

SURVIVING A NUCLEAR WAR

A Guide for the MIT Student

G. Proctor

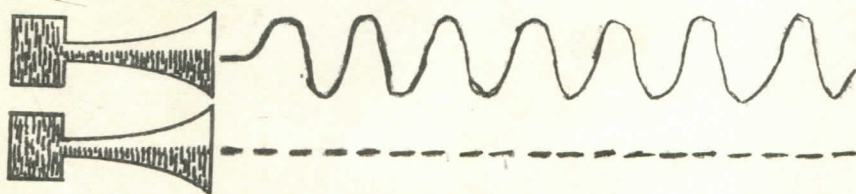
Some people refuse to think about nuclear war, believing that thinking would somehow help bring one on. While I do not advocate nuclear war, I do think that MIT students should be prepared to survive one. Nuclear war is something that hangs over all of us.

Contrary to popular belief, I do not think that MIT is targeted. When you think about it, there is not much in the Boston area of military importance. Thanks to Nixon's defence cutbacks in Mass. and Rhode Island, there are no primary targets in the area. When the Russians eliminate the industrial potential on 128, the fallout will wipe out Boston proper as a bonus. Any preparations are worthless if you are at ground zero.

Warning of an Attack

Warning can vary from 15-20 minutes (radar sighting of a missile attack) to a few hours (nuclear war in Europe that is spreading) to a few days (ultra-tense international situation). In the long run, a nuclear war is inevitable. Surviving means taking advantage of a situation. Act when you can. It is hard to stock up on food when the national guard is surrounding Purity Supreme.

On outdoor warning devices, the Attack Warning Signal is a 3- to 5-minute wavering sound, or a series of short blasts on whistles or horns.



This signal means: An enemy attack against the United States has been detected. *Take protective action.* (This signal has no other meaning, and will be used for no other purpose.)

Whichever signal is sounding, *don't* use the telephone to obtain further information and advice about the emergency. Depend on the radio or television, since the government will be broadcasting all the information it has available. The telephone lines will be needed for official calls. Help keep them open.

First Effects of Nuclear Weapons

The effects of nuclear weapons are very grim. When a nuclear weapon explodes, its immediate effects are intense heat & light, blast and radiation. Obviously, it helps to be far away and in a basement. If you are near a window or other glass object, you are in danger of being cut by large numbers of tiny glass slivers.

Chronology of a nuclear burst.

If There Is a Nuclear Flash

It is possible—but extremely unlikely—that your first warning of an enemy attack might be the flash of a nuclear explosion in the sky some distance away. Or there might be a flash after warning had been given, possibly while you were on your way to shelter.



FIRST FEW MILLIONTHS OF A SECOND

MIT = Committee on Alternative Intelligence (names furnished on request)

TAKE COVER INSTANTLY. If there should be a nuclear flash—especially if you are outdoors and feel warmth at the same time—take cover *instantly* in the best place you can find. By getting inside or under something within a few *seconds*, you might avoid being seriously burned by the heat or injured by the blast wave of the nuclear explosion. If the explosion were some distance away, you might have 5 to 15 *seconds* before being seriously injured by the heat, and perhaps 30 to 60 *seconds* before the blast wave arrived. Getting under cover within these time limits might save your life or avoid serious injury. Also, to avoid injuring your eyes, *never look at the flash of an explosion or the nuclear fireball.*



WHERE TO TAKE COVER.

You could take cover in any kind of a building, a storm cellar or fruit cellar, a subway station or tunnel—or even in a ditch or culvert alongside the road, a highway underpass, a storm sewer, a cave or outcropping of rock, a pile of heavy materials, a trench or other excavation. Even getting under a parked automobile, bus or train, or a heavy piece of furniture, would protect you to some extent. If no cover is available, simply lie down on the ground and curl up. The important thing is to avoid being burned by the heat, thrown about by the blast, or struck by flying objects.

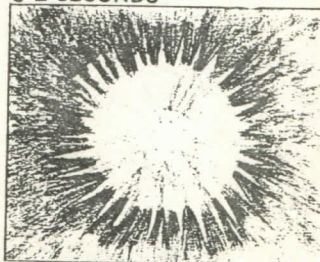
BEST POSITION AFTER TAKING COVER. After taking cover you should lie on your side in a curled-up position, and cover your head with your arms and hands. This would give you some additional protection.



Firestorm

A bomb exploded on the ground produces a lot of fallout, a bomb exploded in the air starts lots of fires. If enough fires start and there is enough combustionable material around, a firestorm is started. A firestorm is one massive fire covering many square miles. It sends up a column of hot air several miles high and sucks in cool air from the surrounding area at more than a hundred miles an hour. In the street, superheated air fries everyone. In the basements, oxygen is swiftly replaced by carbon monoxide and carbon dioxide. Assuming no fallout, it would take several days for the area to cool down to the point where someone could survey the damage. This happened to Hamburg and Dresden in WWII. It is probable that large sections of Boston, Cambridge, Somerville and Chelsea would firestorm in a nuclear war. The only way to escape a firestorm is to cover yourself with blankets soaked in water and run like hell.

0+2 SECONDS



NUCLEAR AND THERMAL RADIATION



Blast Effects

A nuclear weapon produces a shock wave that is highly destructive. Pressure lowers until it is normal, then a suction is produced when the air rushes back again. The jerk forward and back can be milliseconds apart. The overpressure is measured in psi.

1psi breaks windows
3psi wrecks light buildings
5psi wrecks brick, frame homes
7psi damage to massive buildings
12psi people hurled about
15psi lung injuries
25psi 50% prob. eardrum rupture

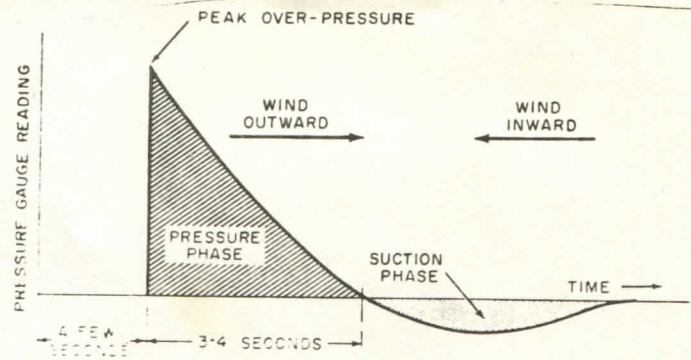
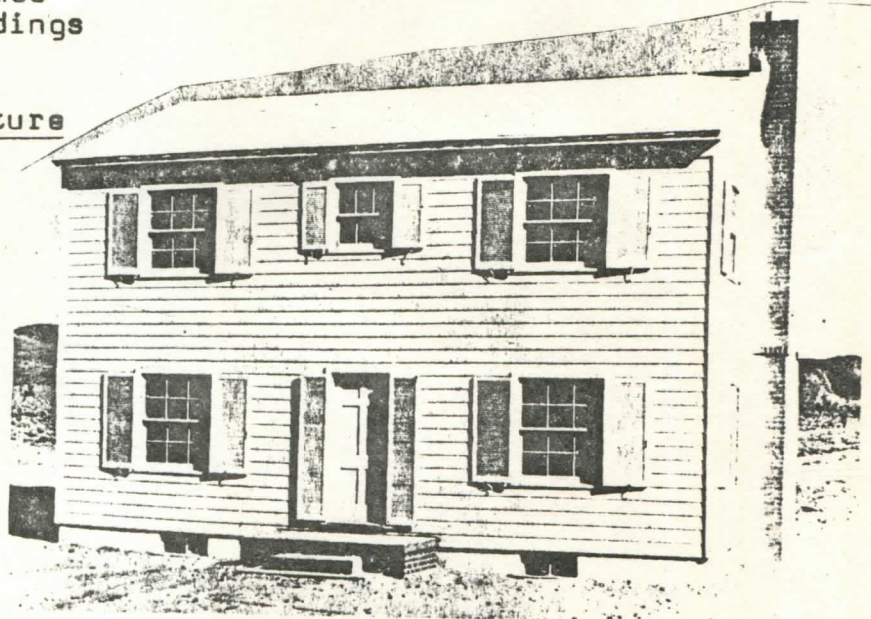


Figure 10 — Overpressure created at a particular point by air blast, showing how it changes as time passes after a nuclear explosion.

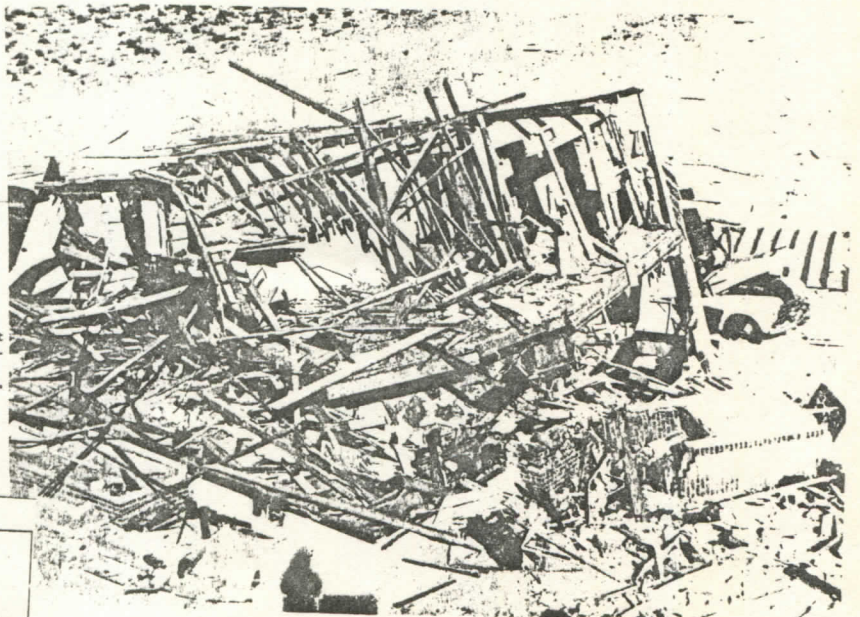
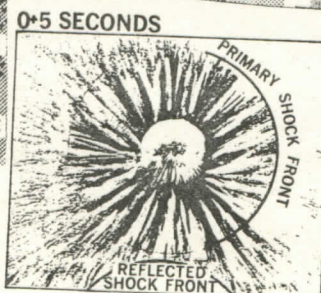
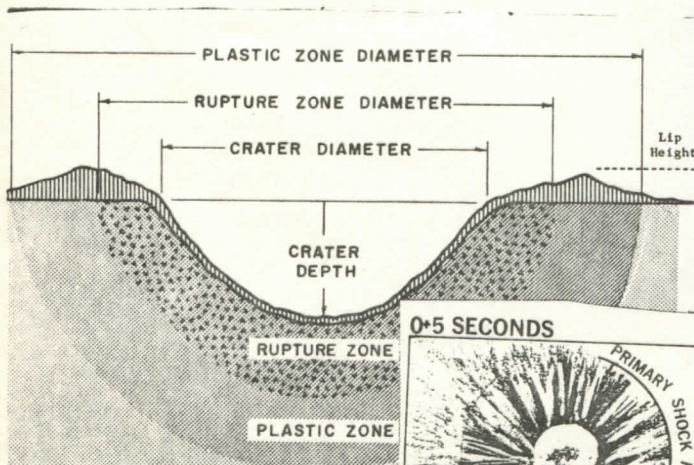
distance from the explosion in miles	maximum horizontal pressure in psi	
	1 megaton surface burst	10 megaton surface burst
1.5	4.9	130
2	1.6	32
3	.40	7.0
4	.16	2.2
5	.08	1.0

distance from the explosion in miles	maximum horizontal pressure in psi	
	1 megaton air burst	10 megaton air burst
1.5	11	over 200
2	4.6	200
3	1.5	18
4	.69	5.6
5	.37	3.0



— Courtesy Office of Civil Defense.

