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In addition to publishing articles which reflect Canadian Government policy the Digest may also publish articles by private individuals on subjects of current interest to the emergency measures programme. The views of these contributors are not necessarily subscribed to by the Federal Government.

Director General: C. R. PATTERSON *Editor:* B. L. PERRIER

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1966

FIRE AT YELLOWKNIFE

by

W. S. HACON and A. W. MANN

This article, written by Dr. W. S. Hacon, Chief, Emergency Health Services Division, Department of National Health and Welfare, and A. W. Mann, Health Supplies Officer, Alberta Emergency Health Services, appeared in "Canadian Hospital", the Journal of the Canadian Hospital Association, August 1966, and is reprinted with their permission.

This is the story of a hospital destroyed by fire yet replaced within 24 hours. On Sunday, May 22nd, 1966, at 8 o'clock in the evening the 44 bed Stanton Yellowknife Hospital in Yellowknife, N.W.T. caught fire and burned to the ground. No one was hurt in the fire and the weather was moderate, but emergency accommodation had to be found for 30 patients and 11 staff. Some items of equipment were saved but the community of 4,000 persons was left without a hospital. The nearest hospital to Yellowknife with adequate facilities was at Hay River on the other side of Great Slave Lake where the ice was breaking up.

By 5.00 p.m. the next day, the equipment for a new hospital had been flown in to Yellowknife. By 8.00 p.m. most of the equipment was unpacked and ready for use in the Elks Hall.

This valuable service to a community struck by peacetime disaster was provided for the first time by the Emergency Health Services (EHS) of Canada and of the Province of Alberta with the assistance of the Emergency Measures Organization, the Canadian Army and the RCAF. The National Medical Stockpile being assembled by the Emergency Health Services Division of the Department of National Health and Welfare will contain, among many other emergency medical units, 200 functionally packaged EHS Emergency Hospitals ready for immediate use. Each EHS Emergency Hospital is equipped to provide care for 200 patients suffering from major trauma and other conditions. Many of them are now completely packaged and are stored in large depots across Canada waiting despatch to selected communities surrounding designated target cities. All 200 of the EHS Emergency Hospitals will be completely packaged within a year.

By good fortune and by good planning on the part of the EHS staff of Alberta, one of the first EHS Emergency Hospitals to be released to a province was standing by in Edmonton. It happened to be one of a group of 16 hospitals specially packaged in re-usable containers for training and familiarization purposes, otherwise it would not have been located in the city itself. Late that night, the Alberta EHS Director, Dr. R.A. Duncan, responded to appeals from Ottawa and Yellowknife and began with his staff to select the necessary packages, out of the 600 which make up an EHS Emergency Hospital, for despatch to Yellowknife. The whole equipment for 200 beds was not required, but the core equipment was required. Specific items could be easily identified in their packages by the cataloguing and colour coding systems in use.

At the instigation of Mr. D.G. Green, Emergency Measures Organization Director for the Northwest Territories, the Canadian Army provided men and trucks to move the 71 selected packages to RCAF Station Namao, and the RCAF provided a Hercules aircraft to fly them from there to Yellowknife. By 4.16 p.m. the equipment was in Yellowknife accompanied by one of us (A. W. Mann) to be met by a very enthusiastic work party. The Administrator of the hospital, Mr. G. M. Barrow, and the Chairman of the Board of Governors, Mr. George Curley, had sensed the spirit of the community and had purposely not called for volunteers or trucks. Volunteers turned up on their own with trucks, and completed the task of moving the equipment to the Elks Hall in 29 minutes.

The Hospital

The story returns to the Stanton Yellowknife Hospital itself. A two storey wooden building, it was built in 1947 with the materials available at that time. Part of the cost was borne by the Canadian Red Cross Society. Recognition of the obsolescence of the structure is reflected in the fact that a fine new hospital is under construction and nearing completion. It should be ready in about four months. The first floor of the old wooden building provided space for 44 beds, operating room, case room, X-ray and administration offices. On the second floor were quarters for 11 staff members, kitchen, laboratory, stores and old records.

The Fire

The fire started on the upper floor, cause unknown, during visiting hours and burned so fast that the hospital was a total loss within one hour. Everyone was saved. The Disaster Plan of the hospital called for evacuation to the nearby Elks Hall. From there the patients were moved to hotels for the night or were discharged home.

With the fire burning furiously on the second floor many determined people of the town went in again and again on the first floor and salvaged just about every moveable piece of equipment on that floor. Much of the operating room equipment, ward equipment and case room equipment was saved and manhandled down the street or on to trucks. The office records and the more recent medical records were saved. Unfortunately

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REIMANN STUDIOS

The fire at Stanton Yellowknife Hospital

the nurses and other staff members living on the second floor lost everything they owned except their housecoats and night attire. (A few days after the fire, the alumnae staged a most invigorating drive for funds.) The major equipment items lost were the X-ray, the autoclaves, kitchen equipment, laboratory equipment and the fixed operating room equipment.

Improvisation

Using salvaged equipment and equipment from the EHS Emergency Hospital the staff got to work rapidly to reorganize the hospital in the Elks Hall. The hall has 8,800 square feet of accommodation, 5,000 on the main floor and 3,800 in the high-ceiling finished basement. The theatre stage on the main floor became the nurses' station and dispensary. Some partitions were quickly built by people from the local mines to break up the main auditorium into two wards, OR, OPD, CSR, case room and cafeteria. The Administrator set up office in the basement between the X-ray and medical records. The Elks bar became the laboratory. Within 24 hours or so they were in business as a 10-bed hospital, had delivered their first baby and had admitted two other patients.

The Board of Governors had been very active all this while directing the community's great desire to help into useful activities. The Board is determined to provide a satisfactory standard of hospital care for the community, for the next four months, until the new hospital opens. It is not satisfied with the present situation, particularly the lack of privacy for patients, the restricted sanitary facilities and the absence of windows. Many improvements will undoubtedly take place in the next week or two, but meanwhile the community does have a hospital.

The Equipment

Most of the items in the EHS Emergency Hospital are standard items and present no problem to professional hospital staff and technicians. The system of colour coding by functional area ensures that the right equipment is delivered to the right department. Certain items however have been specially designed for the EHS program and are not familiar to unindoctrinated workers. The EHS training programmes and training equipment being developed are aimed at just this problem. Technical instructions for equipment assembly are now packaged and manuals on operating procedures will be available soon. The equipment is necessarily austere in quantity but is of good quality. Some mental adaptation must be made to get the best use out of equipment designed to provide austere care for large numbers of injured. The 15 milliampere X-ray machine with its positive polaroid film was primarily designed for the visualization of bones and foreign bodies. With care however, good chest films can be made. The laboratory equipment was designed to provide basic information only on blood and urine specimens. The whole hospital was in fact designed to reinforce the hospital care capability of a community

W S HACON

. . . and eight days later

W S HACON

when set up in a 14 classroom school near to the existing community hospital where more sophisticated diagnostic and treatment procedures could be undertaken. Nevertheless the equipment of the EHS Emergency Hospital can be of great use when used alone, as demonstrated in Yellowknife.

When the unit has served its purpose in Yellowknife it will be recalled, refurbished and repacked. The Cabinet has authorized the Minister of National Health and Welfare to release stockpile items to communities struck by peacetime disaster without immediate concern as to repayment of costs. The cost to the nation of about $55,000 per 200-bed hospital including expendable supplies for seven days is a very small premium to pay for such good insurance. The next step calls for communities to store the equipment and for hospital personnel to familiarize themselves in its use. Then we will surely be able to face up to the hospital care problems of disaster wherever and whenever disaster may strike. ▲

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HOW THE RESCUE WORKED

by
IAIN HUNTER

On August 10, 1966, one of the two parallel centre spans of the Heron Bridge—being constructed over the Rideau River and Canal to join Heron Road and the Base Line Road, in the southeast section of Ottawa—collapsed. One week after the incident, Iain Hunter of the Ottawa Journal spoke to the people involved in the rescue operation and relates how it proceeded.

I stood, helpless, among the silent crowd on the rim of that terrible amphitheatre eight days ago.

But many, many men were not helpless, were tearing at the rubble in search of life.

Who were they? Where did they come from?

One week later, back at their regular duties, those who took part in the rescue operation have now told me how Ottawa met disaster.

At 3.27 p.m. the span swayed, broke apart and crashed 50 feet into the river bed, carrying 68 men with it.

Seconds later a white-faced workman flagged down a passing taxi. Through the taxi dispatcher to city police headquarters to the ambulance companies and fire department went the call for help.

