

SEATTLE

CIVIL DEFENSE MANUAL

Compiled exclusively for residents
of the
PUGET SOUND COUNTRY

Including
"THE
**ATOM
BOMB**
AND YOUR
SURVIVAL"



Sponsored
by Radio Station

KVI
SEATTLE

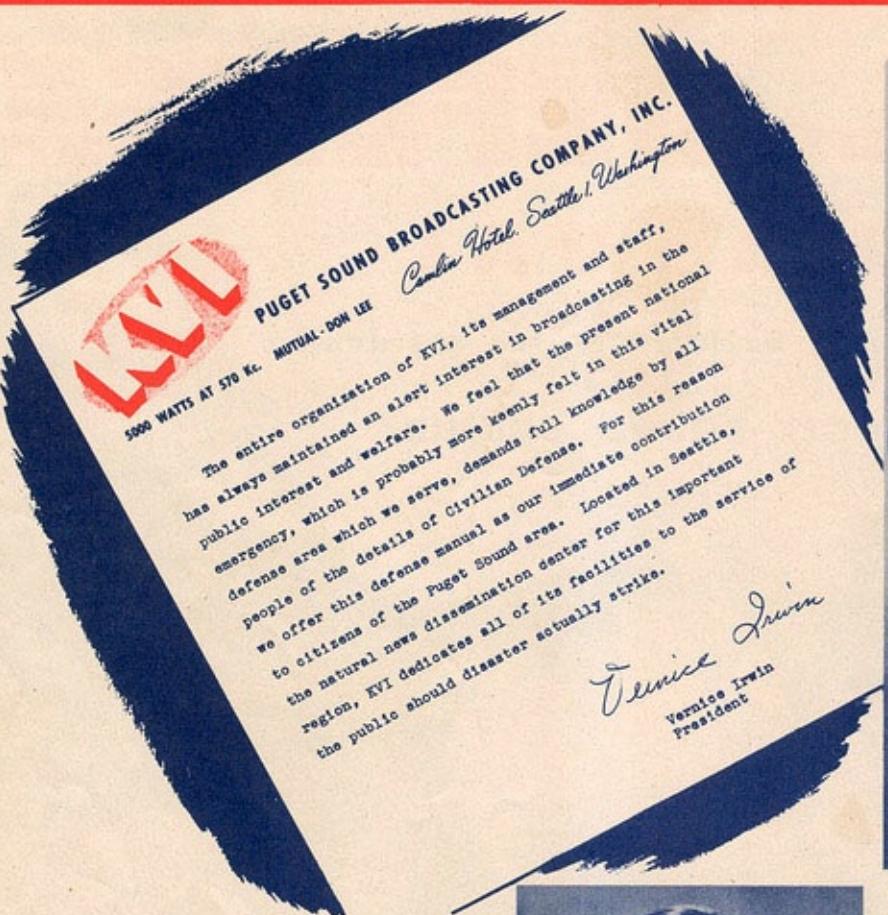
Mutual — Don Lee
Broadcasting
System

AND PUBLIC SPIRITED BUSINESS FIRMS IN THIS AREA
IN THE INTEREST OF CIVIL DEFENSE

CONTENTS

- Atomic Protection Manual
- Seattle Defense Information
- Subversive Organizations in the United States
- Station Personnel, Facilities and Program Photos

KVI'S STAFF AND FACILITIES ARE



(Right) D. M. (Matt) McDonough, Chief Engineer. Full responsibility for reliable operation of the KVI transmitter rests with Mr. McDonough. He became associated with KVI in that capacity shortly after conclusion of World War II. He is recognized as one of the Pacific Northwest's best informed technical men.