— Before the nuclear explosion.



— Courtesy Office of Civil Defense

— After the explosion. Effect of 5 psi overpressure on a wood frame house, showing total destruction.

Fallout

Fallout is particles of pulverized matter that has been sucked up to the stratosphere and filter down to the ground. These highly radioactive particles are visible as tiny grains of sand. The first bits that come down are the most dangerous. Fallout will come down in half an hour after a nuclear explosion. It is critical to take shelter immediately and stay there for at least two weeks. Fallout shelters will be needed to shield one from radiation in all portions of the Northeast. You can either go to a public shelter or improvise your own.

Improvising Fallout Protection

If an enemy attack should occur when you are at home, and you have made no advance shelter preparations, you still might be able to improvise a shelter either inside or outside your house. In a time of emergency, the radio broadcasts may tell you whether you have time to improvise a shelter or should take cover immediately.

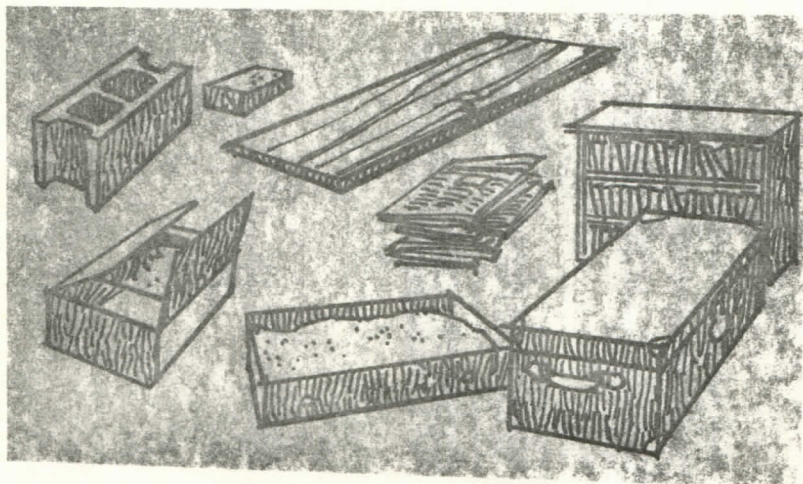
An improvised shelter probably would not give you as much protection as a permanent or a preplanned family shelter, but any protection is better than none, and might save your life.

The best place to improvise a shelter would be the basement or storm cellar, if your home has one.

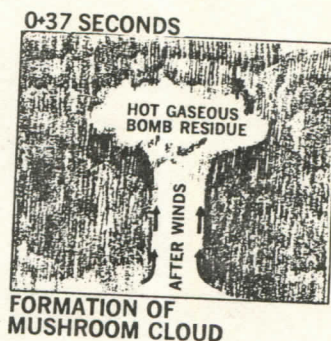
Shielding Material Needed

To improvise a shelter you would need shielding materials such as those mentioned on page 25—concrete blocks, bricks, sand, etc. Other things could also be used as shielding material, or to support shielding material, such as:

- House doors that have been taken off their hinges (especially heavy outside doors).
- Dressers and chests (fill the drawers with sand or earth after they are placed in position, so they won't be too heavy to carry and won't collapse while being carried).



- Trunks, boxes and cartons (fill them with sand or earth after they are placed in position).
- Tables and bookcases.
- Large appliances (such as washers and dryers).
- Books, magazines, and stacks of firewood or lumber.
- Flagstones from outside walks and patios.



half-value layer thickness for gamma rays

Steel	.7 inches
Concrete	2.2 inches
Earth	3.3 inches
Water	4.8 inches
Wood	8.8 inches

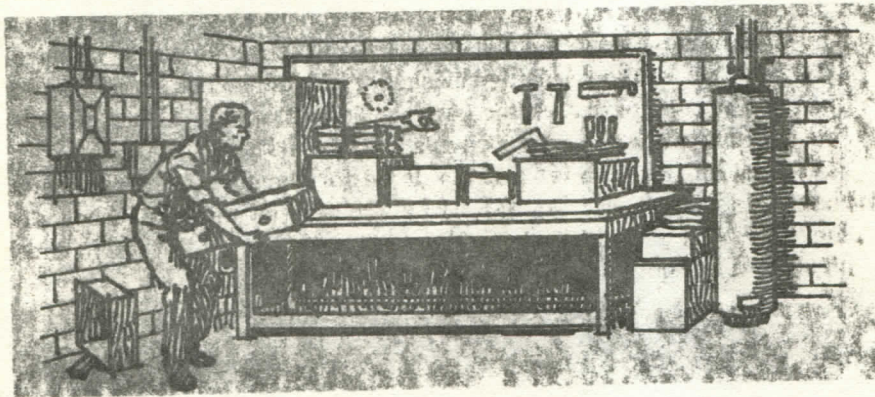
Improvising a Basement Shelter

Here are two ways of improvising fallout protection in the basement of a home:

Set up a large, sturdy table or workbench in the corner of your basement that is most below ground level.

On the table, pile as much shielding material as it will hold without collapsing. Around the table, place as much shielding material as possible.

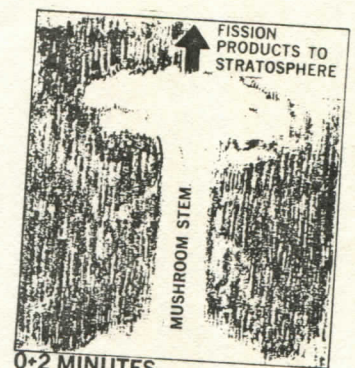
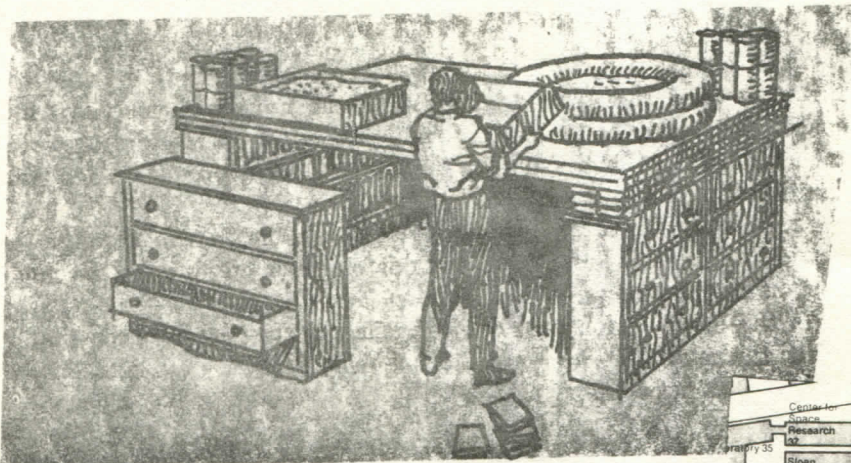
When family members are "inside the shelter"—that is, under the table—block the opening with other shielding material.



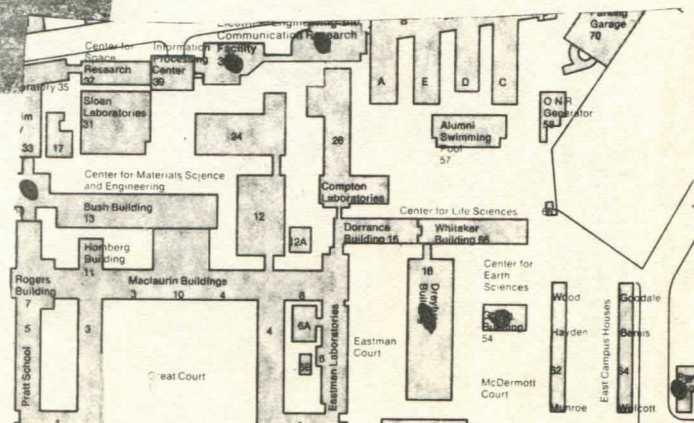
If you don't have a large table or workbench available—or if more shelter space is needed—place furniture or large appliances in the corner of the basement so they will serve as the "walls" of your shelter.

As a "ceiling" for it, use doors from the house that have been taken off their hinges. On top of the doors, pile as much shielding material as they will support. Stack other shielding material around the "walls" of your shelter.

When all persons are inside the shelter space, block the opening with shielding material.



Good MIT basements to head for



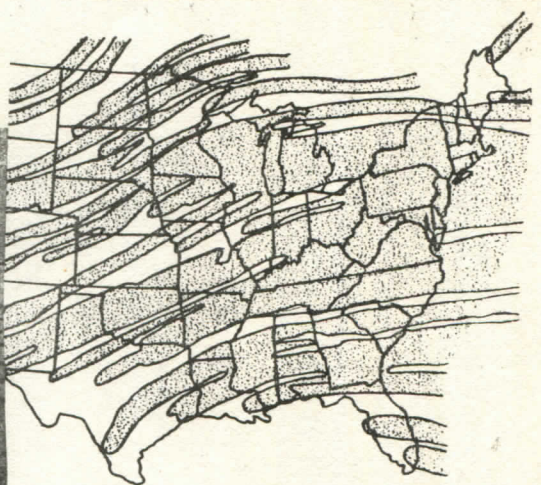
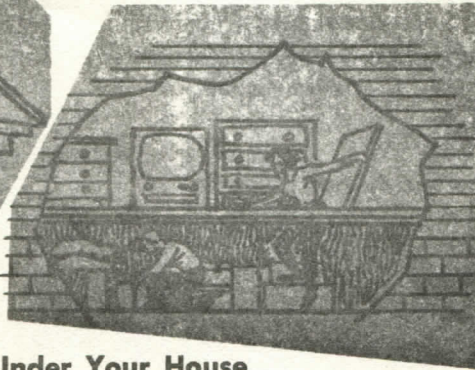
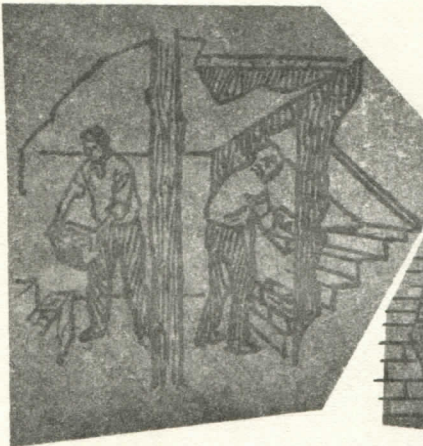
Using a Storm Cellar for Fallout Protection

A below-ground storm cellar can be used as an improvised fallout shelter, but additional shielding material may be needed to provide adequate protection from fallout radiation.