"Send ambulances to the Heron Road bridge." It was 3.30 p.m.

No one can remember whether it was a police car or ambulance which was first to arrive. But by 3.40 p.m. the first word that this was no ordinary construction accident was broadcast over police radios: "Send all available ambulances to the Heron Road bridge. Dispatch every available policeman on shift. Fire stations No. 9 and No. 10 send all rescue equipment to the Heron Road Bridge on Colonel By Drive. For God's sake . . . send everything."

They heard at City Hall at about 3.35 p.m. Mayor Don Reid was notified, and left at once for the site. Planning and Works Director Frank Ayers rushed to the scene.

Tom Dobbin, works department deputy, began calling on all city departments to call in men. They came from water works, recreation and parks, traffic, roadways and sewers branches, from city garages and workshops. As they rushed to the bridge, those who had completed the Emergency Measures Organization course, recalled their training. This was no drill.

At 3.40 p.m. Ronald Jenkins was in his office at Ottawa, Carleton County and Eastview EMO headquarters on Richmond Road. The call came in on the radio link with police headquarters. This was the moment for which the years of planning and training had prepared his organization.

The city had used up all its available emergency equipment. More was needed.

"Put emergency plan in operation," directed Mr. Jenkins. His call from headquarters was telephoned to all rescue organizations in the area. Ambulances from Nepean Fire Department and St. John Ambulance Brigade were directed to the site. All St. John personnel were told to stand by. The radio clubs—'49ers and Ottawa Valley Mobile Amateur Club—were mobilized. The Red Cross was notified and told to stand by for calls for blood and other supplies.

The local headquarters was prepared to call for help from other EMO zones if it were needed. It was not.

The rescue work, chaotic and desperate, had begun before the dust had settled on the wreckage at the bridge site. Construction workers, many of them injured, were joined by passers-by.

Policemen ignored the increasing crowd to deal with the immediate problem of removing the injured to hospital. Workmen from other projects who had heard of the disaster on the radio, off-duty nurses, relatives of the bridge workers, and reporters added to the chaos.

The injured and dying were carried up the slope and into waiting ambulances, police cruisers and private cars. But rush-hour traffic hampered the rescue vehicles. Homeward-bound drivers ignored screaming sirens, and in desperation all ambulances headed for the most accessible hospital, the Civic.

But no one had warned the hospitals.

The injured, the dead and the dying flooded Civic Hospital's emergency department. Luckily, a change of shifts was in process at the hospital and twice as many doctors as usual were on hand. But the casualties came too quickly, and there had been no time to prepare for them.

The General and Tri-Service hospitals had a little more time to prepare for the worst when the news was heard on the radio. But the worst never happened. Only a trickle of injured reached these hospitals.

Urgency and the bewildering nature of the chaos combined to give an air of confusion at the bridge scene. There was at first a lack of over-all direction of the rescue work. The hubbub of chain saws, air hammers and engines drowned out cries for silence from groups trying to listen for sounds of life below the concrete slab.

But slowly, order was established in the melee.

City police, with men of the RCMP and Army put at their disposal gradually ordered things so that city and construction men could use their skills and equipment in the rescuing of their comrades.

Police, a bit tardily, pushed onlookers up to the road level. The immediate rescue area was roped off.

The mayor on arrival took charge at once, detailing two officials of other construction companies to organize the crucial work of extracting the trapped men. His was *the* authority on the disaster site. If city and EMO facilities had proved insufficient he could have called on the attorney-general and the armed forces to give more aid or even to take over direction.

Mr. Jenkins, of EMO, at 4.10 p.m. formed an on-site communications centre, with radio connection from the river bed to his radio car. From here calls for men and equipment were relayed to EMO headquarters and passed on to city departments.

The deputy works director relieved Mr. Ayers on the site at 6.15 p.m. At this time there still was no central organization of rescue parties. But at 6.30 p.m. Mr. Jenkins borrowed a loud hailer from the fire department so that directions from the mayor and other officials would carry further.

A typical rescue team consisted of a city foreman, two men operating an acetylene torch, one or two laborers to clear away debris and firemen with a hose to prevent sparks from the torch burning lumber, clothing or flesh.

Meanwhile, preparations for the long night's work were made, EMO asked the RCAF to supply emergency lighting, and the CBC volunteered more lights. A 45-gallon drum of fuel for construction equipment was brought to the site by the RCAF.

The RCMP offered men for all-night duty at any kind of work at all. Salvation Army personnel had materialized out of nowhere and were passing food and drink to rescuers. A St. John Ambulance first aid centre had been set up and blankets were thrown around the shoulders of exhausted workers.

Meanwhile a city police team was trying to determine the number of casualties and how many men were still missing. This became possible only at 10 p.m. when Mr. Jenkins called for reorganization of work parties. All employees of the bridge contractor were ordered to gather in one place. Police then were able to take a roll call.

From then on, the rescue work was closely concentrated, while the crowd watched, dead silent for an hour at a time. At 11 p.m. half the rescuers were sent home. A fresh group of 30 arrived at midnight. These were the men whose usual job was street sweeping and flushing. The town could stay dirty, that night.

The last body was recovered at 11.50 p.m. The search for survivors ceased, on the mayor's orders, at 3.30 a.m. Thursday—almost exactly 12 hours after the bridge fell.

Planning for Disaster

An editorial from The Ottawa Journal, 18 August 1966

On this page today a Journal writer attempts to outline the method, manner and timing of the rescue work at the Heron Road bridge disaster. Unquestionably it was an occasion when many men and women spent their utmost in able and compassionate work under the most trying circumstances. It revealed, as any such unpredictable thing is bound to, elements of good organization and bad organization. If in this editorial we concentrate on the less fortunate aspects it is not to criticize those things which went a little wrong but to suggest the careful consideration of those things by the community's planners who must think about when disaster strikes again. For disaster always strikes again.

Why were the hospitals not notified immediately so they could prepare for the rush of patients? Why were ambulances not given directions to take the less injured patients to the General or Tri-Service hospitals even if it took a little longer? Why were ambulances unable to get through the jam of sightseeing and rush-hour traffic? Why were onlookers permitted for several hours to hamper the rescuers by crowding too close to the scene?

Could not the rescue workers who had such a ghastly job have been given earlier relief by others organized to pitch in? Is there a risk that in a combined operation of this kind each organization hesitates to make its voice firmly heard lest it appear to be bossing: but a rescue operation needs a boss. How was it there was not a single loud-hailer out there at the scene until 6.30?

Did it have to take until 10 p.m. before police and contractors identified survivors working on the site? The search in the rubble seemed for too long not to know whether it was looking for five men or twenty-five.

When there is a cry for help a community will answer. That we have seen. But we can best thank all those who answered for us last week by doing everything possible to assure that next time their efforts will be better aided by the fruit of hard planning and on-the-spot direction. ▲

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EMERGENCY HOSPITALS TO SOUTH VIET NAM

The first of 10 pre-packaged emergency hospitals, destined for civilian use in South Viet Nam, was shipped from Ottawa at the end of July. It will travel from New York by boat and should be in operation in the Saigon area by the end of August. The other hospitals will leave Canada at one-month intervals.

The pre-packaged hospitals, part of the National Medical Stockpile assembled by the Emergency Health Services of the Department of National Health and Welfare, were specially designed to provide care and treatment of Canadians in time of emergency.

The gift is regarded by South Viet Nam as a major contribution to its medical needs. The hospitals will be integrated into the provincial hospitals system, where civilian Vietnamese medical teams or medical teams of other assisting countries are treating civilian victims of the war, as well as those suffering from poliomyelitis, tuberculosis and other diseases.

Each hospital is a complete functional unit, with equipment and medical supplies to provide care and treatment for sick or seriously injured patients. Containing 200 beds, each unit can be self-supporting for seven days; additional supplies would provide for the continuous functioning of the unit. The approximate value of each hospital is $70,000.

With close to 600 boxes and pieces of equipment colour-coded for quick distribution into functional areas, the hospital can be readily established and operated in existing buildings such as schools. Each unit has equipment to set up three operating rooms, as well as receiving, recovery and general wards, X-ray facilities, pharmacy, central supply and laboratory. Service facilities, such as generators and water tanks, are also part of each hospital.