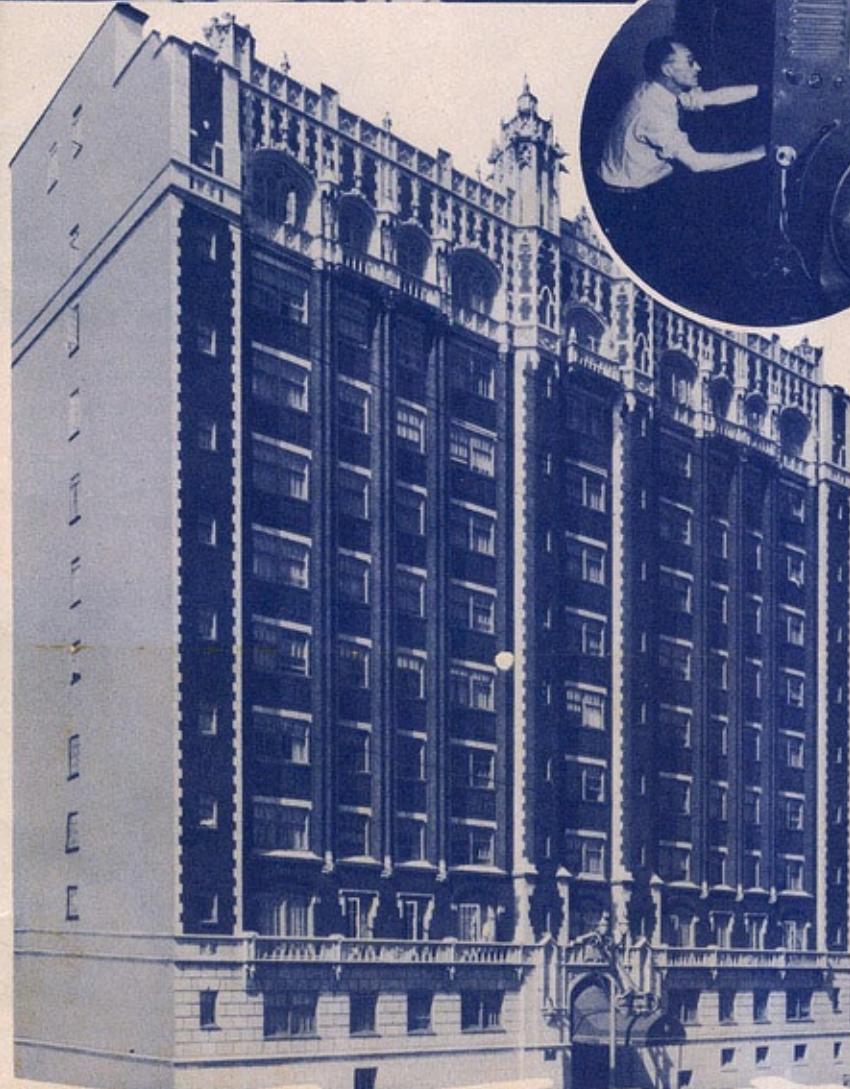


Harry Long, Program Director and News Editor. Harry came to KVI a little over ten years ago, just prior to the outbreak of World War II. Joining the staff as News Editor, he became Program Director in 1947. Active in Civilian Defense committee work he has kept fully informed of all developments on both the local and the state levels in this vital public service.

Mrs. Vernice (Earl T) Irwin, President and General Manager of Puget Sound Broadcasting Company, operating KVI. Mrs. Irwin has been associated with KVI in an administrative or executive capacity since shortly after its inception. She took up active managerial duties, directing all operations, in 1937, and has continued in that capacity since that time. She has always stressed the importance of KVI as a unit of public service to the entire Puget Sound area, schooling her staff toward a full conception of this prime requisite for successful operation.



DEDICATED TO THE PUBLIC DEFENSE



Seattle's distinctive Camlin Hotel is the home of KVI's studios and offices. Centrally located, close to all metropolitan activities, this site provides quick access to prompt coverage of all matters of civic interest.

(Left)

These young women comprise the section of the KVI personnel behind the microphones. Doris Duncanson, executive secretary in the foreground; Joy Ahrens, Traffic Manager; Seated at the far desk, Margaret Bond, standing Marji Ann Dark.

(In Circle) In the event of disaster electric power is one of the major utilities that may be put out of service. Foreseeing this possibility, and to insure continuous operation KVI has installed this emergency power supply, adequate to maintain operation until power service can be restored.



Chief Engineer Matt McDonough consults with Joe Kolesar, transmitter engineer, at the control desk in KVI's Transmitter room. Mr. McDonough has been in full supervision of transmitter operations since 1946 . . . his responsibility to see that efficient operation is maintained at all times.



KVI's Transmitter building, a completely contained unit with auxiliary emergency power supply is located on Vashon Island, from which site a signal providing coverage of 17 Western Washington counties is an engineering marvel.

KVI - DON LEE PROGRAMS DEDICATED



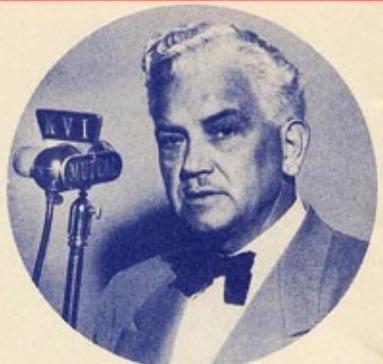
Newscaster Bob Wright . . . Junior member of the KVI staff joined up in 1950; studied broadcasting at the Univ. of Wash.