If the existing roof of the storm cellar is made of wood or other light material, it should be covered with one foot of earth or an equivalent thickness of other shielding material (see page 25) for overhead shielding from fallout. More posts or braces may be needed to support the extra weight.

After the roof has been shielded, better protection can be provided by blocking the entrance way with 8-inch concrete blocks or an equivalent thickness of sandbags, bricks, earth or other shielding material, after all occupants are inside the shelter. A few inches should be left open at the top for air. After particles have stopped falling, the outside door may be left open to provide better ventilation.

If shielding material is not available for the entrance way, shelter occupants should stay as far away from it as possible. They also should raise the outside door of the storm cellar now and then to knock off any fallout particles that may have collected on it.

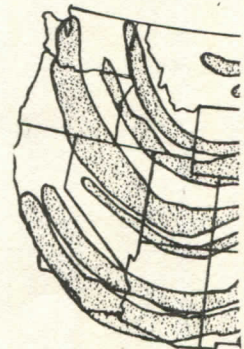


Using the Crawl Space Under Your House

Some homes without basements have "crawl space" between the first floor and the ground underneath the house. If you have this space under your house—and if the house is set on foundation walls, rather than on pillars—you can improvise fallout protection for your family there.

First, get access to the crawl space through the floor or through the outside foundation wall. (A trapdoor or other entry could be made now, before an emergency occurs.)

As the location for your shelter, select a crawl-space area that is under the center of the house, as far away from the outside foundation walls as possible.



Typical case showing the uneven distribution of fallout over the United States, assuming a particular attack and particular weather conditions.

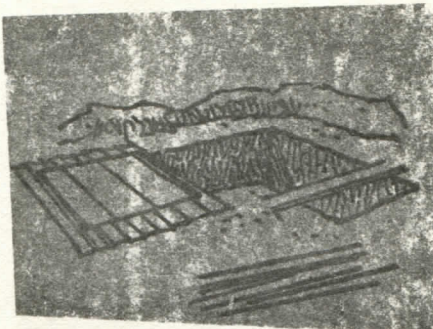
Around the selected shelter area, place shielding material—preferably bricks or blocks, or containers filled with sand or earth—from the ground level up to the first floor of the house, so that the shielding material forms the “walls” of your shelter area. On the floor above, place other shielding material to form a “roof” for the shelter area.

If time permits, dig out more earth and make the shelter area deeper, so you can stand erect or at least sit up in it.

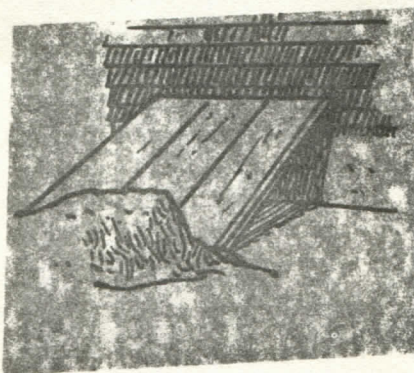
Improvising an Outside Shelter

If your home has no basement, no storm cellar and no protected crawl space, here are two ways of improvising fallout protection in your yard:

● Dig an L-shaped trench, about 4 feet deep and 3 feet wide. One side of the L, which will be the shelter area, should be long enough to accommodate all family members. The other side of the L can be shorter, since its purpose is to serve as an entrance-way and to reduce the amount of radiation getting into the shelter area.



Cover the entire trench with lumber (or with house doors that have been taken off their hinges), except for about 2 feet on the short side of the L, to provide access and ventilation.



On top of the lumber or doors, pile earth 1 to 2 feet high, or cover them with other shielding material.

If necessary, support or “shore up” the walls of the trench, as well as the lumber or doors, so they will not collapse.

● Dig a shallow ditch, 6 inches deep and 6 inches wide, parallel to and 4 feet from the outside wall of your house.

Remove the heaviest doors from the house. Place the bottoms of the doors in the ditch (so they won't slip), and lean the doors against the wall of the house.

On the doors, pile 12 to 18 inches of earth or sand. Stack or pile other shielding material at the sides of the doors, and also on the other side of the house wall (to protect you against radiation coming from that direction).

If possible, make the shelter area deeper by digging out more earth inside it. Also dig some other shallow ditches, to allow rain water to drain away.

Bibliography

Martin and Latham "Strategy for Survival" Hum UA927 .M383

Stonier "Nuclear Disaster" Penguin 1963

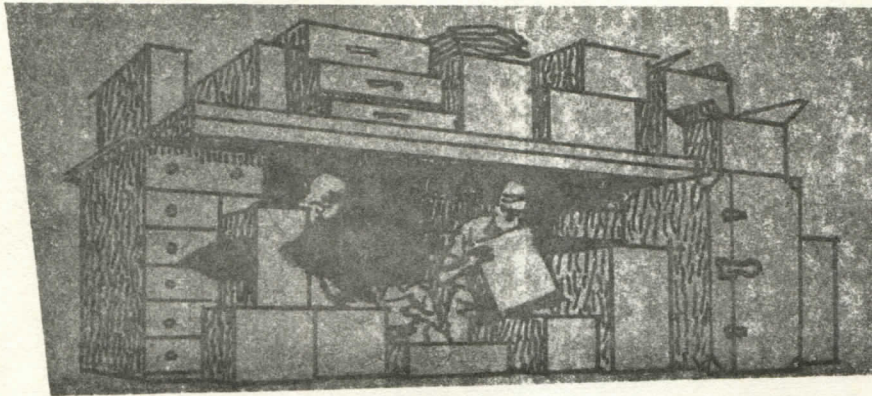
Suggs "Survival Handbook" Dew UF767 .S947

"Emergency Resources Management Plan" Mass. Civil Defense Agency
"In Time of Emergency"

An Improvised Shelter on the Ground Floor

If your home has no basement or storm cellar (and no crawl space that is surrounded by foundation walls up to the first floor), you can get some limited fallout protection by improvising a fallout shelter on the first or ground floor of your house. However, this type of shelter probably would not give you nearly as much protection as the other types of improvised shelters described in this chapter.

Use an inner hall, inner room or large clothes closet on the ground floor, away from outside walls and windows.



With doors, furniture and appliances, plus stacks of other shielding material, you can create an enclosure large enough to live in for a short time. If possible, use boxes filled with sand or earth as shielding material, and fill drawers and trunks with sand or earth.

If there is not room for the shielding material in the limited space of a closet or small room, you can place the material on the other sides of the walls, or on the floor overhead.

Boats as Improvised Shelters

If no better fallout protection is available, a boat with an enclosed cabin could be used. However, in addition to emergency supplies such as food, drinking water and a battery-powered radio, you should have aboard the items you would need (a broom, bucket, or pump-and-hose) to sweep off or flush off any fallout particles that might collect on the boat.

The boat should be anchored or cruised slowly at least 200 feet off-shore, where the water is at least 5 feet deep. This distance from shore would protect you from radioactive fallout particles that had fallen on the nearby land. A 5-foot depth would absorb the radiation from particles falling into the water and settling on the bottom.

If particles drift down on the boat, stay inside the cabin most of the time. Go outside now and then, and sweep or flush off any particles that have collected on the boat.

Food

If you are going to stay alive in a fallout shelter for about 2 weeks, you are going to need 2 weeks worth of food and water. Since Massachusetts has the lowest food stocks of any state, it is especially important to stock water containers and food if you are going to survive. This stocking need not be expensive, in fact it may familiarize one with low cost grains, which may help your budget in the long run. I recommend that one stock enough of the following ultra low cost, easily stored emergency diet:

19 oz. steam toasted wheat (see recipe)

1½ oz. skim milk powder

1/6 oz. salt

1 vitamin tablet

½ gal. water

This will give one person 2,000 balanced calories for one day. Everything has to be combined with water to be eaten. If you had some garbage cans and liners and a hose around, they could make an emergency water tank.

Steam Toasting Wheat

To prepare this wheat for steam-toasting in your pressure cooker, first select a pot just a little smaller than the inside of your biggest pressure cooker. Fill the smaller pot 3/4ths full of the dry grain and wash by pouring the grain into a dishpan of cold water. Stir the wheat with your hands, and you can easily float off the chaff. Then immediately pour the wheat into a strainer to remove all the water, and put the hard wheat grains, that are wet only on their surfaces, back into your smaller pot. You will now find that this smaller pot is now full of wheat. Check to see that no free water is at the bottom of your batch of grain.

Next place a trivet or pebbles on the bottom of your pressure cooker to act as a spacer, and set the smaller pot inside your pressure cooker. Then pour water into the space between the inner and the outer pot. Next close the pressure cooker and set it to cook at 15 or 20 pounds pressure. After it starts cooking, reduce the flame until the pressure control weight only rattles up and down occasionally, or remains at 15 or 20 pounds pressure. Inasmuch as the grain must be cooked for a long time, do not permit excessive loss of steam. The writer has found that when cooking 4½ quarts of wheat filling a smaller pot inside an 8 quart pressure cooker, only 1 pint of water need be lost as steam to assure a full-pressure cooking.

If you are using an 8 quart pressure cooker, cook your wheat at 15 or 20 pounds pressure for one hour and thirty minutes. Your wheat will then be steam toasted. To determine if it is well cooked, chew up a teaspoon taken from the center of the batch. If the wheat gluten is not all cooked, you will find that there will remain in your mouth a sticky lump much like the grey, glutinous "chewing gum" you get if you chew raw wheat.

