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SWISS CIVIL DEFENSE

Prepared for:

OFFICE OF CIVIL DEFENSE
DEPARTMENT OF THE ARMY
WASHINGTON, D.C. 20310

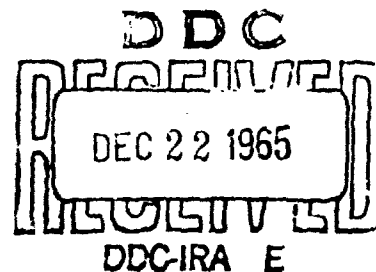
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November 1965

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By: ARTHUR A. McGEE

OCD Work Unit Number 2621A
SRI Project MU-4559

OCD REVIEW NOTICE

This report has been reviewed by the United States and the Swiss Offices of Civil Defense and approved for publication. This approval does not signify that the contents necessarily reflect their views and policies.

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FOREWORD

The present report is one of four in a study of European civil defense. The study was conducted by the Management and Social Systems Area of Stanford Research Institute for the Office of Civil Defense, as part of Contract OCD-OS-63-184.

Grateful appreciation is expressed for the information provided by the staff of the Swiss Federal Department of Justice and Police, Office for Civil Defense, Bern, Switzerland.

Rogers S. Cannell served as project leader for the European civil defense study. Principal investigators for this portion of the study were Arthur A. McGee and Leland H. Towle. Contributions to the research and the preparation of the report were made by Mrs. Gretchen Garrison and Mr. Hans Wiesendanger.

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I INTRODUCTION

Background

Many European nations, from their World War II experience, have made broad advances in the formulation of systems for survival and recovery in the event of a thermonuclear or limited war. Because of their possible application to U.S. civil defense planning, the civil defense systems of four European countries--France, the United Kingdom, Germany, and Switzerland--were investigated.

This report contains the results of the study of civil defense in the Swiss Federation. It is primarily oriented toward defining operational organization, although policy, planning, and training organizations that have had a strong impact in promoting the growth of civil defense preparedness were also investigated.

Objective

The task assigned to the research team, as set forth in the contract, was:

. . . to determine what elements of civil defense operations doctrine in various European countries may be applicable to civil defense emergency operations planning in this country and how they might be used to strengthen our emergency operations planning.

The central theme of the report, therefore, is to present an overall picture of emergency operations as conceived by the Swiss government.

Research

To integrate the efforts of the various research teams, a preliminary study was made to determine the most promising subject areas to pursue in each country.* Subsequently, a two-man team was dispatched

* Study of Civil Defense Organization and Doctrine in Friendly Nations, a progress report by Rogers S. Cannell, Stanford Research Institute, and James W. Kerr, Office of Civil Defense, September 1963.

to Switzerland to interview officials within the Swiss Federal Office of Civil Defense. The primary areas of discussion during these interviews were:

1. The basic concept of civil defense, including a definition of its mission, its functions, assignment of responsibility, and the means of carrying out its activities. These subjects are discussed in Chapter III of this report.
2. The development and availability of detailed information concerning personnel strength, civil defense specialists, and organizational standards for local governments. A definition of the Swiss civil defense training program was also acquired, together with plans for personnel procurement. These subjects are discussed in Chapters IV and V.
3. The Swiss Shelter Program, including the extent to which construction of protection shelter is required and the degree to which the federal, canton, and local governments share the cost of shelter construction with private homeowners. This subject is discussed in Chapter VI.

In addition to the interviews, a study was made of the following key documents and laws that largely define the Swiss civil defense program:

1. Bundesgesetz über die baulichen Massnahmen im Zivilschutz, (Federal Protective Shelter Law), October 4, 1963 - effective January 1, 1964.
2. Richtlinien über die Gliederung und Sollbestände der Schutzorganisationen, (Guidelines for the Organization and Personnel Requirements of the Defense Organization), January 1, 1963.
3. Bundesgesetz über den Zivilschutz, (The Swiss Civil Defense Law), March 23, 1962.
4. Message du Conseil Fédéral à l'Assemblée Fédérale concernant un projet de loi sur les constructions de protection civile, (Message from the Federal Council to the Federal Assembly Concerning a Civil Shelter Bill), September 21, 1962.
5. Bundesbeschluss betreffend den baulichen Luftschutz, (Federal Decree on Construction for Air Defense), December 21, 1950.
6. Bundesratsbeschluss über die Funktionsstufen und Vergütungen im Zivilschutz, (Federal Decree on the Functional Levels and Pay Scale in Civil Defense), September 15, 1964.

II A SUMMARY OF MAJOR FEATURES OF SWISS CIVIL DEFENSE

The Swiss have designed and developed one of the most effective national civil defense systems existing today. Its major features are given in the following paragraphs.

Close Association with the Swiss Army

Designated units of the Swiss Army, called air defense troops, are specifically assigned to civil defense support duty in the larger Swiss cities. These troops are specially trained for civil defense and are provided with heavy engineering equipment. Army personnel may be assigned to command positions within the civil defense organization or, as specialists, to augment civil defense capabilities. The state of operational readiness of the civil defense organization is keyed to a corresponding state of mobilization in the Swiss armed forces. Duty in the civil defense organization is a substitute for compulsory military duty. Individuals cannot hold conflicting duty assignments with both the military and with civil defense. The system of ranks, promotion, and pay for members of the civil defense organization is patterned after the Swiss armed forces.

Total Civilian Manpower Mobilization

The Swiss concept of civil defense calls for almost total mobilization of civilian manpower in the survival system. Nearly every adult member of the community is given an emergency assignment as a fire fighter, a medical attendant, a stretcher bearer, a member of the welfare service, or another essential job. Virtually all key assignments are filled by personnel with compulsory civil defense service commitments. To fill the demand for personnel, women are encouraged to accept assignments on a voluntary basis whenever the nature of the job permits.

Closely Defined Civil Defense Responsibilities

The civil defense duties and responsibilities of the federal government, cantons,* communes,† business establishments, institutions,

* Roughly equivalent to a state in the United States.

† Equivalent to a city or town.

building owners, and individuals are closely defined by Swiss law. The federal government has the supreme responsibility for supervising and enforcing the implementation of the civil defense program. The canton administers and enforces federal civil defense laws and regulations within its areas of jurisdiction. The commune enforces federal and canton civil defense laws and regulations as they apply to the local government, businesses and institutions, building owners, and private individuals. The nature and magnitude of required civil defense preparations are defined within practical limits, and the responsibility for bearing the cost of all elements of the system (e.g., equipment, training, shelter) is prescribed by the federal government.

Civil Defense Organization, Manning, and Training Prescribed by Federal Government

Under the Swiss civil defense system, the federal government prescribes for each commune its emergency organization, tactical units, manpower, and equipment requirements. Guidelines are also given regarding the detailed tactical deployment of the organization and its concept of operations. Because the Swiss have a standardized table of organization and equipment, they are able to design introductory and advanced training programs that include courses for all operational personnel. The responsibility for teaching these courses is allocated among federal, canton, and commune governments.

The civil defense leaders responsible for specific areas within the larger cities have the same status--in terms of rank, pay, and training--as civil defense directors of cities with comparable population.

Businesses and Institutions Are a Major Element of the Survival System

A mandatory requirement for all Swiss businesses and institutions employing 100 or more personnel is the establishment of civil defense tactical units comprising 5 to 20% of the work force and the appointment of a civil defense chief. The civil defense chief, and the crews and leaders of the various tactical units, must attend a series of training courses and participate in periodic exercises. Industrial and institutional defense units are considered an integral part of the local system and report to specified echelons of command in the commune's self-defense organization. Operational units are manned and equipped to handle the type of problems that could occur in their own establishments, but they are also able to assist throughout the community, if needed.

Compulsory Shelter Construction

All new buildings, including homes and apartment houses, must provide protective shelter for the building occupants. Although some exceptions to this rule are possible to prevent undue hardship, in general

it is universally applied at the discretion of the canton. Private owners are given a subsidy by the federal and canton governments of at least 70% of the shelter cost (not to exceed 5% of the total construction cost, excluding land). A subsidy of 80% is given to the owners of existing buildings as an inducement to build shelters voluntarily.

Communes must build shelter in public places, such as the central business district or other areas where no private shelter exists. The communes must also construct shelter in new and existing hospitals to provide for emergency medical care. The federal and canton governments provide a subsidy of approximately 60% for this purpose.

Mandatory Mutual Aid Agreements and Arrangements

One of the keystones of the Swiss concept of operations is the requirement that each commune must make mutual aid arrangements with neighboring communes. In compliance with the law, the cantons have the authority to combine the civil defense organizations of neighboring communes. To further unify and strengthen the system, the cantons must also arrange a chain of mutual assistance with neighboring cantons.

III BASIC CONCEPTS OF SWISS CIVIL DEFENSE

In this section, the basic concepts of Swiss Civil Defense are outlined, including a statement of: the mission of civil defense; the functions that must be performed; the assignment of responsibility for performing these functions; and the means provided to carry out these responsibilities.

The Mission of Civil Defense

The mission of civil defense is to protect, rescue, and care for the Swiss population and to protect goods and property by measures designed to prevent or lighten the consequences of armed conflict. Civil defense is considered part of the national defense effort; however, it does not have a combat function. (Certain arrangements for mutual assistance with the military are described later.) The civil defense organization, its equipment, and facilities are also available for use in natural disaster, at the discretion of the Swiss cantons.

Civil Defense Functions

The Swiss civil defense organizations must perform the following functions:

1. Educate the people regarding the dangers that would exist in a modern war and instruct them in the measures they must take to counter these hazards. The federal government employs a private organization called the Swiss Association for Civil Defense to assist this effort.
2. Perform the following protective and rescue tasks:
 - a. Alert and warn the population.
 - b. Prevent and fight fires.
 - c. Rescue persons and save property from damage.
 - d. Counteract the effects of nuclear, biological, and chemical warfare.
 - e. Protect against floods.
 - f. Evacuate portions of the population.
 - g. Preserve and maintain business and industry.
 - h. Protect vital and culturally valuable goods and facilities.