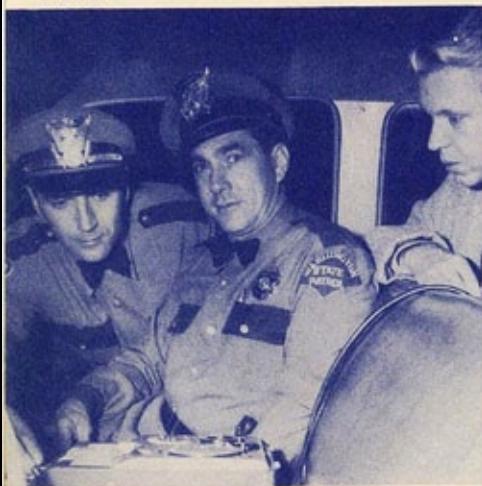
Newscaster Merle Kimball is another veteran at the mike. He has been a member of the KVI staff for eight years.



Newscaster and special events man Rufus Carlson is another old timer at KVI. His production of the weekly State Patrol program, "COULD THIS BE YOU?" has contributed much to the success of this popular weekly feature.



News Editor Harry Long has been before microphones in the Middle West and along the Pacific Coast for 27 years. He was among the first to inaugurate regular newscasts, presenting his first air report in 1927.



Sgt. Aman (left) heard on KVI's National Award winning program, "COULD THIS BE YOU?" with officer Benedict of the Spokane detail. The weekly production highlighting interviews with traffic violators stopped on Washington state highways, is edited and produced by Rufus Carlson, (right).



Under News Editor Harry Long (seated at desk) the KVI staff has developed an active and alert attention to reporting the days news in a concise, authoritative manner with stress on regional and local news. Here the staff discusses a new phase of the fighting in Korea.



Buck Ritchey, the Northwest's most popular Western and folk music M. C. enjoys the confidence of many thousands of KVI's listeners throughout Western Washington. He is treated as a member of the family in many homes and for this reason is in a position to relay vital information without creating useless panic.



Here, Henry Berg, Seattle's co-ordinator and operational head of Seattle's Civilian Defense organization is interviewed by Harry Long. Mr. Berg, with only a limited staff, has developed what is becoming one of the most comprehensive plans for Civilian Defense yet to be prepared in a metropolitan area. Weekly radio reports of progress have been carried by KVI for the past several months.

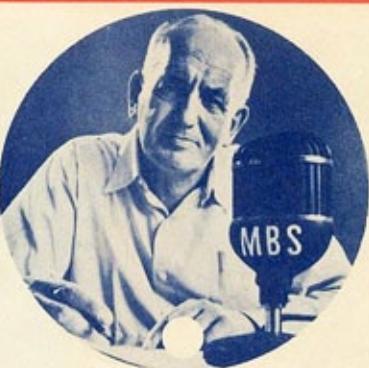
TO THE PUBLIC WELFARE AND NECESSITY



Frank Hemingway — "Twice a day with Hemingway" is a well known slogan from Seattle to San Diego. Hemingway's presentation of the news is unique.



Glenn Hardy — His Pacific Coast programs at 10 a.m. and 9 p.m. are a Don Lee fixture.



Gabriel Heatter — His prophetic commentaries have roused the nation, and given comfort in times of greatest stress.



Fulton Lewis, Jr. — His commentaries from Washington have long made national headlines.



Cecil Brown — Years of courageous coverage under enemy fire and fearless interpretation of the news have given him a deep insight into the truth.



Mutual Newsreel — John Bosman and Jack Fern, editors of Newsreel, editing sound tape recorded at the scene and sent to New York for each evening's selection of news events from "where they happened, when they happened."



"War Front, Home Front" — These alert men in Mutual's New York studios prepare to speak directly to correspondents in Korea, Japan and Germany, in a brilliant weekly discussion of the war news. L. to R.: Les, Higbee, Art Feldman, Cecil Brown and George Fielding Eliot.



Sam Hayes — For twenty-two years he has been one of the most listened-to personalities on the air. His two daily news shows on KVI, 4:45 p.m. and 6:45 p.m. require great speed and judgment in editing and writing.



No disaster coverage, regional or local, could be complete without some connection with a nation-wide network to relay the reports of such an event. KVI is fortunate in being a member of the vast Mutual-Don Lee network providing thorough service to the entire nation.

THE SEATTLE AREA PREP

IN A CITY
PROPERLY ALERTED
AND ORGANIZED
FOR CIVILIAN DEFENSE
THE DEATH TOLL CAN
BE CUT AS MUCH AS
50%

MILLARD CALDWELL WARNS OF ATOMIC ATTACK DANGER

Speaking to the American Society of Newspaper Editors recently, Federal Civil Defense Administrator Caldwell cited 4 reasons why these are the gravest days of our history.