You will notice that the wheat grains have been toasted by the superheated steam to a light brown color, and are only slightly damp. If you live in a dry climate, all you have to do to completely re-dry your steam-toasted wheat is to put it in a cloth bag exposed

SHELTER RESERVE FOOD SUPPLY

Kind of food	Need per person		Remarks
	Daily	2 weeks	
1. Milk	Equivalent of 2 glasses (fluid)	Equivalent of 7 qts. (fluid)	Each of the following is about the equivalent of one quart of fluid milk: Three 6-oz. cans of evaporated milk. One 14½ oz. can of evaporated milk. Three to 3½ ozs. of nonfat dry milk.
2. Canned meat, poultry, fish, dry beans, and peas	2 servings	28 servings (about 8 to 9 lbs.)	Amounts required for one serving of each food are as follows: Canned meat, poultry, fish—2 to 3 ozs. Canned mixtures of meat, poultry, or fish with vegetables, rice, macaroni, spaghetti, noodles, or dry beans—8 ozs. Thick soups containing meat, poultry, fish, or dry beans or peas—one-half of a 10½-oz. can (condensed).
3. Fruits and vegetables	3 to 4 servings	42 to 56 servings (about 21 lbs. canned)	Amounts required for one serving of each food are as follows: Canned juices—4 to 6 ozs., single strength. Canned fruit and vegetables—4 ozs. Dried fruit—1½ ozs.
4. Cereals and baked goods	3 to 4 servings	42 to 56 servings (about 5 to 7 lbs.)	Amounts required for one serving of each food are as follows (selection depends on extent of cooking possible): Cereal: Ready-to-eat, puffed—½ oz. Ready-to-eat, flaked—¾ oz. Other ready-to-eat and uncooked—1 oz. Crackers, cookies—1 oz. Canned bread, steamed puddings, and cake—1 to 2 ozs. Flour, flour mixes—1 oz. Macaroni, spaghetti, noodles: Dry—¾ oz. Cooked, canned—6 ozs.
5. Spreads for bread and crackers	According to family practices		Examples: Cheese spreads. Peanut and other nut butters. Jam, jelly, marmalade, preserves. Sirup, honey. Apple and other fruit butters. Relish, catsup, mustard.
6. Hydrogenated fats and vegetable oils		Up to 1 lb. or 1 pt.	Amount needed depends upon extent of cooking possible.
7. Sugars, candy, nuts, instant puddings		1 to 2 lbs.	
8. Miscellaneous	According to family practices		Examples (amount needed depends on extent of cooking possible): Coffee, tea, cocoa. Instant, dry cream substitute. Bouillon products. Synthetic beverage products. Salt and spices (e.g., pepper). Flavoring extracts, vinegar. Soda, baking powder.
9. Water	1/2 gal.	7 gals.	

to dry air for a few days. Or you can re-dry it at a low heat in your oven, with the door opened slightly, until it is as dry as wheat long stored in a granary. Then if you seal this thoroughly cooked and re-dried wheat in a tight container, it will remain a nourishing food for at least 25 years.

Of course, any foods that are available should be utilized. Some plans for shelter food are over-elaborate (see Shelter Reserve Food Supply).

While You're at it...

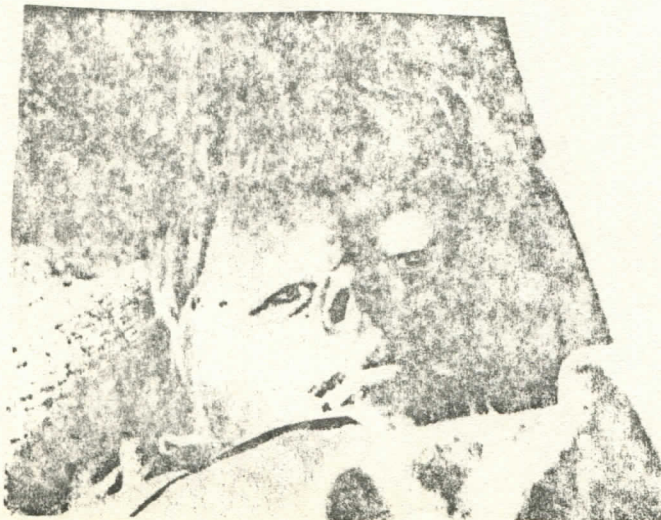
While you're at it, why don't you stock a whole range of survival goods. A list might include:

- transistor radio
- flashlight
- first aid kit & first aid guide
- toilet paper & other sanitary articles
- essential medicines
- pot or LSD to escape reality
- cooking and eating utensils
- tools
- anything that might help you in a post attack society

Radiation Sickness and Major Medical Emergencies

Survivors of a nuclear attack can be cassified into three categories. Those that don't need any medical attension save a few bandaids, those who will die despite medical attention and those who will respond to medical attention. All attention should be given only to the latter case except seditives for the hopeless cases. Everyone, not just the paranoids worried about atomic warfare, should learn what to do when faced with a medical emergency. What do you know about artificial respiration, stopping serious bleeding, shock, broken bones and burns?

Radiation sickness is the name given to the symptoms of over-doses of radiation. Obviously it is not contagious. No matter how much radiation a person has received, it takes serveral days to die. A general patter is to get sick, feel better after a while, get a relapse, and die. There is not much that can be done, except a blood transfusion, which might be difficult to arrange under the circumstances.



From a dramatization
of a nuclear war

This is the face of a boy lying in a refugee camp near Dover in Kent

He has vomited and undergone nausea on the first day of his exposure to 380 roentgens of radioactivit y

But now he feels better and for two weeks he will feel relatively well, although important changes are continually occuring inside his body

In about two weeks' time he will begin to bleed into various organs of his body, and haemorrhages under his skin will be observed. His hair will begin to fall out in patches and he will suffer from general malaise and fever

In the third week he will begin to suffer from inflammation of the mouth and throat, from severe diarrhoea, and general emaciation. Ulceration about the lips will then commence, and will spread from the mouth through his entire gastro-intestinal tract in the terminal stage of the sickness

In the fourth week, he will die

Acute Clinical Effects of Whole-Body Irradiation to Healthy Adults

Dose (Range)	0-100 rads (subclinical range)		100-1000 rads (sublethal range)		100-1000 rads (sublethal range)		Over 1,000 rads (lethal range)	
			100-200 rads	200-600 rads	600-1,000 rads		1,000-3,000 rads	over 3,000 rads
INITIAL PHASE	Inci- dence of nausea and vomiting	NONE	5-50%	50-100%	75-100%		100%	
	Time of onset	Approx. 3-6 hrs.		Approx. 2-4 hrs.	Approx. 1-2 hrs.		Less than 1 hr.	
	Duration	Less than 24 hrs.		Less than 24 hrs.	Less than 48 hrs.	Less than 48 hrs.	Approx. 48 hrs.	
	Combat effective- ness	100%		Can perform routine tasks. Sustained combat or comparable activities hampered for 6-20 hrs.	Can perform only simple routine tasks. Significant incapacitation in upper part of range. Lasts more than 24 hrs.	Progressive incapacitation following an early capability for in- termittent heroic response.	Progressive incapacitation fol- lowing an early capability for intermittent heroic response.	

LATENT PHASE	Duration	More than 2 weeks.	Approx. 7-15 days.	None to approx. 7 days.	None to approx. 2 days.	NONE
	Signs and symptoms	NONE	Moderate leukopenia.	Severe leukopenia; purpura, hemorrhage; infection; epilation about 300 rads.	Diarrhea; fever; disturbance of electrolyte balance	Convulsions; tremor; ataxia; lethargy

Dose (Range)	0-100 rads (subclinical range)		100-1000 rads (sublethal range)		100-1000 rads (sublethal range)		Over 1,000 rads (lethal range)	
			100-200 rads	200-600 rads	600-1,000 rads		1,000-3,000 rads	over 3,000 rads
SECONDARY PHASE	Time of onset post exposure.	2 weeks or more.	Several days to 2 weeks.	Several days to 2 weeks.	2-3 days.			
	Critical period post exposure.	NONE	4-6 weeks	4-6 weeks.	5-14 days.		1-48 hrs.	
	Organ system respon- sible.	NONE	Hemato- poietic tissue.	Hematopoietic tissue.	Gastrointestinal tract.		Central nervous system.	
	Per- centage	NONE	Less than 5%	90%	100%		100%	
HOSPITAL- IZATION	Dura- tion	45-60 days.	60-90 days.	90-120 days.	2 weeks.		2 days.	
INCIDENCE OF DEATH		NONE	NONE	0-80%	90-100%		90-100%	
AVERAGE TIME OF DEATH			3 weeks to 2 months.	3 weeks to 2 months.	1-2 weeks.		2 days.	
THERAPY		NONE	Reassurance, hematologic surveillance.	Blood transfusion, antibiotics.	Blood transfusion, antibiotics.	Maintenance of electrolyte balance.		Sedatives.

Decontamination of Food and Land

Any food can be eaten as long as it does not contain any fallout particles. Just because something is exposed to radiation doesn't mean that it becomes radioactive. Any fruit or vegetable should be thoroughly washed. Animals that have died from radiation sickness can be eaten if you avoid the internal organs. Eggs are safe, too, if you don't eat the shells. Covered water is safe, of course. Water can be filtered by passing it through a column of earth. But the filtered water should be purified by adding water purification tablets or bleach (only if hypochlorite is its only active ingredient, at least 8 drops per gallon of water). Fallout particles should be removed from clothes and skin, as they can cause burns.

Hypothetical Situation

first hour radiation intensity	1,000 r./hr.
fallout shelter shielding factor	100
total dose after 2 weeks	30 r.
dose in 2 weeks on, out of shelter	700 r.
radiation dose to kill $\frac{1}{2}$ population	450 r.
total dose if outside level down by 1/10 by decontamination	30+70=100 r.

Decontamination, or removal of fallout particles from the immediate environment is very important for survival. It should be started when it is safe to go outside the shelter for brief periods. The idea is to sweep away or wash away or cover up the fallout particles. This may be harder than it sounds, in areas of heavy contamination, fallout can be one pound of dust and sand per square foot.

Decontamination Methods and Efficiency

Surface	Method	Man-Hours per 1,000 Sq. Ft.	Decontamination Factor	by clearing a circle with a diameter of	radiation reduced by a factor of
Pavement	Motorized sweeper	0.02	0.06	25 feet 50 feet 200 feet	33% 50% 75%
	Motorized flusher	0.01	0.02		
	Firehosing	0.5	0.03		
Tar and gravel roofs	Firehosing	0.3	0.07	200 feet	75%
	Firehosing plus scrubbing	2.0	0.02		
Composition shingle roofs	Firehosing	0.2	0.05		
	Firehosing plus scrubbing	2.0	0.02		
	Hand sweeping	1.0	0.12		
Unpaved land	Scraping	0.11	0.02		
	Six-inch earth covering	0.25	0.15		
	Plowing	0.4	0.20		
	Grading	0.016	0.07		
	Hand shoveling with wheelbarrow	2.25	0.12		
Bare frozen ground	Motorized sweeper	0.027	0.1		
	Firehosing	0.27	0.5		
Packed snow	Motorized sweeper	0.017	0.02		
	Firehosing at 15° F	0.45	0.12		
Undisturbed snow	Blade plow	0.003	0.03		
	Rotary plow	0.019	0.10		

Long Term Effects

The ecological results of a full scale nuclear war are beyond comprehension. Trees are about as sensitive to radiation as people are, except they don't have fallout shelters. Insects will take massive doses of radiation without blinking. Obviously there will be massive distortions of the biological balance. Large sections of the Northern Hemisphere may irreversibly turn into deserts like the Sahara. The vast amounts of dust thrown into the stratosphere could block enough sunlight to start another ice age. Once the ice and snow appear, they reflect the sun to keep the temperatures suitably chilly. Nobody really knows what he is talking about when he discusses long term effects.

The radiation will produce a lot of cancer, genetic damage and birth defects. Gross abnormalities will disappear fast. Little things, like slight retardation, will plague mankind for hundreds of years. It may be necessary to kill malformed babies to keep chimpanzees from competing with man on an intellectual level. It won't be pretty.