3. Perform the following medical care and welfare tasks:

- a. Aid the wounded, injured, and sick.
- b. Provide for the helpless and those without homes.

Assignment of Civil Defense Responsibility

The specific assignment of civil defense responsibility to federal, canton, and commune government; to business and industry; and to private individuals is prescribed in Swiss federal law. Civil authorities ensure that necessary activities are performed and that the laws are enforced. By placing civil defense within civilian agencies of the government, the Swiss believe there is less chance that civil defense personnel will be treated as prisoners of war in the event of occupation.

Federal Government

The Swiss Federal Council exercises supreme supervision and surveillance over the civil defense program, and, if necessary, may take measures to ensure enforcement of civil defense regulations. All federal functions assigned by civil defense legislation (except the preservation of cultural objects) are the responsibility of the Federal Department of Justice and Police; the enforcing agency is the Office of Civil Defense.

Cantons

The canton government administers and enforces federal civil defense laws and regulations; designates the communes and business establishments that must set up civil defense organizations; and ensures the adequacy of these organizations. The canton must establish a civil defense office within its government to administer the C.D. program and must also appoint the necessary number of instructors for the program.

Communes

Swiss local governments are regarded as the chief implementers of civil defense in their respective areas. They are responsible for the enforcement of the laws and regulations enacted by the federal and canton governments. Civil defense activities of business establishments, building owners, and individuals within their area of jurisdiction must be monitored by the communes to ensure compliance with the law. As an enforcing agent, the commune must appoint a local director with the necessary authority.

Business Establishments

Swiss business establishments are responsible for forming a civil defense organization and complying with other required measures.

Building Owners

Swiss building owners are responsible for forming a civil defense organization, complying with blackout regulations, and obeying regulations regarding the accumulation of debris.

Individual Persons

The public must observe blackout regulations, guard against the accumulation of debris, and obey regulations governing personal behavior during warnings and alerts. Upon the activation of civil defense organizations, each person is obliged to render aid to the full extent of his ability.

System Activation

The activation of the civil defense system in an emergency may be accomplished at the federal, state, or local level. The federal government is empowered to activate civil defense organizations should there be a partial or full military mobilization. The cantons and individual communities have the authority to activate civil defense organizations in the event of an unexpected act of war, or to render emergency aid in case of a natural disaster.

Military Support

The Swiss Army supports civil defense by placing designated military units called air defense troops at the disposal of local governments. These units are assigned by the federal government to assist large communities that lie in probable target areas. The origin of such substantial support is due to the militia nature of the Army and because civil defense was formerly under military administration.

Program Cost

The cost of the Swiss Civil Defense Program over the last three years (including shelter construction subsidies) is given below:

1963:	14.5 million Swiss francs (actual expenditures)
1964:	48.0 million Swiss francs (budget amount)
1965:	74.6 million Swiss francs (budget amount)

The 1965 program amounts to 13.75 Swiss francs per person (approximately \$3.00 at the official rate of exchange).

IV SWISS CIVIL DEFENSE ORGANIZATION AND OPERATIONS

Under Swiss law, civil defense organizations must be established by communes, business establishments, and groups of homes. The organizations within business establishments and homes are under the command of the commune civil defense organization. In general, local civil defense organizations must be created in all communes with a population of 1,000 or more; those with less must set up, as a minimum, an independent war emergency fire-fighting unit. The canton is empowered to combine the local civil defense organizations of two or more communes if such an arrangement is desirable. Essentially all business establishments employing 100 or more persons and all hospitals, nursing homes, and mental institutions with 50 or more beds must establish a civil defense organization.

Commune Civil Defense Organizations

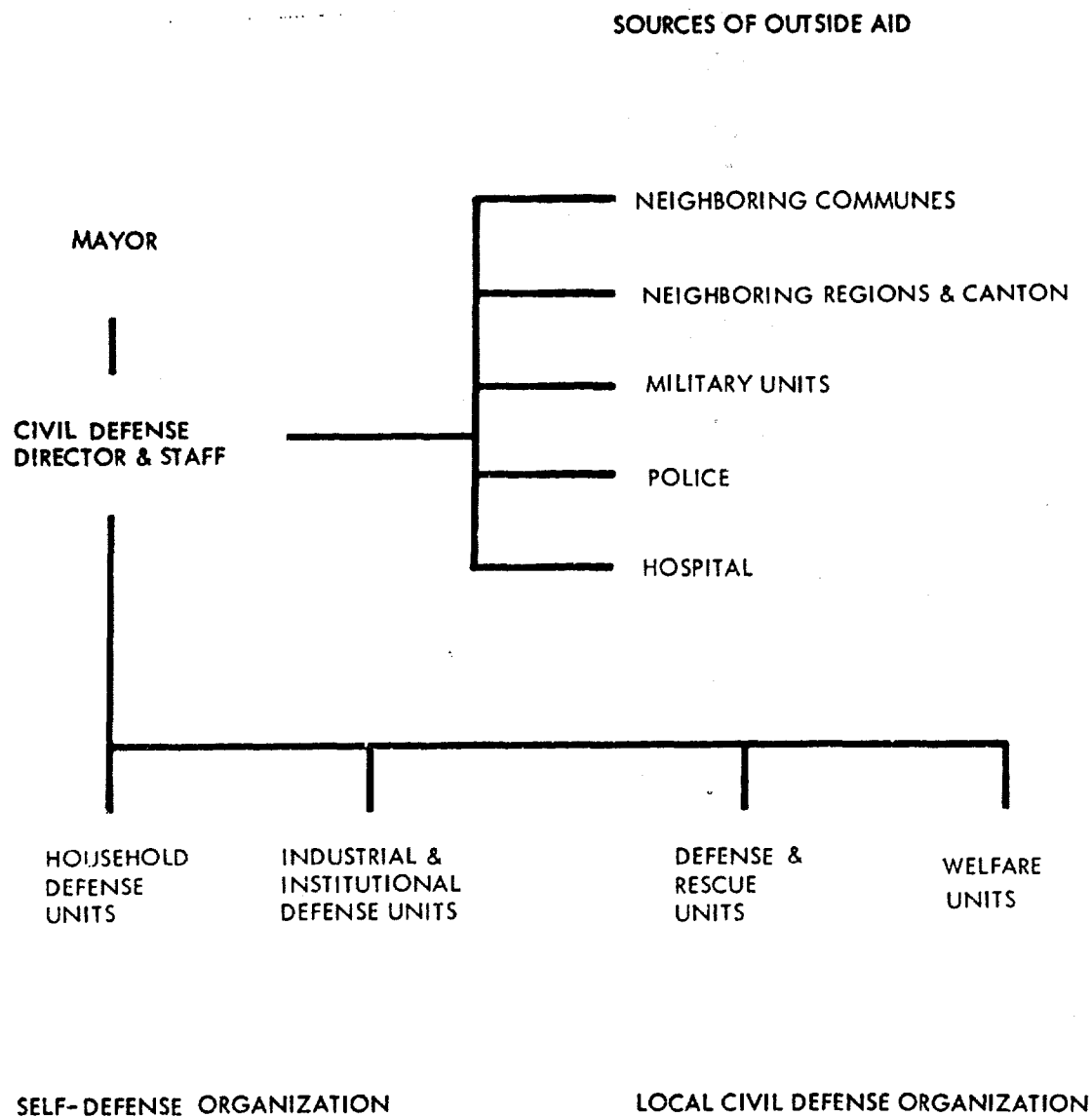
As Figure 1 indicates, there are two major types of organization at the commune level of government: self-defense and local civil defense. The self-defense organization is composed of household defense units and industrial and institutional defense units that are largely made up of personnel within homes and businesses. The local civil defense organization is composed of specialized defense, rescue, and welfare units, generally under the immediate control of the local director. These organizational relationships are shown in Figure 1. The equipping of civil defense organizations is a ten-year program that started in 1964 (10% of the equipment was furnished at the end of 1964).

Personnel Strength

The approximate apportionment of personnel within the civil defense organizations of a Swiss commune is prescribed by the federal government and requires an almost complete mobilization of the adult members of the community. To estimate the manpower necessary for civil defense, the number of personnel preassigned for military duty is deducted from the total population of the commune to determine the remaining inhabitants. Approximately one-third of the remaining inhabitants (nearly all able-bodied adults) are required for civil defense. From this one-third, 10% is deducted to meet unforeseen and extraordinary civil defense needs. Of the remainder, 25% are assigned to specialized units of the local civil defense organization, and 75% are assigned to the self-defense organization. This computation for any given commune usually results in the assignment of 6% of the population to local civil defense units and 18% to the self-defense organization.

Figure 1

COMMUNE CIVIL DEFENSE ORGANIZATIONS



In meeting these heavy demands upon the commune, the Swiss realize that men alone cannot fill the requirement. Accordingly, field guidance specifies that jobs be assigned to women whenever the nature of the task permits. This policy is an outgrowth of World War II experience when the Swiss achieved excellent results using women in fire brigades (i.e., local fire departments). They found it preferable to use physically fit women in the local fire-fighting units than to use men unfit for military service.

Concept of Operations

The concept of operations is based on the philosophy that units of the self-defense organization will perform all functions within their capability, such as fire fighting, rescue, and medical aid. When confronted by problems beyond that capability, help is requested from the local civil defense director, who is empowered to dispatch operational units to their aid.

If conditions become so extreme that the commune civil defense organizations can no longer cope with the situation, the local director may call upon such sources of outside aid as police and hospital units and facilities, civil defense organizations in neighboring communes and cantons, and military units. The police and hospital resources are those ordinarily associated with the commune; however, they are classed as outside sources of aid since they exist apart from the civil defense organizations. Under Swiss law, neighboring communes must execute mutual assistance arrangements; ensuring compliance with this requirement is the responsibility of the canton. Similar mutual aid arrangements must be undertaken between neighboring cantons.