1. The Russians have atomic bombs and planes in sufficient numbers and excellent to assault ALL of our major cities in one attack.

2. There is little or nothing we can do to stop them. The best to be expected is that some 10 percent of the attacking force may be downed or deflected.

3. That attack can come with little or no warning. The best we can hope for is a few minutes notice.

4. The Russians are capable and ready to deliver this destruction whenever they feel like it -- whenever it is most profitable to do so.

An excerpt from,

UNITED STATES CIVIL DEFENSE

BECAUSE of developments in this air-atomic age, the United States can no longer be free from the danger of a sudden devastating attack against the homeland.

The greatest deterrent to such attack is the knowledge on the part of a would-be aggressor that we have the power to destroy him by retaliatory action.

Since there can be no absolute military defense, an effective civil defense is vital to the future security of the United States because it might provide the means whereby this country, if suddenly attacked heavily and without warning could get up off the floor to fight back.

An enemy attack would presumably be aimed at the great metropolitan areas, at the cities and towns, at the country's most critical targets.

Such an attack would be against all the people of the United States, and therefore defense against it must require the coordinated effort of the whole Nation.

It is expected that such an attack would be partially successful. Whether it would succeed in destroying America's productive power would depend in the main on the organization and functional efficiency of the country's civil defense.



MAYOR'S OFFICE
SEATTLE 4

PRESIDENT
AMERICAN MUNICIPAL ASSOCIATION

June 5, 1951

STATEMENT FOR KVI BROCHURE ON CIVIL DEFENSE

I hope every citizen of Seattle will have the opportunity to read KVI's Defense Manual.

The atomic age is here and our enemies are utterly ruthless. To fail to take the necessary steps to protect ourselves is suicidal.

Here in Seattle we are pledged to organize so well that no surprise can paralyze us; no attack can disorganize us; no terror weapon can panic us.

To this end I ask every citizen of Seattle to:
(1) learn the essential steps for self-protection; (2) enroll as a Civil Defense volunteer.

This is the greatest challenge a free society ever faced, for the things we must do involve very real sacrifices from all of us.

H. F. Devin
MAYOR

SEATTLE CIVIL DEFENSE CORPS

721-7TH AVENUE
SEATTLE 4, WASHINGTON
Eliot 8720

May 31, 1951

Statement for K.V.I. Brochure on Civil Defense.

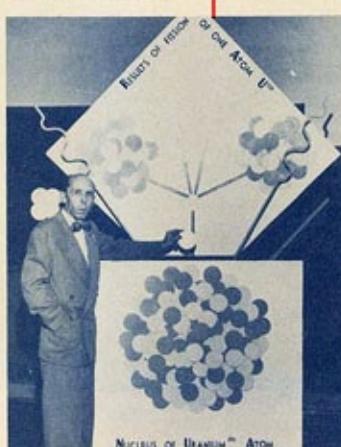
Civil Defense under our Democracy starts with the individual citizen. Unless the individual citizen is willing to assume initiative and responsibility to the degree of informing himself of the fundamentals of survival in this New Atomic Age, it will not be possible to develop an adequate Civil Defense.

Therefore, it is imperative that we all become interested and devote some of our spare time to the study of authentic publications on the subject; that we as individuals know what to do in an emergency; that we take First Aid Training so we can help ourselves and our neighbors under disaster conditions and finally that we all participate as volunteer members of the Civil Defense Corps in our community.

In this Atomic Age it just is not possible to delegate our individual responsibilities to George. George may not be here to take care of the situation. Our Civil Defense Corps literally constitutes a collective insurance policy to minimize the dangers that came into being with this new age. We cannot buy this kind of insurance. The only way we can achieve it is to work together as a team in a spirit of good neighbors and citizens.

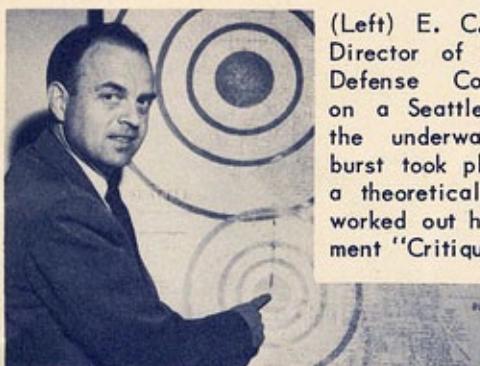
May I urge that you read and study this brochure carefully. Radio Station KVI is rendering a splendid public service in making this publication available to the citizens of this area.