To assist in setting up the hospitals in South Viet Nam, and explain their operation, a two-man team from Emergency Health Services travelled with the first unit that left Ottawa. They are Dr. W. J. Connelly, Medical Officer and Mr. M. J. O. Corbeil, Warehouse Officer. ▲

NATIONAL HEALTH AND WELFARE

Recovery ward

NATIONAL HEALTH AND WELFARE

Pre-packaged emergency hospital

Part of the first hospital being loaded on trucks

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Working Group on Emergency Welfare Services Peacetime Disasters

This report was prepared by the Emergency Welfare Services Division, Department of National Health and Welfare.

The Honourable C. M. Drury announced in the House of Commons on December 11th, 1963, that one of the three objectives of civil emergency planning now was "to reduce as far as possible the losses in life and property occurring because of natural disasters affecting Canada". Since then most provinces have put more emphasis upon preparations for the provisions of Emergency Welfare Services (EWS) in peacetime disasters as well as in time of war.

This official recognition, combined with the fact that there have been several natural disasters in Canada recently, has meant an increased involvement for the EWS Division in the development and acquisition of supplies and equipment, among other matters.

In order to have a sound, objective basis for EWS planning and for possible future stockpiling requirements, the EWS Division, Department of National Health and Welfare, recently set up and conducted a Working Group composed of persons who have had practical experience in peacetime disasters in Canada and/or who have administered the disaster services of a large organization. Liaison officials from the Canada Emergency Measures Organization and the Canadian Armed Forces, and a consultant from the American Red Cross also participated. The chairman of the meetings was Mr. Reuben Baetz, Executive Director, Canadian Welfare Council, and the co-chairman was Miss Gladys Dunn, Emergency Welfare Services Division.

The task of the group was to study the subject of the initial emergency welfare needs of victims of peacetime disasters and the supplies, equipment and supporting services which are required by EWS to meet these emergency welfare needs during the first 24 hours.

Scope of Discussions

Before the Working Group convened, preparatory meetings were held with the American Red Cross, Canadian Armed Forces, Canadian Red Cross, Canadian Welfare Council, Mennonites, Municipal and Provincial EWS, Salvation Army and the Seventh Day Adventists. Reports available upon disaster operations in the 64 major peacetime disasters which have occurred in Canada since 1910 were reviewed, and a summary of the pertinent information was prepared.

The problems discussed by the Working Group included the following:

- the initial emergency welfare needs of victims;
- type of equipment and supplies, and supporting services needed for the operation of EWS;
- 4 items of equipment and supplies, and supporting services required by EWS that could be immediately obtained;
- the need to stockpile items of equipment and supplies;
- advisability to purchase some type of welfare disaster vehicle.

Findings

The following is a summary of the information obtained, the major points discussed and the decisions reached by the group.

1. The findings of the group confirmed EWS thinking and planning regarding the need for all 5 EWS Services at some time by victims of large peacetime as well as war disasters: Emergency Clothing, Registration & Inquiry, Emergency Feeding, Emergency Lodging, and Personal Services. However, the order of priority for the provision of a specific service, and the scope and the extent of the service required, depends upon various factors, such as the time of day, season of the year, type of disaster, the geographical location of the disaster, and whether or not there is warning.
2. Various items of equipment and supplies, and several supporting services are needed for the operation of a Welfare Centre and the provision of the five EWS Services.

   (*a*) Equipment and Supplies

   Emergency Clothing:

   Basic items of clothing—blankets, outer garments, rubber boots and diapers—generally are needed quickly following the onslaught of a disaster, before there is time to collect and sort donated used clothing.

   New clothing should be provided in peacetime disasters if at all possible (because of the immediate need, the morale of victims, and the elimination of the problem of handling quantities of used clothing—much of which cannot be used).

   There should never be a mass appeal for used clothing. If an appeal for clothing has to

be made in a specific situation it should be a limited, controlled appeal.

Registration and Inquiry:

Problems were encountered in some disasters in handling inquiries being made by 'phone wire and letter from other communities in the province, in other Provinces, and from the U.S.A.

It is essential to have uniform operational R&I procedures across Canada, and to have people operate this service who are familiar with these procedures.

Emergency Feeding:

Essential supplies and equipment are: safe water, water purification tablets, hot beverage, powdered or canned milk for infant formula, baby bottles and nipples, sandwiches, eating utensils, cooking utensils, and cooking units and fuel.

Wherever it is possible, restaurants and catering firms should be used to prepare the hot beverage and food required during the first 12-24 hours.

Emergency Lodging:

Private dwellings and congregate facilities are generally both used for the lodging of disaster victims. There have been instances when there were no buildings near the scene of a disaster which could be used as a centre for the provision of emergency services or as a shelter from the elements for victims and workers (e.g., forest fires, air crash). In such cases, tents or some other type of emergency shelter were needed.

The use of congregate facilities and emergency accommodation creates a need for blankets, cots and emergency lighting and heating equipment.

Personal Services:

Personal care articles for unattached children were indicated as the supplies needed most urgently by Personal Services.

Welfare Centres:

In addition to indicating the need in Welfare Centres for such items as: signs, emergency sanitation, auxiliary lighting and heating, housekeeping supplies, and fire extinguishers, considerable discussion took place regarding the need for means of identification for workers.

It is very important to have some special identification for key EWS personnel, in addition to the general identification of EWS workers by arm bands. It was recommended that special identification should consist of a hard hat, jacket in a distinctive colour, and a plastic service badge.

(*b*) Supporting Services

The supporting services required by EWS are communications, transportation, health, engineers and police. The urgent need for communications and transportation in all disasters was stressed.

Communications:

Some methods of communication are required for the efficient operation of a Welfare Centre and the Registration & Inquiry Service particularly.

Transportation:

Buses, trucks, railways, aeroplanes, helicopters, seaplanes, ships, boats and motorcycles have all been used by EWS in peacetime disasters to move workers, supplies and equipment, to take food to disaster workers and to airlift food to isolated areas.

Lengthy considerations concerning the possible need for stockpiling equipment and supplies indicated that generally speaking, the supplies and equipment required by EWS were available from various sources, in the quantities which have been needed in past peacetime disasters in Canada. In some disaster situations, however, there has been some delay in the receipt of such supplies and equipment, due to a lack of knowledge of existing resources and to the fact that no pre-planning had been done regarding written agreements for the immediate supply of goods and services in the event of a peacetime disaster.

After discussing the items needed immediately for the setting up of Welfare Centres, it appeared that there should be some stockpiling of welfare centre kits. Some of the items suggested for inclusion are: registration and inquiry kits, identification items, rope for barriers and a pressure lantern.

In discussing the usefulness of welfare disaster vehicles for mobile stockpiles of needed items and as distribution points, factors considered included: the initial purchase price of the vehicle; its lack of mobility in many situations; the cost of maintenance; deterioration losses; the proportion of the time that it would be idle; and the public relations value of such vehicles.

After fully considering this subject, including the experience and comments of the American Red Cross, Provincial EWS and the Armed Forces, the general concensus of opinion was that essential items for EWS which should be available for immediate dispatch to a disaster area, should be packaged in boxes, crates, or kits that could be easily transported in any type of transportation that might be necessary or available—station wagon, jeep, truck, aeroplane, helicopter and boat.

(Continued on page 17)

REFLECTIONS ON CIVIL DEFENCE AND SURVIVAL

by Wing Commander Sir John Hodsoll, C.B.

Sir John Hodsoll has compiled in twenty chapters his personal views on the important things which should and need to be done to develop a healthy civil emergency programme. The Canada Emergency Measures Organization is indebted to Sir John for his permission to reproduce his material in the EMO National Digest. It is being reproduced in serial form. Chapters 1 to 13 appeared in previous issues. Chapters 14 to 16 appear in this issue and the remaining chapters will be published in subsequent editions.

Chapter 14

Ports and Harbours

Large ports are obvious targets for nuclear or any other form of attack; one of the most important survival considerations, in most countries, will be the provision of alternative facilities.

The problem can be solved by using smaller ports and sheltered anchorages. Britain is fortunate in this respect; but with countries having only a small coast line, this solution may apply to a very limited extent or even be impossible.

The big question is whether it is worthwhile spending money on precautions which might help to keep the major ports in action, or whether it would be better to concentrate on the alternatives. This is a difficult decision, but it would be wisest, on balance, to work on the secondary ports and anchorages first.

It will be necessary to find places with a sufficient depth of water and reasonable shelter from the prevailing winds to enable ocean going vessels to anchor and manoeuvre in reasonable safety. Unloading will have to be into barges, lighters or smaller vessels; a good deal of use will have to be made of the ship's derricks and floating cranes, if they can be provided. There may be some port facilities, but very often loading and unloading will have to be done from beaches and hards, which may require considerable improvement. Craft for operating from such beaches and hards to ships anchored offshore will have to be provided, together with tugs, as many such craft may not be self-propelled.

