduates of the Army-State courses. This training ties in with the policy of evacuation.

Texas has completed the construction of rescue street at Texas A. & M. College and expects to offer complete training in rescue operations very soon.

Generally, training and education in civil defense has progressed materially during the past year.

REGION VI—REGIONAL OFFICE, DENVER, COLO.

States: Colorado, Wyoming, Nebraska, Kansas, Missouri.

Critical target areas are Denver, Kansas City, St. Louis, and Wichita.

Population of the region is 9,168,000, according to July 1, 1953 Bureau of the Census estimates.

A steadily increasing degree of public awareness of civil defense stood out plainly in Region VI in 1954. Several factors pointed to this: (1) An increase in requests to national, regional, State, and city offices for information on civil defense, for publications and leaflets, for speakers, and for films; (2) a greater desire to participate in exercises and tests; (3) more inquiries on procedure for enrollment and training.

The biggest stumbling blocks in the development of the program have been appropriations for civil defense, which are meager in almost every State and major city; understaffing on State and city levels; lack of established and continuing training facilities. Despite these handicaps on every level there was a genuine sincerity in attempts to make the most of the tools at hand. There was no lack of volunteers when organizational and training facilities existed for handling them.

The willingness of the personnel of all Federal agencies to take part in civil defense contributed to progress in 1954. When more than 200 Federal personnel were required for operation of the Region VI control center in Operation Alert, the number of volunteers instantly exceeded the need. As a result of a Region VI suggestion, Federal agencies voluntarily established their own control centers for liaison and cooperation with FCDA in Operation Alert. They also provided data on facilities and resources which could be available in natural disaster or war emergency.

There has been continued progress in establishment of a hard core of civil defense through use of existing organizations on Federal, State, and local levels. Increasing attention has been paid in the year to alignment of supporting resources, personnel, and services behind the critical target areas and target area cities. Civil defense leaders encouraged mobilization of support forces for larger cities and at the same time urged defense in rural sections against possible sabotage of facilities, against biological and chemical warfare. The exercises and tests bore out this development.

Estimate of State of Readiness by States and Cities

While every State and critical target area civil defense organization is still far from reaching a state of full readiness, gains in that direction could be seen.

This was apparent in a growing knowledge of resource compilations in State and critical target area organizations. It was evident in the improved know-how and facility of operations in exercises and tests. More time to advance in planning, organizing, and exercising appeared a prime need.

While there are no firm measurements available for determining the stage of readiness in percentage figures, as of the end of the year, this evaluation may be made with safety on the States and critical target area cities:

(a) All State civil defense organizations—Colorado, Kansas, Missouri, Nebraska, and Wyoming have a limited state of operational readiness.

(b) St. Louis is quite capable of coping with a limited emergency and Wichita is steadily reaching a state of readiness. The Kansas Cities in Missouri and Kansas have limited stages of readiness, as does Denver.

There has been marked development in evacuation planning and preparations in the critical target areas.

Civil Defense Appropriations

State, critical target area, and target area city organizations in Region VI had roughly \$483,400 available for civil defense expenditures, including salaries, in calendar year 1954. Of this total, \$169,000 was in State appropriations, \$229,500 in critical target area cities, and \$84,900 in target area cities. (Fiscal year appropriations were broken down to obtain the estimated amounts available for civil defense spending in the calendar year 1954).

By States and cities:

<i>State</i>	<i>Amounts available Calendar year 1954</i>
Colorado.....	\$40, 000
Kansas.....	16, 500
Missouri.....	75, 000
Nebraska.....	12, 500
Wyoming.....	25, 000
Total.....	\$169, 000
<i>Critical target areas</i>	
Denver, Colo.....	\$29, 500
Kansas City, Kans.....	20, 000
Kansas City, Mo.....	23, 000
St. Louis, Mo.....	105, 000
Wichita, Kans.....	47, 000
Total.....	229, 500
<i>Target areas</i>	
Cheyenne, Wyo.....	\$7, 500
Jefferson City, Mo.....	none
Lincoln, Nebr.....	3, 000
Topeka, Kans.....	5, 000
Omaha, Nebr.....	17, 750
Pueblo, Colo.....	6, 000
Springfield, Mo.....	38, 650
St. Joseph, Mo.....	7, 000
Total.....	84, 900
Grand total.....	483, 400

Control Centers

Region VI has a fully operational control center.

Among the States in Region VI, Missouri, Nebraska, and Colorado report having operational main control centers. Wyoming reports a main control center and one alternate center. Kansas reports having no operational control center but legislative funds are being asked in 1955 for establishment of a center.

Critical target area cities.—Kansas City, Mo., 1 main, 1 alternate; Denver, 1 main; Kansas City, Kans., 1 operational main, mobile; Wichita, 1 main, 3 alternates; St. Louis, 1 main, 1 alternate.

Target area cities.—Cheyenne, Omaha, Lincoln, Jefferson City, Springfield, St. Joseph, Topeka, and Pueblo are without fully operational control centers.

Aid Compacts

A number of mutual aid and interstate compacts were completed in the region in 1954:

Colorado made new compacts with Utah and District of Columbia and completed an amendment to its compact with Ohio. Missouri remained unable to enter compacts because of State statutes. Wyoming completed compacts with all border States except Utah.

St. Louis and St. Louis County, with over 100 incorporated municipalities, completed a mutual aid pact. St. Louis and East St. Louis, Ill., have a compact under discussion. Wichita completed mutual aid compacts with 13 surrounding cities. Kansas City completed pacts with 6 cities in the area. Omaha completed compacts with 6 nearby cities. Kansas City, Mo., limited by legal restrictions, entered into mutual aid compacts with 25 cities in the area.

Civil Defense Exercises

A total of 98,381 persons was reported to have participated in 70 exercises conducted in Region VI in 1954. The participating personnel were both public and civil defense-enrolled, and the exercises were in major, minor, and command post exercise categories.

The list included 16 major exercises (including Operation Alert participation) with 42,350 public, 10,077 civil defense personnel; 19 minor exercises with 11,375 public and 3,054 civil defense; and 35 command post exercises (largely communication and warden) with no public participation and 31,525 civil defense enrollees.

Participation in Operation Alert

The outstanding development in the operation of the Region VI control center during national Operation Alert on June 14-15 was the wholehearted and enthusiastic participation of Federal agency workers on a strictly voluntary basis.

Recapitulations show that 207 Federal employees took part in the 24-hour operation, and commercial transportation industries provided 21 persons. Prior to the actual operation the Federal volunteers made themselves available for training held at the Denver Federal center and later reported in working groups to the control center for actual practice runs with specimen problems and follow-through action.

In addition to providing most of the manpower for the FCDA control center, Federal agencies in Denver, Kansas City, Missouri, and St. Louis established their own jointly operated and fully manned control centers each for Federal agency operations and liaison work with the FCDA control center operations staff.

All State civil defense agencies and agencies of critical target area and target area cities participated. In addition scores of smaller cities mobilized their operational center forces on varying degrees of staffing; action in smaller cities was confined largely to activity in the support services of civil defense, with the accent generally on the particular support services in which the individual cities (or counties) were best organized and developed.

Better preexercise planning by the regional staff with State and local civil defense subdivisions was carried out than for any previous

exercise. Solution of the problems was confined to a basis of realism throughout, using yardsticks of existing resources developed by the regional staff in conjunction with State and local civil defense staffs prior to the exercise. In isolated cases where the bounds of realism on resources, human and material, were overstepped, regional specialists, through the control center intelligence division, inaugurated and pushed through corrective steps.

Several State and local civil defense organizations introduced into the operation separate incidents of sabotage, conventional bomb drops, etc., but nuclear attacks in the region were limited to specifications of the national FCDA office.

The communications service, by virtue of its widespread functions, regional, State, and local, bore the brunt of test-weight.

States and cities placed major reliance on radio, assuming that since telephonic and teletypewriter centers are normally located in total-destruction areas, these would be inoperative. They gave little consideration to potential use of periphery exchanges which would survive, and to improvised cut-throughs of periphery facilities. For this reason radio circuits in States and cities were generally overburdened and many exchanges of information within States and with the FCDA control center remained incomplete.

The regional center took into consideration planning of the utility companies and relied heavily on probable surviving telephone and teletypewriter exchanges, but also utilized radio as a means of communication.

The message center force in FCDA headquarters kept abreast of all communications handling except for isolated instances of jamming during periods of excessive flow. An important finding in Operation Alert is the establishment of closed-circuit communications service between the region and the States and between the region and FCDA headquarters.

During the test the regional center handled 426 incoming messages and 319 outgoing (of the latter 75% were multiple address, bringing total handling to actual 814).

The need for the establishment of uniform measurement of units, teams, etc., in all the realms and services of civil defense was clearly brought out. Subsequent to the exercise, steps were taken to accomplish uniform categories and units of measure for all civil defense services. Also, steps were taken to develop an agreement between the States and FCDA as to their relative roles in preattack support planning and postattack operations.

Civil Defense Personnel

A gain of 10,381 in enrolled and assigned civil defense personnel was shown for the 5 States in Region VI between January 1, 1954,

and June 30, 1954, the 2 latest reporting periods. Of the gain, 1,588 were reported from the five critical target area cities, St. Louis, Kansas City, Mo., Kansas City, Kans., Wichita, and Denver.

Public Addresses and Meetings

Members of the staff spoke on public and professional programs 163 times in the year and addressed a total of 15,870 persons. The appearances included assemblies, radio, and television, with the audience estimates for the latter two based on studio statements. The reports do not include a large number of meetings at which one or more staff specialists appeared as auditors and advisors.

Natural Disaster Operations

Investigations, and in some instances action, necessitated by reports of natural disaster conditions, bulked considerably larger in 1954 in Region VI activities than in the preceding year.

Investigative action was taken in 15 separate instances during the year. Six of the investigations resulted from drouth disasters; 1 from fire; 3 from tornadic conditions; 3 from water shortages involving 8 cities and towns; 1 from wrecking of a bridge; 1 from flood conditions. In six investigative incidents reports were contributive to Federal aid grants through the Federal Civil Defense Administration and loan of FCDA pipe and pumps.

In three instances staff personnel assisted other FCDA Regions in disaster investigations and operations.

In March 1954, drouth counties in Colorado, Kansas, Missouri, and Nebraska were surveyed by representatives of the regional office and by a special report to the National FCDA Office in connection with Federal aid to be granted through the Department of Agriculture.

In April there was an investigation of water shortage in various towns of eastern Kansas. Subsequently a loan of engineering equipment for Olathe, Kansas, was approved and an agreement covering the loan entered into between Governor Arn of Kansas and the regional office. The loan agreement was extended by supplemental agreements until November 30, 1954.

Several tornadoes occurred in Kansas, Missouri, and Nebraska during the year but damage was light and did not require Federal aid.

In June, the flood area in southeast Nebraska involving three counties was investigated by the regional office, by the Nebraska State engineer, and a representative of the Corps of Engineers. The disaster was handled by local personnel, with civil defense personnel handling the governmental function and Red Cross the welfare. No subsequent request for assistance under Public Law 875 was received.

Regional office participation in drouth disaster activities in Wyoming involved assistance in securing Federal aid through the Department of Agriculture.

In interregional disaster activity a representative of the regional office was detailed to assist in water shortage investigation and flood conditions in Region IV. Representatives were detailed to Regions I, III, and IV to assist in investigations in connection with Federal aid to hurricane disaster victims.

Warning and Communications

Extensive and satisfactory advances were made in the warning and communications field in Region VI, with the Federal contributions program serving as a stimulant in approach toward the goal of total accomplishment of established objectives.

PUBLIC WARNING SYSTEMS

The final objective for the public warning program is to provide 100% warning sound coverage for all priority areas as defined by FCDA as critical target area and target area cities. At the end of fiscal year 1953 only the critical target area cities had warning systems installed or on order. A few of the target area cities had warning surveys completed and applications approved. During fiscal year 1954 all target area cities for Region VI had warning surveys completed, and all except Pueblo, Colorado, have warning projects approved and have warning equipment installed or on order. Total estimated dollar value of warning equipment required for principal critical target area cities and target area cities in Region VI is \$551,476. Total expenditure to date for warning in the above cities is \$536,250. Total allocated for the warning program, fiscal year 1954, Federal share is \$139,106.

Approved in priority areas, Federal share.....	\$128,852
Approved in nonpriority areas, Federal share.....	8,248

Total funds approved fiscal year 1954, Federal share... 137,100

The foregoing figures show that the warning program in the priority areas is approximately 95% completed. The figures also indicate approval of applications of 98% of the \$139,106 in Federal funds allocated to the States for public warning equipment during fiscal year 1954. Such factual data may lead to the erroneous conclusion that the public warning program in Region VI is nearing completion. Area and population growth in the critical target areas and target area cities will require additional warning equipment and facilities. The nuclear weapon and the fallout problem make public warning systems mandatory over much of the present nonpriority areas; hence the public warning program must continue and new objectives must be established for the future.