The human foetus is between 20 to 60 times more sensitive to radiation than the normal adult

Peak stages of development in the womb at which the following might occur if the unborn child be subjected to irradiation:

Cleft palate	32 days
Deafness	25 days
Skeletal deformity	37 days
Finger deformity	20-54 days
Spinal curvature	29 days
Anaemia	41-70 days
Microcephaly (dwarf head)	32 days

Living in the Post Attack Society

It is hard to predict how society would put itself back together after a nuclear war. If there are no long term disruptions, like massive plagues or chemical warfare, then it is possible that people would put the pieces back together and raise the standard of living and industrial output to the level of 1900 in a few years! However, if the telephone lineman thinks that forging for food and protecting his family are more important than restoring vital communications, then you have a problem. If there is anarchy, with anti-technology mobs burning books and shooting people for scraps of food, then the best means of survival is to collect some friends and head for the hills.

However, the government has it all worked out. The Office of Emergency Planning is responsible for the all over planning. Local Civil Defence organizations carry it out. This is the way it goes:

- 1) Control will be retained by private ownership, with possible governmental controls

- 2) US currency is the only medium of exchange
- 3) There will be strict rationing and management of resources with the consumer getting the lowest priority
- 4) There will be strict wage, price, rent and everything freezes
- 5) Government agencies and private corporations will control the post attack society. As usual.

They lived through the missiles, they lived through the bombs, they lived through the fires, they lived through the epidemics—which were not extreme and may not have been weapons; both sides disclaimed them—and they lived through the long period of disorders while civil government writhed like a snake with a broken back. They lived. They went on.

Their sign reads:

**FARNHAM'S FREEHOLD
TRADING POST & RESTAURANT
BAR**

American Vodka
Corn Liquor
Applejack
Pure Spring Water
Grade "A" Milk
Corned Beef & Potatoes
Steak & Fried Potatoes
Butter & some days Bread
Smoked Bear Meat
Jerked Quisling
(by the neck)
Crêpes Suzettes to order.

**Chapter 23
Farnham's Freehold
by Robert Heinlein**

!!!!Any BOOK Accepted as Cash!!!!

DAY NURSERY

!!FREE KITTENS!!

Blacksmithing, Machine Shop, Sheet Metal Work—
You Supply the Metal

FARNHAM SCHOOL OF CONTRACT BRIDGE

Lessons by Arrangement

Social Evening Every Wednesday

WARNING!!!

Ring Bell. Wait. Advance with your Hands
Up. Stay on path. avoid mines. We lost three
customers last week. We can't afford to lose
• YOU. No sales tax.

Hugh & Barbara Farnham & Family
Freeholders

High above their sign their homemade starry flag is fly-
ing—and they are *still* going on.

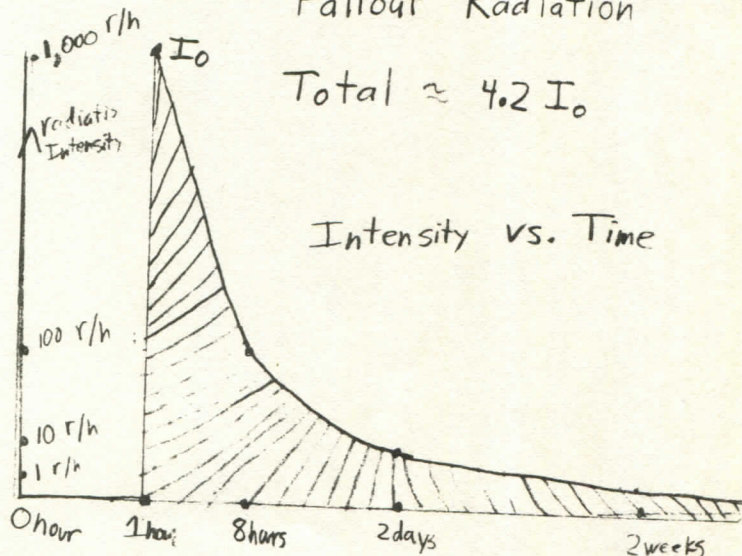
**Reasons for Leaving Shelter at Various
Radiation Levels**

RADIATION RATE OUTSIDE THE SHELTER (r/hr)	ACCEPTABLE REASON FOR LEAVING
MORE THAN 50	Only destruction of the shelter. All other needs must be postponed at least one day.
50 TO 10	Only: a. Destruction of the shelter. b. Removal of dead. c. Severe illness, necessitating immediate treatment with medical help close by.
10 TO 2	a. Obtaining water, if very near b. Obtaining food, if very near. c. Leaving shelter for nearby shelter with better protection factor.
2 TO 0.5	All rescue, repair, communication and decontamination work. Remain in shelter for sleeping, rest, and meals.
0.5 TO 0	Normal workday can be spent out of doors.

Fallout Radiation

Total $\approx 4.2 I_0$

Intensity vs. Time



Radiation Measuring Equipment
Victoreen Instrument Co.
5806 Hough Ave.
Cleveland 3, Ohio

Atomic Accessories Inc.
811 W. Merrick Rd.
Valley Stream, NY

Bendix Aviation Corp.
3130 Wasson Rd.
Cincinnati, Ohio

Hoffman Electronics Corp.
3761 S. Hill Street
Los Angeles 7, Calif.

Possible Attack on New England

<u>City</u>	<u>Megatons</u>	<u>Why</u>
<u>Connecticut</u>		
Bridgeport	10	industry, population
Hartford	5	industry, population
Meriden	1	population
New Britain	1	population
New Haven	5	industry, population
Norwalk	1	population
Stamford	5	population
Waterbury	2	population
<u>Maine</u>		
Bangor	5	SAC, ADC base
Lewiston-Auburn	5	population
Limestone	5	SAC, ADC base
Portland	2	population
<u>Massachusetts</u>		
Boston	20-50	large population center
Brockton	1	population
Fall River	1	population
Fitchburg-Leominster	2	population
Lawrence-Haverhill	2	population
Lowell	1	population
New Bedford	1	population
Pittsfield	1	population
Springfield	5	industry, ADC base, population
Worcester	2	industry, population
<u>New Hampshire</u>		
Manchester	1	population
Portsmouth	5	SAC base
<u>Rhode Island</u>		
Pawtucket-Providence	8	industry, population
Providence	8	industry, population

(In the same guess, Great Falls, Montana gets between 500 and 1500 megs)

Government Documents

The following documents are real. They take effect immediately in event of nuclear war. The Federal Freeze Order can be authorized by any federal employee in the name of the President. These papers and much, much more come in a thick notebook entitled "Emergency Resources Management Plan". Get one free, just write
Massachusetts Civil Defense Agency
400 Worcester Road
Framingham, Mass. 01701

It is a stupid, bureaucratic plan. But you will notice that nothing happens without official authorization. They will control all the means for survival. To survive means to cooperate with the establishment. Which shouldn't come as news to MIT students. To get anything, it has to be declared "essential to the Commonwealth and the nation". Notice that "Engineers, all types" are an essential industry. All you have to do is write on a request form:

This is an essential order authorized by the State of _____ _____ Signature of Purchaser
--

for anything you need. As proof, show your brass rat. Above all, work for the bureaucracy. Never doubt the value of the dollar in post attack society. Uncle Sam, as well as stockpiling raw materials, has stashed away enough money to last two years. It also has hardened shelters for the Federal Reserve Board. Good Luck.

Food Rationing

After it is safe to leave the shelter, register for ration cards, probably at local schools. Listen to the radio for instructions. With the ration cards, you can buy food at normal food stores. If you have the money, that is. The post attack economy will be primarily based on checks rather than cash to curb black markets. Massachusetts has very low food stocks anyway, so rationing may be irrelevant. Mormons will survive, since they are required to always have a years supply of food on hand.

God Save These United States

THE COMMONWEALTH OF MASSACHUSETTS

BY HIS EXCELLENCY

GOVERNOR

A PROCLAMATION

FREEZE ORDER COMPLIANCE

WHEREAS, our Commonwealth and nation have been subjected to a grave emergency requiring the efforts of all citizens for community and national survival; and

WHEREAS, a Civil Defense emergency has been recognized and duly proclaimed in Massachusetts, and the provisions of the Massachusetts Civil Defense Act (Acts 1950, Chapter 639 as amended) are now in effect; and

WHEREAS, our Commonwealth is determined to do its share in the whole national effort;

NOW, THEREFORE, I, _____ as Governor of the Commonwealth and by the authority vested in me by law, order the publication of the Federal General Freeze Order, declare it to have full force of law throughout our Commonwealth, and command due compliance with all its provisions.

I further order that this Proclamation be disseminated and published in every part of our Commonwealth by every means of communication.

Witness my hand and the Great Seal of the Commonwealth at _____

this _____ day of _____
Governor (or other title)

GREAT SEAL

Secretary of the Commonwealth

GOD SAVE THE COMMONWEALTH OF MASSACHUSETTS



THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE DEPARTMENT

STATE HOUSE • BOSTON 02133

FRANCIS W. SARGENT
GOVERNOR

To: Executive Heads of Local Government

All persons are expected to comply with the provisions of the Federal General Freeze Order dealing with ceilings on prices, wages, rents, the prohibition of retail sales for five days and the rationing of essential consumer items.

You are authorized to make exceptions to the Freeze Order provisions to permit retail sales to meet immediate needs of designated essential local users and to maintain operations of designated essential facilities. However, with the above exception you are requested to enforce compliance with the Freeze Order and with such other regulations, orders or directives as may be issued to implement this Order.

Your local Ration Board should proceed immediately to register and issue ration cards to the public in accordance with instructions pre-placed with them by the State Economic Stabilization Board. The District Price and Rent Boards will be issuing instructions on procedures as well.

Date

Governor

EMERGENCY DOCUMENT 1

Massachusetts Economic Stabilization Policy and Guidance

To: Citizens of the Commonwealth and Officers of State and Local Governments

In the present declared emergency the conservation and restricted use of food, petroleum and other necessary goods in Massachusetts are essential pending ascertainment of supply conditions and determination of how much may be available for non-priority needs.

In accordance with the Commonwealth's emergency plans it is necessary, among other matters, to ration consumer goods and to stabilize prices, rents and real property prices. For this reason full public support and cooperation are required for the Economic Stabilization Board, including Ration Boards, Price Boards and Rent Boards. Local public officials are requested to take action to accomplish the following things:

1. Make known and enforce the temporary freeze on inventories of essential goods;
2. Make public announcement of the items which will be rationed to the public generally by use of ration cards;
3. Make public announcements of the use levels and distribution quantities for items rationed;
4. Report to the appropriate Area Ration Committee, as required, the numbers of people among whom necessary goods are to be rationed;
5. Make further public announcement of those goods that may be made available to consumers on proof of immediate need, by application to their local Ration Boards;
6. See that the public is fully informed how and where to register to receive ration cards in their communities and how to use them;
7. Assist local Ration Boards in instructing retail merchants in their duties and functions under the ration system;
8. Assist price and rent stabilization in retaining all prices, rents and real property prices at the levels existing at the time of attack.