The selection of beaches, anchorages and secondary ports can best be done by the Navy, in co-operation with Port Authorities, under the general direction of the appropriate Government Department. The survey must take into account the means of land or water communication, since an alternative port is of little use if the means of communication inland are non-existent or very poor.

All the preparations mentioned will cost money, which countries may be reluctant to spend, especially in building or improving roads, railways and sidings, and laying moorings which may have small peacetime value. It will be a question of laying out such monies as may be available to the best advantage and gradually building up as time goes on and means permit.

In selecting ports and anchorages, regard should be paid to the proximity of any major target areas, and should, if possible, be chosen so that the most likely risk will be confined to fallout. It may even be possible to find some sites where that risk is small.

Secondary ports and anchorages will require additional equipment. It is clear that, unless it is provided ab initio and kept in store, reliance will have to be placed on transfer from the major ports during a time of emergency. This will be another of those awkward decisions which the magnitude of nuclear warfare makes inevitable.

Plans must be made beforehand so that the equipment required from a major port is known and earmarked. Probably the best answer would be to allot certain secondary ports, anchorages, beaches, etc., to a major port, in accordance with its ability to supply what is required. Each major port might have, in this way, a number of satellites within a certain radius for which it would be responsible, which would give a straightforward plan. The major port authorities concerned should be asked to work out details in co-operation with the appropriate authorities as its satellites.

The next question concerns the provision of personnel to operate the satellites to the major ports. If a minor port is used, there should be a certain number of experienced personnel available, but even so, they will need to be supplemented. And there will be anchorages without any facilities at all, where the whole of the personnel will have to be imported, lodged and fed. Accommodation problems may be difficult to solve, especially since temporary hutments and buildings of this kind will normally offer little protection against fallout. A possible answer would be to house personnel in ships anchored offshore, where fallout protection could be more satisfactorily provided, and if necessary the ships could be moved elsewhere, temporarily, to avoid the fallout cloud. Messing and sleeping facilities would be available on board and a lot of other troubles would be avoided.

As has been said, the question of adequate communications inland from the alternative ports and anchorages is of great importance. Ideally, the provision of additional or new roads and railways should be made in peacetime, to supplement those in existence. How much is likely to be accomplished in practice before a crisis is problematical, but at least plans should be made so that work can be put in hand without delay as soon as it is possible to do so; materials might also be stocked near at hand.

If the country is split up into a number of survival areas, the communications from the satellite ports should be oriented on these areas rather than on to the big industrial cities which must be assumed to be main target areas. With the flexibility that is possible with transport, destinations can be altered to meet the situation as it develops or to conform to the pattern left by the bombing.

In all planning of this kind, however, it must be remembered that Air Force bases from which the retaliatory forces will operate will operate probably be first priority targets for hostile attack, and the dangerous areas around them should be avoided as far as possible.

The emphasis, then, is on the selection of an appropriate number of alternatives to the main ports, with careful plans to make their use possible by vessels of all kinds, at the same time avoiding too much concentration at any one place. If a country has insufficient alternatives to its main port or ports, it will have to try and arrange facilities with an ally who is better placed. After an attack, especially if more than one member of an Alliance was affected, there would have to be a quick appreciation of the port facilities remaining available, their capacity and other relevant facts, so that a plan of operations could be worked out which would aim at meeting the survival requirements.

It is obviously desirable to try and keep major ports wholly or partially open because of their unrivalled facilities, which cannot be matched by any alternative arrangements such as have been suggested. Certain precautions ought, therefore, to be taken. In the last war, very complete schemes were prepared for the major ports which, despite heavy damage and losses by fire, did succeed in keeping them in action, though their capacity was reduced from time to time.

It is important, as a first step, to try and clear the warehouses and transit sheds which are a high fire risk and very vulnerable. All kinds of devices were adopted in Britain after heavy losses had been sustained. Timber, for example, was stocked in fields and alongside roads, as were crated aircraft and other commodities. A general policy of dispersal was applied, which greatly helped to reduce losses.

A major difficulty concerned cold storage facilities in the docks, as well as grain stores and milling plant. It is the general practice to store, temporarily, large quantities of meat, butter and other perishable goods in the docks, and the problem of finding alternatives on a widely dispersed basis is not easy. It was solved, in Britain, by making use of all facilities, including commercial premises, which in some cases have considerable storage and refrigerating capacity, e.g.: large manufacturing chemists, and making a bigger distribution to retailers. Such arrangements should be considered in making plans for the future, with special emphasis on dispersal to the survival areas. It should also be remembered that imports will be drastically reduced and subject to interruption, so that there will be less danger of the accommodation problem becoming unmanageable, so far as those countries which rely extensively on imports are concerned.

In the docks, a technique had to be developed of operating without the usual storage facilities on the quay sides, since much of the warehouse accommodation was destroyed. Goods had to be cleared from the docks as far as possible and dispersed inland, not only to avoid losses by bombing, but also deterioration from exposure to the weather. This technique would have to apply to a considerable extent to all secondary ports and anchorages where storage facilities will either be non-existent or wholly inadequate.

Lock gates are especially vulnerable and perhaps the most sensitive part of a port so far as the handling of shipping is concerned, particularly to underwater bursts. If, however, a major port suffers a nuclear attack, no precautions will be of much use, nor will it be reasonable to expect dock operating personnel to remain in the port, even if blast and splinter proof protection is provided.

It has been suggested that the main emphasis should be put on the equipping of alternatives to the main ports, and that the necessary equipment for this purpose should be dispersed to them to enable them to function. It may still be worthwhile however, to provide, in major ports, some protection to vital pumping plants and other vulnerable machinery with sandbags and other protective devices which will reduce the effect of blast and splinters. Such precautions may prove useless; on the other hand, they might help in getting the port in action again, if it is only damaged and not wholly destroyed.

One of the most valuable assets of large ports are floating cranes which are not easy to replace if lost. If possible they should be towed to secondary ports, where they will be of great value, or alternatively to some place of comparative safety.

If it is decided to try and keep a major port open, it will be essential to provide shelters and also a control centre and a complete civil defence organization. The port itself will have to be split up into conveniently sized areas, each of which should be self contained as far as practicable, with its own sub-control centre and civil defence personnel. The control system will have to include both civil defence and shipping operations in the same protected building, where arrangements must

be such that the staff can remain under cover for some days, if necessary.

The problem of tugs, lighters, barges and other craft essential for port operation and their preservation is one of difficulty. A proportion will have to be dispersed to the alternatives, but the staff for the remainder, if its is decided to leave some behind, and they can be persuaded to stay, will either have to be sent home or else provided with shelter accommodation in the docks. If their families have been evacuated, then they will have to live in the docks or aboard ships moored in the port area.

The whole problem is utterly different to that of the last war, when despite the bombing, it was possible to follow more or less, the normal routine. And the same difficulties will have to be faced with the dock labour force; the same solutions as those suggested above will have to apply.

It will be highly inadvisable to maintain any concentration of shipping in major ports, if there is risk of nuclear attack; this will be a matter for the shipping control organization to handle in the light of conditions prevailing at the time.

Taking a thoroughly realistic view of the position, it will obviously be wise to disperse, during a period of tension, the shipping, personnel and other requirements from the major ports to their satellites, and to spend the major part of any funds available on their development. If, in the event, a major port is not attacked, it can be got back into action without great difficulty. But if, as is more likely, it is destroyed or heavily damaged, it will still be possible to carry on from the satellites, though obviously on a reduced scale and under considerable difficulties.

As the shipping situation will be equally difficult, it seems likely that things will even themselves out, and the survival ports, as they might be termed, will be adequate to handle the survival cargoes that are likely to reach them. And that the dispersal facilities from these alternatives will be able to handle the quantity of of goods that is likely to need transportation.

No attempt has been made to go into details of the protection of a big port, as it is felt wisest to concentrate on the alternatives. If a large port is subjected to nuclear attack, no amount of precautions will make very much difference. There is one point, however, to which attention must be drawn. If the attack should take the form of an underwater burst, there will be a great upsurge of highly contaminated water and spray which will spread over the dock surrounds and will be very dangerous. It would be desirable to evacuate the appropriate area round the docks beforehand against such a contingency, whether any other evacuation plans exist or not: another argument, if one is needed, for concentrating on the satellites.