As previously stated, the larger communes have Army units assigned to them for civil defense use; furthermore, any commune may request military assistance. At the end of 1964, 28 battalions (3-6 companies per battalion) and 13 independent companies of special air defense troops were deployed for civil defense assistance. These special troops are equipped with heavy equipment for fire fighting, rescue, and medical assistance.

When Army units are made available, the local civil defense director decides where their assistance is needed and with what urgency. In actual use, the military units maintain their unit integrity and are ordered and controlled by the military commander. Although the local civil defense director may be assisted by Army units, he has no assurance that they will remain with his commune for any period of time. Units may be withdrawn by higher echelons of military command because of the need for these troops in combat operations or for any other reason, (i.e., more pressing civil defense needs).

The relationship between the military and civil defense is altered when a commune is in or near a combat zone. In such a case, the

cooperation between the Army and civil defense is determined by the military commander. Civil defense may be assigned tasks by the military commander, with the sole reservation that such tasks must not be of a combat nature.

The Swiss no longer plan for the evacuation of the civilian population in their concept of operations. Switzerland is a small country geographically, and any mass movement of people would hinder military operations.

Commune Self-Defense Organization

The commune self-defense organization is composed of household defense and industrial and institutional defense units. The composition and deployment of these units is described in the following paragraphs.

Household Defense

The basic civil defense organization of the commune is household defense. Each dwelling in the commune is an element in its structure, as shown in Figure 2. For each group of dwellings containing 60-80 inhabitants, the following household defense unit is formed:

<u>Job Title</u>	<u>Number</u>
Building chief	1
Shelter warden (deputy)	1
Fire fighters and rescue	3
Sand carriers	2
Medical attendant	1
Messenger	1
Total	9

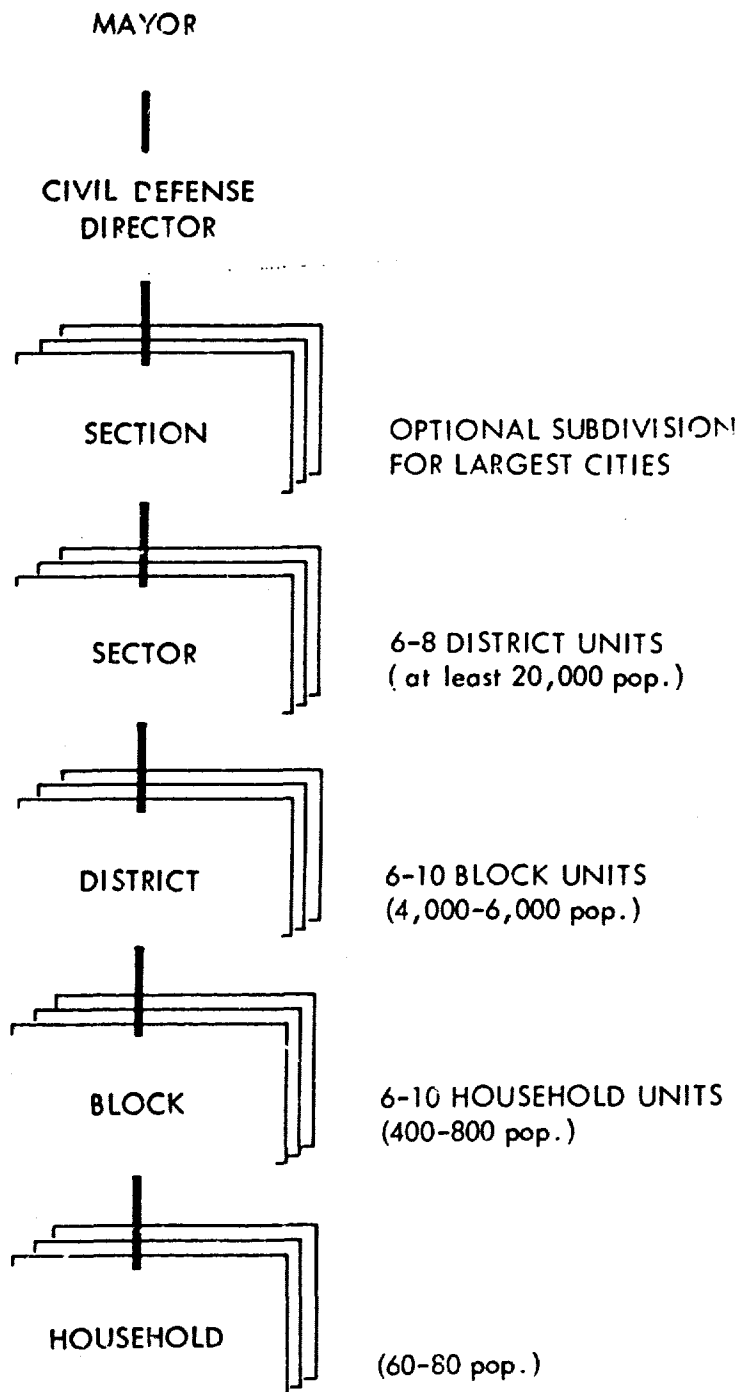
Swiss regulations stipulate that members of the household defense unit should be persons who remain on the premises day and night. For this reason, and because of the general shortage of personnel, women are generally the members of this unit. Depending upon special conditions, such as in tall, multistory apartment buildings, the unit may be expanded to include more fire fighters, sand carriers, medical attendants, and messengers.

The training and administrative support of household defense units is the responsibility of the household defense service chief, who is part of the civil defense director's staff. Tactical command in an emergency, however, is exercised by the block chief. At the end of 1964, 84,000 building chiefs were trained.

Figure 2

SELF-DEFENSE ORGANIZATION

Household Defense



The block unit consists of 6-10 household units and an area of the city containing 400-800 people. Block unit personnel consist of the following:

<u>Job Title</u>	<u>Number</u>
Block chief	1
Block staff	<u>3</u>
Total	4

The block staff consists of a minimum crew that serves as: a deputy to the block chief, an emergency analyst or sorter, a log clerk, and a telephone operator. (Only three persons are required, as one member performs two of these jobs.)

A district unit consists of 6-10 block units containing 4,000-6,000 people. District unit personnel are:

<u>Job Title</u>	<u>Number</u>
District chief	1
Emergency analyst	1
Clerks	<u>4</u>
Total	6

The emergency analyst is responsible for reviewing all incoming information and plotting data on situation maps. The clerks are responsible for keeping the log, acting as messengers, and operating telephone and radio equipment.

A sector unit consists of 6-8 district units containing at least 20,000 population. Sector unit personnel consist of the following:

<u>Job Title</u>	<u>Number</u>	<u>Total</u>
Command		
Chief	1	
Secretary	1	
Orderly	1	3
Communications		
Chief (deputy)	1	
Analyst	1	
Clerks (log & map clerks)	3-5	5-7
Service Representatives		
Warning	1	
Fire fighting	1	
Engineering	1	
Medical	1	
Welfare	1	
Household & business	1	<u>6</u>
Total		14-16

For large cities, an added echelon of command--called a section--may be set up. The staff of this unit is identical to the sector except for the addition of atomic-biological-chemical service representatives. Depending upon the size of the city, sectors or sections report to the civil defense director and his staff.

Industrial and Institutional Defense

According to Swiss law, public and private businesses and administrative offices employing more than 100 persons must establish a civil defense organization. Similar organizations must also be set up in all hospitals, nursing homes, and mental institutions having 50 or more beds.

The approximate number of persons required for such organizations, as a function of the size of the work force, is:

<u>Work Force Personnel</u>	<u>Number of Defense Organization Personnel</u>	<u>Percent</u>
100	20	20%
200	32	16
300	45	15
400	52	13
500	60	12
750	75	10
1,000	90	9
2,000	130	6
3,000	150	5
over 3,000	--	5

These figures are suggested norms. Variations may be caused by special features of a business or institution, such as the size of the buildings, type of construction, nature of business, and the danger of fire or explosion.

Figure 3 shows the units into which the industrial and institutional defense organization is divided. The distribution of personnel among these service units is approximately as follows:

<u>Unit</u>	<u>Percent of Defense Organization Personnel</u>
Staff of C.D. chief and warning observation & communications units	15%
Fire fighting and rescue	45-50
Technical services	20-25
Medical aid	<u>10-20</u>
Total	100%

The training and administrative support of the service units is the responsibility of the industrial and institutional service chief, who is part of the C.D. director's staff. In an emergency, however, tactical command is exercised through the household defense organization. As indicated in Figure 4, industrial and institutional defense units for establishments employing over 800 persons report for tactical control to the C.D. director; those employing between 300 and 800 persons report to their district chief; those employing less than 300 persons report to their appropriate block chief. Through this system of tactical control,