CIVIL AIR DEFENSE WARNING

All States in Region VI have a fair to good civil air defense warning system set up and working. All now have a backup system that has been tested and proved workable. Kansas, Colorado, and Nebraska are utilizing law enforcement radio networks for disseminating civil air defense warning alerts to the secondary State key points. Missouri is using a combination radio and wire civil air defense warning system from the State key points down to grass-root communities. Wyoming is considering changing from an all wire system to a State police radio as the primary alerting system. The civil air defense warning system again demonstrates the effectiveness of the FCDA Contributions Program. Many State civil air defense warning systems have been strengthened with equipment procured with Federal aid. This equipment serves the dual purpose of warning dissemination plus communications for other civil defense activities.

COMMUNICATIONS

The objective for civil defense communications is to provide all the communications facilities and trained operator personnel necessary to direct, coordinate, and control full-scale disaster operations. The communications applications representing a Federal share of \$324,641 accounted for approximately 61% of all projects approved in Region VI.

Civil defense communications plans have been written and approved in all States and principal critical target area cities. These plans include law enforcement radio, commercial radio, amateur radio (RACES), and commercial wire services. During fiscal year 1954 a total of 28 RACES communications plans were submitted and all were approved by FCDA and the Federal Communications Commission. This brings the total number of approved RACES plans to 34 showing a gain of almost 500% during fiscal year 1954.

TESTS AND EXERCISES

Amateur radio (RACES) nets in Kansas, Colorado, and Missouri hold weekly civil defense communications drills. These exercises vary in length from one to three hours (Kansas and Colorado hold drills every Sunday morning). Nebraska and Wyoming State RACES nets hold periodic tests. Tests of the State civil air defense warning systems follow a similar pattern.

Civil defense test exercises indicated that the communications services, while inadequate for a full-scale emergency, are steadily improving. Much more equipment, together with more and better trained operator personnel, is needed before Region VI can claim operational readiness for the warning and communications services.

Supply

Establishment and stocking of warehouse facilities for medical supplies in Springfield, Missouri, was one of the major supply accomplishments during 1954. In slightly over 5 months this facility has received close to 3-million dollars worth of supplies, using approximately 40,000 square feet of storage space, leaving slightly over 22,000 square feet available.

A study of warehouse requirements, essential facilities, and auxiliary manpower required for emergency operations was continued during 1954. This study included evaluation of locations for engineering stockpiles in both Kansas City and St. Louis. Inspections and inventories of stocks and maintenance studies were conducted periodically throughout the year. All motorized equipment stored in stockpiles was uncrated, serviced, and operated in trial runs to determine operational condition.

A comprehensive survey of storage and warehouse facilities, personnel, and preparation of individual property record cards of materials, supplies, and equipment was completed in preparation for the release of property accountability to the regional office by National Headquarters. Complete inventory and inspection of property prior to transfer of accountability to the region is planned.

Transportation

Most important development in the transportation field has been completion of a Rail Transportation Civil Defense Operational Guide for greater St. Louis and the east St. Louis area. The plan covers 41 written pages and in addition carries a full set of maps, showing every phase of facilities protection and utilization of facilities for evacuation of the public. The Terminal Railroad Association, with all roads operating in and out of St. Louis as members, took the leading role in preparation of the plan. A plan based on the same outlines is now being prepared for the greater Kansas City (Missouri and Kansas) area.

Lines operating in Missouri have agreed to take the lead in projecting an overall rail plan for Missouri along the lines adapted for St. Louis and Kansas City, and to this end are appointing a full-time civil defense coordinator for rail transportation at \$10,000 per year salary. In other States, rail industry preparation for civil defense has so far been confined largely to facilities protection, but first steps are underway in most of the larger cities for implementing rail evacuation of the general public, following the change from a seek-shelter concept to one envisaging mass evacuation on warning.

In the motor transport fields working agreements between State civil defense organizations and State carrier associations are still in the discussion and tentative-planning stages.

Arrangements were completed with major air lines and railroads operating out of Denver for preferential handling of transportation requirements for regional office personnel in connection with travel necessary for investigation in handling of natural disasters.

Public Safety

Tabulations on fire, police, rescue, and warden services for the States and critical target area cities are fragmentary in some instances; relatively adequate figures are available for enrolled and assigned civil defense personnel in the services, through reports (as of June 30, 1954) submitted for States and critical target areas. For the continuing programs of training and assignment State and critical target area offices have been polled for current status reports.

Fire plans have been completed for St. Louis and the mutual aid area, and tentative fire plans are ready for the Kansas City, Kansas, mutual aid and State support areas. Plans for mobilization of all fire equipment in States of Region VI are in process.

Regional-city conferences were held in the warden service at Denver, Kansas City, Missouri, and Wichita, and a regional-State conference at Topeka. A regional rescue-fire conference was held November 9-10 at Lincoln.

In Kansas City, Missouri, the policy has been to provide rescue workers without civil defense training from the construction industries; and a training program along civil defense lines has been instituted. Omaha has 50 civil defense rescue workers trained along lines closely following civil defense policy. When a rescue street is completed 102 will be trained. Rescue street construction is under way in St. Louis, Wichita, Hutchinson and Arkansas City, Kansas. Rescue street construction will soon begin in Omaha and is planned at Grand Island, Nebraska, and Topeka, Kansas. Denver has construction plans under consideration. St. Louis has received a fully equipped civil defense rescue truck, purchased through the matching fund program.

A regional police conference was held in November in Denver.

INDUSTRY

In St. Louis an estimated 30 percent of the city's plants are organized for facilities self-protection, and all others have moved into the planning stage.

In Kansas City, Kansas, and in Kansas City, Missouri, an estimated 10 percent of the plants are organized and an additional 30 percent have some forms of planning in process; Wichita is 20 percent organized and more plans are in the planning stage; Denver is 35 percent organized and an additional 45 percent has some planning.

Seminars were held in St. Louis and Denver and others are scheduled in the Kansas Cities, Wichita, and Omaha.

Engineering

The planning and organizational work accomplished by the engineering service in each of the States in Region VI was evaluated for the purpose of better understanding the resources available in each of the States and to establish a uniform basis on which all the States could plan. The theory of uniform teams, uniform procedures, and uniform nomenclature was adopted by each of the 5 States in advance of the regional engineering meeting held in Denver November 16, 1954. The purpose of the meeting was to reach an agreement among the States on uniform procedures. Much attention has been given to the promotion of teams in the engineering service.

Regional engineering activities during the year included inspection of areas in Nebraska and Kansas suffering from flood damage and lack of adequate water supplies resulting from drouth. Engineering pipe and pumps were loaned to Olathe, Kansas, for a period extending from April 5, 1954, to December 1, 1954. By the use of this FCDA equipment the City of Olathe, with a population of approximately 7,500 has been able to secure practically all of its water supply for this period from Cedar Creek, approximately 2 miles from the city. Engineers loaned from other agencies were indoctrinated and trained in civil defense operating procedures by means of various bulletins, group meetings, and actual participation during Operation Alert. These engineers, who could now be assigned to responsible jobs in the event of a disaster, are considered an important asset.

Health

The civil defense medical services took on a new impetus in 1954. Special attention was given in State and city civil defense organizations to the development of improvised emergency hospital and medical stockpiling programs.

CASUALTY SERVICES

Denver and St. Louis County, Missouri, have developed good emergency hospital plans. Missouri has also completely reorganized its emergency medical services during the past year with the formation of strong district and county organizations.

BLOOD PROGRAM

Pueblo, Colorado, has established a very successful community blood bank, using the equipment and supplies transferred from the Little Rock, Arkansas, Defense Blood Center. It began functioning in January, 1954.

CHEMICAL, BIOLOGICAL, RADIOLOGICAL WARFARE DEFENSE

Wyoming and Kansas each sent one person to Fort McClellan, Alabama, for a one-week instructor training course in chemical, biological,

and radiological warfare defense in June 1954. Kansas, Missouri, Nebraska, and Wyoming developed effective radiological training programs. Virtually all of the 90 radiological survey instruments at Springfield, Missouri, will be loaned to these States to implement their training programs.

OPERATION ALERT

The weeks immediately preceding Operation Alert provided an opportunity to work with State and critical target area staffs to determine medical personnel and supplies needed to meet large-scale enemy attack and to evaluate resources in the States to meet those needs. The region appears to be self-sufficient in personnel but short of emergency medical supplies.

MAJOR CONFERENCES

Week of February 15, regional medical officers' conference in Washington, D. C.; April 14, American Red Cross area office, St. Louis; interregional office conference of FCDA with the American National Red Cross and Department of Health, Education, and Welfare on recruitment and training of home nurses; May 3, 4, and 5, Fitzsimons Army Hospital, Denver, Medical Military Armed Forces Institute for Armed Forces Reserves, physicians, dentists, and nurses, attended by the regional medical officer; May 16, Jefferson City, Missouri, state-wide emergency medical planning conference; July 2, Denver, biological and chemical warfare conference, attended by FCDA staff member and Denver city medical staff; July 12-13, Denver, regional emergency medical conference attended by regional health services advisory committee with 33 persons in attendance.

Welfare

Six major accomplishments during 1954 were:

1. Completion of two regional instructor training courses in emergency mass feeding conducted in cooperation with the Army, at Fort Riley, Kansas, and Fitzsimons Army Hospital, in Colorado.
2. The programing of a section on civil defense emergency welfare services at the annual meetings of the Kansas Conference of Social Work and the Mountain States Regional Conference of the American Public Welfare Association held in conjunction with the annual meeting of the Nebraska Welfare Association in Lincoln, Nebraska.
3. Compilation of a manual by regional welfare which contained selected materials pertinent to the organization and implementation of a program of emergency welfare services.
4. A marked furthering of understanding with associated agencies, namely the regional and area officers, respectively, of the Department of Health, Education, and Welfare and the American National Red

Cross regarding their participation and assumption of responsibilities in the civil defense program.

5. Implementation of a program for effective utilization and integration of women's volunteer groups.

6. An increase in the production of technical materials by State civil defense agencies.

A public participation exercise in Holyoke, Colorado, was highlighted by preparation of the noon meal on permanently installed improvised field cooking equipment. The civil defense agency in Holyoke was the first in the State to purchase, with matching funds, items of emergency welfare equipment.

Items of special interest to welfare in the Operation Alert test were:

For the first time efforts were made by State and local civil defense agencies to relate the estimated size of the welfare problem to resources with respect to (1) total number of welfare workers required, (2) workers required specifically for mass feeding and registration and information services, and (3) availability of lodging accommodations in the form of congregate facilities and private homes. As a result of this evaluation a greater awareness of the full potential and utilization of resources in mutual aid and mobile support areas was demonstrated. The desirability of utilizing standardized forms and procedures for registration and information was demonstrated with the recommendations made by FCDA being in general acceptance.

Wyoming has an outstanding statewide plan for organizing and staffing welfare teams. Recruiting of key supervisory welfare personnel for initial requirements is complete.

Training programs in emergency mass feeding were conducted as follows:

Colorado.—Three training sessions with attendance of 200 persons; *Missouri*—three programs with 120 persons receiving training; and *Nebraska*—the Red Cross conducted several training courses in the State.

The welfare advisor spoke at a regional civil defense meeting in Denver, participated in panel discussion on disaster preparedness at the annual Missouri Public Health Association Conference in St. Joseph, addressed the entire Denver Department of Welfare staff, and addressed a meeting of county welfare directors at Canon City, Colorado.

Women's Activities

Women's activities moved forward in the region in 1954 with the principal objectives of utilizing women's committees at State and local levels on which major women's organizations have representation. The emphasis on public education, home protection, and home and family evacuation planning and testing, recruitment of women for the

civil defense services, encouraging women to take civil defense training, and to develop, with specialists, projects into which women can be integrated.

Each State has a State committee, headed by a deputy director for women's activities or a State chairman; 2 are part-time volunteers and 3 part-time paid staff members. These committees met once every 3 months, in company with the regional director of women's activities. The best work has been done in towns and cities where there is a local women's civil defense council. In the year the director of women's activities, in company with State counterparts, organized local committees in 36 "pilot" or "test" communities in 3 States, as demonstration projects; 5 of these were in Nebraska, 11 in Missouri, and 20 in Kansas.

Among women's accomplishments from this effort have been repeated classes in Omaha's home protection exercises, also for registration and information. In Wichita more than one thousand block mothers have been recruited and are undergoing training. In St. Louis, under special sponsorship of the Business and Professional Women's Club, representatives of 452 organizations have met for briefing on evacuation planning for householders. In St. Louis County, a countywide council includes hundreds of representatives of women's groups from the 94 municipalities which make up that county. They are active in public education programs and are starting special training classes in home nursing and mass feeding.