Chapter 15

Fuel Supplies

There are two main types of fuel to be considered—liquid and solid, of which the chief are oil fuels and coal. Wood will also be mentioned as it may have considerable importance during the survival period and afterwards.

In the main, oil fuel supplies have to be imported, so far as the Central European Bloc of nations is concerned. The United States and Canada are more fortunate in this respect.

As for coal and its products, a few European countries are almost entirely dependent on imports, but the situation is easier than with oil supplies from the import point of view. Whether there are internal supplies of these products or not, however, the distribution problem will still remain.

Oil supplies depend, to a large extent, on storage and refining facilities which are generally situated in major port areas and are, therefore, highly vulnerable to attack. Since, so far as Europe is concerned, imports come from far afield, the transportation problem is bound to be one of difficulty.

Because of its great importance, the whole question of oil supplies will almost certainly have to be dealt with as an Allied problem. The pooling of ocean tankers will be essential. The control of oil supplies is largely an international affair, in any case, though it is a highly competitive trade. If supplies are to be maintained, however, there must be the closest co-operation between the interests concerned, otherwise the whole system may break down completely.

Whether there will be special tanker convoys, whether they will sail independently or whether combined with normal convoys is a matter for the authorities concerned, and is outside the scope of this book. One point should be mentioned. Large modern tankers require special loading and unloading facilities, which are, so far as the unloading facilities are concerned, generally situated in highly vulnerable areas, e.g.: Rotterdam, Thameshaven and Avonmouth.

Tankers, like other craft, will be forced to use emergency anchorages and other alternatives to the main ports, and will have to arrange to discharge their cargoes into coasters, lighters and other vessels. There is, therefore, an obvious need for an international body, composed of members of an Alliance, to handle these matters and prepare plans in conjunction with shipping and port authorities.

The problem of refining and distribution remains. So far as the former is concerned, there may have to be pooling, so that those refineries which have survived

can try and supply the Alliance. The only alternative is to arrange for refining outside the war zones altogether, if it is feasible. This is another question which must be examined in detail and various alternative plans worked out to meet the differing situations that may arise.

So far as distribution is concerned, internal pipelines have many advantages, though they are likely to be disrupted where they pass through or near target areas. This method of distribution has been developed to a considerable extent, especially by the Air Forces, and will obviously, under ordinary circumstances, be much less vulnerable to attack and dislocation than if carried out by road and rail.

These difficulties make the question of stockpiling in the less vulnerable areas of special importance, as also the use of all available storage facilities. Dispersal will also help to reduce losses. The needs of the survival areas must be given special attention.

Countries will have to estimate their basic requirements for survival, and in doing so, decide what forms and quantities of transport they will try and keep in action. It will be essential that the overall needs of an Alliance are approximately known because they will affect basic planning. Furthermore, in view of the difficulties of internal storage which are likely to arise, and the destruction of much of the existing facilities owing to their vulnerable locations, such storage may have to be arranged in tankers or other craft which are surplus to the carrying capacity required. Unless losses are very heavy, some surplus may be available since consumption will be much less than normal.

One of the most important liquid fuel products will be paraffin for cooking, lighting and heating purposes for the civil population, since it must be expected that electricity and gas supplies will be either greatly reduced or non-existent in many areas.

Private motoring as such will almost certainly have to be prohibited since there will not be supplies of fuel available, nor will many of the roads be in any state to carry traffic. The sort of rationing system applied in Britain during the last war would prove impracticable on all grounds. There will be a need for some of the civil population to be supplied with petrol for what might be called survival purposes. A simple scheme should be prepared which might be based on instructions to garages.

Supplies of fuel to industry will probably have to be limited to those establishments, including public utilities, which it is planned to try and keep in action.

There are in many countries small ports, which have limited storage capacity, which are fed by coasters in peacetime. Such places could prove valuable in the circumstances being considered.

It must be expected that imports will be interrupted during the survival period and may be irregular for some time afterwards. The largest stockpile possible should, therefore, be built up in peacetime and maintained at a level laid down by the Government. Supplies will have to include those needed by the military authorities. Reserves should be for a period of three months, based on the estimated consumption so far as the civil authorities are concerned.

There will have to be a national pooling of road tankers, rail tank wagons, barges, lighters and coastal shipping suitable for transporting oil fuels and some international arrangements may be necessary for those countries which depend, to a greater or lesser extent, on inland water transport. In these cases, the arrangements will have to be dovetailed into those to which reference has already been made in Chapter 13.

Large refineries and storage depots should have complete civil defence schemes prepared and the necessary personnel trained in peacetime, except where they are situated in target areas, where it is not considered worthwhile taking any precautions. The construction of saucers round storage tanks, capable of holding the contents of the tank is an important precautionary measure and helps in preventing the spread of fire. The sand-bagging and protecting of control valves is another important measure, supplemented where practical, by some form of remote control, which would enable supplies to be cut off if the valves are unapproachable. Any personnel remaining on duty should have blast, splinter and fallout protection and arrangements made so that they can stay under cover for some days.

The best answer is to put storage tanks underground, or to countersink them by a half or three quarters. This can be expensive but where done paid off a good dividend in the last war.

As with everything else, there must be flexibility in handling fuel supplies, so that situations can be met as they arise, both from the point of view of imports and internal distribution.

An international authority will almost certainly be needed for an Alliance, to look after the general pooling of supplies, including control from the oil fields. Each country must have its own control arrangements. Decentralization on a regional or other convenient basis will be essential to safeguard against the possibility of central control arrangements being disrupted. There must be a very close national linkage with the shipping control authorities and the supply priorities, which should be laid down in peacetime, must be known to the regional and shipping authorities, as they might have to sort out the situation between them, if other arrangements ceased to function.

The provision of solid fuel is an entirely separate problem. Many countries are self-supporting, and the question will be mainly their ability to maintain some production and to arrange for internal distribution.

There are some countries, such as Italy, which rely largely or wholly on imports and it will be important to try and maintain normal arrangements. If difficulties arise, which such countries cannot solve themselves in co-operation with their neighbours—who might be neutrals—then the help of their Alliance should be sought.

In Britain, the primary question is the extent to which production can be continued in the mines. They are not in themselves probable targets though some are located close enough to target areas to be affected. Most coal mining districts will be liable to fallout.

On the continent of Europe there are many mines which are part of an important industrial complex, such as the Ruhr, which might be a nuclear target. Some are in areas that might be affected by military operations. Many, though not necessarily all, will be in areas liable to fallout. The first question again, will be for the various Governments, in consultation with the authorities concerned, to decide where it is reasonable to attempt to carry on production.

An important matter to investigate, if it has not been done already, is whether, if fallout is experienced, it is likely to penetrate into the mines and if so what, if any, preventive action can be taken. Another equally important factor is the likelihood of power supplies being cut off or seriously interrupted. There must be no danger of miners being stranded in the mines, although they might be, temporarily, safer than on the surface.

If, after taking all relevant factors into consideration, it is decided to try and maintain some production, there must be a civil defence organization on lines operated in the last war. Precautions should be taken to protect stacks of coal from fallout, unless there is a guarantee that it will be mechanically handled throughout. Covering by tarpaulin would be effective, provided it is hosed down before removal and steps are taken to see that the water is safely channelled away. Hosing down of coal stacks could be a partial answer, though it is not wholly reliable. If tightly packed, the top layers, which have been contaminated, should be removed mechanically.

When transported by railway wagons similar precautions will be necessary, if the fallout danger exists or might arise en route to the final destination. There is considerable coal carrying trade by coasters, which would be a useful method of transport, provided the cargo can be covered. Coal transported by barge on canals and inland waterways must be similarly treated.

The next problem is that of distribution. Again the survival plan will be the governing factor; in other words what industries, public utilities, etc., using solid fuel it is proposed to try and keep in action; their location and the means of transport by which they can be reached. This is likely to vary and may be by rail, sea, canal, inland waterway or road, or a combination of two or more of these methods. Again there must be flexibility, but it is essential that there is a clear survival pattern on which to work.

There are all sorts of by-products of coal as there are with crude fuel. A careful review should be made to see which of these by-products of both liquid and solid fuels are vital to survial, where the various processes are carried out, and to what extent it may be possible for them to be continued.

Such a review could best be carried out by the industries concerned, acting under the general direction of the Government, so that they may have the necessary guidance as to the vital survival needs. Having made such a survey they would then be in a position to advise the Government as to the possibilities of the situation.