Figure 3

SELF-DEFENSE ORGANIZATION
Industrial and Institutional

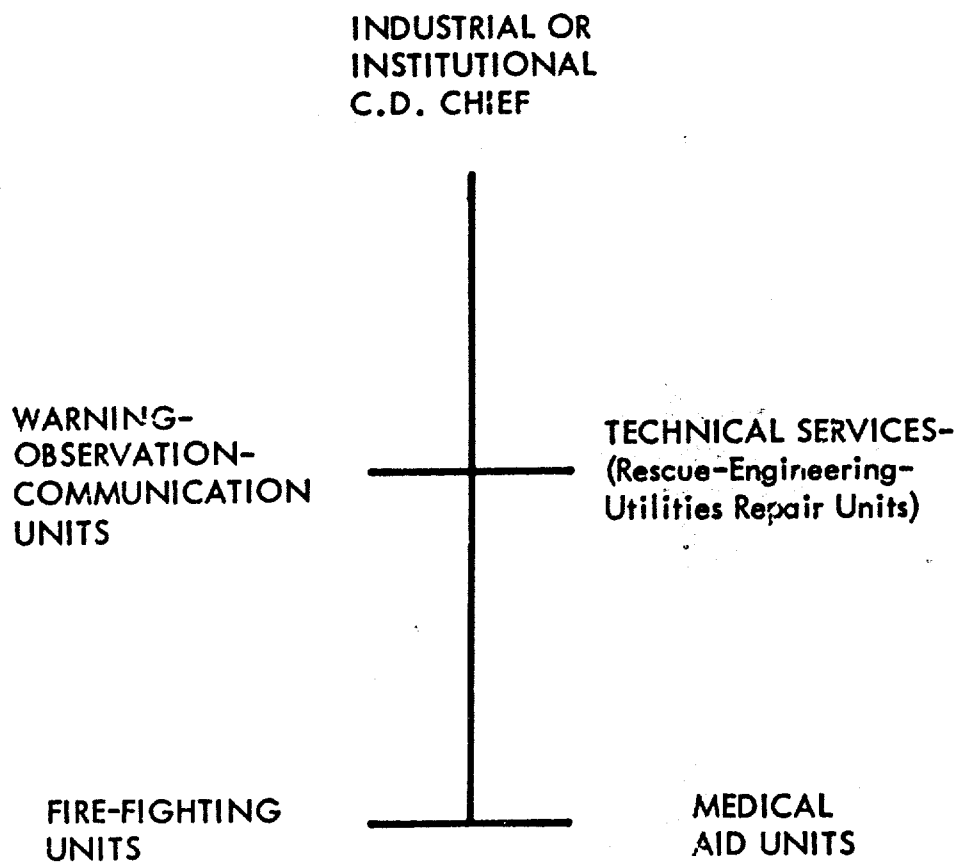
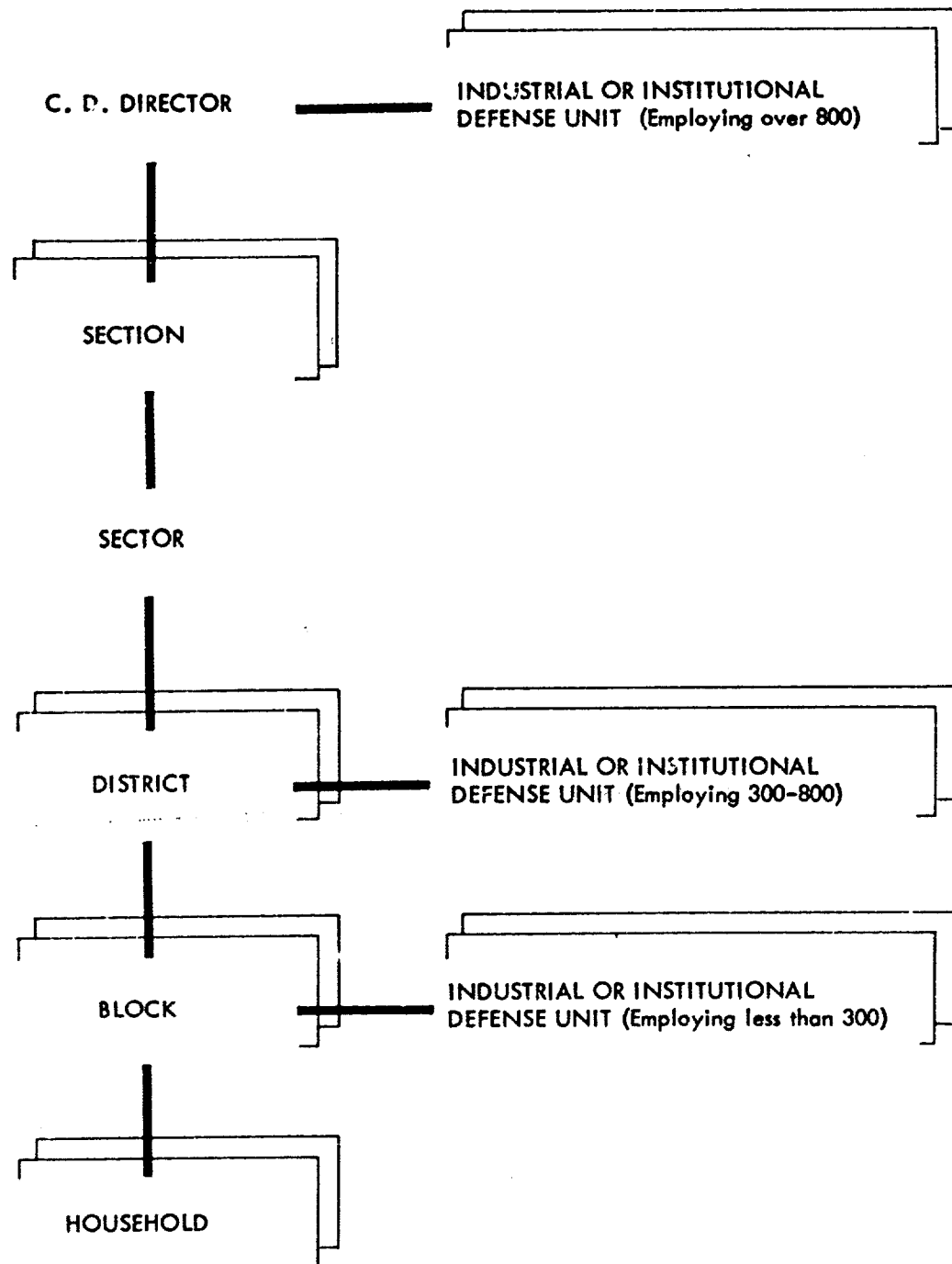


Figure 4

INDUSTRIAL AND INSTITUTIONAL DEFENSE UNITS Tactical Control



organized units from business and institutions may be ordered to carry out rescue, fire-fighting, medical, or engineering-type assignments throughout the community--and are not restricted merely to their own factory or institution.

The general guidance provided above does not, of course, apply to hospitals and other medical institutions where the medical service represents the bulk of the professional personnel. It is planned that the entire operation of the hospital will continue in basement shelters, ready for mass-casualty care. The organization of the hospital will reflect this requirement.

Local Civil Defense Organization

The local civil defense organization consists of various service groups organized as tactical units. Figure 5 lists these services and indicates their relation to the civil defense director. As previously discussed, the total personnel of the local civil defense organization is approximately 6% of the population of the commune. The approximate distribution of these personnel among the services is presented in Figure 6. The composition and deployment of the various command and service groups are discussed in the following paragraphs.

Composition of Command and EOC Staff

The highest authority in the local civil defense organization is the civil defense director. During an emergency, he is located at the Emergency Operating Center (EOC) where he may use his staff and the EOC's communication facilities. The self-defense organization, previously discussed, reports to the local civil defense director through the chain of command established from household defense units and industrial and institutional defense units to block, district, and sector headquarters. The various tactical units of the local civil defense organization also report for instructions to the director located in the EOC. For training and administrative purposes, these units report to their service chiefs during normal times. Table 1 lists the personnel on the EOC staff and their titles. In addition to these individuals, there are also telephone repair crews (4-7 men) and a number of observation crews (4-7 men) attached to the EOC and other levels of command, depending upon the size of the city.

The floor plan of a typical Swiss commune's EOC is shown in Figure 7. Note the warning and communications center through which incoming and outgoing messages are processed. Incoming messages are logged in and forwarded to the operations room for analysis. In the operations room, the civil defense director can assess the situation presented on the various wall maps that are posted by special assistants and clerks. He may also call upon the service chiefs who have office space in an adjoining room. The EOC has facilities for emergency power, water storage, and decontamination.