Governor

(Date)

Attest:

Chairman, Massachusetts Economic
Stabilization Board



OFFICE OF EMERGENCY PLANNING

Executive Office of the President

Federal General Freeze Order

Whereas, the President has proclaimed the existence of an unlimited national emergency and of a civil defense emergency, and has found that it is necessary to provide for resource conservation and control and for the stabilization of the civilian economy;

Now, Therefore, by virtue of the authority vested in me by the President, it is hereby ordered as follows:

Section 1. General Freeze

All prices, wages and salaries and rents are hereby frozen at the levels specified in section 2 of this order.

Section 2. Prohibitions

(a) No person may charge, receive, or pay more for commodities and services than the highest prices which were in effect during the one-month base period (prior to the base date).

(b) No employer shall pay and no employee shall receive a wage, salary or other form of compensation at a rate higher or lower than that paid or received as of (the base date).

(c) No person shall demand or receive, nor shall any person pay more than the following rent ceilings:

(1) The rent in effect on the base date for any housing accommodation, commercial, or industrial unit which was rented on the base date;

(2) The last rent in effect during the base period for any house, apartment, flat, commercial, or industrial unit which was not rented on the base date but was rented at any time during the base period;

(3) The ceiling rent established by regulation, directive, or order issued pursuant to this Order for houses, apartments, flats, commercial, and industrial units, for rooms of all types, and for any rented structure, unit or space.

(d) No owner of any interest in real property shall demand or receive, and no purchaser shall pay more than the sales price ceilings which shall be:

(1) The sale price specified in a sales contract signed by both parties on or before the base date; or

(2) Where there is no such sales contract, the fair market value of the property in the rent-control area as of the base date, as established by an authorized appraiser, subject to the approval of the local rent administrator.

Section 3. Consumer Rationing

For a period of five days from the effective date of this Order, all retail sales, except perishable foods or any health item dispensed under prescribed procedures, shall be prohibited. Thereafter, rationing of selected essential consumer items will be imposed as rapidly as possible.

Section 4. Definitions

(a) "Base Date": Base date means the date of the first nuclear attack on the United States.

(b) "Base Period": Base period means the one-month period prior to the base date as to ceiling prices, and the three months prior to and ending on the base date as to rents.

(c) "Persons": Persons shall include an individual, corporation, partnership, firm or any other entity.

(d) "Price": Price shall include rentals, commissions, margins, rates, fees, charges or other forms of prices paid or received for the sale or use of commodities or services or for the sale of real property, but shall not include prices on finished military items produced for the armed forces.

(e) "Commodity": Commodity means all commodities, articles, products, and materials, including those provided by public utilities services, such as electricity, gas, and water.

(f) "Services": Services means all services rendered, other than as an employee, in connection with the processing, distribution, storage, installation, repair, or negotiation of purchases or sales of a commodity, or in connection with the operation of any service establishment for the servicing of a commodity, or privileges including professional services. (The term "services" shall not be construed to authorize the regulation of compensation paid by an employer to any of his employees.)

(g) Wage, salary, or other form of compensation includes all forms of remuneration to an employee by an employer for personal services including, but not limited to, premium overtime rate payments, night shift, year-end and other bonus payments, incentive payments, commissions, vacation and holiday payments, employer contributions to or payment of insurance or welfare benefits or pension funds or annuities, and other payments in kind. Regardless of any right or contract heretofore or hereafter existing, no change or adjustment shall be made in such rates of wages, salaries, or other forms of compensation except as may be permitted or required by regulations, orders, or directives issued under this Order.

(h) "Sale": Sale includes sales, dispositions, exchanges, and other transfers and contracts and offers to do any of the foregoing.

(i) "Authorized Appraiser": Authorized appraiser means qualified appraiser designated by the local rent administrator to make appraisals in connection with the establishment of sales price ceilings for real property.

(j) "Essential Consumer Items": Essential consumer items means items that are used to satisfy essential needs of individual consumers, such as food, clothing, petroleum products, and other items as indicated in section 5. (b).

(k) "Retail": Retail (sometimes referred to as secondary) means the

level at which commodities, products, and materials are sold directly to the consumer.

(1) "Rent": Rent includes charges for any building, structure or part thereof, or land appurtenant thereto, or services, furnishings, furniture, equipment, facilities, and improvements connected with the use or occupancy of such property.

Section 5. Interim Administration

Until such time as a Federal emergency stabilization agency is created and is capable of administering the provisions of this Order, interim operations include the following:

(a) The Secretary of Labor is delegated authority to administer those provisions of this Order dealing with wages, salaries and other compensation (and the resolution of any labor disputes that may arise) and to issue such regulations, orders, or directives as he deems necessary to such administration. He is further authorized to redelegate this authority to such officers of his Department as he deems appropriate.

(b) It is expected that the Governor of each State through such State officers or agencies, local authorities including civil defense and other emergency organizations as he may designate, will exercise such emergency authorities as are available to him under State law, to provide for the administration of those provisions of this Order dealing with ceilings on prices, rents, the prohibition of all retail sales, and the rationing of essential consumer items. In the course of such administration, the Governor through such designees is expected to make such essential exceptions to the prohibition-of-sales provisions of this Order as he finds necessary and shall designate those essential consumer items to be distributed through the consumer rationing system.

(c) It is further expected that the Governor of each State, pursuant to the laws of his State and supported by local authorities, will provide for the interim enforcement of ceilings established by this Order and of any regulations, orders or directives issued pursuant to this section.

Section 6. Record Keeping

(a) Commodities and Services: All records in existence on the date of this Order reflecting prices which were charged for the commodities or services during the base period, together with all other records of any kind or description shall be preserved. All records hereafter required to be kept pursuant to regulations or directives issued hereunder shall be preserved.

(b) Rents: All persons subject to this Order shall preserve and maintain all records which are necessary to show the manner by which the ceiling rentals were determined and the record of payments made by persons in occupancy of real property or any part thereof.

(c) Wages and Salaries: All employers shall preserve and maintain all records which reflect the rates of wages, salaries or other forms of compensation paid on the base date, together with all other records of any kind or description.

Section 7. Applicability

The provisions of this Order shall be effective immediately and are applicable to the United States, its territories and possessions, the Commonwealth of Puerto Rico, and the District of Columbia.

Section 8. Termination

This interim order shall expire when replaced by subsequent executive or administrative Economic Stabilization Agency orders.

Dated _____

Designated Federal Official



THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE DEPARTMENT

STATE HOUSE • BOSTON 02133

FRANCIS W. SARGENT
GOVERNOR

To: Executive Heads of All Political Subdivisions in this State

It is essential that the resources available to this State during the immediate post-attack situation be carefully conserved and channeled into the most urgent uses and activities.

I have issued overall policies and guidance on the use of essential resources. Copies of these policy and guidance documents are contained in the State Plan for the Emergency Management of Resources and have been provided to the executive heads and governing bodies of all of the political subdivisions in the State. Included is a list of specific items considered essential for survival.

I hereby proclaim these policies and guidance in effect throughout this State.

I have instructed the Directors of the several State Resource Divisions to provide to you more specific guidance on the application of State policies for the distribution and use of resources.

Facilities in your jurisdiction which produce or distribute items or provide services essential for local, State, and National survival and which must be supported with locally available resources to maintain operations have been identified for you by the State Resource officials.

You are requested to authorize essential local users and essential facilities in your jurisdictions to use the following certification on their purchase orders or requests on their suppliers to obtain resources, or in placing contracts or work orders with construction contractors, in accordance with the specific provisions contained in policies and guidance provided to you, on my behalf, by the several State Resource Directors.

"This is an essential order
authorized by the State of

"

Signature of Purchaser

Please advise local employment offices to act on requests and arrange for the assignment of manpower needed by essential local users and essential facilities.

You are to inform secondary suppliers of essential survival items in your jurisdictions that they are prohibited from selling items in their inventories unless (1) excepted by the Federal General Freeze Order, or (2) to fill authorized demands under the consumer rationing system, or (3) to meet other essential needs authorized by you pursuant to specific guidance provided to you by the Directors of the several State Resource Divisions. Secondary suppliers and secondary inventories of resources are defined and designated in the separate resource sections of the State Plan for the Emergency Management of Resources.

If supplies of essential survival items available for use to meet essential needs in your jurisdictions are inadequate, you are to restrict further their delivery and use to those needs which, in your judgment, are most urgent and request appropriate State officials to arrange for an increased resupply to make up local deficiencies.

Federal emergency regulations contain provisions for persons operating essential facilities or providing essential services to use Federal certifications on delivery orders to obtain production materials, capital equipment, and maintenance, repair, and operating supplies. The Business and Defense Services Administration of the U. S. Department of Commerce has issued these regulations and State Production officials have distributed and publicized them. You should advise the management of essential facilities to make use of these Federal authorities to obtain production materials, capital equipment, and maintenance, repair, and operating supplies where these are applicable; all other essential needs are to be met through State certified orders.

You are to inform persons engaged in essential local activities or operating essential facilities how to obtain emergency credit from local banks and financial institutions in accordance with Federal emergency regulations. A copy of the Federal Emergency Banking Regulation has been provided to you pre-attack by the State Emergency Stabilization Board.

Rationing Boards are to register the population for issuance of ration evidence as soon as possible.

Date

Governor

THE COMMONWEALTH OF MASSACHUSETTS

OFFICE OF THE GOVERNOR

COMMISSION OF APPOINTMENT

By Virtue of the Authority vested in me, I do hereby commission

to serve

Division

to develop the Commonwealth's Emergency Controls Organization for
a National Emergency

Witness my hand at the Executive Chamber in

Boston this

day of

19

By His Excellency

Governor



Massachusetts Civil Defense Agency

400 Worcester Road

Framingham, Mass. 01701

Oath of Office to be Completed Upon Being Commissioned

I, _____, accept this appointment at the hands of the Governor, and I solemnly affirm that I will well and faithfully discharge the duties on which I now enter.

I do solemnly affirm that I will support and defend the Constitution of the United States and the Constitution of the Commonwealth of Massachusetts against all enemies, foreign and domestic, and that I will bear true faith and allegiance to the same.

And I do further affirm that I do not advocate, nor am I a member of any political party or organization that advocates, the overthrow of the government of the United States or of this Commonwealth by force or violence; and that during such time as I am a member of the Department of Emergency Controls, Massachusetts Civil Defense Agency, I will not advocate, nor become a member of any political party or organization that advocates, the overthrow of the government of the United States or of this Commonwealth by force or violence.

This I do under the pains and penalties of perjury.

This will certify that _____, commissioned as above described, on this _____ day of _____ personally appeared, and made and subscribed the foregoing oath or affirmation to qualify (him or her) to discharge the duties of (his or her) office.

Before me,

Allan R. Zenowitz, Director
Massachusetts Civil Defense and
Emergency Planning

EMERGENCY DOCUMENT

Forms for Emergency Operations

1. Industries Requesting Manpower

Certificate

(To be submitted to
Director, Manpower Division)

"I certify that this (company - corporation), is an essential industry authorized to operate, and the manpower requirements listed below are the minimum types and numbers required."