Henry R. Berg
Henry R. Berg
Civil Defense Coordinator
City of Seattle



(Left) Seattle Civil Defense Corps. Coordinator Henry Berg illustrates a phase in nuclear fission, with one in a series of graphic models designed for classroom use.

ARES FOR ATOMIC ATTACK



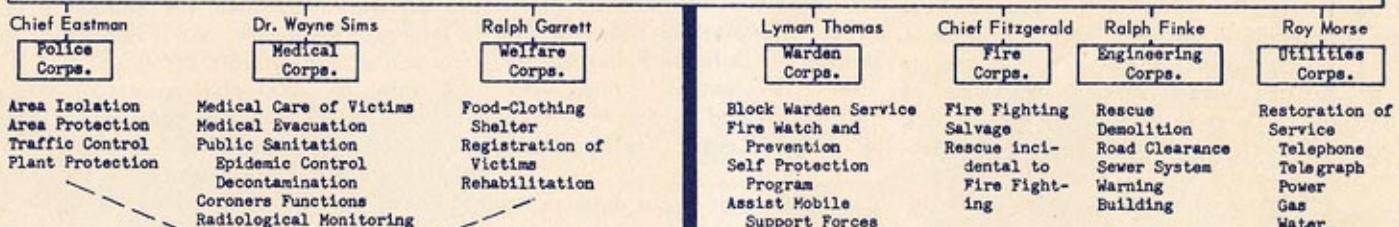
(Left) E. C. Dingwall, Ass't Director of the Seattle Civil Defense Corps, points out on a Seattle map just where the underwater atomic bomb burst took place, according to a theoretical bombing problem worked out here in a Government "Critique."

(Right) A lot of detail work is necessary to permit a properly functioning civil defense organization. E. C. Dingwall (left) and Henry Berg (center) explain one of the dozens of detailed maps in Seattle Civil Headquarters to a visitor.



SEATTLE CIVIL DEFENSE CORPS
Mayor Wm. F. Devin
Director
(Mayor - City of Seattle)
E. C. Dingwall
Asst. Director
Henry R. Berg
Coordinator

CIVIL DEFENSE BOARD Line Divisions



EVACUATION
TASK GROUP

Staff Services

Don Sampson <small>Mutual Aid</small>	M. O. Anderberg <small>Emergency Communications</small>	Lloyd Grober Don Smith <small>Transportation</small>	Wally MacKay, Jr. <small>Public Information</small>	Major Kowalski <small>Filter Center</small>	John Spaeth <small>Control Center</small>	Roy Palm <small>Personnel</small>	Lyle Stewart <small>Schools & Training</small>	Paul Hendricks <small>Supply</small>	Legal
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Technical Consultants

Radiological Military Economic Other Fields

MAIN CIVIL DEFENSE OFFICES IN AREA

LOCATION	IN CHARGE	ADDRESS	TELEPHONE
SEATTLE City Office	Henry R. Berg	721 - 7th Ave. (7th & Columbia)	ELiot 5720 MAin 6000 Ext. 689
SEATTLE King County Office	Col. Wm. D. Frazer	326 County City Bldg.	MAin 5900 Ext. 494
TACOMA City Office	Frank S. Evans	948 South Grant	BRoadway 8451
TACOMA Pierce County Office	Gus K. Partridge	Pierce County Courthouse (Room 206)	MAin 7121 Ext. 20
BREMERTON & KITSAP CO.	Commander Harry R. Hubbard	County Administration Bldg., Port Orchard	Pt. Orch. 65111 Brem. 34346
BELLINGHAM & WHATCOM County	Harry S. Jenkins	1212 Cornwall Ave.	5200
EVERETT & SNOHOMISH County	George A. Tozer	Snohomish County Courthouse	Bayview 2468
OLYMPIA & THURSTON County	Carlton I. Sears	2412 Columbia St.	4265

AIR RAID WARNING SIRENS

Air raid warning sirens that were held over from World War II have been installed in Seattle and these are now in operating condition. This initial installation covers approximately 75 percent of the city area. Equipment for the completion of the city installation is on order.



(L. to R.) Seattle Mayor Devin, City Engineer Ralph Finke, and Civil Defense Coordinator Henry R. Berg, inspect 5 hp-air raid sirens before they were mounted.

CIVIL DEFENSE PROVIDES MAXIMUM

F-94 jet fighters from McChord Air Force Base, Tacoma, play an important part in the defense of this area against enemy attack.