Figure 5

LOCAL CIVIL DEFENSE ORGANIZATION

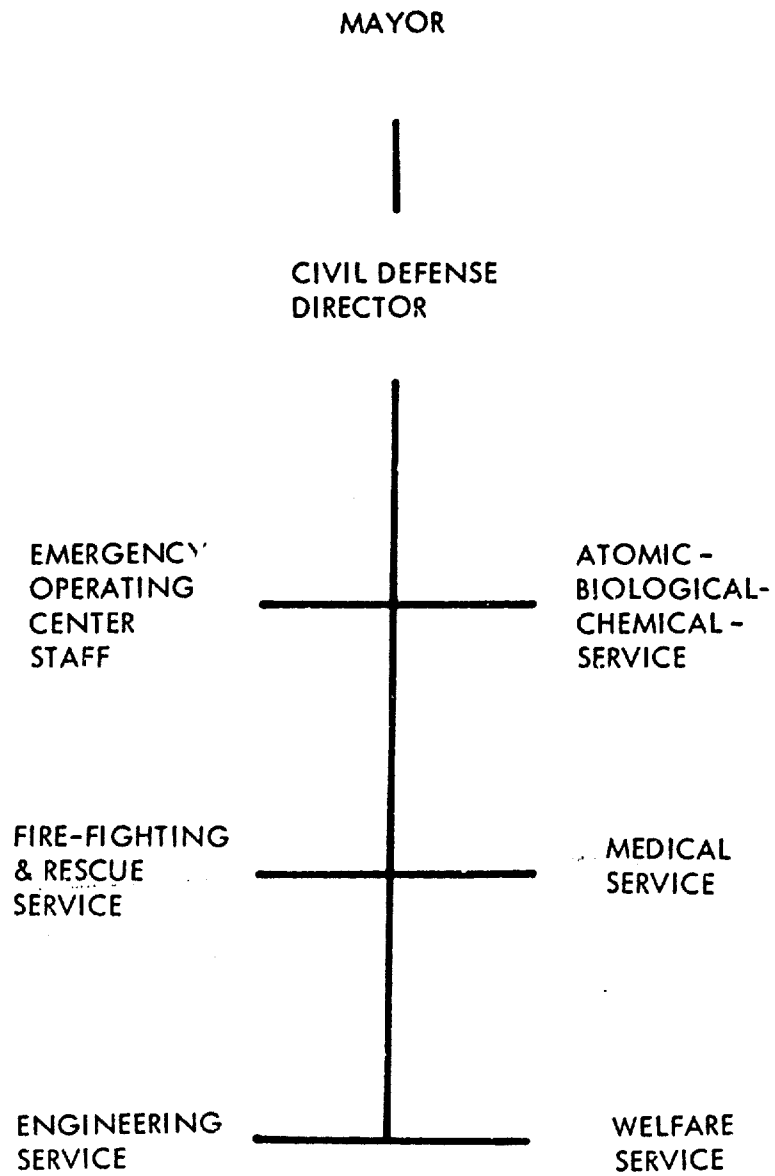


Figure 6

LOCAL CIVIL DEFENSE ORGANIZATION
Distribution of Personnel Among Services

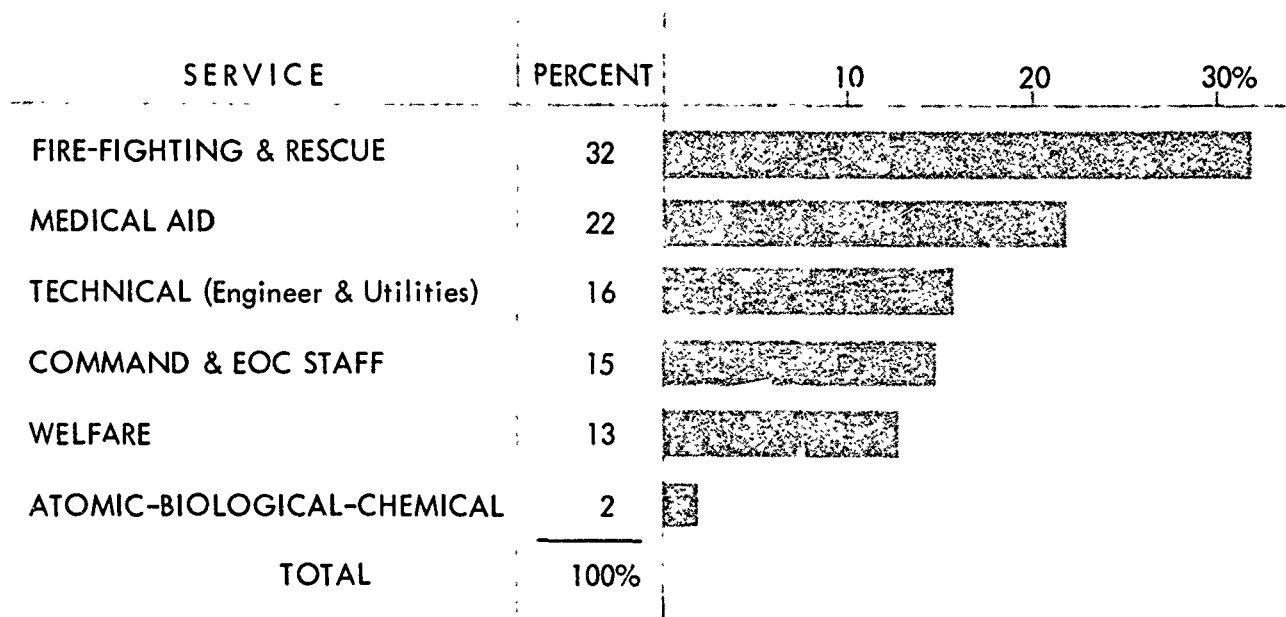


Figure 7

COMMUNE EMERGENCY OPERATING CENTER FLOOR PLAN

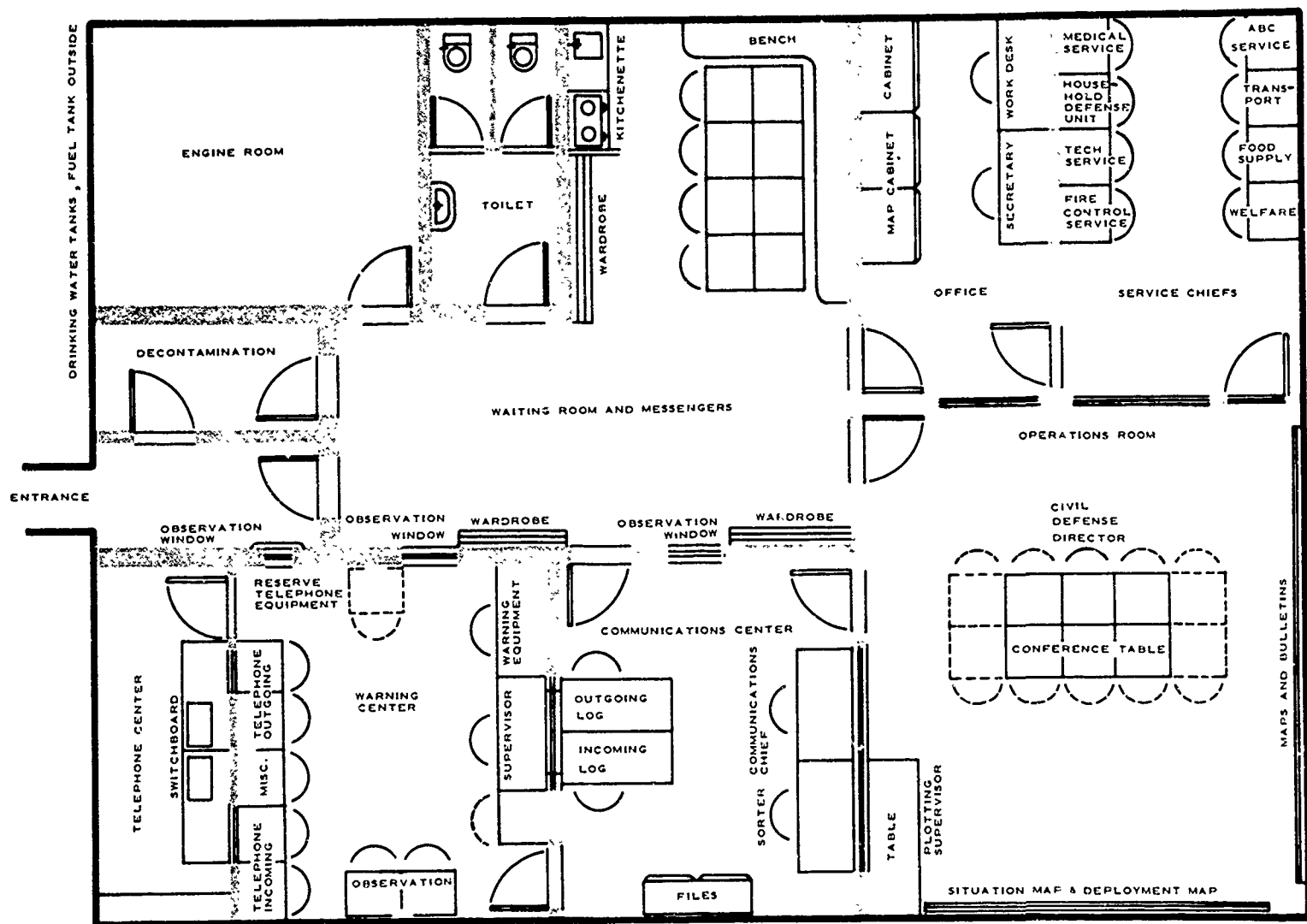


Table 1

EMERGENCY OPERATING CENTER STAFF

<u>Job Title</u>	<u>Number</u>	<u>Total</u>
Command		
Civil Defense Director	1	
Assistants	2	3
Communications and Warning		
Chief and Deputy	2	
Emergency analyst	1	
Clerks (map plot and message log)	3-5	
Telephone operators and messengers	5-9	
Radio operators	0-4	11-21
Service Chiefs		
Warning and liaison service	1	
Fire-fighting and rescue service	1	
Technical service	1	
Medical service	1	
ABC service	1	
Welfare service	1	
Household defense	1	
Optional Service Chiefs		
Business and institution	0-1	
Transport	0-1	
Food supply	0-1	<u>7-10</u>
Total staff		21-34

Composition of Operational Service Units

Each of the local services has distinctive organization, manning, and equipment patterned to its own operational requirements. The following is a précis of this information.

Fire-Fighting and Rescue Service. The basic tactical unit of the fire-fighting and rescue service is the action detachment, whose organization and manning is illustrated in Figure 8. Each detachment consists of two platoons; each platoon is composed of two squads. Two medical attendants are attached to each platoon. The platoon's major item of equipment is a fire engine, capable of pumping 1,500 liters per minute, carried on a tractor-type vehicle. A complete set of hand tools is also provided for fire fighting and rescue work.