Signature of Company - Corporation Official

2. Referral of Manpower

Statement

(To be used by
Director, Manpower Division)

"This referral applies to an emergency manpower order and is authorized by the Director, Manpower Division for the Commonwealth."

Signature of Director
or Authorized Representative

3. Resource Requirements for Massachusetts Manpower Division for 30 - 60 - 90 Day Periods Commencing with the Emergency.

The Director, Manpower Division, will estimate resource requirements for the above periods and submit requirements in summary format to the Office of Emergency Controls which will release available resources for support of the emergency manpower operations. As a claimant of resources, orders placed for purchase will contain the following statement:

"This is an essential order authorized by the Commonwealth of Massachusetts."

Signature of Director
or Authorized Representative

4. Manpower Reports and Instructions

The provisions of Appendix E, Defense Readiness Handbook, will apply to appropriate users of manpower. Additionally, essential Federal facilities have been instructed to file current job orders with the Manpower Division to cover critical manpower requirements.



FRANCIS W. SARGENT
GOVERNOR

THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE DEPARTMENT

STATE HOUSE • BOSTON 02133

Delegation of Resources Authority

To: Directors of Resource Divisions, Office of Emergency Controls

The purpose of this order is to delegate resources authority.

You are hereby authorized during the 90-day period commencing _____ to determine the division of the particular resources assigned to your jurisdiction among essential needs for these resources. In reaching these decisions you will review estimates of requirements presented to you by civil defense officials, the Adjutant General, the Director of Administration and Finance, and other appropriate State and Federal agencies.

You will be guided in making decisions on the division or allocation of resources by the policy on priority use of resources dated _____.

You are to notify representatives of major users of resources (claimants) of the quantities of resources allocated to carry on activities under their particular jurisdiction during the prescribed 90-day period.

You will authorize such claimants to use and in turn to authorize others to use the following certification on purchase orders to procure quantities of resources within the amount allocated to them:

This is an essential order authorized by
the Director, _____ Division

(Signature)

Effective Date _____ (Signed) _____
Governor

EMERGENCY DOCUMENT CONSTRUCTION 3

To: Director, Construction and Housing Division, Area _____

The following essential facilities require repair and there are no available construction or building contractors to undertake this work.

Name of Facility _____		Location _____	
Purpose served by facility _____		Numbers served by facility _____	
No. of stories _____	Sq. Feet per floor _____		
Type of construction _____			
Type of repair required: (Indicate percentage of total building)			
roof	heating	electrical	
plumbing	window and doors		
structural: foundation	stairwells		
walls	elevator shafts		
Date required for occupancy _____			

(Note: Appropriate forms for other types of constructions will be issued to localities)

Signed _____
Owner

Approved _____
Local Executive

_____ Address

Emergency Food Release Order

Acting on the authority delegated to me by the Governor of the Commonwealth of Massachusetts in order to meet urgent and immediate survival needs, I _____, Director/Co-Director, Massachusetts Food Division, authorize all food retailers to release secondary food resources as provided below:

1. The following foods which are exempt from rationing: (Insert list prepared to fit conditions at the time of issuance.)
2. Special dietary foods and other special foods as needed to provide diets for specific individuals when prescribed in writing by recognized medical authorities. (When a rationing program is in effect, they will be supplied in place of the standard ration.)
3. Canned and packaged baby foods for babies in accordance with special ration plans developed by local civil authorities.* (Since quantities available for resupply are likely to be limited, care should be exercised in development of such plans and quantities shall be provided for no more than a week at a time.)
4. Such food as may be determined by me or my designee to be needed for emergency feeding purposes.
5. Perishable foods in danger of spoilage. (In areas without refrigeration, this will include frozen foods.)

Any person who violates or conspires to violate any provision of this order or any requirement pursuant to this order, will be subject to the full penalties of applicable laws and regulations.

Effective Date _____

Director or Co-Director, Food Division,
Office of Emergency Controls

*These should be supplied only to persons that the local rationing authorities certified as eligible (having children under two years of age).

Massachusetts Area and Sector Headquarters

Emergency Operating Center 400 Worcester Rd., Framingham, Mass.
Office of Civil Defense, Region 1 Oak Hill Rd., Harvard, Mass.

Area 1 Tewksbury State Hospital, Building 5, Tewksbury 851-7251
Sector 1-A 115 Southamptn St., Boston 442-3020
Sector 1-B Women's Correctional Inst., Western Ave., Framingham
875-1381 ext. 333, 237-0200 ext. 333, 872-5922
Sector 1-C (Camb.) VA Hospital, Build. 41, Bedford 275-8777
Sector 1-D same as area 1
Sector 1-E Superior Court House, 40 Appleton St., Lawrence 688-1061
Sector 1-F Bradley Palmer State Park, Topsfield 887-2909

Area 2 Mass. Correctional Inst., PO Box 54, Bridgewater 697-(4202,4961)
Sector 2-A Bristol County Agri. Sch., Old Dorm., PO Box 87, Segregansett
669-2311
Sector 2-B Plymouth County Hosp., PO box 237, Hanson 293-3736
Sector 2-C Town Hall, PO Box 172, South Dennis 398-2261
Sector 2-D Town Hall, Stoughton 344-5310

Area 3 Lyman Scholl, PO Box 308, Westboro 366-5321, 366-8881
Sector 3-A Worcester Municipal Auditorium, Worcester 757-7771
Sector 3-B Milford High School, Milford 473-6141
Sector 3-C Town Hall, Box 417, Webster 943-7370, 943-7371
Sector 3-D Civil Defense Office, Rutland 886-4912
Sector 3-E Civil Defense Office, Box 172 Gardner 632-4223

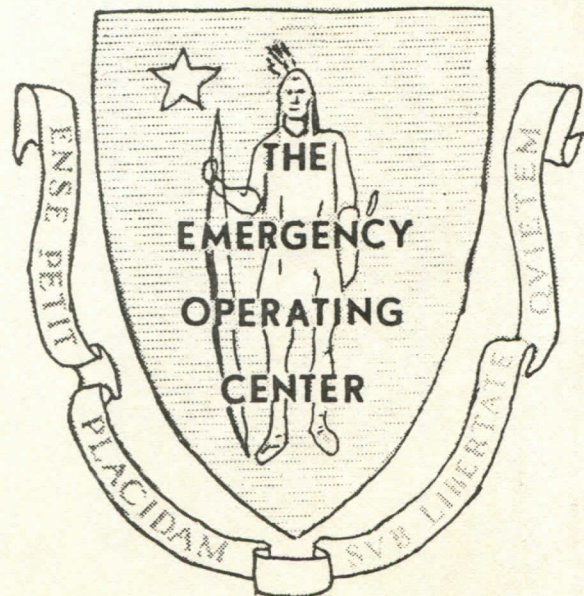
Area 4 Belchertown State School, Belchertown 323-6306, 323-6307
Sector 4-A Ludlow Hospital, 14 Chestnut Place, Ludlow 583-5111
Sector 4-B Dean Memorial Building, Blandford 848-2846
Sector 4-C Univ. of Mass., Amherst 549-0121
Sector 4-D Old Green River Sch., Town Build., Washington St., Greenfield
772-0476
Sector 4-E Town Hall, Dalton 684-1510

The Emergency Operating Center is a coordinating center, not a fallout shelter (except for the governor and his staff.)
Its phone numbers are 237-(0200, 0201, 0202, 0203, 0204, 0207, 0208)
237-(0209, 0222, 0223) and 875-1381 through 875-1386
Teletype exchange number is 617-872-8280