It is very important that every effort should be made to ensure household supplies. The Government should advise families as to what they should stock, taking into account the various means of emergency cooking, lighting and heating they will have to use, and encouraging them to build up reserves in peacetime, as a part of self-help. Arrangements should also be made for emergency distribution during a period of crisis, so as to provide supplies for those householders, probably the majority, who have not already built up their reserves. It would also be valuable to stockpile reserves in survival areas. The most important fuels for householders will probably be paraffin, fuel oil and coal, with candles for lighting, which are a paraffin product.

In assessing the total survival requirements, regard must be had to the difficulties of importing and distributing the fuels concerned, and it will be important to build up a reserve in peacetime which will help to bridge the critical period. Any Alliance should develop a pooling system so that the best use can be made of all available supplies.

Wood may be an important emergency fuel, especially when the fight back begins. Whether it should be stockpiled in the survival areas, or whether the population should be left to forage for their own supplies, is a matter for consideration. It would be preferable to conserve supplies and for some sort of control to be exercised, as there may be areas where the getting of supplies may be difficult. Whether, in the circumstances any control will be possible, is a debatable point. If the population is in want it will take the law into its own hands. But the unrestricted devastation of woods and forests should be avoided, if possible.

Reliance will probably have to be placed on local leaders to keep some sort of control of the situation, and to see that such supplies as may be available are conserved, as well as efforts made to help neighbouring areas that are having difficulties, if communication with them can be established.

Chapter 16

Food and Other Supplies

The problem of feeding the population is one of the most vital of all, and each country will have its own difficulties. The basic diets vary and while some countries are more or less self-supporting, others rely on imports for their existence. Whatever the situation may be, there will remain the problem of distribution, which depends on the extent to which transportation services can continue to function.

The prime responsibility for providing food and drink during the survival period, and for a time afterwards, will rest to a large extent on individual households; for unless they have laid in supplies which will enable them to exist during this period, when they will have to remain mostly under cover, there may be little that can be done to get supplies to them until freer movement is possible.

Each country must advise their population as to what they should stockpile against the emergency, based on the feeding habits of the community. The United States has already issued copious instructions on this matter, but information should be included in the Householder's Handbook which many countries have already issued, and which is such a vital part of the survival plans.

Most households normally carry some reserves, but they may not, necessarily be the right things for the emergency, nor may they be packaged in the best way. It is essential that everything, including drinks, should be in bottles, tins, containers or wrappings of some sort which will prevent penetration by fallout.

One of the biggest difficulties likely to arise is during a period of tension when the Government should warn the public to stock up, if they have not already done so, in accordance with instructions which have been or are being issued. It is inevitable that considerable numbers will have done nothing, and a rush on food shops may result which will rapidly exhaust their supplies. Ideally, the Government should give a confidential warning in advance of the public one, but the trouble is that it would not remain confidential for very long. There is all the makings of a crisis in this situation, unless steps can be taken to forestall these sudden demands.

It would be a prudent move for the Government to issue to all retailers and wholesalers, as one of the peacetime precautionary measures, a list of the things they are recommending the public to stock, with suggestions as to the wrappings in which they should be packed. Given this information, the trade itself might be able to forestall a crisis, or at least would know what to expect if one arose. This information should be provided whether the public have had their instructions or not.

One country has adopted the device of subsidizing firms to enable them to carry a surplus of non-perishable goods or even those which have a limited life. By doing so the extra stocks can be turned over in the ordinary course of business, which is the best way of keeping a commercially uneconomic reserve in existence.

The question of self-help on the part of the public has been emphasized at the start, because of its fundamental importance to the whole survival problem. There is no substitute for the householder's reserve.

Food stockpile should be built up in the same way as has been suggested for other products; clearly, there should be at least three months' reserve well dispersed throughout the country in non-target areas. One difficulty which will have to be overcome is that milling plants are often located at docks and are highly vulnerable in consequence. The importance of developing facilities inland is, therefore, very great.

The reserves to be built up should be based on survival requirements, which should include livestock, which it will be essential to preserve. All stockpiles must be given proper fallout protection, they should be in substantial buildings and covered with whatever is the best material for the purpose. They might be given bulk cover or individual cover, whichever is the most practical. Protection during distribution may be necessary to try and ensure there is no risk of the goods getting contaminated before reaching the customer; who will, equally, have to make his own protective arrangements, so far as may be necessary.

The Government should see that all wholesalers and retailers or others concerned have proper instructions on fallout protection measures, and any further advice about handling and transportation that may be necessary, so as to reduce losses to a minimum. The survival areas should have special reserve arrangements if possible, and there will normally be a fairly wide dispersal of many things of a non-perishable nature, which will help.

In the last war, ration systems were used or imposed in many countries. The one in Britain worked well, having been carefully planned beforehand, and with the knowledge of the mistakes made and the experience gained during the latter half of the 1914-18 war.

The big question is whether, in the circumstances of a nuclear war, any rationing system can be made to work, except on a very rough and ready basis. The British system with its points scheme would probably be impracticable. Since shortages may last for some time, it would be wise to have some very simple system available, which could be used, if required, when there was some prospect of being able to administer it. Meanwhile, during the survival period and immediately afterwards, when there may be great transport difficulties, households will have to exist on their own stockpiles and such local arrangements as may be possible.

A number of shops will have survived and have some supplies available, and will have to make their own rationing arrangements on an emergency basis. Everything may have to be done on a credit system, as banking and other facilities may not be available. It is possible that a system of barter may have to be developed. Life, for the time being at any rate, may have to be on a fairly primitive basis, but this will not matter provided that in this way survival is ensured and the fight back can be successfully accomplished.

It will be useful if people are taught to live off the land and leaders are given information as to how this can be done. Since the survival areas are mostly in country districts this should not be too difficult, subject always to any limitations imposed by fallout, but it will be essential for all supplies to be pooled.

Some countries are very dependent on imports from overseas for a portion of their essential food supplies; others are more or less self-contained and some have considerable surpluses to meet the demands of those countries which are in a less fortunate position. It would seem clear that, in any alliance such as NATO, there will need to be some pooling organization, so that surviving supplies can be distributed in an equitable manner. Naturally a country will have first claim on its own produce, but where there is a surplus or a surplus could be created, it should be made available. The economic survival of members of any alliance on the side of the free world is just as important as its military survival. This problem of the pooling of surpluses, which must include imports from neutrals and other sources, including the British Commonwealth, is closely linked with the shipping and internal transport facilities, which have already been discussed. Successful distribution will depend on information being available as to requirements, which in turn depends on communications.

There is certain data, however, which should be known beforehand, so that if there is a lack of information, there will be at least some facts on which to base distribution arrangements. For example, on the international and national levels, the basic survival needs of the various members should be known; how much they can produce themselves and how much has to come from outside sources; what reserves they have been able to build up and any other relevant information to enable decisions to be taken. It will be of the utmost importance to know the situation after an attack as soon as estimates can be made, which may have to be on a very rough and ready basis in the early stages, but vital nevertheless, if any international machinery is to be set quickly in motion. With all the goodwill and energy in the world, some time may elapse before results are obtained; and the need may be very great.

It will take any international organization time to get in working order, even though it has all been planned beforehand, and the possibility that things might go wrong cannot be ruled out. Countries will have to look after themselves in the meantime and make whatever arrangements they can with their neighbours, until the planned international system becomes operational. An important matter in connection with food storage and preservation may be dehydration. Great advances have been made and it could be the means of helping to make available a more varied diet. From a storage point of view, it has obvious advantages, especially where bulk storage is concerned. It would be unwise, however, to rely on too many things that cannot be used without water. This commodity may be, temporarily at any rate, in short supply; certainly it will have to be carefully conserved while people are sheltering during the fallout period, and may still be scarce afterwards, depending on all kinds of circumstances of a local and national character.

Countries should arrange to stockpile those foods which are the staple diet of their people, so far as is practicable, and those which will give a reasonable calorific value. The average daily intake of calories varies with countries: a figure of 2,500 is a fair guide in peacetime. This amount can be safely reduced to 2,000 and even a little less without harm, though when it starts getting into the realms of 1,500 or less, then the damage will be caused by malnutrition, if it is continued for any length of time. In making recommendations to the public as to what they should store, and in building up reserves, this figure of approximately 2,000 calories a day should be a general (guide) aim.

Every effort should be made to keep livestock under cover during any period of fallout danger and to watch carefully the extent of any contamination of grazing. To some countries, which are used to bringing in their cattle during the winter months, this problem will present less difficulties than for others, where conditions do not make such action necessary. Arrangements must be made, however, and the fodder must be stored and kept free from contamination. The importance of conserving all food supplies cannot be overestimated, and farmers should be given instructions in peacetime, so that they will know what to do.