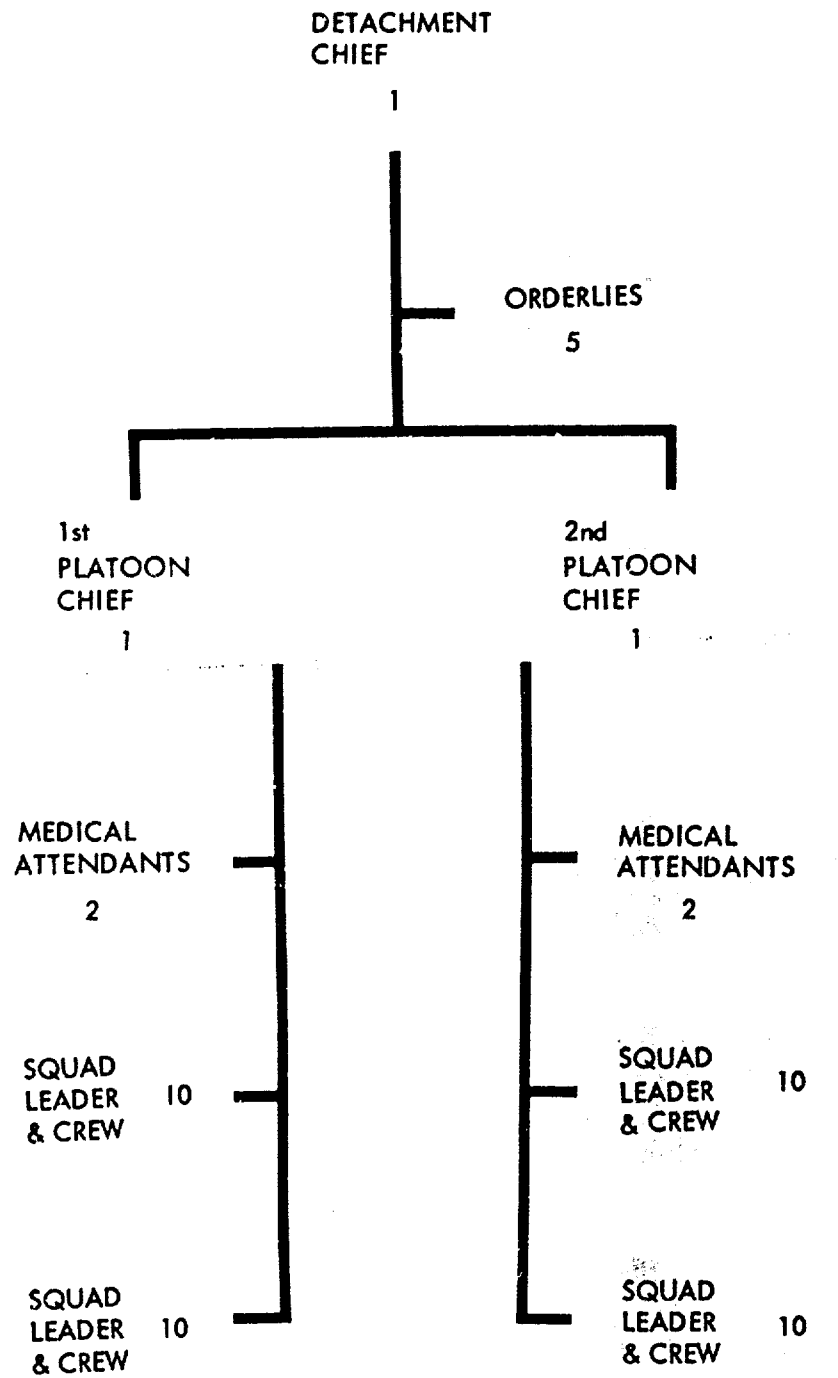
Medical Service. The tactical units of the medical service are: teams of medical attendants attached to the various other service teams, medical units, and medical stations. The organization of the medical unit, illustrated in Figure 9, consists of medical attendants and stretcher bearers. Its job is to administer first aid to the injured and to transport them to a medical station when this is possible. The unit is provided with a set of utensils, medicines, bandages, splints, and nursing supplies. The medical station, as shown in Figure 10, is manned for complete medical care and is organized into receiving, treatment, and care groups. Surgical equipment and supplies are provided, together with the required drugs and operating room furnishings. The care group is set up to accommodate 50-70 bed patients. The medical station will use the facilities of existing medical installations or other buildings converted for emergency use.

Technical Service. The technical service shown in Figure 11 consists of utility platoons and engineer platoons, each of which may be deployed as an independent unit. The utility platoon is subdivided into 7-man electricity, water, sewer, and gas squads. The engineer platoon is divided into two 11-man squads to which two medical attendants are attached. Each engineer squad is equipped with heavy rescue equipment, including chain saws, searchlights, winches and tackle, a mobile compressor and jackhammer, and a tractor-type vehicle for transportation.

Welfare Service. The tactical formation of the welfare service consists of aid stations and collection points, as shown in Figure 12. Each aid station consists of a 5-man team for immediate assistance to the homeless. Collection points include groups responsible for registration, care, and feeding, and they are equipped to feed and to provide sanitary facilities and housing for 300 persons. Two medical attendants are attached to each collection point. If it becomes necessary to set up a refugee camp, collection point personnel will act as the cadre for the establishment.

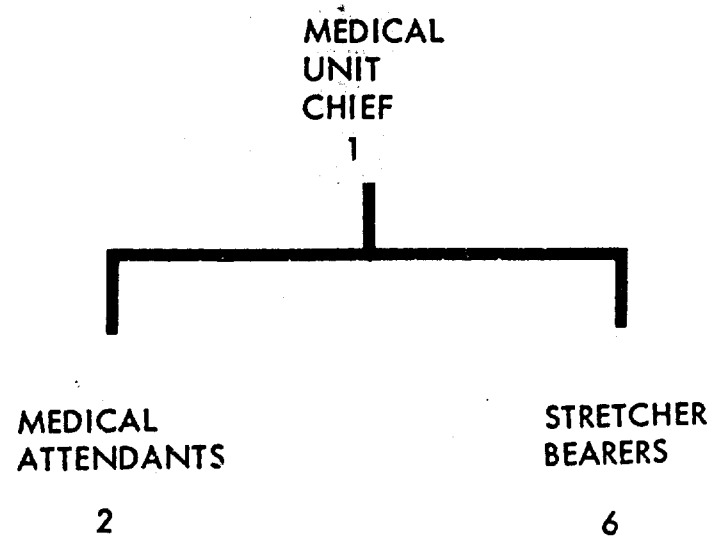
Figure 8

FIRE-FIGHTING AND RESCUE SERVICE
Action Detachment



TOTAL PERSONNEL : 52

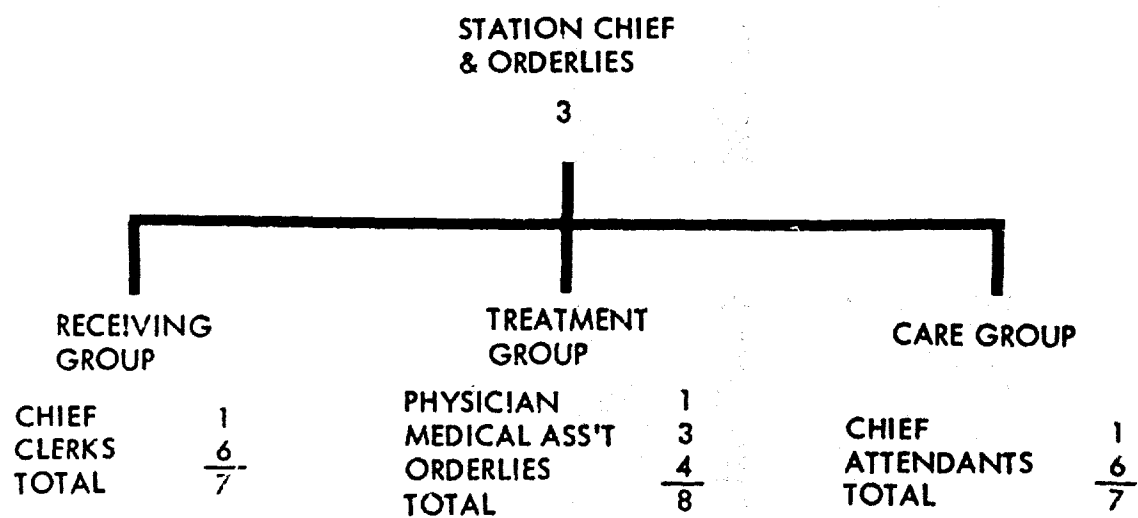
Figure 9
MEDICAL SERVICE
Medical Unit



TOTAL PERSONNEL: 9

Figure 10

MEDICAL SERVICE
Medical Station



TOTAL PERSONNEL: 25

Figure 11
TECHNICAL SERVICE

UTILITY PLATOON

PLATOON
LEADER
& ORDERLIES
4

ELECTRICITY
SQUAD
7

WATER/SEWER
SQUAD
7

GAS
SQUAD
7

TOTAL PERSONNEL: 25

ENGINEER PLATOON

PLATOON
LEADER
& ORDERLIES
3

1st SQUAD
11

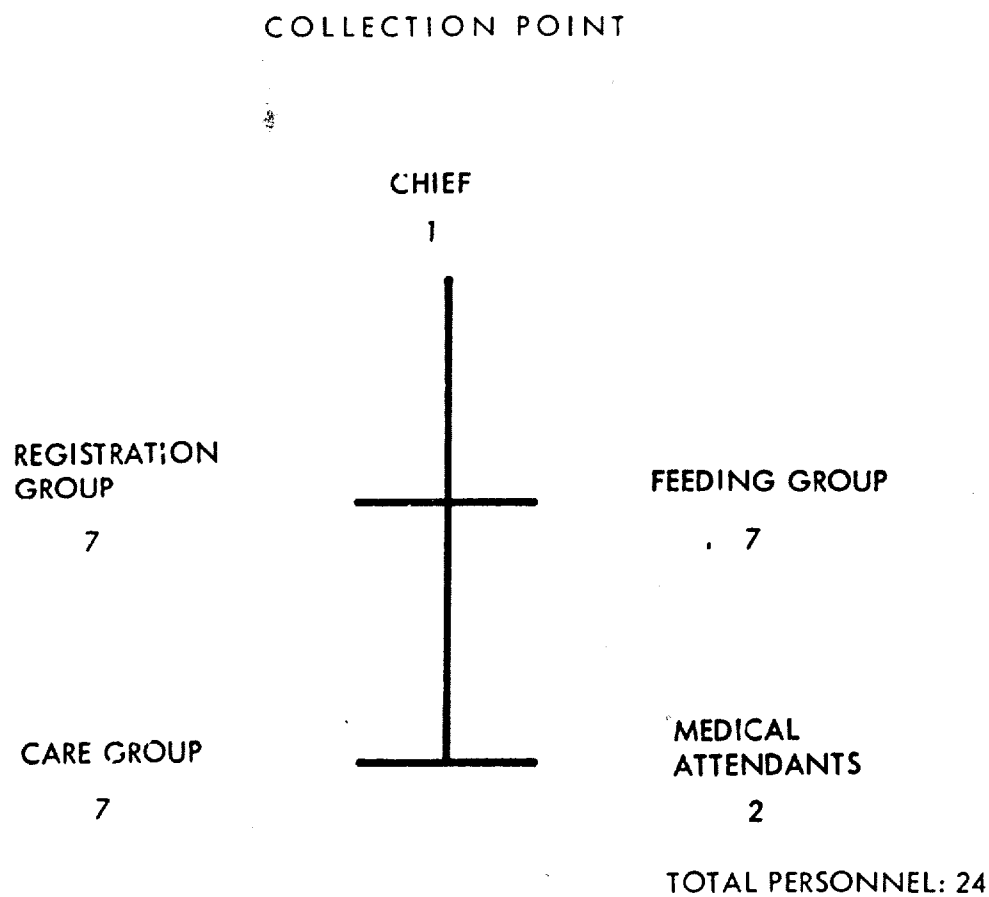
2nd SQUAD
11

MEDICAL
ATTENDANTS
2

TOTAL PERSONNEL: 27

Figure 12

WELFARE SERVICE



AID STATION

AID STATION STAFF	
CHIEF	1
CREW	<u>4</u>
TOTAL	5

Atomic-Biological-Chemical Service. The tactical units of the ABC service consist of a command group, radiation detection patrol, chemical detection patrol, and a decontamination group. The organization and manning of these units is illustrated in Figure 13.