The chairman of the Kansas City, Missouri, Council recently put on a skit for the Jackson County Medical Auxiliary and representatives of 200 other women's groups. The skit is now in preparation by the American Medical Association for national TV broadcasting on the "Medics" program.

In Kansas the Junior Leagues furnished radio and TV programs statewide, with local talent, and a rural women's program based on everyday emergency needs on the farm was tested with success in Morris County and is now being spread statewide through home demonstration councils. This project encompasses training and service in first aid, home nursing, home fire fighting, safe food and water, mass feeding and care of evacuees.

Youth subcommittees in Nebraska and Kansas held a number of State-level meetings with adult and youth leaders of major youth groups to plan and get youth civil defense participation in many lines. Recruitment of women volunteers for mass feeding training has been a major project in all States.

Women's committees in four States and major cities sponsored highly successful and well attended meetings during 1954.

Public Affairs

The 5 State civil defense offices reported combined total of 2,585 film showings to audiences of varying sizes totaling 116,350 persons. The State office personnel participated in 27 television shows for civil defense, with studio estimates of approximately 2,500,000 persons in the viewing audiences.

Five critical target area cities and 1 target area city reported a total of 715 film showings in the year with audiences of varying sizes totaling 58,900 persons.

Region VI office made 190 film loans during the year.

Seventy-six film loans were made by the regional office to Federal agencies in the Denver, Kansas City, and St. Louis regions. In many instances the agencies made multiple showings to reach all employees.

Five major exhibit showings were made during the year; 1 for a State convention, 4 for national or regional gatherings. In addition, the regional office prepared a number of special smaller exhibits for use by State and city civil defense organizations.

The regional office encouraged radio and television productions by State and city organizations, by providing outlines, plans, and suggestions. In Colorado the outstanding television project was a one-hour show with Denver civil defense and city officials participating. In Kansas a 5-week series of 15 television shows has been set up. Target area directors participated in 46 civil defense television shows. Television stations in almost every instance are using the TV kits distributed by FCDA, over and over, and continue to make requests for new films. Most stations have shown all available civil defense films one or more times.

State and critical target area cities produced 39 civil defense publications, totaling 2,097,200 copies. In addition, Missouri reproduced a number of FCDA publications.

Kansas City, Kans., developed a speaker's bureau which delivered 80 talks on civil defense to audiences totaling 7,200 by November 1, and additional appearances were scheduled for the remainder of the year.

One civil defense film was produced by the Colorado State office, depicting how concrete mixer trucks can be utilized for emergency water supply. Colorado has a second film projected; this to be based on civil defense home readiness for emergency.

There are no full-time paid public affairs officers in the States, target areas or critical target areas. Missouri and Colorado have part-time paid public affairs officers; and St. Louis, Wichita, Denver, Springfield, and St. Joseph have part-time public affairs officers among the cities.

Training and Education

Four progressive lines of approach have been emphasized in the training field: school, citizen, skill, and staff. A measure of progress is found in the increased figures in the "enrolled and assigned personnel" reports for the region, and the training and education program which led all others in matching fund totals, with the single exception of warning and communications equipping projects.

SCHOOL TRAINING

School training, directed toward the youth population, resulted in increased curriculum attention given civil defense by teachers and school boards, notably in civics, health, and home economics. At grade and high school levels, junior police patrols, 4-H clubs, boy and girl scouts, and similar groups participated in specific civil defense projects. A teenage civil defense conference, attended by 260 students and faculty members from the State was held at the University of Colorado at Boulder in November. State and private schools have been cooperative in offering facilities for civil defense training.

CITIZEN TRAINING

Citizen training was carried out largely through veteran and civic clubs, churches, and specialized interest groups such as the Parent-Teachers Association. Audio-visual aids and publications were used extensively. The *Home Protection Exercises*, *What You Can Do Now*, and *Mass Feeding* booklets were particularly helpful in the training of civil defense personnel and home protection techniques.

SKILLS TRAINING

Kansas erected two rescue training facilities. One has been completed in Missouri and Nebraska is starting one. Colorado, Missouri, and Kansas erected mass feeding facilities.

Missouri's statewide police training, based upon selective recruiting of auxiliaries by each member of the State highway patrol, was outstanding. Colorado and Kansas continued training auxiliary police while Wyoming and Nebraska made progress towards trained sheriffs' auxiliaries, particularly in mobile support functions.

Nebraska and Kansas held regularly scheduled statewide fire training, both possessing well organized city and rural departments coordinated under active State fire marshal offices. Nebraska utilized firemanship instructors from the State Department of Vocational Education; Kansas, instructors from the University Extension Division.

Wyoming was active in radiological training, conducted through the State University at Laramie. All States have equipped monitoring teams.

All States progressed in health, communications, and supply training during the year. Much work was done by the Red Cross in first aid classes by amateur radio operators in the RACES program and by the Flying Farmers and the Civil Air Patrol in air transport. Warden training has so far been confined to the critical target areas in Region VI, with the Kansas City, Kansas, program notably successful.

STAFF TRAINING

Staff training was directed toward operational control of personnel, equipment, and facilities. This has been best accomplished through seminars, conferences, and test exercises. These resulted in increasing efficiency in handling problems of actual emergencies, such as floods, tornadoes and drouths.

REGION VII—REGIONAL OFFICE, SANTA ROSA, CALIF.

States: California, Oregon, Washington, Montana, Idaho, Nevada, Arizona, Utah, Territory of Hawaii, Guam, American Samoa.

Critical target areas are Los Angeles, Portland, San Diego, San Francisco-Oakland, and Seattle.

Region population is 19,357,000, according to July 1, 1953, Bureau of the Census estimates.

The regional office was transferred on August 13, 1954, from Berkeley to Santa Rosa, Calif., as part of the national program of dispersal from target areas. The new office is located in Building 33 of the Naval Auxiliary Air Station.

The effect of the national dispersal policy has been profound, both on the programs of the regional staff and the programs of the States and local areas within the region.

Every critical target area has initiated dispersal planning; San Francisco has issued a basic dispersal plan and begun a program of public education. Los Angeles, through the cities and counties civil defense planning board, has begun a study which has already cost more than \$57,000.

The State of Washington has had practice evacuations in two target areas, Spokane and Bremerton. A third exercise under study would involve the Seattle-King County critical target area and perhaps the adjacent county of Pierce and city of Tacoma.

Arizona has adjusted the State civil defense program to care for evacuees from Southern California. Nevada has begun similar planning. Utah is perfecting support plans which include unprecedented mass care resources. Oregon has issued quotas to support areas which establish the possible reception load any community might be assigned.

Natural disasters during the year imposed heavy responsibilities on the region. The major disaster from the North Central Montana flood of 1953 was handled almost entirely during 1954. The Los Angeles County flood of January 1954 evoked reimbursement requests for Federal funds totaling \$587,000. Earthquakes struck near Fallon, Nevada, in July and August.

In November, the geographical jurisdiction of the regional office was extended to include American Samoa, Guam, and the Territory of Hawaii.

By the end of the year, the regional office reported quickening interest in civil defense on the part of officials at every level and the general public. Local communities noted a substantial gain in volunteer personnel. In women's activities, the machinery was placed in motion for carrying through a program of sustaining recruitment, individual and family protection education, and the integration of organized groups into the civil defense effort.

During the year, Region VII developed a "Suggested Model Plan for the Use of Federal Agency Bureaus and Offices." Such a plan is authorized by Public Laws 920 and 875.

More than 60 Federal agencies submitted emergency and disaster plans based on the model plan. About 30 participated in Operation Alert.

Data were compiled for a Region VII Federal Agencies Key Data Book which will include a regional emergency directory listing names, addresses, telephone numbers, and other communications data of essential Federal personnel.

Memorandums of understanding regarding operations in natural disasters were developed between Region VII and the U. S. Army Corps of Engineers and the U. S. Forest Service.

One outstanding example of a completed plan following the format of Region VII's "Suggested Model Plan" is that of the U. S. Department of the Interior, Bureau of Reclamation, Columbia Basin Project. The assembled plan spells out every detail of the disaster plans and emergency operational procedures of the project, which includes the vital Grand Coulee Dam.

Following are highlights of the accomplishments of the regional staff during 1954:

Warning and Communications

Washington, Oregon, and California developed communications systems which are well advanced in operational readiness.

Pending reasonable State civil defense budgets, the regional office worked with interior State officials to utilize every available commercial, State, and Federal, and amateur communications network for emergency use. Extensive encouragement and assistance was

given to interior States in development of their communications plans. The release of communications plans in all States and the Territory of Hawaii is anticipated.

Hawaii had an extensive RACES program in motion and was awaiting Federal Communications Commission approval of the Territorial application. Radio receiving and transmitting equipment was being installed in the Territorial control center, and 7 interisland 100-watt transmitters and receivers were to link the archipelago's civil defense organization. The warning siren system on Oahu was overhauled and enlarged, and regular testing procedures were established. On the mainland, the audible warning systems were at a high level of efficiency in the critical target areas, and appropriations were available for installation of sirens in a number of target areas during 1955. Funds were available for the three target areas of Montana; Salt Lake City and Ogden, Utah, were endeavoring to obtain funds for warning system installation. In other areas major progress was recorded. Over 548 warning and communications projects were processed during 1954 for a total Federal share of \$1,416,442. When installation of authorized sirens is completed, the following coverage should be available:

Arizona:	Percent	California—Continued	Percent
Phoenix.....	100	San Bernardino.....	90
California:		San Diego.....	100
Alameda.....	100	San Francisco.....	100
Alhambra.....	90	San Jose.....	62
Berkeley.....	87	Santa Monica.....	100
Burbank.....	100	South Gate.....	80
Fresno.....	100	Stockton.....	100
Glendale.....	82	Montana:	
Long Beach.....	100	Helena.....	100
Los Angeles.....	100	Oregon:	
Oakland.....	100	Portland.....	84
Pasadena.....	100	Salem.....	6
Richmond.....	100	Washington:	
Riverside.....	90	Seattle.....	96
Sacramento.....	90	Spokane.....	80

Supply

In the supply service Nevada and Utah named supply officers to their staffs, and Nevada designated a supply officer to each of the operational services.

Oregon and Washington, with full-time professional supply officers, made appreciable advances in their programs, and California maintained a fair status of operational readiness.

Plans for handling stockpiled engineering equipment in time of disaster were completed, and arrangements were made with local civil

defense staffs for pickup and delivery of blood sera at Los Angeles, San Francisco, Seattle, and Portland.

A close study was being made of the requirements of the Territories to furnish support to meet conditions applying particularly to them.

Conferences were held on the subject of Federal Civil Defense Administration engineering equipment stockpiles. Plans were discussed with the State of California for assignment of custody of the stockpiles at Wilmington and San Bruno to the civil defense, State, or political subdivisions, or to local municipalities.

Close liaison was maintained with the area and regional offices of the U. S. Department of Agriculture; Federal Supply Service, General Services Administration, and Veterans Administration for facilities of their organizations and backup personnel in expediting shipments of supplies during emergencies. Contacts were continued in States with representatives of the above Federal agencies in furthering coordinated planning. Several conferences were held with representatives of the Territory of Hawaii during their visits to Region VII office.

Close contact was maintained with the transportation office, communications offices and technical services towards accomplishing coordinated logistical planning.

A "Suggested Outline for State Civil Defense Supply Operational Plans" with a progress "checklist" was developed and a copy delivered personally to each State civil defense office.

"Emergency Operations Basic Operating Plan" was maintained currently to meet changing conditions.

Inventories of resources of other Federal agencies were received and recorded for ready reference of the supply staff and the technical services concerned.

Periodic inspections of FCDA stockpiles were accomplished throughout the year.

Transportation

The selection and briefing of a permanent rail operating and advisory committee and a permanent highway operating and advisory committee has been accomplished, and preliminary steps have been taken toward appointment of the permanent water and air transportation operating groups.

In addition, operational arrangements for the regional committees have been completed at the regional control center, and State plans have been analyzed.

The regional office began a study of dispersal in preparation for greater assistance to the States and cities in development of final dispersal plans.

Revision of the regional transportation emergency operating plan by the members of the four transportation branches, who will place the plan into operation, was undertaken. Accomplishment to date consists of tentative draft of the rail plan prepared by two members of the regional rail committee and the coordinator, for submission to the full rail committee.

A factual examination and analysis of the State transportation plans and accomplishments was made in California and Washington, including detailed operational discussions with State transportation officers. A similar analysis was planned with the State transportation officers of Oregon, Utah, and Nevada.

Safety

Activity in the fire service has been highlighted by two major fire projects which included regional participation. The senior fire officers of the Pacific Coast met in Portland, Oregon, to consider the many problems aggravated by increases in weapon yield, the strategic concept of dispersal, and the research and mass fire fighting studies which are available on the major conflagrations in Europe and Japan during World War II.