(Tacoma News Tribune Photo)

SEATTLE AIR DEFENSE FILTER CENTER



(Official U.S. Navy Photograph)

One of the most essential services in our country, and absolutely vital in the Pacific Northwest, is the Aircraft Warning Service. Upon it depends in no small part, the defense of this country against air attack. It is operated by military personnel and thousands of volunteers. Defense against enemy attack in the northwest begins with the warning network. This is the vast system of radar stations - and of civilian observation posts in this region that swiftly reports all planes over commercial telephone lines to the Seattle Air Force Filter Center. There the reports are evaluated, and these "filtered" reports are passed on to Air Defense Fighter Intercept Stations. Here, the course of the approaching aircraft is plotted on a large map. Here also, a Controller, from the information he sees on the map, takes

All aircraft in this area are plotted on this plotting board at the Seattle Air Defense Filter Center. After "evaluation" this vital data is relayed to the Air Force by Filter Center "tellers."

appropriate measures to meet the situation. He orders the necessary fighter planes into the air and gives them the course to follow to intercept the enemy, and if necessary, calls into action anti-aircraft batteries.

A total of 2000 civilian volunteers, men and women between the ages of 20 and 50, are URGENTLY NEEDED for work at the Seattle Filter Center, which is the core of our defense against enemy attack. Training takes only 2 hours one day a week. Classes are held at 11:00 a.m. to 1:00, 2:20 to 4:30 and from 7:00 to 9:00 p.m. After basic training you will be needed only two hours every week unless an emergency occurs. Call Seattle Filter Center, ELiot 3535, between 9 a.m. and 9 p.m. Mon. through Fri. for additional information. Headquarters: Room 210, Second Ave. & Cherry Bldg.

VOLUNTEERS FOR SEATTLE CIVIL DEFENSE CORPS URGENTLY NEEDED

The Seattle Civil Defense Corps., organized for your protection, urgently needs many types of civilian volunteers, including auxiliary police, and police reserves for the Police Corps.; medical evacuation personnel, doctors, dentists, nurses, osteopaths and pharmacists for its Medical Corps.; volunteer auxiliary firemen for the Fire Corps.; radio amateurs, "hams", for Emergency Communications, and truck, and bus drivers etc. for the Transportation Corps. Application blanks of any of these volunteer services are available at the Seattle Civil Defense Corps. Office at 721-7th Ave. Further information can be obtained by calling ELiot 5720. Thousands of volunteers will be needed. It is your responsibility, but at the same time should be considered a privilege to aid in this vital defense work. Sign up today.

WARDENS

About 17,000 block wardens, the "eyes and ears of Civil Defense," will eventually be required for Seattle. The duties of the block wardens will be three-fold, namely: for fire watch and prevention; for the self protection program, and to assist the Mobile Support Forces. The Zone, and District organizations of the Civil Defense Warden Service, are already organized (correspond to the elementary and high school districts) in Seattle, and a block warden organization will be set up in the near future.

RADIO, AND CIVIL DEFENSE

Radio and television facilities are being utilized extensively for the dissemination of authentic civil defense information to residents of this area.

In the event of an emergency, when other means of communications are disrupted, radio broadcasting from out of town transmitters play an important role in the dissemination of vital information, and instructions, to the public.

SEATTLE SCHOOLS AND CIVIL DEFENSE

Responsibility for civil defense in schools is a primary responsibility of the Seattle School District, however, they are an integral part of the Seattle Defense Corps. The School System has set up a Civil Defense Committee with L. Stewart as its Director.

Shelter stations have been designated in all public schools, and instructions for using them in case of an emergency have been given all pupils. Actual drills are being conducted periodically.

Under the sponsorship and direction of the P.T.A., small stainless steel identification tags, bearing name and address, have been distributed to 44,500 pupils of the Seattle elementary schools.

First Aid Stations have also been established in all public school structures which will be manned by trained school personnel. Approximately 2000 Seattle Public School teachers have completed the standard first aid course and of these almost 500 have qualified as instructors.

YOU CAN HELP BY OFFERING YOUR SER

PROTECTION ON THE HOME FRONT

THE AMERICAN RED CROSS AND CIVIL DEFENSE

Under a directive of the NSRB the American National Red Cross was given the responsibility for: coordinating a nationwide blood program under the Civil Defense Plan; providing first aid training for all Civil Defense officials and volunteer

workers; providing Home Nursing training; training Nurse's Aides; and training leaders and developing plans to assist Civilian Defense authorities in the provision of food, clothing and shelter during an emergency.

RED CROSS COURSES

The Seattle-King County Chapter of the American Red Cross in assisting Civil Defense preparedness, offers the following First Aid Courses.

Standard First Aid (including supplementary atomic information), an approximate 20 hour course for adults over 16 years.

Junior First Aid . . . for Junior High and High School students under 16 (approximately 22,000 students had enrolled in the Junior and Standard first aid courses by June, 1951).

Advanced First Aid . . . open to those who have completed the Standard Course.