Information regarding the effects on cattle and other livestock of eating contaminated foodstuffs is still incomplete. It is most important to acquire all the data possible on this and other relevant matters, such as the effect on crops of different kinds, so that the Governments will be in the best possible position to conserve their available food supplies for man and beast. In this way they will also get to know the problems which may face them after the survival period.

It is equally important that this knowledge, as it is gained, is passed on to the farmers and others who have the practical handling of such matters, and will thus know what to do in an emergency.

Stocks of food must be dispersed from probable target areas, especially major ports. Reference has already been made to the problem of refrigeration and

milling: it must be remembered that in the small ports and anchorages which will have to be used, facilities of these kinds will only exist, if at all, in small numbers and with limited capacity.

Dispersal should be as widespread as possible, but special reserves should be built up in the survival areas.

In addition to food, there are certain other survival requirements, such as clothing, of which dispersed reserves will also be needed. One country is known to have drawn up a tentative list of basic survival requirements. They will vary, to some extent, from country to country, but this idea is worth pursuing, though it is not an easy task. If it is to be undertaken, however, it will have to be in a number of parts, e.g.: the family, transport, industry, public utilities, etc., and should be based on the survival plan for the country. It is appreciated that such a list is likely to keep growing; if it is to be of any use, it must be ruthlessly pruned to include only what is really vital for survival and not what is desirable.

The military authorities have their own fundamental requirements as well, though they will be mainly responsible for their own arrangements. In some matters, however, there will have to be close co-operation with the civil authorities. *(To be continued)*

(Continued from page 9)

Summary of Recommended Action

- Each provincial EWS and municipal EWS organization should compile a complete list of all the sources in their area of each item of equipment and supplies that could be required for the operation of EWS in the first 24 hours of disaster operations.
- Each Provincial EWS with Provincial CD/EMO should analyse the transportation resources within the province in relation to the possible need to move supplies, equipment and workers anywhere in the province in the event of a disaster.
- Each Provincial EWS with Provincial CD/EMO should analyse the adequacy of communications resources within the province in relation to the possible need of same by EWS.
- Consultations should be held between Federal EWS and Emergency Health Services regarding the possible use by EWS of blankets, cots and 3000 watt generators which are within EHS's Advanced Treatment Centre and emergency Hospital equipment, when these items are not required by EHS.
- Necessary written agreements should be made by Provincial EWS and Municipal EWS regarding the provision of required supplies, equipment and services with appropriate departments, agencies, manufacturers, wholesalers and retailers.
- Only if it is proven that certain items could not be available in time under certain circumstances, should stockpiling be considered.
- If it is decided that Welfare Centre Kits should be stockpiled, a Federal EWS Working Group should be convened to consider the contents and the most efficient manner of "packaging".
- If Welfare Centre Kits and/or other items are to be stockpiled, they should be located in central places where various types of transportation always are available.
- A Working Group of R&I specialists should be convened by Federal EWS to study existing R&I procedures and cards in relation to peacetime disasters.

Additional Observations

Throughout the discussions, many subjects were raised and discussed which were related to the problems but did not come within the specified scope of the study. As some of the principles and concepts which were stated are basic to the efficient operation of EWS and other emergency services in a disaster, they are listed here for information:

- The first need in any disaster is that of immediate, overall authority—leadership, co-ordination and control of all public and private services and activities are essential.
- Every community should have a comprehensive peacetime disaster plan. It must be a basic, flexible plan that can be adapted as circumstances demand. Its contents must be known to all concerned.
- Trained EWS personnel who have frequent practices in their operational roles must be in charge of each of the 5 EWS Services—untrained volunteers create problems.

3. Provincial EWS must have specific up-to-date information about the EWS operational capability in every community in the province. Hence, in the event of a disaster occurring in a community where there is no EWS organization, or an incomplete organization, provincial EWS immediately could arrange for mobile EWS teams to go there from another community.
4. There is a need for Canada EMO and EWS to meet with national organizations to clarify their respective roles in peacetime disasters. In like manner, Provincial EMO and EWS should meet with provincial organizations to clarify their respective roles. As soon as the foregoing has been done, Canada EMO and Provincial EMOs should advise the public as to the role and responsibilities of government services and specific voluntary agencies in peacetime disasters. ▲

SWISS CIVIL DEFENSE

Extracted from "Swiss Civil Defense", a study prepared by the Stanford Research Institute for the Civil Defence, Department of the Army, Washington, D.C., November 1965.

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-63-84.

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

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 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.
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.
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.

In addition to the interviews, studies were made of key documents and laws that largely define the Swiss civil defense program.

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

* *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.

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, 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, business 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 Defence 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.

* Roughly equivalent to a state in the United States.
** Equivalent to a city or town.

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.

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SWEDISH CIVIL DEFENCE REPORT (1965) SUMMARIZED

The Swedish Civil Defence Administration in its recently submitted report summarizes its opinion of the possibilities and prerequisites of civil defence in Sweden and the Administration's requests for the remainder of the reorganization period which will, in the main, be concluded in the early 1970s. The material, which may be defined as the civil defence counterpart of the Supreme Commander's report "ÖB 65", was submitted on December 2, 1965, to the 1965 National Defence Committee.

The Civil Defence Administration wants certain improvements, primarily a strengthening of anti-gas precautions and the emergency alarm system. In addition, the Administration wants to procure equipment for the quarters and camps planned in the accommodation areas, and for the billeting of refugees from abroad. Also, certain minor adjustments are requested regarding the rescue units. Proposals for certain revisions in the evacuation plans have previously been submitted.

The costs are estimated in the Administration's tentative budget at 621 million Kronor ($29.6 million) for the period 1967/68-1970/71 split up on annual allocations of about $7.4 million. The estimates are based on the 1964 price level. In comparison with the present appropriation limits the estimates involve an increase in costs of about $2 million annually.

Also in the future a long-term national defence plan is, according to the report, to be preferred. This time, the period should be 4 years for the Civil Defence plan in order to include appropriations for the entire remaining build-up of the organization. The system should include purchasing facilities on the principle of government guarantee for appropriations in the future and authority to grant government subsidies, mainly to communities, for shelter construction. A system has previously been introduced for the compensation of price increases and the carrying forward to another budget year of unspent funds from the proposed appropriations. According to the Administration, the system has proved to be practical and should be retained.

The Administration wants to complete, during the financial year 1971/72, the development of the civil defence units, whose primary duties include rescue service, fire control and first aid. The continuous growth of urban areas may necessitate an increase in the number of units according to the current principles for the dimensioning of the organization. The Administration estimates this increase to be 30 percent in respect of the rescue units with corresponding demands on the number of medical units and other relief units. In spite of these estimates the Administration is not, at the present moment, prepared to suggest such an extension, partly because the recruitment rate does not permit an enlargement without extraordinary measures; furthermore, because the Administration wants to continue varying its studies before making a decision on the matter. Not only the population changes should be studied. The Administration also wishes to study such items as the effects of repeated enemy attacks, since the exhaustion of the units may prove to be an important factor. Pending the completion of these studies the Administration wants to continue development along the present lines.

It is emphasized, however, that the present development of the organization must not be delayed, that the organization is not oversized and that the investigations have shown the integral parts to be mutually well proportioned.

Concerning the evacuation plans, the Administration wants to reduce the number of urban evacuation areas involved but at the same time increase the number of evacuation areas around stationary military targets. The need for this has been enforced by the increased difficulties in finding accommodation facilities.

The matter of air-raid shelter planning in the major cities is currently being investigated by the Administration. In this connection is discussed a reintroduction of the obligations on the part of house-owners in these areas to construct standard shelters. The investigation may result in a proposition to the King in Council.

In its report the Administration points out that the civil defence organization was originally built up to start functioning after air-raid attacks with conventional bombs. During the years, these weapons became increasingly heavy and more effective. The shelters were appropriately sized and located according to a certain advance warning time that was gradually cut down. In remaining fields of civilian protection the anti-gas protection system was emphasized in particular.

Conventional weapons have been further developed and nuclear weapons added; tactical warning time-limits have come down almost to zero in the case of certain weapon carriers; war gases now include extremely dangerous contact-acting nerve gases; furthermore, biological weapons are stock goods in the arsenals.

Stating that it has consciously avoided entering upon the question of war levels and forms of aggression, the Administration has instead concentrated on the effects of various weapons. At the present stage of research and of its own investigations the Administration has considered these effects to constitute a more realistic basis of further discussion.