The joint research project, Operation Firestop, had a stimulating influence on the fire services in planning for civil defense operations.

In general, progress in police service recruitment and training was encouraging throughout the region.

A police institute, conducted in Arizona with regional aid, assisted in developing a more effective police program in that State.

Rescue training facilities were established in four California communities and are in operation.

In six other localities rescue courses were given, and the groundwork for future development was laid. Rescue sets were under construction in several localities and trained rescue instructor graduates were developing programs in a score of areas.

The coast States showed progress in the field of facilities self-protection. The State Chamber of Commerce in Arizona inaugurated a facilities self-protection program; two conferences were slated for the State of California, one for Los Angeles and the other in the San Francisco Bay area. The greatest progress was noted in schools, public buildings, and institutions, and there were notable examples of industrial programs in the aircraft industry of Southern California and other isolated manufacturing concerns throughout the coastal States.

Progress in the warden service was slow in some States, but there were encouraging programs in Berkeley, California, and Everett, Washington.

Engineering

While natural disasters claimed 40% of the time of the regional office, the operational planning of Federal agencies in engineering fields was brought to near completion; dispersal planning was initiated in every critical target area of the region; State engineering and utilities plans were pushed to completion or near completion; and a series of other major accomplishments were recorded.

Close liaison was maintained with professional engineering societies, State civil defense organizations, public and private utilities, industries and Federal agencies concerned with engineering.

At the request of these bodies, conferences were held with the Washington State Water Utilities Committee, Northwest Section American Water Works Association, Montana Section American Water Works Association, Washington State Electric Utilities Committee, Northwest Power Pool Civil Defense Committee, Oregon State Utilities Committee, Pacific Gas and Electric Company, Professional Engineers of Oregon, Utah Municipal Water and Sewage Works School, Oakland Municipal Departments, East Bay Municipal Utilities District, Los Angeles City Departments, Los Angeles County Departments, San Francisco Planning Department, Seattle Municipal Departments, Fallon, Nevada, City and County Departments, and State of Idaho Departments.

In addition to these groups, the regional office worked closely with Federal agencies in developing equipment and manpower inventories, operational plans for emergencies, and coordination of engineering activities in times of disaster. Frequent contacts were made throughout the year with the following agencies:

- Corps of Engineers, Division and District Offices.
- Bureau of Reclamation, Division and District Offices.
- Bureau of Public Roads, Division and District Offices.
- U. S. Weather Bureau, Regional and Area Offices.
- Bonneville Power Administration.
- Bureau of Indian Affairs, Regional Offices.
- U. S. Forest Service, Regional Offices.
- Fish and Wildlife Service, Regional Office.
- Health, Education, and Welfare, Regional Offices.
- Sixth Army Command, Presidio.

Urban analyses were begun in Los Angeles and Oakland areas. Dispersal planning was begun in the following areas:

- Seattle-Tacoma
- Portland-Vancouver
- East Bay (Oakland, Berkeley, Alameda, Emeryville, Albany, Richmond, El Cerrito, and the counties of Alameda and Contra Costa)
- Los Angeles (Los Angeles, Glendale, Burbank, Long Beach, Pasadena, Alhambra, Santa Monica, and South Gate)
- San Diego
- San Francisco

The State of Washington completed the traffic routing plans for the entire State and organized debris clearance teams.

A gas utilities plan for Oregon and Washington was completed; water utilities plans for Oregon and Washington were practically completed; power utilities plans for Oregon, Washington, Idaho, and Montana were 90% complete. The Bonneville Power Administration operational plan was coordinated with that of Northwest Power Pool.

In January 1954, Los Angeles County suffered a flood of major disaster proportions which was so declared by the President. Total estimated damage was approximately \$3,000,000 with a requested Federal participation of \$587,000. All restoration work was completed and procedures for reimbursement of municipal subdivisions were initiated.

In May 1954, the Kootenai River in Northern Idaho (tributary of the Columbia) reached a crest higher than that of 1948. Though the Corps of Engineers took over the flood fight, at the request of the Governor of Idaho, declaration of a major disaster was not requested.

In July 1954, Fallon, Nevada, suffered a disastrous earthquake. The Newlands irrigation project was very severely damaged and emergency work was necessary in order to minimize loss of crops. This was declared a major disaster on request of the Governor. The Bureau of Reclamation on the Truckee Carson Irrigation District completed the work at a total cost of approximately \$100,000.

In August 1954, another severe earthquake hit the same area of Nevada and damaged the Newlands project again. Much of the work that had just been completed was lost and additional damage was done to the Truckee Carson Irrigation District. In addition, school buildings in Fallon were severely damaged and one school building had to be razed. The estimated Federal funds necessary for this earthquake were \$100,000 for the irrigation system and \$30,000 for the school district. This earthquake was included in the first major disaster declaration. The emergency work is completed in the irrigation district though the Bureau of Reclamation and Truckee Carson Irrigation District have not been completely reimbursed. The school district is making necessary repairs to the schools and planning to build additional facilities to replace the building that has to be razed.

Though the Montana flood occurred in June 1953, school construction was not completed until 1954. Consequently, the detailed vouchers and supporting documents were not submitted until this year.

Health

Progress in the health services was recorded in two main areas. The first course in atomic medicine and disaster planning for professional

persons engaged in health fields was completed during 1954 and a second course begun. Offered by the Extension Department of the University of California, the course was organized under the direction of the regional medical office and extended over 32 weeks.

Forty students were graduated from the first course, but over 200 persons engaged in some portion of the instruction or participation, including authorities in all divisions of the health sciences, civil defense, safety, American Red Cross disaster services, education, and other fields.

Organization of a pilot first aid team was nearing completion at the end of the year. A cooperative experiment under the guidance of the regional medical office, the pilot first aid team project goal is a fully staffed, trained, and equipped unit, capable of operating as a mobile or stationary team. Practically all key positions have been staffed, and most of the critical posts have been filled by trained personnel.

Forty-two professional meetings were attended, including those of official civil defense agencies and the professional associations of medicine, dentistry, pharmacy, nursing, hospital administration, public health, optometry, veterinary medicine, Red Cross, Army, Navy, and U. S. Public Health Service. Speeches were made on civil defense at 22 professional meetings, having an aggregate attendance of approximately 2,800.

The regional medical conference for civil defense in Salt Lake City, September 1 through 3, included 96 participants and the regional medical advisory council.

Welfare

The impact of dispersal on the welfare program was perhaps greater than on any other service. New emphasis and direction were given to the mass care services, and during the Operation Alert exercise a companion emergency welfare experiment was conducted at Gladstone, Oregon, that was unique in training value and provided an opportunity to test theory under somewhat realistic conditions. More than 250 emergency welfare volunteers from throughout the State assembled in a State recreational center near a small Oregon community and lived for 3 days the experience of being disaster victims. Participants were registered, billeted, assigned mass responsibilities; meals were prepared on improvised equipment; recreational and mental hygiene activities were established; and at the conclusion of the exercise the volunteers were hypothetically reassigned back to their home communities.

The emergency mass feeding program has received special interest, and in the latter days of October the regional office and Sixth Army Food Service School at Ford Ord, California, conducted a regional

school which drew 47 participants. A revised and compressed course was offered, with an introductory session on general planning assumptions and policy decisions.

Two surveys of dispersal reception areas were undertaken in California during the year. Ventura County in southern California was canvassed by 200 volunteer research workers under the direction of a score of professional civil defense field and administrative personnel. The survey was an exhaustive census of every shelter, feeding, recreational, and medical resource of the county. A second survey in San Mateo County, south of San Francisco, was initiated late in the year. In the coming year the State of California plans to conduct welfare surveys in every evacuation county of the State.

Women's Activities

Increased confidence and interest of State Directors in a volunteer participation program, and extensive activity with regional and national women's organization leaders marked the women's activities program in the region.

Arizona had a full-time director of women's activities. A woman's advisory council was being planned. The State program included training-workshops in home protection and emergency feeding.

California had a full-time director. A woman was appointed to the advisory council in each of the 10 State civil defense regions. The State program included promotion of home protection and emergency feeding.

A home protection program was initiated in Idaho and Montana.

An advisory council was in the planning stage in Nevada. A statewide conference was held, the home protection program begun, and a workshop program for each county was initiated.

The home protection program was begun in Oregon and two statewide conferences were held.

Utah had a director, an advisory council, 12 district directors, and 32 county directors of women's activities. A statewide conference was held, and the home protection program started.

Washington had a full-time director and a small advisory council. There was an extensive program in home protection and emergency welfare.

A conference held with the American Red Cross-Pacific Area resulted in plans for a pilot experiment to promote the "Extension of Home Nursing."

The pilot experiment was adopted for three areas—Los Angeles County, California (large city), Marion County, Oregon (small city), and Deer Lodge County, Montana (rural area).

The visit to the region October 3-10 of the two British women civil defense experts, resulted in excellent attendance at each city visited, Salt Lake City, Olympia, Portland, Sacramento, and Los Angeles.

Public Affairs

The most significant accomplishment in the field of public affairs was the development of a newsmen's orientation course, approximately 16 hours in length and run over a period of 8 weeks.

The first course was offered last spring in Los Angeles and a similar course was being set up in San Francisco. Similar courses were planned for Portland and Seattle.

Reporters, editorial writers, radio news commentators and news chiefs, and employees from the production side of the newspaper industry were among the 40 persons who attended the first course. The course in San Francisco was also planned to draw executives from the business side in order to carry further the facilities for self-protection aspects which were not covered at Los Angeles.

The regional public affairs officer assisted State and local civil defense personnel in development and manning of civil defense displays at State Fairs in Oregon and Montana, and also developed a special exhibit of model field cooking expedients for the American Public Welfare meetings in California and Oregon and the American Home Economics Association national convention in San Francisco.

Numerous conferences were conducted, meetings covered, and visits made, covering all States but Nevada, and visiting every critical target area on a bimonthly schedule. Support was given to the activities of other staff members in connection with conferences and projects.

Over 100 public information and education contributions projects were processed; 2 major exercises calling for broad public affairs participation; regional liaison and participation in connection with the Ground Observers Corps, and extensive assistance was given to State and local organizations in perfection of CONELRAD operating procedures and programing.

Revisions were made in the regional emergency operations guide and assistance again given to State and local public information personnel in connections with all phases of emergency operations planning.

Training and Education

In the field of training and education the regional training officer counts 21 major accomplishments during 1954, principal among which is the reorientation of training and education efforts at State and local levels to a program of specific training for specific people. A continuing survey project has been carried on to assess current train-

ing programs and the results projected to determine future training requirements. One project of interest was assistance to the State of California in the production of a 22-minute film report on their participation in Operation Alert. Universities and colleges have been surveyed to determine their contributions to the total civil defense effort and courses available in specific civil defense areas.

Fire auxiliaries were trained on civil defense operational equipment. Police reserves progressed to pistol practice with live ammunition. Mass feeding training began.

First aid crews were organized and trained. Previously organized mobile units were in the training stage, and rescue trucks were used for training.

Warden, home, and self-protection refresher training began.

Additional radiological monitoring crews were organized and trained to cope with fallout. Training in dispersal was given operational tests.

Three more States committed themselves to a State Department of Education civil defense education program. Their publications were distributed throughout the educational system.

Two additional State colleges began special courses in civil defense. One State university converted its special civil defense course into a regular course. Universities completed their organization of mobile units and began training. State universities, particularly, assumed their role of leadership in civil defense.

Appendix A

CIVIL DEFENSE ABROAD

As pointed out in the earlier part of this report dealing with civil defense planning, civil defense is one of the elements in the total program of national security, which includes diplomatic efforts to resolve international disputes by peaceful means and the maintenance of a system of defense alliances with other free world nations.

It was noted also that, in the field of working relations, civil defense planning as part of the total security program frequently involves mutual planning with other nations. Thus, U. S. cooperation with other nations on civil defense activities, especially through NATO, has become more clearly defined and active.

During the past 6 years, the Western European nations, particularly, have established or reactivated their civil defense organizations. However, for the most part these preparations had been based largely upon experience gained during World War II. With the notable exception of the Scandinavian countries, the civil defense preparations in Europe were devised to provide protection against conventional high explosives and incendiary bombs. These preparations did not contemplate the scope of damage inherent in modern warfare; nor did they contemplate the secondary effects of thermonuclear weapons.

In the latter part of 1952, the requirements of atomic warfare began to influence civil defense planning. Heavily populated nations of Western Europe which have little room for tactical evacuation, or permanent dispersal, began a review of shelter programs and evacuation planning. Germany, which was rebuilding its bombed out cities, included plans for fire alleys and the construction of urban satellite areas. Sweden and Norway, both of which have accessible granite mountains, intensified dependence on large cave shelters, "in the rock," in which a substantial part of the population, essential industries and public utilities could be housed against any type of attack. Actual civil defense preparations, except for the Scandinavian shelters, have been largely devoted to training and organizing manpower, devising evacuation schemes and perfecting shelter designs.