First Aid Instructor . . . open to those who have completed Standard and Advanced courses.

Those wishing to enroll in any of the above courses can do so by calling Red Cross at ELiot 2800.



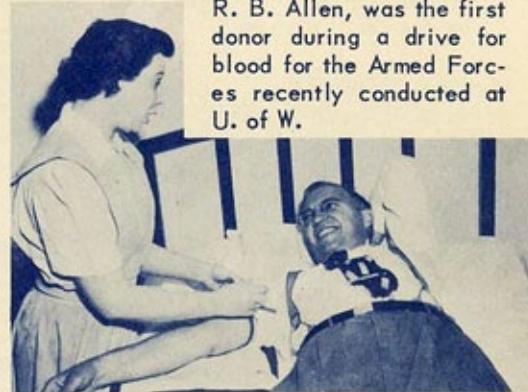
(Left)

Preparatory to giving Red Cross first aid training to Junior and Senior High School students in King County, especially selected teachers were trained as Red Cross first aid instructors. Pictured is one of these instructor classes being given a demonstration of artificial respiration, under the watchful eye of Elmer Holstrom, Red Cross safety services director (left).

BLOOD DONATIONS

The King County Central Blood Bank, Seattle, in cooperation with the American Red Cross, is furnishing blood and plasma to our armed forces. The American Red Cross locally is also preparing for the day when it may be called upon to supply wholesale quantities of blood and plasma to disaster victims should an emergency arise in this area. Blood donors are urgently needed to fill the monthly blood quota set for this area by the military. Any male resident (18 to 60) or female (21 to 60) in normal health may safely give blood. To make an appointment for a blood donation call Red Cross at ELiot 2800. The Blood Banks donor hours are Mon/ Thurs 1:00 to 8:00 p.m. and Tues/Wed/Fri/Sat. 9:00 a.m. to 4:30 p.m.

Univ. of Wash. Pres. Dr. R. B. Allen, was the first donor during a drive for blood for the Armed Forces recently conducted at U. of W.



FIVE KEYS TO HOUSEHOLD SAFETY

SIX SURVIVAL SECRETS FOR ATOMIC ATTACKS

ALWAYS PUT FIRST THINGS FIRST AND NEVER LOSE YOUR HEAD AND

1. TRY TO GET SHIELDED

If you have time, get down in a basement or subway. Should you unexpectedly be caught out-of-doors, seek shelter alongside a building, or jump in any handy ditch or gutter.

2. DROP FLAT ON GROUND OR FLOOR

To keep from being tossed about and to lessen the chances of being struck by falling and flying objects, flatten out at the base of a wall, or at the bottom of a bank.

3. BURY YOUR FACE IN YOUR ARMS

When you drop flat, hide your eyes in the crook of your elbow. That will protect your face from flash burns, prevent temporary blindness and keep flying objects out of your eyes.

4. DON'T RUSH OUTSIDE RIGHT AFTER A BOMBING

After an air burst, wait a few minutes then go help to fight fires. After other kinds of bursts wait at least 1 hour to give lingering radiation some chance to die down.

5. DON'T TAKE CHANCES WITH FOOD OR WATER IN OPEN CONTAINERS

To prevent radioactive poisoning or disease, select your food and water with care. When there is reason to believe they may be contaminated, stick to canned and bottled things if possible.

6. DON'T START RUMORS

In the confusion that follows a bombing, a single rumor might touch off a panic that could cost your life.

1. STRIVE FOR "FIREPROOF HOUSEKEEPING"

Don't let trash pile up, and keep waste paper in covered containers. When an alert sounds, do all you can to eliminate sparks by shutting off the oil burner and covering all open flames.

2. KNOW YOUR OWN HOME

Know which is the safest part of your cellar, learn how to turn off your oil burner and what to do about utilities.

3. HAVE EMERGENCY EQUIPMENT AND SUPPLIES HANDY

Always have a good flashlight, a radio, first-aid equipment and a supply of canned goods in the house.