With respect to conventional weapons the Administration concludes that the substantial decrease in the number of bombers implies that one should probably not expect a repetition of the conventional saturative bombing of the second world war. But the value of this conclusion with regard to Sweden is doubtful, since this country almost completely lacks targets of continental size, and since the big powers must still be presumed to have a sufficient number of bombers to launch very large attacks according to Swedish standards. Another plausible alternative is that missiles be used as carriers of conventional weapons. Certainly, it is the general opinion that missiles are too expensive for such purposes but this opinion might change as the supply of missiles increases. Thus, the Administration concludes that conventional weapons will probably still be used, such as ground-to-ground and long-range missiles with conventional warheads, aerial mines, demolition and incendiary bombs.

The report points out the effects of a "moderate" employment of such weapons during the last war. During one single night-raid against the German town of Darmstadt, with a population of 100,000 on September 11, 1944, some 580 tons of incendiaries and about 400 tons of demolition bombs were dropped. The result was the total destruction of major parts of the city.

The report notes that nuclear weapons are available in quantity together with a variety of weapon systems, and that supplies are accumulating. Both charge and carrier can be adapted to the targets chosen, and the accuracy is fairly high in relation to the radius of damage. In consequence, nuclear weapons have become increasingly versatile. They also constitute a threat in the form of radioactive fallout, even if the attacks are not directed against Sweden.

Furthermore, the possibility of adapting the employment of gas weapons to a desired effect is gradually increasing. War gases may be spread over large areas with dangerous consequences to unprotected individuals and animals. They do not cause material destruction. The use of gases may, in fact, be expected to have considerable psychological effect on the population if it is not well informed and prepared. Also, the population may be exposed to drifting war gas should it be employed against Swedish armed forces or those of neighbouring countries.

Finally, one has to take into account biological weapons, primarily bacteria and germ poisons in aerosol form that can be spread over large areas. Production costs are small, and the big powers can produce these weapons at short notice and in large quantities. They also have supplies of such weapons ready and they have the facilities to spread them.

The Administration states that in most cases the civil defence forces are capable of very extensive rescue actions. The effectiveness of this activity may be severely limited by the scope and character of the effects of the attacks and the duration of the latter, but the civil defence has a mission even in the most severe situations. The conclusion of the Administration is that by the completion of the development programme and the simultaneous and full exploitation of experiences gained during this period, the organization will be equipped to execute the tasks that should—in view of the weapons known today—be entrusted to civil defence within the limits of Sweden's general defence policy.

In case of gas attacks, radioactive contamination by the enemy, and attacks with biological weapons the country has to meet the additional demand for increased individual protection facilities supplementing air-raid shelters and an effective detection and warning system. Modern carriers can deliver all these weapons to every part of the country and thus strike the civilian population anywhere. The Civil Defence Administration therefore strongly emphasizes its demand for protective masks for the whole population and proposes an acquisition programme extended over a nine year period.

A new warning system is currently being introduced. It is connected to the tactical control system "60" of the Swedish Air Force and should be further developed in harness with this system. Necessary sirens should be installed in addition to those already existing.

The question of the preparedness of civil defence is also discussed in the report. In peace-time the organization has no actual emergency preparedness beyond the resources represented by the local fire brigades. The number of persons permanently employed in the civil defence is very small, and the training of personnel for the various civil defence units is pursued under such a restricted time-schedule—the majority being trained in evening courses—that it is impossible to count on having any emergency forces immediately available. However, local recruitment activity makes it possible to assemble the necessary units at short notice, and the Administration has set the target of having the local units for patrol and evacuation duties mobilized in 4 to 6 hours, the remaining regular units in 24 hours, and the regional mobile columns in 36 hours. There is, however, a lack of practising facilities. Current rules do not give scope for obligatory exercise in units larger than groups. The Administration finds this entirely unsatisfactory if the civil defence is to function with full efficiency immediately after mobilization, and consequently requests improvements.

Important in this connection is that under the present regulations civil defence cannot increase its preparedness by emergency call-up as can the armed forces. This means that, at the lowest preparedness levels, civil defence may be lagging in relation to other sections of the national defence system that have to provide protection against airborne attacks. It is the opinion of the Administration that new prerequisites should be created for improved preparedness.

In addition to matters of organization the report also deals with the role of civil defence as a peace-preserving factor in the eventuality of attempted foreign pressure or threat. If the population is not, in certain circumstances, convinced of the viability of the national defence policy, the government's ability to negotiate from a position of strength may be quickly compromised. When faced with threats of attack against civilian targets the strain on the government will be particularly heavy. Since, for psychological and other reasons it is reasonable to expect such a threat, civil defence will of necessity play a leading role.

The role of civil defence under occupation conditions is discussed. Under current international law, civil defence organizations enjoy certain protection during occupation. The International Red Cross Committee has long been considering the question of strengthening this protection. This work has advanced so far that the Committee is prepared to draw up tentative detailed provisions.

Finally, the Administration deals with the question of a more specific policy for civil defence than that laid down for the current development of the organization which only states that it is the primary task of civil defence to "protect population and property against enemy attacks and to save survivors in case of such attacks".

The report emphasizes that in the least complicated cases civil defence might face the demand to save almost everybody, whereas in the most severe situations one has to content oneself with hoping that sufficiently many will be saved to enable the nation to survive. Consideration must also be given to the requirement that the total defence system must be well balanced in order to resist and to function in different situations. The armed forces are primarily organized for defence against invasion, and the fundamental task of economic defence is to safeguard the national economy under blockade conditions. The strength of civil defence is tested as soon as the civilian population is affected by attack. In addition, civil defence will be responsible for protecting the population against radioactive fall-out and drifting war gas, even if Sweden could remain neutral in a war between the big powers. Different sectors of national defence thus will be subject to different valuation norms, and different types of the aggression and different war levels will be decisive for the organization and structure of the individual branches of national defence.

The specified policy which the Civil Defence Administration finds necessary should be laid down against the background of the National Defence Committee's analyses of the intentions of an aggressor and of consequent attacks, and the government's demand for political liberty of action. ▲

(Continued from page 20)

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). ▲

Editorial Opinion

CIVIL DEFENCE — SOME QUESTIONS

It is understandable that some members of city council are curious about what value, if any, Vancouver receives from its investment in civil defence.

They are only being honest with themselves. Civil defence is one of those sacred cows that for the large part both politicians and public are content to leave alone. It is a small enough token offering to a wrathful god, a bit of conscience money that's not really missed. To challenge civil defence on the point of principle, if not practice, is to open oneself to the risk of being labelled defeatist, or almost as bad, apathetic, and the easy way out is to light a candle and forget about the whole thing.

Yet, even if one can accept that a sort of pitchfork army constitutes any defence at all against the inter-continental nuclear missile or bacteria warfare or any other of the refinements of global horror, does its orientation to the city, where it would be among the first to be wiped out, begin to make sense?

If Canada's civil defence system has been rendered obsolete as a civil defence system, does it really have any practical subsidiary purpose—apologists keep mumbling about its reserve police role, whatever that may be—which couldn't be handled by existing, professional agencies, whose results, performance and costs are a little more open to public scrutiny?

Rightly or wrongly, many Canadians are bemusedly convinced that civil defence is a cobwebbed sinecure for shrewd old police sergeants and Home Guard types, and if they ask questions at all it is what in heaven's name do they do all day long.

Well, what do they do all day long? We know that somewhere in the bowels of the service there is a pamphleteer who sporadically churns out manuals advising troops at what point protocol permits the shooting of unmannerly civilian blast survivors, and advising motorists driving under the mushroom cloud to duck their heads but keep on driving. We know that certain highways, leading to nowhere in terms of nuclear blast distribution, are marked with civil defence escape route signs, although these same roads are almost impassable on any decent Sunday. We know there are supposed to be shelters reserved in the basement of selected public and private buildings, but even if we could think of one off hand it wouldn't make us feel that much more chipper.

Like life insurance, civil defence will only prove its worth when the policy has to be paid off. But, like life insurance, it should be subjected to more immediate tests; is the coverage adequate, is one; and if it isn't, are we willing to pay the premiums for coverage that, by whatever actuarial odds prevail, may be more so.

The obstreperousness of some Vancouver city council members should help to service notice on the federal government, by far the heaviest premium-payer after all, that Canadians now are dauntless enough to look civil defence in the eye and receive an honest appraisal. If we are merely supporting waste and fraudulent principle or feeding a habit it is money which can be put to far better purpose. If the considered answer is not less investment in civil defence but more, let's hear the facts.

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