Thus, at the close of 1954, civil defense planning abroad primarily was devoted to the revision of concepts and requirements. As nations paused to reevaluate, they continued to construct shelters to house essential workers and industries, and to plan for evacuation where possible.

Concurrently some elements of public opinion questioned the validity of civil defense and suggested that genuine public protection can be assured by avoiding war altogether.

In those parts of Western Europe in which civil defense measures are more highly developed, particularly the Scandinavian countries, it is notable that public participation in, as well as governmental support of civil defense is much more advanced than in the United States. All new residential construction must include shelters; industry is required to organize separate civil defense services and provide adequate shelters without financial assistance from the government; laws are available by which the population may be drafted into civil defense; adults are required to receive a prescribed number of hours of civil defense training per year; and mobile columns have been organized and receive extensive specialized training. Almost all of the Western European nations have now established civil defense training schools.

In other parts of the world, civil defense measures continued to be developed. In the early part of 1954, the Australian government began to establish a civil defense organization and to plan necessary measures. Underlying this planning was the realization that the large urban areas, lying close to the coast line, presented excellent targets.

India, Pakistan, and Egypt all continued the development of civil defense offices. The United States was called upon for a limited amount of technical assistance; but in these instances, it was pointed out that the measures designed by the United States were predicated upon assumptions which probably were not applicable to these countries.

In South America, three nations requested U. S. information relative to the organization of civil defense services. Brazil sent representatives to the United States for training, the civil defense director of Chile was furnished information to assist him in the formulation of a civil defense organization; and inquiries were received from Argentina.

BELGIUM

Under decree of January 20, 1946, the Higher Council for Civil Security was assigned responsibility for advising the Minister of Interior on the organization of civil defense. The Council has established a number of subcommittees to carry on civil defense planning and research while a Supervisory Committee, established in 1950, coordinates decisions of the Higher Council. The Ministry of Interior divides operational and administrative responsibility between the Civil Defense Department and the National Civil Defense Corps.

The National Civil Defense Corps was established by Royal Decree in June 1951. The Corps consists of both local organizations and

mobile units. The national organization comprises an administrative division responsible for personnel and training, and an operational and control division which supervises both the local units and mobile columns. The Civil Defense Corps has established separate mobile columns which are organized and controlled at the national level.

The organization of the Civil Defense Corps includes the national center, 9 provincial centers, 12 regions which include the main cities as well as industrial and strategic centers, local centers organized on a municipal basis, 1 national school for civil defense, 1 completely staffed and supplied mobile column and 1 partially staffed mobile column. At the present time, the Corps comprises 370 full-time personnel and 3,700 part-time volunteers. The full-time personnel are accorded the same status as civil servants. Volunteers are enrolled for three years and serve for a total of 120 hours. They receive from 20 to 40 Belgian francs per hour, according to grade.

At the provincial level a permanent chief directs and coordinates the provincial civil defense organization and the mobile columns allotted to the province. Local authorities are responsible for their civil defense arrangements.

At the present time, the Belgian shelter policy has been concerned with the renovation of shelters built in basements during World War II. No new shelters have been built except at Antwerp and five concrete shelters for cultural property.

The question of evacuation is still under study by the Higher Council for Civil Security.

DENMARK

The preparatory work on the establishment of a Danish civil defense system (air raid precautions) was commenced in 1930. In the following years a number of recommendations and reports were made, forming the basis of the Act of 1938, which in 1949-50 was replaced by the two present acts.

The Danish Civil Defense comes within the Ministry of Home Affairs, exercising its authority through the National Civil Defense Directorate (NCDD), except for hospital services, which are administered by the National Health Directorate placed under the same ministry.

The entire Danish Civil Defense is under the centralized administration of the NCDD, which in every respect is in charge of the tactical direction. The NCDD is especially responsible for (1) the maintenance of the State civil defense mobile columns, (2) the establishment of public shelters, and (3) through the local chiefs of police—all employed in State service—warnings, communications, and evacuation.

The municipalities are responsible for the organization of the local auxiliary services (fire, rescue, clearance) and supervises the self-protection of the population, which is organized in cooperation with the voluntary Civil Defense League and is divided into four branches, viz., plant and block protection, which are organized on a compulsory basis, and garden city and village protection, organized on a voluntary basis. All measures are carried out according to directions issued by the NCDD, which is also responsible for the procurement of funds. The Government normally pays all local services expenditures with the exception of administration expenses. As to self-protection and training, a part of the equipment is defrayed by the Government. However, industrial establishments are required to organize their plant protection programs entirely at their own expense.

The State's total expenditure on civil defense from the spring of 1950 and to the end of the fiscal year 1953-54 (March 31, 1954) amounts to \$29,000,000 including the civil defense hospital program. Working expenses for 1953-54 amounted to \$3,600,000. In the budget for 1954-55, \$4,000,000 has been included for working expenses; as regards preliminary expenses, no amount has yet been fixed. In addition, the municipalities have spent approximately \$2,000,000 in 1950-54.

Denmark is divided into 7 civil defense regions, each comprising several civil defense areas, 98 in all. Regional inspectors, who for the present are acting as advisors to the local authorities, are in charge of warning, communications, and tactical dispositions. In major towns, command control centers have been organized in subterranean concrete shelters. A similar shelter has been established for the Supreme Civil Defense Command in case of war.

A warning system based on a wired communication network, and a radio network under construction, both covering the entire country, can be put in operation at short notice. However, at present this service is not manned.

Signals are effected by electrically operated sirens, which are started from the civil defense command centers in the towns. A remote controlled wireless system is, however, in the working program. In case of emergency, a considerable number of gasoline operated sirens may be used. Warning information is obtained from the Air Force; decision as to when and to what extent warning is to be sounded is, however, taken by the Civil Defense Directorate, represented by specially trained civil defense officers in the military Sector Operations Centers. As a standby, a local warning system has been established.

For the larger towns a flexible evacuation program is being planned with a view to three situations: (1) general (strategic) evacuation, (2) (strategic) thinning-out, and (3) emergency (tactical) evacuation. However, all schemes are under constant revision.

The object of the Danish shelter policy is to provide public shelters for 500,000 persons, or 25%, of the urban population. Under the Act all house owners in towns are required to establish private shelters. So far, about 5,100 public reinforced concrete shelters for 260,000 persons have been constructed, and all new buildings must provide private shelters.

Remedial civil defense measures are carried out under three forms: first, self-protection, i. e. units of workers in industrial establishments, units of residents of houses or blocks, and units of residents in garden city areas and villages; second, municipal auxiliary services, the personnel of which is supplemented by volunteers (part of the expenses of the material and equipment for these services is defrayed by the government) third and last, the State mobile columns.

The mobile columns provide for 327 permanent officers of which 256 were available at the end of 1954. The columns are manned by draftees who are called up in the same way as personnel for the Armed Forces. At present 1,050 men are called up each year. These comprise the force in peacetime which is formed into 3 brigades of 3 columns each. Each column consists of 3 sections; in peacetime, however, only 2 of these sections are manned simultaneously. At the end of 1954, it will be possible to bring the columns up to a mobilization strength of approximately 10,500 men. The final aim is a mobilization strength of some 18,000 men, or 8 brigades. The smallest tactical unit, the column, consists in peacetime of 53 permanent officers and 136 conscripts, in wartime of about 100 officers and 700 conscripts.

The training of personnel takes place at civil defense barracks; at the end of 1954, 13 barracks were available, located at various places in the country.

Women volunteers are included in the mobile columns. This personnel (not to be confused with the women volunteers in the local auxiliary services) is given the same status as conscripts and remains at the disposal of the columns for a certain number of years after the completion of their training. This training has recently been reorganized.

The mobile columns are equipped with completely modern material: big four-wheel drive, cross country vehicles, equipped with everything considered necessary from wireless, field kitchens, ambulances, fire fighting equipment, cranes, and bulldozers to transportable field dressing stations. In peacetime, the columns will have 993 special vehicles, 896 of which have been purchased and are at present being fitted. On mobilization, the rolling stock of the columns will be supplemented by about 1,200 motor vehicles, which have been registered.

The total number of volunteers, conscripts and other persons serving in all branches of civil defense is estimated at approximately 110,000

persons. Apart from draftees in the mobile columns, all personnel is at present provided on a voluntary basis. As regards self-protection and local auxiliary services, an emergency enlistment system has, however, been prepared in accordance with the Act, under which every man and woman between the ages of 16 and 65 is liable to take on a civil defense function.

FRANCE

French civil defense is based on laws passed in 1938, which provide for the general organization of the nation in time of war. Since 1951, a number of decrees based on this legislation have been enacted which relate to the internal security organization of France, the protection of roads, bridges, and oil stocks, and the safeguarding of public health in time of war.

Since the war, civil defense activities have been confined primarily to planning. The civil defense office within the Ministry of Interior has devised measures relating to evacuation, the dispersal of industries, warning systems, shelter policy, the education of the public, and the establishment of control centers. In 1954, the civil defense office established a Staff College to provide basic civil defense training and rescue courses; however, the implementation of other plans has been held in abeyance pending the allocation of funds.

GERMANY

The development of German civil defense has been characterized by three principal activities: the organization of a technical relief program; the organization of a warden service, or a Federal Association for Civil Defense; and the establishment of a Federal College for Civil Defense for training, scientific research, and development.

The technical relief program is concerned with training volunteers in rescue and engineering techniques. These volunteers have been used during peacetime in flood relief work and will be available for civil defense rescue and engineering activities, as well as for the maintenance of public utilities, in time of war.

At the present time, there is no extensive civil defense organization. This is due, in part, to the lack of basic enabling legislation and funds. At the same time, German civil defense officials have been hesitant to enlist popular support for a national program because it is believed that such measures would meet with public resistance. In Germany, the memory of the war remains vivid and the reactivation of civil defense may be considered by many to mean that a new war is imminent.

Nonetheless, the German civil defense organization is planning the establishment of a warning and alert system and has completed the

basic plans for the formulation of a civil defense corps to provide fire, rescue, medical, communications, welfare, and radiological decontamination services. German technicians have also completed designs for pressure resistant, air-conditioned shelters with a capacity of up to 50 persons.

GREECE

Civil defense in Greece was organized in 1949, utilizing the existing echelons of the police, the Army and the Navy. It was formalized in 1951 at which time Greece was divided into 14 regions for civil defense purposes.

The Civil Defense Department is part of the Ministry of Interior. However, the Department is responsible to the War Cabinet which includes the Ministry of Interior, Defense, Treasury, National Affairs, and the head of the General Staff. The Department is headed by a Director General who is responsible for the preparation of civil defense plans for the General Staff. The Director General is nominated by the Minister of Interior and the Minister of Defense, and appointed by the War Cabinet. He is responsible to the Minister of Interior and to the Minister of Defense.

In Greece each Ministry is assigned responsibility for civil defense planning, and the implementation of approved plans, consistent with the basic function of the Ministry. Thus, the Ministries of Health, Welfare, and Public Works prepare civil defense plans within their normal functions. To coordinate these plans, each Ministry has appointed a Director of Civil Mobilization. These directors comprise a coordinating committee under the Ministry of Interior. The plans developed by this Committee are presented to the Cabinet. In carrying out national civil defense measures, the national authority is delegated to local police who cooperate with the local representatives of other Ministries such as Health, Welfare, etc.

The Greek civil defense organization is divided into 14 civil defense regions, the boundaries of which coincide with those of national administrative regions and the police areas of responsibility. Each civil defense region is directed by the Regional Police Commander who is trained by the Civil Defense Department at the Special Training Center. The Regional Civil Defense Director has combined authority to coordinate and direct all local services.

The civil defense regions are, in turn, divided into civil defense divisions, each directed by the local police commander who is assisted by a committee composed of the town Mayor and health, welfare, fire service, and other local officials. These divisions prepare their own plans, which are submitted to the Civil Defense Department for approval, and carry out their own training programs.

Industries are responsible for organizing and financing their own civil defense operations. However, they are responsible to the local civil defense commanders with respect to the application of civil defense regulations within the industrial premises.

The national Civil Defense Department is organizing mobile columns to be comprised of fire, first aid, and heavy rescue units which, under the direction of the Civil Defense Department, will be sent to areas of greatest need in periods of emergency.

At the present time, approximately 124,430 persons are enlisted in the Greek civil defense organization. In these, 79,430 persons are enlisted in the local civil defense organizations and the mobile columns; 45,000 persons are involved in the industrial civil defense units.

Civil defense conscripts 3.6 percent of the population, including both men and women. The service is compulsory for persons between 38 and 52 years of age, Armed Forces personnel excluded.