Massachusetts Civil Defense Agency

400 Worcester Road

Framingham, Mass. 01701



**AREA 3
HQ**

BOUNDARY:
—— AREAS
--- SECTORS

**AREA 1
HQ**

**AREA 2
HQ**

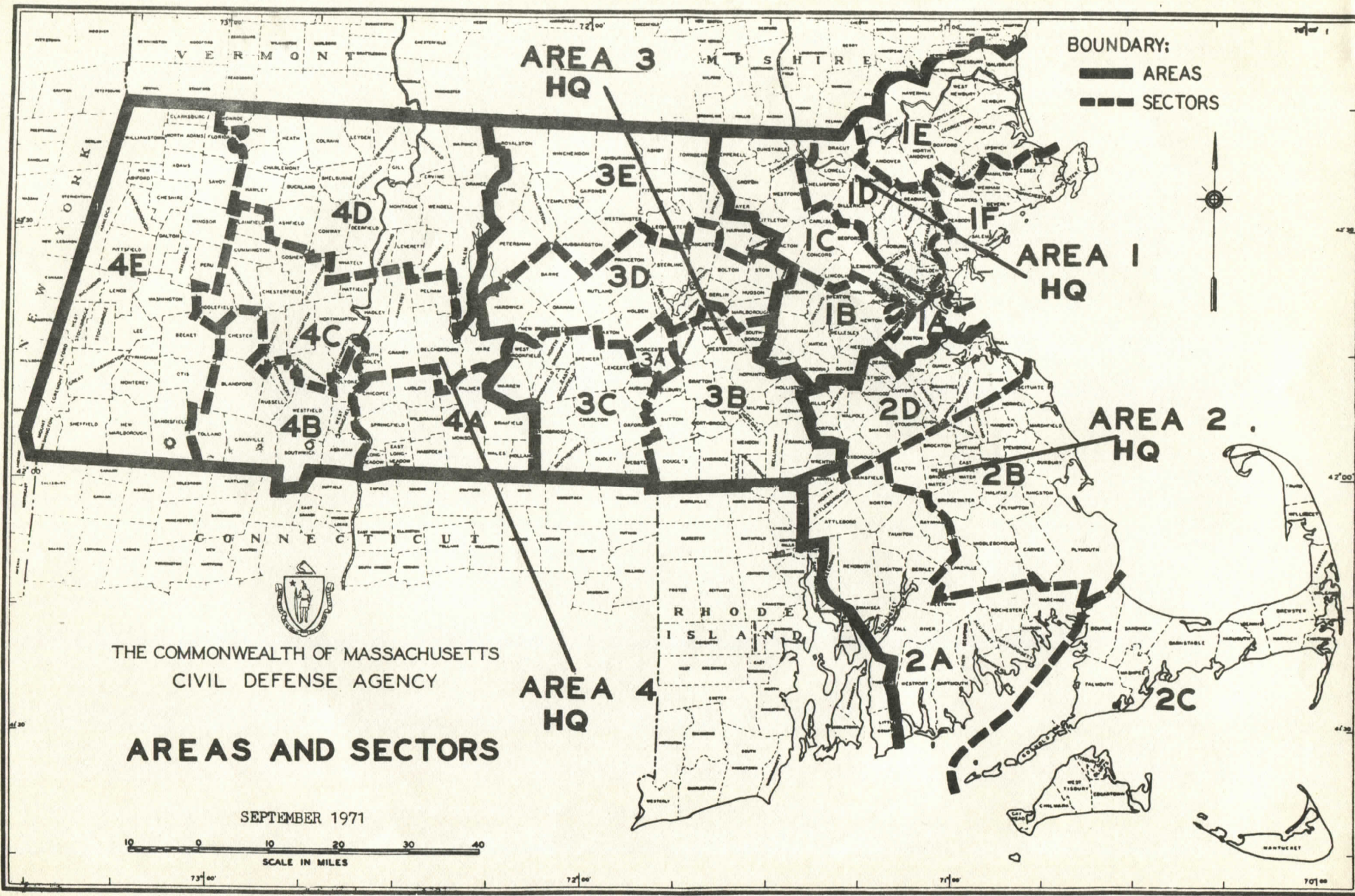
**AREA 4
HQ**

THE COMMONWEALTH OF MASSACHUSETTS
CIVIL DEFENSE AGENCY

AREAS AND SECTORS

SEPTEMBER 1971

10 0 10 20 30 40
SCALE IN MILES



EXAMPLES OF ESSENTIAL INDUSTRIES AND BUSINESSES

Air Compressors
 Air Conditioning Contractors
 Air Lines - Bus Lines - Railroads
 Airports
 Ambulances & Hearses
 Antennas
 → Architects ←
 Asphalt & Products
 Automobile Livery & U Drive-it
 Baby Foods
 Bacteriologists
 Bank of Federal Reserve System
 Batteries
 Bearings
 Beds & Bedding
 Biological Products
 Biscuit Companies
 Blacksmiths
 Blankets
 Blasting
 Block Tackle
 Blood Donor Agencies
 Boiler Supplies & Repairs
 Boxes & Containers
 Builders
 Building Cleaning
 Building Materials
 Building Movers, Wreckers
 Bulldozers
 Burial Vaults & Caskets
 Bus Lines
 Cable & Wire Mfgs. & Dist.
 Camping Equipment
 Candles
 Cans - Paper, Fibre & Metal
 Canvas Products
 Carpenters
 Catering
 Cement & Lime Distributors
 Cemeteries & Crematories
 Chains & Hoists
 Chemicals
 Clinics & Dispensaries Suppliers
 Clothing Mfgs. & Dist.
 Coal Dealers
 Contractors
 Contractors' Equipment & Supplies
 → Control, Control Sys. & Regulators ←
 Cooking Utensils
 Cooling Systems
 Cooperage

Coppersmiths
 Cordage
 Covers - Protective
 Cranes & Derricks
 Dairies
 Dairy Equipment & Supplies
 Disinfectants & Germicides
 Divers' Equipment
 Drilling Contractors
 Druggist - Wholesale & Retail
 Electric Appliances - Major
 Electric Contractors
 → Electric Equipment ←
 → Electronic Mfgs. & Dist. ←
 → Elevators - Repairing ←
 → ~~Engineers - All types~~ ←
 Engineers' Supplies
 Engines - Diesel & Gasoline
 Explosives
 Filters - Air & Water
 Fire Alarm Systems
 Firearms Mfgs. & Dist.
 Fire Protection Equip. & Supplies
 Fireproofing Materials
 First Aid Supplies
 Food Brokers & Suppliers
 Foundries, Equipment & Supplies
 Freezers - Food Lockers & Storage Units
 Fumigators
 Funeral Directors' Supplies
 Furnaces - Repair
 Gas Burners & Equipment
 Gasoline, Oil and Coal
 Grocers & Meat Packers - Wholesale
 Hardware Suppliers
 Heating Apparatus
 Hose
 Hospital Equipment & Supplies
 Hotel Equipment & Supplies
 Hotels & Motels
 Hydraulic Machinery & Equipment
 Hydrogen & Oxygen
 Ice - Natural & Artificial
 Industrial Supplies
 Insecticides & Germicides
 Iron Works
 Jacks
 → Laboratories ←
 → Laboratory Equipment & Supplies ←
 Ladders
 Lanterns

EXAMPLES OF ESSENTIAL INDUSTRIES
AND BUSINESSES (Contd.)

→ Locksmiths ←
Lumber
Machine Shop Supplies
→ Machine Shops ←
Machinery
Marine Contractors, Equip. & Supplies
Masons
Mattresses - Mfgs. & Distributors
Meat Packers & Distributors
Medical Supplies
Metals
Milk Distributors
Mining Equipment & Supplies
Movers
Nitrogen & Acetylene
Oil Burners Mfgs. & Service
Oils - Diesel, Fuel, Transportation
Physicians' & Surgical Supplies
Pipe
Pipe Locating Equipment
Plumbers
Plumbing Supplies
Poultry
Power Plant Equipment - Repairing
Printers
Provisions - Wholesale
Pumps, Mfgs. Dist. & Servicing
Radiation Shelters
→ Radio, Communications Equipment ←
Radioactivity Instruments, Supplies & Service
Refrigeration Equipment & Repairing -
Commercial
Respirators

Restaurant Equipment & Supplies
Roofers & Roofing Materials
Rubber Clothing, Footwear, Gloves
Safety Appliances & Equipment
Sand & Gravel & Cement
Sand & Gravel Handling Equipment
Sewer Cleaning Service
Soaps & Solvents
Spraying, Supplies & Service
Steel Suppliers & Fabricators
Sterilizers
Still
Stoves
Tanks & Tank Repairing
Tents
Tires
Toilet Paper & Sanitary Napkins
→ Tools ← ?
Towers
Tractors
Truck Agencies & Dealers
Trucking
Tubing
Undertakers & Embalmers
Valves
Ventilating & Heating Equipment
Veterinarians
Water - Distilled & Bottled
Water Treating
Water Works Supplies
Waterproofing Contractors
Welding & Welding Equipment

Directors are also Assistant Directors of the Office of Emergency Controls.

Directors of Divisions (See Resource Sections for Division Staffing)

		<u>Telephone</u>
<u>Communications:</u>	Victor P. McDavitt N. E. Telephone & Telegraph Co. 185 Franklin Street Boston, Mass. 02110	617-743-5200
<u>Construction & Housing:</u>	Commissioner Department of Public Works 100 Nashua Street Boston, Mass. 02114	617-727-4800
<u>Economic Stabilization:</u>	Samuel M. Seegal 4 Channing Road Brookline, Mass. 02146	617-232-4341
<u>Electric Power:</u>	General Timothy J. Regan, Jr. Boston Edison Company 800 Boylston Street Boston, Mass. 02116	617-424-2532
<u>Food:</u>	Malcolm V. McCabe Mass. Retail Grocers Assoc. 80 Federal Street Boston, Mass. 02110	617-542-3085
	Director Division of Food & Drugs Department of Public Health State House Boston, Mass. 02133	617-727-2670
<u>Gas:</u>	Horton L. Chandler NEGEA Service Corporation 130 Austin Street Cambridge, Mass. 02139	617-864-3100
<u>Health:</u>	Commissioner Department of Public Health State House Boston, Mass. 02133	617-727-2700
<u>Industrial Production:</u>	Commissioner Dept. of Commerce & Development New State Office Building 100 Cambridge Street Boston, Mass. 02202	617-727-3218
<u>Manpower:</u>	Director Division of Employment Security 881 Commonwealth Avenue Boston, Mass. 02215	617-254-3300

Petroleum:

D. A. Hosmer
Mobil Oil Company
648 Beacon Street
Boston, Mass. 02215

617-267-2400

Solid Fuels:

Harold A. Thurston
Consolidation Coal Company
207 Derby Street
Salem, Mass. 01970

617-744-4400

Transportation:

Nathan S. Paven
7 Water Street
Boston, Mass. 02109

617-523-7324

Water:

Sanitary Engineer
Department of Public Health
State House
Boston, Mass. 02133

617-727-2692

GOVERNOR

Resources Priorities
Board

Director and Assistant Directors
Office of Emergency Controls

Divisions of Office
of Emergency Controls

Claimants

Federal Agency Liaison
from the Following

Communications

Construction & Housing

Economic Stabilization

Electric Power

Food

Gas

Health

Industrial Production

Manpower

Petroleum

Solid Fuels

Transportation

Water

Director, Massachu-
setts Civil Defense
Agency

State Adjutant
General

State Commissioner
Administration and
Finance

U. S. Dept. of Agriculture
State Defense Board

U. S. Dept. of Commerce
Business and Defense Services
Administration

Maritime Administration
Office of Emergency Transporta-
tion

Bureau of Public Roads

U. S. Dept. of Interior
Defense Electric Power Adminis-
tration

Emergency Petroleum and Gas
Office

Emergency Solid Fuels Adminis-
tration

U. S. Dept. of Labor
Office of Mobilization Plan-
ning and Coordination
Wage and Hour and Public Con-
tracts Divisions

U. S. Dept. Health, Education and
Welfare
Public Health Service

U. S. Interstate Commerce Comm.
Federal Aviation Agency

Federal Housing Administration
Dept. of Housing and Urban
Development

Executive Office of the President
Office of Emergency Planning

Office of the Secretary of the
Army

Office of Civil Defense

Definitions

1. Claimants - Prospective users of resources who may place demands for supplies or services to accomplish their missions.
2. Emergency Documents - Drafts of regulations, directives, orders and the standby legislation or ordinances that would be required to implement emergency action.
3. Freeze Order - An order to be proclaimed nation-wide immediately upon an attack, fixing prices, wages and salaries, rents and realty sale prices at levels based on prices immediately preceding the emergency. It also prohibits retail trade in essential consumer items for an initial period of five (5) days, thereby allowing time for the inventory or appraisals of such commodities and establishment of consumer rationing thereafter.
4. OEP - Office of Emergency Planning, Executive Office of the President. Advises and assists the President in the formulation of National Policies for resource mobilization. Post-attack it is responsible for promulgating National policies and program directives governing priority use of resources and maintaining a system for central programming of key resources. OEP, Regional Office 1, located at Harvard, Massachusetts, coordinates the resource mobilization activities of Federal agencies and states within its geographical boundaries, and interprets national policy and program direction. The regional office also adjudicates appeals by Federal field agencies and states. The OEP regional office serves the New England states, New York, New Jersey, Puerto Rico and Virgin Islands.
5. OCD - Office of Civil Defense, Department of the Army. Responsible for major civil defense activities of Federal government. Prepares and directs national civil defense plans and programs and assists development of state and local civil defense activities. OCD Region One is located at Harvard and covers the same geographical boundaries as OEP.
6. Primary Resources - That part of total resources of the Commonwealth reserved for Federal control and management, including manufacturers' and wholesale stocks normally intended for shipment, and stocks in distributors' hands for interstate commerce. Specifically, primary resources mutually agreed upon between states and authorized Federal agencies under the National Plan.
7. Resource Management - Methods to insure that surviving resources are used to the best interest of the nation and state. Maintaining techniques, procedures and systems for determining requirements for and availability of goods, services and facilities. Developing procedures and criteria for: production, distribution, allocation, conservation and resupply of goods and services, adjudicating differences, and stimulating mutual aid agreements between industry and industry members to provide for emergency exchange of resources.
8. Secondary Resources - Resources within, and reserved for the Commonwealth's exclusive control, intended or adapted for use, consumption or manufacture within its borders; and all those resources specifically identified as secondary resources in agreement with State and authorized Federal agencies under the National Plan.