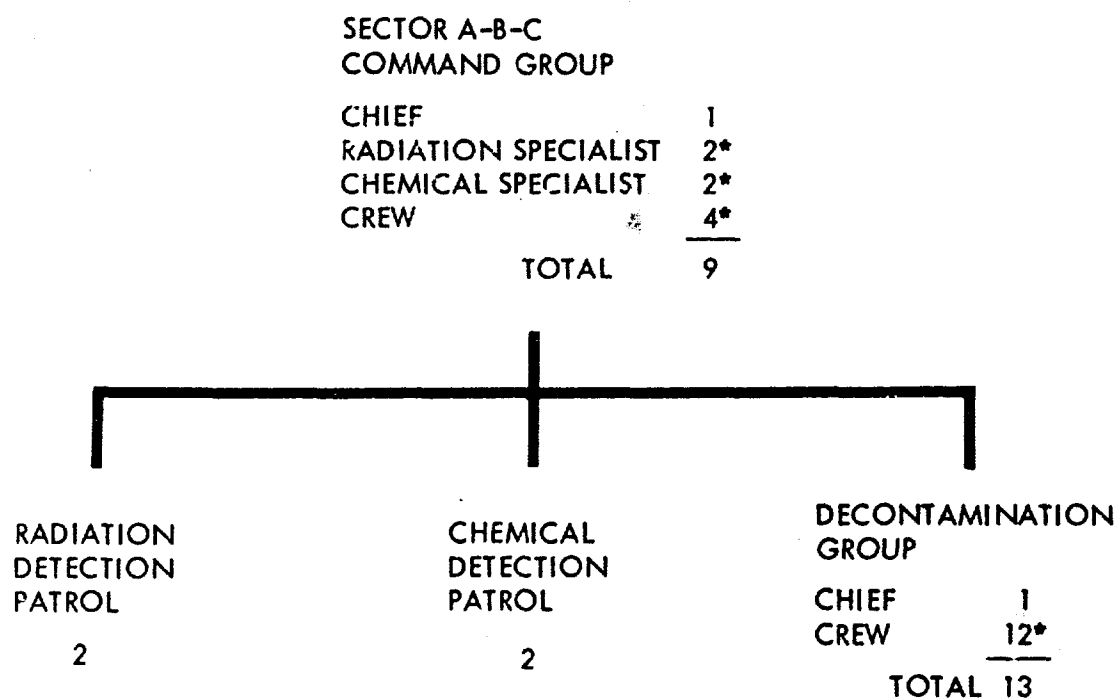
Tactical Deployment of Operational Service Units

For training and administrative purposes, each operational unit reports to its respective service chief. When an actual emergency occurs, however, each unit is deployed throughout the commune in a prescribed pattern. In general, the tactical units become part of the self-defense organization and report to an echelon commander, as indicated in Figure 14.

The Sector Chief has under his direct command an action detachment of the fire-fighting and rescue service, engineer platoon and utility platoon of the technical service and a command group, radiation detection patrol, chemical detection patrol and decontamination group from the ABC service. The sector chief, at his discretion, may deploy fire-fighting and technical service units to districts within his sector. Each district chief has under his direct command a medical station and welfare collection point. Each block chief has a medical unit and a welfare aid station under his direct control.

Figure 13

ATOMIC-BIOLOGICAL-CHEMICAL SERVICE

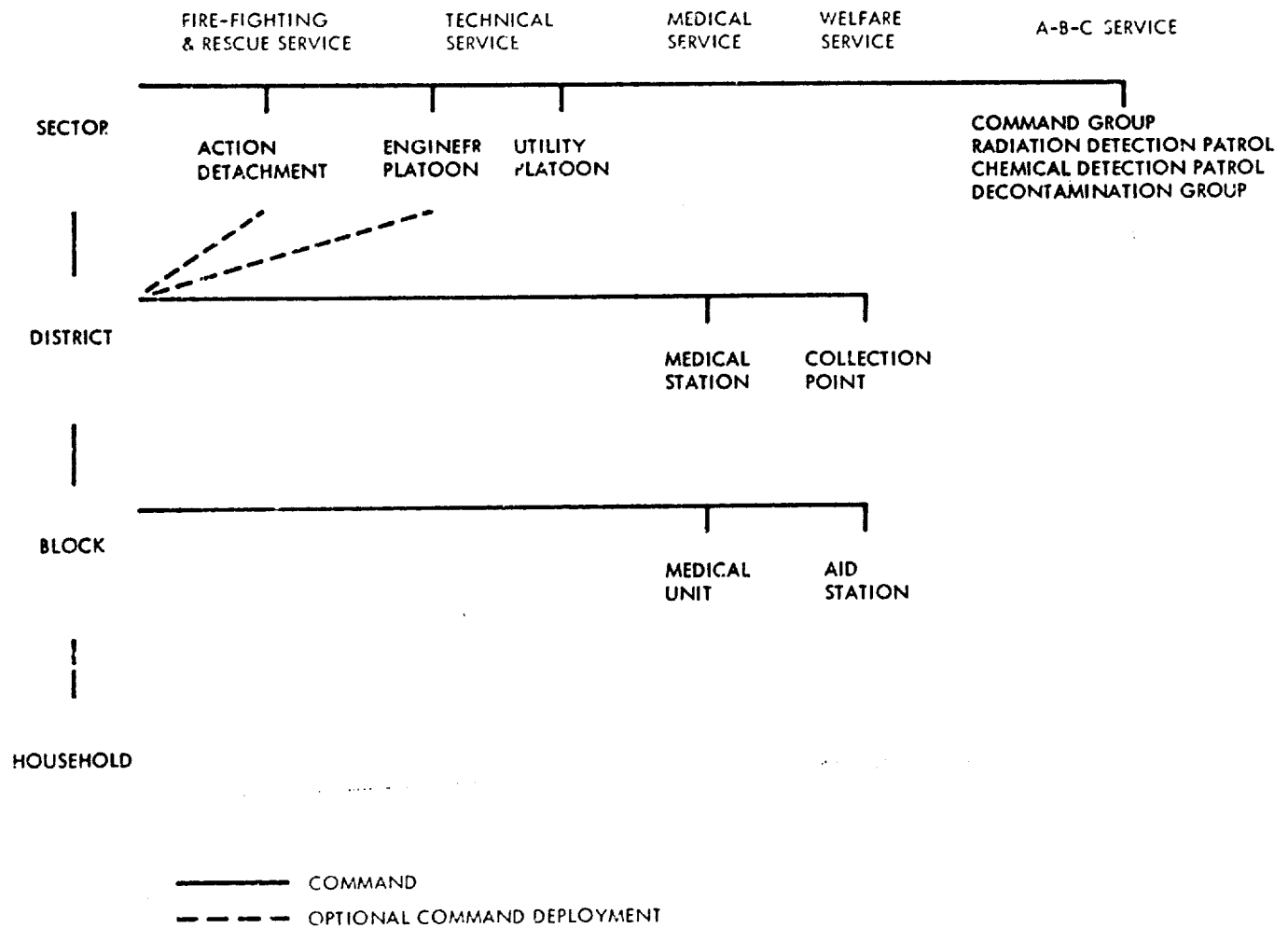


TOTAL PERSONNEL: 26

* These numbers are reduced by one-half
for Communes not divided into sector and districts.

Figure 14

TACTICAL DEPLOYMENT OF LOCAL CIVIL DEFENSE ORGANIZATION



V PERSONNEL PROCUREMENT AND TRAINING

The organization described in the previous section requires a large number of personnel trained to perform many specialized tasks. The Swiss system for obtaining and training such personnel is described in the following paragraphs.

Personnel Procurement

All Swiss men are liable for civil defense duty upon reaching the age of 21 and remain available until they are 61. An exception to this policy is men who have duty assignment with the armed forces. Some members of the armed forces, however, may be given civil defense command positions or serve as specialists in civil defense organizations. Conversely, a number of men liable for civil defense duty may also serve as reserves to the canton and commune police forces. Service in a civil defense organization is a substitute for military service. There is also provision for volunteer service (particularly for women) for a term of five years. The rights and duties of volunteers, however, are identical to those of personnel serving under legal compulsion.

During training or during an actual emergency, civil defense personnel are entitled to receive pay for their services, which generally conforms with Army rates. Eight functional levels have been defined within the civil defense organization, as shown in Table 2. The pay for each functional level is:

<u>Functional Level*</u>	<u>Daily Pay (Swiss francs)</u>
1	20
2	17
3	15
4	13
5	10
6	7
7	5
8	4

* There is a ninth functional level that is paid 3 Swiss francs per day. This level constitutes the majority of personnel in the organization.