Civil defense training in Greece is provided at the Special Training Center to police officers and administrative officials. The courses offered include: staff administration, tactical training, instructors courses, rescue techniques, and courses in atomic, biological, and chemical warfare defense. The police and other officers receiving this training are expected to repeat the courses at the local level.

Under present civil defense planning, the defense of the various areas of Greece has been worked out in coordination with the Armed Forces (Army, Navy, and Air) and the Armed Forces are represented on the town civil defense committee. Plans have been prepared for an evacuation of approximately 20 percent of the population of towns likely to be attacked. The persons to be evacuated have already been enlisted in civil defense and steps for their billeting have been arranged. Because of the effect of hydrogen weapons, the Greek civil defense department believes it will be necessary to increase the number of persons which must be evacuated.

On the other hand, shelters are believed to be the principal means of protecting the population and extreme reliance is being placed on early warning and public education. Shelters for industry and commercial premises, works of art, and other cultural objects have been provided while the population has been instructed regarding the preparation of shelter ditches. Since 1951, all buildings of three stories or more are required to provide shelters for their occupants and it is intended to construct subways in Athens which can be used for shelters as well as for normal traffic. Present planning also requires the construction of civil defense control centers in the main towns.

Greek civil defense is financed in part, by the national budget and in part by the local municipal budgets. The National Government provides funds for the Civil Defense Department, for training equip-

ment and the fire, rescue, and first aid units. Local authorities pay for light rescue equipment and sirens. Industries and commercial institutions finance all equipment requirements within their premises.

IRELAND

In Ireland the local authorities are responsible for the organization of civil defense measures under the general direction of the Minister for Defense. Grants varying from 50 to 60 percent are paid on approved expenditure by such authorities. Expenditures for the treatment of casualties, the provision of auxiliary fire fighting equipment and training equipment, the provision of food and rest centers, and the organization of a general publicity campaign will be borne entirely by the State.

A Civil Defense School has been in operation since 1951. The school includes a realistic rescue range for training students in modern rescue methods. One hundred and seventy-six instructors have qualified at the school and several courses in the administrative aspects of civil defense have been given. Sets similar to the rescue range are to be erected at selected places throughout the country.

The casualty service and the auxiliary fire service will be organized under the general direction of the Department of Defense by the Department of Health and the Department of Local Government respectively.

Civil defense officers have been appointed for each local authority area and these officers have drawn up detailed plans for their particular areas.

Broadly speaking, the organization of civil defense in Ireland is based on the provision of comparatively intensive measures in the larger centers of population, county and rural areas to be covered by mobile parties of the flying squad type. Local forces will be organized by the local authorities to meet the immediate effects of an attack. There will be regional reserves organized and controlled by the State. These reserves will consist of mobile columns comprising large units of certain services, e. g., rescue, ambulance, and fire.

Local authorities will be responsible for the recruitment and local training of personnel and for local arrangements e. g., dissemination of warnings, transport of casualties, auxiliary fire fighting, emergency, communications, care of the homeless, evacuation and billeting arrangements, maintenance of water supplies, sewage, disposal of the dead, first aid repairs to houses, debris clearance, and demolition.

The State will be responsible for the arrangements for warning, the accumulation of certain specialized stocks of equipment, the training of instructors, and the organization and training of regional reserves.

NETHERLANDS

The Minister of the Interior is responsible for the national civil defense. The Civil Defense Department of that ministry does the overall planning; gives directives to the municipal authorities in the way civil defense has to be organized; publishes booklets on civil defense and training manuals; arranges the training of civil defense instructors; and purchases the equipment which the government issues free to the municipal civil defense services such as fire engines, medical outfits, rescue equipment, telecommunication sets, personal outfits, and similar items.

The municipalities are responsible for building up the local civil defense organizations through strengthening the municipal public services (police, medical service, public works, fire service) with civil defense units.

The municipalities (towns and villages) have been divided into two categories. The first category comprises the target-towns, the second, all remaining municipalities. The municipalities of the second category have been grouped together into 70 civil defense districts. All target-towns have a civil defense controller, appointed by the burgomaster, who builds up the municipal civil defense organization and has the wartime command over the municipal services. His staff includes the chiefs of those services.

Likewise every civil defense district has a civil defense controller, appointed by the joint burgomasters of the municipalities within the district, who in time of war has the joint resources of those municipalities at his disposal to fight calamities in his area. The provincial civil defense controllers, attached to each of the eleven Queen's Commissioners, supervise the building up of municipal civil defense organizations and, in time of war, arrange assistance to badly stricken towns by calling in help from non-attacked areas.

Interprovincial assistance will be arranged at national level by the national chief of civil defense.

The national, provincial, and municipal (or area) command posts of the civil defense controllers have been set up and telecommunication sets (radio, telephone, teletype) have been or are being installed. Telephone communications between these control centers are being prepared in such a way that, when war danger is imminent, they can be realized as direct lines at short notice.

Civil defense controllers, chiefs of municipal services, chief instructors, and other leading civil defense personnel have followed training courses at the governmental civil defense staff college. The personnel of the municipal civil defense organizations have been or are being trained; local exercises are being held regularly.

For the municipal civil defense organizations about 230,000 people are needed of which about 75% have been recruited on a voluntary basis up till now. These recruits in time of war will serve either full or part time, or will be called up when the need arises. Command post personnel will generally serve full time; all fire fighting units in the target-towns will be manned permanently; part of the medical and rescue personnel will serve full time, and part of them will be called up in an emergency.

Mobile columns (12 fire fighting, 5 medical and 6 rescue columns) will be put at the disposal of the national chief of civil defense for assistance to heavily hit areas. Their equipment is stationed at various places throughout the country. In time of war they will be manned full time. The personnel (approximately 15,000) will be enlisted on a conscription basis.

From 1951-1954 the civil defense budget amounted to 90 million guilders. The budget for 1955-1956 envisages an expenditure of 65 million guilders.

The government has provided all target-towns with sirens, to be operated from the municipal civil defense control centers. Civil defense warning officers who have been trained will be posted at the military radar and observation centers and will issue air-raid warnings to target-towns via the civil defense warning circuit.

Public shelters, the cost of which is borne by the national government, are being built in the target-towns. Where possible, they serve peacetime purposes (garages, store rooms).

Evacuation offers a serious problem, due to the fact that the country is densely populated. Plans calling for preventive evacuation from target areas on a restricted basis have been drawn up, as well as evacuations which might appear to be necessary after bombardments. Provincial evacuation commissioners have been appointed who will execute the plans and will guide, if necessary, an evacuation from bombed towns.

NORWAY

In Norway, civil defense is the responsibility of the Ministry of Justice. The civil defense program was established in 1948 as a preliminary 4-year plan to provide shelters, communications, and emergency supplies, and to create a civil defense force of about 60,000 people. The total capital state cost of this program will be 150,000,000 Norwegian kroner. Civil defense costs for the municipalities, individual property owners, industrial concerns, and railways are not included.

On the 17th of July 1953, the Parliament sanctioned the Civil Defense Act, and in November 1954, the Parliament agreed to a final organization plan for civil defense.

The civil defense program is comprised of two major purposes: actions to prevent damage and actions to remedy damage. The preventive measures comprise evacuation, provision of shelters, warning systems, and black-out. Remedial actions include fire service, casualty and rescue services, gas identification and decontamination, and public utility repair services.

Evacuation planning is directed toward the dilution of population density in the larger cities. Altogether it is expected that 450,000 or about 40% of the population of about 60 cities and towns, will be evacuated. Some 11,000 persons will be required to assist in carrying out evacuation. In addition some 22,000 persons have been appointed to control billeting areas. The major part of these 33,000 helpers have received training and participated in training exercises.

The provision of shelters comprises two parts: municipalities have to provide public shelters, and the owner of each house must provide shelter for its occupants. The civil defense plan includes provisions for public shelters for approximately 20% of the population of the 50 largest cities, or 180,000 people. On July 1, 1954, shelters for about 80,000 people had been completed, and the program is expected to be one-half completed by January 1, 1955. Two-thirds of the expenditures by municipalities for public shelters are refunded by the State. Public shelters are so planned that they may be used in peacetime for storage space, garages, etc. A warning system is established and about 750 acoustic warning appliances have been installed and will reach the whole city population. Warning will be given on the basis of decisions or observations of the Air Force. The civil defense organization has trained warning officers in the Air Force operations rooms.

Under the present organization plans the civil defense forces are assigned either to local civil defense organizations or to organized mobile columns. These columns number about 200 men each and are located in 14 sub-regions throughout the country to provide mutual assistance to any area which cannot cope with effects of attack. A column has three 200-men contingents. Approximately one-third of the total Norwegian civil defense personnel is allocated to the fire services. This allocation is particularly concentrated in the large cities and will provide 10 times as many fire fighters as in peacetime.

The civil defense mobile forces are approximately 61,000 persons, including 9,000 women. On July 1, 1954, the greatest part of the forces had received initial training and 2 or 3 refresher courses. The remaining 5,000 persons are expected to be recruited and trained by January 1, 1955. The largest portion of the civil defense forces is obtained through conscription and represents men over 45 years of age or others who cannot be mobilized for military services.

The leading personnel and the instructors are trained in courses at the Civil Defense School in Oslo.

Regional courses for section leaders and local courses for team leaders are held every year.

The privates of the Civil Defense School get an initial training of 40 hours, divided in evening courses of 2-3 hours each.

Every year all personnel receive a 20-hour refresher training course, including at least a 3-4 hours of joint training in the different branches within a local civil defense organization.

Since conscripted personnel will serve for 10 years, each person will, in the course of this period, receive 240 hours of service.

For the mobile columns the initial training is also 40 hours, but the refresher courses comprise 10 days a year in the respective camps, with turnouts to the cities where in case of emergency the units would have to serve.

Procurement of material costing 60,000,000 Norwegian kroner is virtually completed.

The civil defense construction program, comprising control centers and depots, mobile column camps and storerooms, will require an expenditure of approximately 53,000,000 kroner. On July 1, 1954, of 95 planned control centers, 80 had been completed. Of 180 depots in which civil defense forces will be stationed under emergency conditions 140 have been completed. In most instances, these depots are tunnels constructed in rock. The 14 mobile column camps are finished, as are the storerooms.

In addition to the public civil defense measures which the government and municipalities are providing, self-defense measures are required of all property owners, public institutions, and industries. Property owners are required to provide adequate shelters for the inhabitants of their houses. Six thousand blockwardens have received initial training courses. The first training of about 150,000 housewardens is in progress.

Industrial concerns employing more than 50 persons and power and fuel plants are required to establish separate civil defense organizations including casualty, rescue, and police services. It is expected that the total industrial civil defense program, comprising about 1,500 plants, with a total labor force of 190,000 persons, will organize a force of 40,000 civil defense workers.

In conformity with existing law the expenditures involved in civil defense are paid by the industries themselves. Considerable amounts of fire extinguishing material have been procured, including 270 fire motor pumps. First aid material has been provided to a great extent, and larger construction works have been undertaken to provide shelters, etc. More than 1,500 civil defense leaders have been trained in

courses arranged by the Industries Protection (a semi-private organization), in the course of the last couple of years. In addition, correspondence courses are provided for fire service leaders. These courses finish up with two days of practical exercises.

The Railway Civil Defense Organization corresponds to that of the industrial civil defense, but comprises in addition the responsibility for providing public shelters at railway stations.

SWEDEN

The creation and maintenance of civil defense in Sweden is a responsibility which is shared by the government, the municipalities, the private citizen, and private industries. The responsibility and the financial burden is divided in accordance with special rules. For the last budget year 1953-54, the government's expenditures for civil defense amounted to approximately 50 million kroner, 7 million for central and local administration, 18 million for equipment, 8 million for training, and 9 million for shelters. For the same budget year, the municipalities spent approximately 5 million kroner for shelter. Expenditures by industries and private citizens amounted to about 18 million kroner, for shelters, and in addition, industries spent approximately 2 million kroner for planning and training. Total expenditures for civil defense during the budget year in question amounted to approximately 75 million kroner. (Average annual per capita income in Sweden is about 7,000 kroner.) These estimates do not include expenditures by industries and private citizens for equipment, for which estimates are not available.

As of July 1, 1954, there were about 725,000 persons enrolled in civil defense; 400,000 in general civil defense and 325,000 in special civil defense. At the same time about 300,000 men and women were fully trained and 235,000 partially trained.

Swedish shelter progress ultimately will provide shelter for about 4,000,000 persons. At the end of 1954, rock shelters, standard shelters, and provisory shelters had been completed for 1,980,000 people.

A detailed description of the Swedish Civil Defense Organization appears in the FCDA Annual Report for 1953.

SWITZERLAND

As provided by law, the Swiss Military Department has a service for air raid protection which takes the necessary measures for the protection of the civilian population, vital installations, and establishments. These measures include: education of the civilian population regarding the dangers and precautions to be taken; promotion and surveillance of the construction of air raid shelters; organization of the defense of houses and factories; organization of the war fire de-

partments and of shelter provisions for people who may need help in various communities; and, training of the civil defense troops of the Army.

All new buildings are in principle obliged to have air raid shelters and owners of existing houses and buildings are encouraged to build shelters. A subsidy is granted for such constructions.

The War Medical Service is a branch of the Health Section of the Swiss Department of the Interior.

The responsibility for carrying out civil defense measures rests with the individual communities and cantons. The territorial service of the General Staff, together with the ground observer corps and the air raid protection service, on one hand, and the community on the other, organize the air raid warning system and the assistance of the military authorities to the civilian population.

Mass evacuation of the civilian population cannot be accomplished in Switzerland. This is because the population is not sufficiently dispersed. A part of it could be evacuated, depending on the acuteness of the emergency, but a carefully planned decentralization of residential and working areas is recommended.

All people from 15 to 65 years of age are obliged to take part in civil defense, provided they are not serving with the Armed Forces. For the present time, only the cadres, some specialists, and volunteers are receiving training.

The regular expenses for 1955 for the service for air raid protection are Swiss Francs 1,684,500. A special allocation of Swiss Francs 30 million is planned for the completion of the equipment of the civil defense troops.

UNITED KINGDOM

In the United Kingdom, responsibility for civil defense preparations is shared between a number of Ministries. The Home Office coordinates all civil defense activities, in addition to its particular responsibility for the Civil Defense Corps, the industrial civil defense service, the police and fire services, shelter policy, the air raid warning system, scientific research, control rooms and training.

Other Ministries are responsible for the services connected with their peacetime duties. The Ministry of Health covers the hospitals, first aid and ambulance services, care of the homeless, and rest center services. The Ministry of Housing and local government has a wide range of responsibilities including evacuation, re-housing and billeting the homeless, the disposal of the dead, water supplies, sewage, demolition, and debris clearance. The Ministry of Food is charged with emergency feeding, and the storage and distribution of food. The Ministry of Transport and Civil Aviation has functions in relation to

road and rail transport and civil defense schemes for railways, docks, harbors and airfields.

The coordination of civil defense planning and research involves much interdepartmental work, and an important part of the machinery which exists for this purpose is the Civil Defense Joint Planning Staff, for which the Home Office, in view of the Home Secretary's coordinating responsibilities, provides the chairman. Each Ministry concerned has its own planners, and representatives of these combine to form the staff. The main task on which the Civil Defense Joint Planning Staff has been working during 1954 has been a comprehensive review of all aspects of civil defense planning to take account of the hydrogen bomb threat.

The forces to be deployed for civil defense operations are divided into three echelons. The first echelon consists of local civil defense forces which would not be moved very far outside their own area. Supplementing these local civil defense forces will be mobile forces, which can be sent to any part of the country requiring additional support. For the past 2 years an experimental mobile column, which was formed to study operational techniques, has been touring the country and taking part in many local civil defense exercises. Beginning in 1955, the Air Ministry has agreed that 7,500 R. A. F. reservists may be trained each year for these second echelon mobile column duties. The Army will supply third echelon support if this is possible without prejudice to its primary role.

Training for senior officers in the higher direction of civil defense is carried out at the Civil Defense Staff College, and technical training (for local civil defense instructors, etc., in rescue and general duties) is provided at three civil defense schools. In the past 5 years, 5,300 students have passed through the Staff College, and 13,900 instructors have been trained at the schools.

Up to November 1, 1954, members of recruits to the civil defense and allied services were approximately as follows:

Civil Defense Corps.....	348, 000
Special Constabulary.....	70, 000
Auxiliary Fire Service.....	21, 000
National Hospital Service Reserve.....	46, 000
Total.....	485, 000

In addition to the above, the Industrial Civil Defense Service, which was formed in 1953, has already recruited over 150,000 volunteers.

U. S. S. R.

To meet the need for rapid mobilization of the civilian population in the event of air attack on the Soviet Union, a well organized civil

defense system has been developed. It includes a permanent command and staff organization, called MPVO, directly responsible to the Ministry of Internal Affairs, and is supplemented by numerous organizations and groups whose primary functions are not civil defense. The MPVO organization parallels that of the government structure down to the basic unit of collective farm, factory, or apartment house. Each unit has at least one "self-defense group" consisting of all men between 16 and 60 and women between 18 and 54 who are not engaged in high priority work. The group, numbering about 50, is divided into teams responsible for police services, fire-fighting, decontamination, first aid, and rescue.

The training of these self defense groups, and the mass civil defense training of the civilian population in general, is conducted by the MPVO, the DOSAAF (Voluntary Society for Assistance to the Army, Air Force and Navy), and the Red Cross and Red Crescent Societies. Primary training responsibility, however, rests with the DOSAAF, the organization of which parallels that of the MPVO. Although DOSAAF conducts programs of instruction in many premilitary and paramilitary subjects, there is in each of its echelons a section for "Anti-air and Anti-chemical Defense" (PVKhO). These are the basic DOSAAF civil defense training units, and they are organized like the MPVO units at the factory, the collective farm, and the apartment house level. In October, 1954, it was stated in Pravda that "in every (DOSAAF) primary organization priority must be given to the preparation of all the population for modern anti-air and anti-chemical defense."

There are two significant things here: first, that *all* the population must be trained, and second, that they must be trained in *modern* defense. It would seem that more than the self defense teams will be trained and that atomic attack will be brought into the training.

Civil defense training in the USSR has always laid great stress on defense against gas attack. During World War II, against the Germans who were known to have stocks of various types of gas, such an emphasis was not only understandable but wise. Today, however, it is somewhat puzzling to see the continuing interest in anti-gas training and the relatively large number of hours devoted to it. The certificate issued to those passing the basic civil defense training courses states that they are "Ready for Anti-Air and Anti-Chemical Defense."

In addition to the peacetime training of personnel and perfecting of organization, the MPVO has the important function of supervising town planning, and is thus able to assure not only the provision of shelters in all new construction, but also the dispersal of new industrial buildings from the heavily built up cities.

Interest in shelter construction for the population has been on the increase since 1950, and has continued during 1954. There is still no feeling of urgency in this or any other phase of civil defense activity and, as far as is known, no drills or exercises involving public participation have been held. Aside from the general civil defense training in the PVKhO courses, there are numerous specialists' courses given by other agencies, of which the most important are the first aid training of the Red Cross and the Red Crescent Societies. Mass training is conducted by the Red Cross Society in "Christian" areas of the USSR, and by the Red Crescent in Moslem areas. No figures are available for the number of people trained or in training.

During the past year, the Kremlin changed its former policy regarding the release of information on nuclear energy, and in a series of articles in the Army journal "Red Star" and later in "Pravda," the nature of the processes of nuclear fission and fusion as manifested both in bombs and in reactors for peaceful purposes was officially revealed. It is known that the Soviet Armed Forces have recently received indoctrination in atomic warfare, and it is logical to assume that some similar type of training has been given to MPVO officials, at least in the upper echelons. We have no definite information on this.

To sum up, the Soviets have a well organized and well developed civil defense system, geared closely to their active air defense system and operating from top to bottom of the Soviet state. It is producing each year large numbers of people trained in the different services, who are themselves equipped to lead and train others. The civil defense effort contributes materially to the general Soviet capability for defense against air attack.

Appendix B

FCDA DELEGATIONS

FDCA DELEGATION NO. 1

(Approved by the President, July 14, 1954)

By virtue of the authority vested in me by section 201 (b) of the Federal Civil Defense Act of 1950 (64 Stat. 1249), and in the interest of the development of the National Civil Defense Program contemplated by the said act, including action in support of the States during a civil-defense emergency, I hereby delegate to the Secretary of Health, Education, and Welfare, the following-described responsibilities:

1. Plan a national program, develop technical guidance for States, and direct Federal activities concerned with financial assistance for the temporary relief or aid of civilians injured or in want as the result of attack.
2. Plan, program, and develop technical guidance for the States and direct Federal activities concerned with the acquisition, transportation, and payment for clothing of civilians in want as a result of attack.
3. Plan a national program, develop technical guidance for States, and direct Federal civil-defense activities concerned with research with respect to, and detection, identification, and control of: (1) communicable diseases in humans, (2) biological warfare against humans, (3) chemical warfare against humans, and (4) other public health hazards.
4. Plan, develop, and direct Federal activities concerned with a national program designed to provide Public Health Service reserve professional personnel from support areas to those damaged by enemy attack.
5. Plan, develop, and distribute through appropriate channels, training materials for incorporation in the curricula of school and colleges throughout the United States in order to integrate the teaching, in all possible courses, of civil-defense skills, and knowledge and fundamentals of behavior during emergencies.
6. Plan, develop, and distribute, through appropriate channels, technical guidance concerning the provision of shelter and other protective measures, designed to minimize injury to personnel and reduce damage to vital functional components of educational institutions and hospitals and of water, sewer, and other public-health facilities.
7. Plan a national program, develop technical guidance for States and direct Federal activities concerned with the emergency restoration of community facilities essential to health or functional components thereof for which the Public Health Service normally has regular operating programs.
8. Plan a national program, conduct research, develop technical guidance for States, and direct Federal activities designed to meet the extraordinary needs for food and drug inspection and control in attacked areas.

9. During a civil-defense emergency, employ temporarily additional personnel without regard to the civil-service laws and incur such obligations on behalf of the United States as many be required to meet the civil-defense requirements of an attack or an anticipated attack.
10. Disseminate such civil-defense information as may be approved from time to time by the Federal Civil Defense Administration.

FCDA DELEGATION NO. 2

(Approved by the President, September 8, 1954)

By virtue of the authority vested in me by section 201 (b) of the Federal Civil Defense Act of 1950 (64 Stat. 1248), and in the interest of the development of the national civil-defense program contemplated by the act, including action in support of the States during a civil-defense emergency, I hereby delegate the following-described responsibilities, as indicated, to the Secretary of Agriculture, the Secretary of Commerce, the Attorney General, the Secretary of Labor, and the Housing and Home Finance Administrator :

The Secretary of Agriculture

1. Plan a national program and direct Federal activities concerned with research, diagnosis, strengthening of defensive barriers, and control or eradication of diseases, pests, or chemicals introduced as agents of biological or chemical warfare against animals or crops.
2. Plan and direct Federal activities, and provide technical guidance to States, in connection with an overall food program aimed at maintaining adequate emergency food supplies for attacked or support areas.
3. Plan a national program, direct Federal activities and provide technical guidance to States concerned with the prevention and control of fires caused by enemy attack in rural areas of the United States.

The Secretary of Commerce

1. Provide advice and guidance to State highway departments in the designation of State civil-defense emergency highway routes.
2. Coordinate interstate and State designated civil-defense highway systems to assure uniformity of designation for civil-defense emergency purposes.
3. Plan a national program, develop technical guidance for States, and direct Federal activities concerning emergency clearance and restoration of highways, streets, and bridges in damaged areas.
4. Provide technical guidance to States concerning highway traffic control problems which may be created during a civil-defense emergency.
5. Provide data and assist the State in conducting analysis of potential target and support areas for the purpose of providing basic statistics and maps essential to the completion of Federal, State, and local civil-defense operating plans.

The Secretary of Labor

1. Plan and develop a national program relating to the utilization of the labor force, during a civil-defense emergency, consistent with the responsibilities of the Department of Labor with respect to manpower mobilization.

2. Conduct research and provide a method of estimating survivors, by occupational and social characteristics, and for determining their availability for employment during a civil-defense emergency.
3. Provide technical guidance to the States and direct Federal activities concerned with coordination of the nationwide system of employment service offices for determining requirements of, and recruiting, referring, and utilizing workers to meet civil-defense needs.
4. Plan a national program, develop technical guidance for States, and direct Federal activities concerned with the methods of compensation for authorized workers in a civil-defense emergency.
5. Plan a national program, develop technical guidance for States, and direct Federal activities concerned with the provision of compensation payments for the injury or death of authorized workers while engaged in civil-defense activities.
6. Plan a national program, develop technical guidance for States, and direct Federal activities concerned with financial assistance for temporary aid to members of the labor force during periods of idleness due to destruction of working places through enemy action.

The Attorney General

Provide technical guidance to States concerning the protection of penal institutions and the control and utilization of prisoners and facilities during a civil-defense emergency.

The Housing and Home Finance Administrator

1. Conduct research and provide technical guidance to the States concerning protective standards for new housing construction and temporary shelter in existing housing facilities.
2. Plan a national program, provide technical guidance to the States, and direct Federal activities concerned with the provision of temporary and emergency housing in support of areas subjected to enemy attack.
3. Plan a national program, develop technical guidance for States, and direct Federal activities concerned with the emergency restoration of essential housing and those related community facilities damaged by enemy action for which the agency normally has legal responsibility.