Table 2

FUNCTIONAL LEVELS WITHIN SWISS CIVIL DEFENSE ORGANIZATIONS

Functional Level	Local Civil Defense
1	Directors of large cities divided into sectors and sections
2	Directors of cities divided into sectors Section chiefs
3	Directors of cities without sectors Sector chiefs
4	Deputy C.D. Directors of large cities divided into sectors and sections (the deputy is also communications chief) Service chiefs of large cities divided into sectors and sections Deputy section chiefs Section service chiefs
5	Medical doctors Dentists Pharmacists Veterinarians Physicists (nuclear warfare) Chemists (chemical warfare) District chiefs Detachment chiefs Deputy C.D. Directors for cities without sectors Sector deputy chiefs Sector service chiefs
6	Block chiefs Platoon leaders EOC analysts
7	Chief accountants Public shelter wardens

Table 2 (concluded)

Functional Level	Local Civil Defense
8	Group Chiefs Supply chiefs Food service chiefs Alarm and communications Equipment chiefs Map plotters Analysts and plotters for districts and blocks Anesthetist assistants Operating room assistants X-ray assistants Medical orderlies Radiation technicians Chemical warfare technicians
	Industrial and Institutional Defense
5	C.D. chiefs of large business or institution Medical doctors Detachment chiefs
6	C.D. chiefs of medium-size business or institution Deputy C.D. chiefs Service chiefs Platoon leaders
7	C.D. chiefs of small-size business or institution Chief accountants
8	Group chiefs Supply chiefs Analysts Map plotters Medical assistants Shelter wardens for large business
	Household Defense
7	Building chiefs
8	Shelter wardens for private shelters

In addition to a pay scale and civil defense ranks, a promotion system has also been developed.

Civil defense personnel are entitled to many of the rights of the military. They are insured against illness and accident and are given protection against loss of job during civil defense training and active duty. They are also entitled to apply for loss-of-earnings indemnification and to the suspension of action for debt recovery and bankruptcy during civil defense service.

Civil Defense Training

Swiss civil defense law prescribes a set of training courses and exercises that must be performed by the members of civil defense organizations at all levels of government. Insofar as possible, joint exercises are carried out with special military units assigned civil defense duties.

The duration of training varies with the degree of responsibility and specialization inherent in the civil defense position. All members of the commune's self-defense organization must participate in a 3-day introductory training course. All leadership personnel and specialists at the local level must receive a 12-day (two weeks) basic training course, with a refresher course every four years. Personnel in higher civil defense positions must also undergo an additional training course of up to 12 days (two weeks) duration.

The Commune's Civil Defense Training Responsibility

The commune is responsible for the training of group chiefs, block chiefs, building chiefs, and the rank-and-file of the local organization. A schedule of the courses taught at the local level is given in Table 3. In addition to these classroom courses, the local C.D. organization must be given a two-day training exercise each year.

The Canton's Civil Defense Training Responsibility

The canton is responsible for the training of the commune's service chiefs, detachment chiefs, sector chiefs, and the specialists of the local civil defense organization (excluding ABC). The heads of industrial and institutional civil defense units for establishments with less than 500 employees are also trained by the canton. In addition, the canton must train the members of its own institutes and agencies. A schedule of the courses taught by the canton is provided in Table 4.

Table 3

COURSES TAUGHT BY COMMUNE CIVIL DEFENSE ORGANIZATION

Course Title	Required Attendance
Introduction to Civil Defense (3 days)	Household and business building chiefs Crew members of all local civil defense service organizations
Shelter Manager's Course	All shelter managers
Household Medical Attendant's Course	Medical attendants that are members of household defense units
Medical Care Course	Medical service personnel who are medical attendants, stretcher bearers, and part of the medical station care group
Self-Defense Organization Group Chief Course (2 days)	Household defense unit chief Industrial and institutional C. D. chief
Self-Defense Organization Block Chief Course (5 days)	All block chiefs
Local Civil Defense Organization Group Chief Course (4-5 days)	Fire fighting and technical service squad leaders Medical service medical station group chiefs Medical service medical unit chiefs Welfare service collection point group chiefs Welfare service aid station chiefs Selected EOC staff members

Table 4

COURSES TAUGHT BY CANTON CIVIL DEFENSE ORGANIZATION

<u>Course Title</u>	<u>Required Attendance</u>
Fire-Fighting Equipment Course	Industrial & institutional fire-fighting crews Fire-fighting & rescue service units
Chemical Warfare Course	Industrial & institutional chemical war specialists Fire-fighting & rescue chemical war specialists
Construction Equipment Course	Industrial & institutional air compressor specialist Technical service air compressor specialist Technical service construction machinery specialist
Atomic-Biological-Chemical Patrol Course	ABC service--patrol crew members
Atomic-Biological-Chemical Specialists Course	ABC service--sector specialists ABC service--chief of decontamination group
Business & Institute Unit Leaders Course	Industrial & institutional unit leaders
Welfare Administration Course	Welfare service--collection point Welfare service--registration group chief
Welfare Mass-Feeding Course	Welfare service--collection point Welfare service--feeding group chief
Medical Assistant's Course	Medical service--medical station Medical service--medical assistants

Table 4 (concluded)

<u>Course Title</u>	<u>Required Attendance</u>
Detachment Chief's Course	Fire-fighting & rescue service-- detachment chief
	Medical service--medical station chief
	Welfare service--collection point chief
	Industrial & institutional unit chiefs
Industrial & Institutional C.D. Chief	Industrial & institutional C.D. chief (over 500 employees)
Intelligence Course (Analysts)	EOC emergency analysts
Industrial & Institutional Service Chief's Course	Commune industrial & institutional service chiefs
Sector Intelligence Course	Chiefs of industrial & institutional communication centers (over 500 employees)
	Sector communication group chiefs
District Chief's Course	District chiefs
Sector Service Chief's Course	Sector service chiefs
Sector Communication Group Chief's Course	Sector communication group chiefs
Advanced Welfare Adminis- tration Course	Commune chief of welfare registration
C.D. Service Chief's Course	Commune service chiefs (except ABC service chief)
Advanced Intelligence Course	Commune communications chief (deputy C.D. director)
Physician's Course	Medical service--medical station
	Medical service--physicians

The Federal Civil Defense Training Responsibility

The federal government is responsible for the training of the heads of canton civil defense offices, canton instructors, local civil defense directors and their deputies, the heads of industrial and institutional defense units (employing 500 or more). Specialists of the commune's civil defense organization in the atomic-biological-chemical service and specialists in warning and liaison and communications are also trained by the federal government. In addition, the federal government must train personnel with civil defense responsibilities in its own institutions and agencies. A schedule of the courses taught by the federal government is provided in Table 5.

Federal, canton, and commune authorities may assist one another, if priorities and availability of instructors, attendants, and facilities require a temporary exchange in giving courses. The responsibility, as given by the law, is neither affected nor altered and remains with the initial authority.

Provision is made under Swiss law for private organizations to conduct--on a contractual basis--the training courses outlined above, subject to federal approval.

Table 5

COURSES TAUGHT BY THE FEDERAL OFFICE OF CIVIL DEFENSE

Course Title	Required Attendance
Warning and Liaison Course	Commune warning and liaison service chief
Advanced ABC Course (Sector)	Sector ABC command group chief
Industrial & Institutional C.D. Chief's Course	Business & Institute C.D. Chief (over 500 employees)
Advanced ABC Course (Service Chief)	ABC service chiefs
Sector Chief's Course	Sector chiefs
Civil Defense Director's Course (cities less than 20,000 pop.--without sectors)	C.D. directors
Section Chief's Course	Section chiefs
Civil Defense Director's Course (cities with pop. greater than 20,000--with sectors)	C.D. directors
Instructor's Courses for All Services	All C.D. service instructors
Course for Canton C.D. Organization Heads	Canton C.D. organization heads

VI THE SWISS SHELTER PROGRAM

As of January 4, 1964, Swiss law decreed that all new buildings must contain adequate shelter from weapons effects for its occupants. This requirement has been imposed in all communes with a population over 1,000, except for those exempted by the canton. The obligation to construct private shelter is limited to new buildings that ordinarily have cellars. The canton determines to what extent shelter must be constructed in buildings that would not ordinarily have cellars. Communes with a population less than 1,000 may be required to build shelter if they are located near a large communications center, an essential production facility, an important military target, or a large city.

Hospitals, in particular, must provide well-protected operating and treatment rooms. In communes without a hospital, the canton may require the commune to build a sheltered emergency hospital as an extension of its medical station.

Under the shelter law, communes must provide for the construction of public shelter wherever crowds of people gather, such as the central business district. The communes must also provide for public shelter where private shelters do not exist, cannot be built, or are subject to flood danger. Because of the high cost of shelter construction, public shelters with a dual use are encouraged. Possible peacetime uses are as a storage area, manufacturing facility, underground garage, natural disaster dormitory, gymnasium, small shop, or charity hotel. Provision must be made, however, for conversion to civil defense use within 24 hours.

In those cases where the construction of shelter is mandatory (i.e., new construction), the federal government awards a subsidy of 25-35% of the expense of building the shelter. The canton and commune contribute an added subsidy of 35-45%, so that the total subsidy to the building owner must be at least 70%--but must not exceed 5% of the total construction cost. In the case of hospital shelter, the federal government awards a subsidy of 55-65%, and the canton and commune contribute the remaining 35-45%. The federal subsidy for public shelter and shelter in public buildings (minimum capacity 100 persons) is from 40-50% and--in special cases--up to 60%. In all of the cases cited above, the sharing of subsidies between cantons and communes is based on canton law.

The owners of existing private buildings may voluntarily wish to build shelter into their structure. As an inducement to the private owner, the government will contribute a total of at least 80% of the

shelter cost, with a federal contribution of from 35-45% and a canton contribution of 35-45%. If the canton or commune wishes to voluntarily build shelter into existing public buildings, the federal government will contribute 40-50%.

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