GENERAL DELEGATIONS

I hereby delegate to the Secretary of Health, Education, and Welfare, the Secretary of Agriculture, the Secretary of Commerce, the Secretary of Labor, the Attorney General, and the Housing and Home Finance Administrator:

1. The authority during a civil-defense emergency whenever needed to carry out their responsibilities hereunder, to employ temporarily additional personnel without regard to the civil-service laws and to incur such obligations on behalf of the United States as may be required to meet the civil-defense requirements of an attack or of an anticipated attack.
2. The authority to disseminate such civil-defense information as may be approved from time to time by the Federal Civil Defense Administration.

GENERAL PROVISIONS

In carrying out their responsibilities hereunder, the Secretary of Health, Education, and Welfare, the Secretary of Agriculture, the Secretary of Commerce, the Secretary of Labor, the Attorney General, and the Housing and Home Finance Administrator shall be governed by the following :

1. The Federal Civil Defense Administrator shall provide basic assumptions, criteria, and standards relating to the said responsibilities and shall review and coordinate the carrying out of such responsibilities.
2. The designated officials shall take into consideration assignments respecting mobilization preparedness measures made to them by the Office of Defense Mobilization.
3. Each of the designated officials, as the official having primary responsibility for the matters hereby delegated to him, shall undertake to coordinate directly with other Federal agencies concerned.
4. Each of the designated officials shall be responsible, after consultation with the Federal Civil Defense Administration, for requesting such appropriations as may be required for his delegated responsibilities.
5. The designated officials shall make such reports as may be required by the Federal Civil Defense Administrator to insure consistency with national civil-defense policies and standards.

[Signed] VAL PETERSON,
Administrator.

Approved :

[Signed] DWIGHT D. EISENHOWER.

Appendix C

THE NATIONAL CIVIL DEFENSE ADVISORY COUNCIL

Public Law 920 established a National Civil Defense Advisory Council for the purpose of advising the Administrator on general or basic policy matters related to the civil defense program. The Council is appointed by the President. The Administrator of the FCDA is Chairman, half of the twelve other members are representatives of State and local governments, and the remainder are appointed from the general public on the basis of their qualifications and interest.

On August 16th President Eisenhower reappointed 3 old members and named 9 new ones to the 12-member National Civil Defense Advisory Council. At the close of the year the following were members:

Honorable Arthur B. Langlie, Governor of Washington

Honorable Frank Lausche, Governor of Ohio (reappointed)

Honorable John Lodge, Governor of Connecticut

Honorable Albert E. Cobo, Mayor of Detroit

Honorable Martin H. Kennelly, Mayor of Chicago (reappointed)

Honorable Clifford E. Rishell, Mayor of Oakland, California

Mrs. Katherine G. Howard, Boston, Massachusetts

Mrs. Charles W. Weis, Jr., New York, New York

Gordon Dean, former Chairman of the Atomic Energy Commission

General Otto L. Nelson, vice president of New York Life Insurance Company

Okey L. Patterson, former Governor of West Virginia

George J. Richardson, Secretary-Treasurer, International Association of Fire Fighters, American Federation of Labor

STATE GOVERNORS AND CIVIL DEFENSE REPRESENTATIVES

Alabama.....	Gov. James E. Folsom..	Colonel James M. Garrett, Jr. (1954), Director of Civil Defense, James W. Jones (1955), Acting Director, 702 Washington Ave., Montgomery, Ala.
Arizona.....	Gov. Ernest W. McFarland	Mr. George B. Owen, Director of Civil Defense, 2019B N. Seventh St., Phoenix, Ariz.

Arkansas-----	Gov. Orval Faubus-----	Mr. E. B. Ward, Jr. (1954), Owen Payne, Jr. (1955), Director of Civil Defense, P. O. Box 1228, Little Rock, Ark.
California-----	Gov. Goodwin J. Knight--	Mr. Stanley Pierson, Director of Civil Defense, P. O. Box 110, Sacramento 1, Calif.
Colorado-----	Gov. Edwin C. Johnson--	Lt. Gen. Henry L. Larsen, Director of Civil Defense, 300 Logan St., Denver, Colo.
Connecticut-----	Gov. Abraham Ribicoff--	Brig. Gen. Wm. Hesketh, Director of Civil Defense, 92 Farmington Ave., Hartford 15, Conn.
Delaware-----	Gov. J. Caleb Boggs-----	Lt. Col. D. Preston Lee, Director of Civil Defense, 85 East Delaware Ave., Newark, Del.
Dist. of Columbia.	Samuel Spencer, Pres. Board of Commissioners	Col. John E. Fondahl, Director of Civil Defense, 4820 Howard St., N. W., Washington 16, D. C.
Florida-----	Gov. LeRoy Collins-----	Mr. James E. Keezel, Director, State Defense Council, 2585 Riverside Ave., Jacksonville, Fla.
Georgia-----	Gov. S. Marvin Griffin--	Maj. Gen. George J. Hearn, Director, Department of Defense, Civil Defense Division, 959 E. Confederate Ave., S. E., Atlanta 2, Ga.
Idaho-----	Gov. Robert E. Smylie--	Lt. Col. John R. Mamerow, Acting Director of Civil Defense, Room 430, State House, Boise, Idaho.
Illinois-----	Gov. William G. Stratton--	Brig. Gen. Robert M. Woodward, Director, Civil Defense Agency, 57th and South Shore Dr., Chicago 37, Ill.
Indiana-----	Gov. George N. Craig---	Col. Edward L. Strohbahn, Director of Civil Defense, 777 North Meridian St., Indianapolis, Ind.
Iowa-----	Gov. Leo A. Hoegh-----	Mr. C. E. Fowler, Director of Civil Defense, State Office & Laboratory Bldg., East 7th and Court Sts., Des Moines, Iowa.

Kansas.....	Gov. Fred Hall.....	Brig. Gen. Howard S. Searle, Director of Civil Defense, Sixth & Jackson St., Topeka, Kans.
Kentucky.....	Gov. Lawrence Wetherby..	Maj. Gen. Jesse Scott Lindsay, Adj. Gen. & Director of Civil Defense, Frankfort, Ky.
Louisiana.....	Gov. Robert Kennon....	Gen. Francis A. Woolfley, Director of Civil Defense, P. O. Box 8517, Univ. Station, Baton Rouge, La.
Maine.....	Gov. Edmund S. Muskie..	Col. Harry A. Mapes, Director of Civil Defense and Public Safety Agency, State House, Augusta, Maine.
Maryland.....	Gov. Theodore R. Mc- Keldin	Mr. Sherley Ewing, Director of Civil Defense, State Armory, Pikesville 8, Md.
Massachusetts....	Gov. Christian A. Herter..	Col. John J. Maginnis, Director of Civil Defense, 143 Speen St., Natick, Mass.
Michigan.....	Gov. G. Mennen Wil- liams.	Mr. C. F. VanBlankensteyn, Director of Civil Defense, 119 W. Washtenaw, Lansing 23, Mich.
Minnesota.....	Gov. Orville Freeman....	Col. E. B. Miller, Director of Civil Defense, 1643 Rice St., St. Paul 3, Minn.
Mississippi.....	Gov. Hugh L. White.....	Mr. Hendrix A. Dawson, Director, Civil Defense Council, 1014 State Office Bldg., Jackson, Miss.
Missouri.....	Gov. Phil M. Donnelly...-	Mr. Marvin W. Smith, Director of Civil Defense, 100 East Capitol Ave., 5th Floor, Jefferson Bldg., Jefferson City, Mo.
Montana.....	Gov. J. Hugo Aronson...-	Mr. Hugh K. Potter, Director of Civil Defense, State Arsenal, Box 1157, Helena, Mont.
Nebraska.....	Gov. Victor E. Anderson..	Gen. Guy Henninger, Adjutant General and Director of Civil Defense, 12th Floor, State Capitol, Lincoln, Nebr.

Nevada.....	Gov. Charles H. Russell..	Mr. Floyd H. Crabtree, Director of Civil Defense, Capitol Bldg., Carson City, Nev.
New Hampshire..	Gov. Lane Dwinell.....	Rear Adm. C. A. Brinkman, Director of Civil Defense, Room 211, State House, Concord, N. H.
New Jersey.....	Gov. Robert B. Meyner..	Mr. Leonard Dreyfuss, Director of Civil Defense, The Armory, Armory Drive, Trenton 10, N. J.
New Mexico.....	Gov. John F. Simms, Jr..	Col. John W. Chapman, Director of Civil Defense, P. O. Box 4277, Santa Fe, N. Mex.
New York.....	Gov. Averill Harriman..	Lt. Gen. Clarence R. Huebner, Director, Civil Defense Commis- sion, 124 East 28th St., New York 16, N. Y.
North Carolina...	Gov. Luther Hodges.....	Brig. Gen. E. F. Griffin, Director of Civil Defense, Jefferson & Dale Sts., Raleigh, N. C.
North Dakota....	Gov. C. Norman Bruns- dale.	Brig. Gen. Heber L. Edwards, Adjutant General, State of North Dakota, Fraine Barracks, Bismarck, N. Dak.
Ohio.....	Gov. Frank J. Lausche..	Maj. Gen. Leo M. Kreber, Adjutant General and Director of Civil Defense, Columbus 18, Ohio.
Oklahoma.....	Gov. Raymond Gary.....	Mr. L. A. Chatham, (1954) Director of Civil Defense, Thomas Brett (1955), Acting Director State Capitol Post Office Station, Oklahoma City 5, Okla.
Oregon.....	Gov. Paul Patterson....	Col. Arthur M. Sheets, Director of Civil Defense, Room 12, State Office Bldg., Salem, Oreg.
Pennsylvania....	Gov. George Leader.....	Dr. Richard Gerstell, Director of Civil Defense, Main Capitol Bldg., Harrisburg, Pa.
Rhode Island....	Gov. Dennis J. Roberts..	Col. John McGreevy, Director of Civil Defense, 24 Exchange Pl., Providence, R. I.

South Carolina	Gov. George Bell Zimmerman, Jr.	Maj. Gen. James C. Dozier, Director of Civil Defense, 105 Wade Hampton State Office Bldg., Columbia, S. C.
South Dakota	Gov. Joe Foss	Mr. R. P. Harmon, Director of Civil Defense, State Capitol Bldg., Pierre, S. D.
Tennessee	Gov. Frank G. Clement	Colonel, Robert L. Fox, Director of Civil Defense, 317 Cordell Hull Bldg., 6th Avenue North, Nashville, Tenn.
Texas	Gov. Allan Shivers	Mr. Wm. L. McGill, State Coordinator for Civil De- fense and Disaster Relief, Capitol Station, Austin, Tex.
Utah	Gov. J. Bracken Lee	Col. Alvin Sessions, Director of Civil Defense, 207 South Main St., Salt Lake City, Utah.
Vermont	Gov. Joseph B. Johnson	Mr. William H. Baumann, Director of Public Safety, Montpelier, Vt.
Virginia	Gov. Thomas B. Stanley	Mr. J. H. Wyse, Coordinator of CD Agency, Room 20, The Capitol, Richmond, Va.
Washington	Gov. Arthur B. Langlie	Vice Adm. Daniel E. Barbey, Director of Civil Defense, P. O. Box 519, Olympia, Wash.
West Virginia	Gov. William C. Marland	Brig. Gen. Charles R. Fox, Adjutant General, State Capitol, Charleston 5, W. Va.
Wisconsin	Gov. Walter J. Kohler	Maj. Gen. Ralph J. Olson, Adjutant General's Office, State Capitol, Madison 2, Wis.
Wyoming	Gov. Milward L. Simpson	Maj. Gen. R. L. Esmay, Wyoming Civil Defense Agency, Box 395, Cheyenne, Wyo.
Alaska	Gov. B. Frank Heintzman	Mr. Harold E. Pomeroy, Director of Civil Defense, Box 260, Juneau, Alaska.
American Samoa	Gov. Richard Barrett Lowe	Tutuila, American Samoa.

Canal Zone Gov't.	Brig. Gen. J. S. Seybold..	Mr. H. L. Donovan, Director, Civil Affairs Bureau, Balboa Heights, Canal Zone, Panama.
Guam.....	Gov. Ford Q. Elvidge---	Mr. F. T. Gutierrez, Director of Civil Defense, P. O. Box 322, Agana, Guam, M. I.
Hawaii.....	Gov. Samuel W. King---	Maj. Gen. F. W. Makinney, Director of Civil Defense, The Armory, Honolulu 13, Hawaii.
Puerto Rico.....	Gov. Luis Munoz Marin..	Col. Miguel A. Munoz, Director of Civil Defense, San Rafael Bldg., Ponce de Leon Avenue, San Juan, P. R.
Virgin Islands....	Gov. Archibald Alexander..	Mr. Adolph Gereau, Director of Civil Defense, Governor's Office, Charlotte Amalie, St. Thomas, V. I.