4. CLOSE ALL WINDOWS AND DOORS AND DRAW THE BLINDS

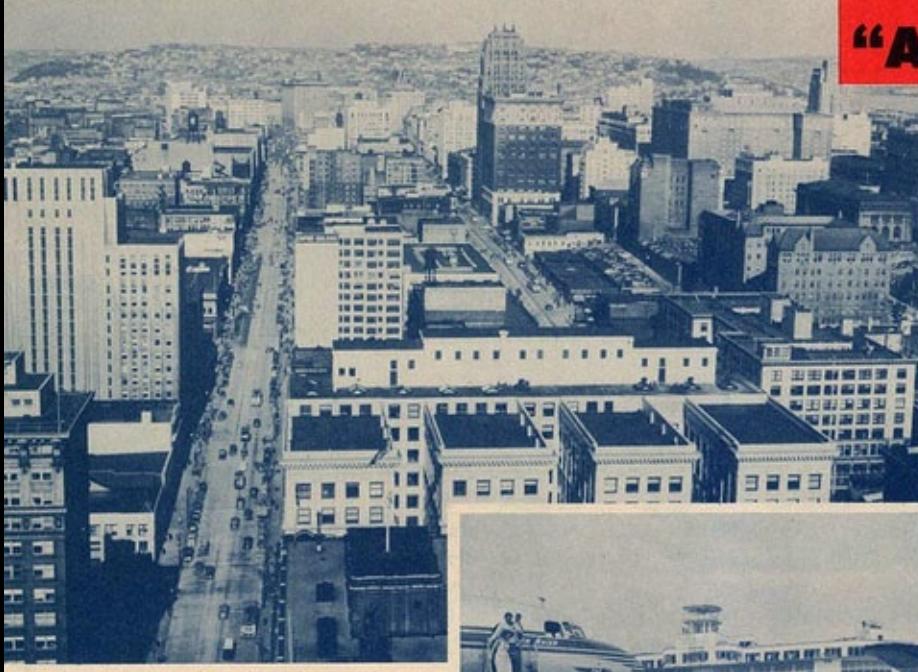
If you have time when an alert sounds, close the house up tight in order to keep out fire sparks and radioactive dusts and to lessen the chances of being cut by flying glass. Keep the house closed until all danger is past.

5. USE THE TELEPHONE ONLY FOR TRUE EMERGENCIES

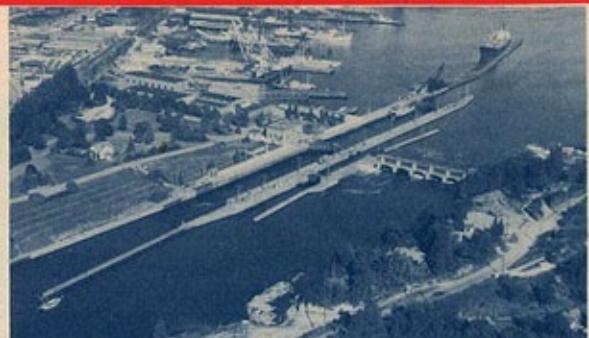
Do not use the phone unless absolutely necessary. Leave the lines open for real emergency traffic.

VICES IN SOME CIVIL DEFENSE CAPACITY

"ATOM BOMBS COULD



Looking up Seattle's busy Second Avenue toward the Queen Anne residential district.



Seattle's Lake Washington Ship Canal, and vitally important Government locks, the larger of which is second in size only to those of the Panama Canal.



The Seattle-Tacoma Int. Airport, one of the most beautiful and modern airports in the country, offers travel and cargo services to all parts of the world. To the left is the huge, luxurious terminal building.



The new Tacoma Narrows Bridge across Puget Sound, connecting Tacoma with the Olympic Peninsula.

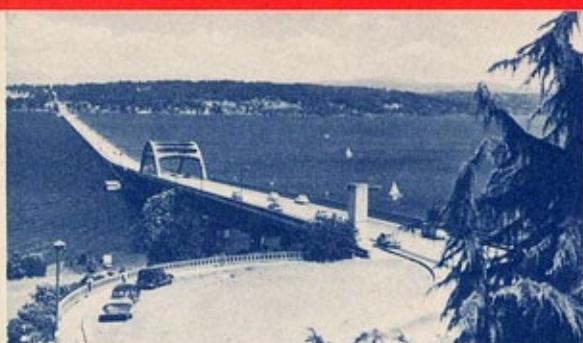


Tacoma, the City of Destiny, and gateway to Mt. Rainier National Park.



Fort Lewis parade ground. Fort Lewis, near Tacoma, is one of the largest and most important military installations in the U.S.

DESTROY THESE".....



Famous Lake Washington Floating Bridge, the World's longest floating span, on U. S. Highway No. 10 is a colorful entry to downtown Seattle.



Bustling Harbor Island where ships of the seven seas ply their way from salt water to the Duwamish River. Size of the Island may be indicated by the four U.S. Navy Aircraft Carriers and numerous ocean going freighters shown. Seattle's business district may be seen in the background. (Graphic Photo Company Photo)



Seattle, Queen City of the Pacific Northwest, a vitally strategic shipping and transportation center, the gateway to Alaska and the nearest American port to the troubled orient. Beautiful Mt. Baker may be seen in the background. (photo by Laidlaw)



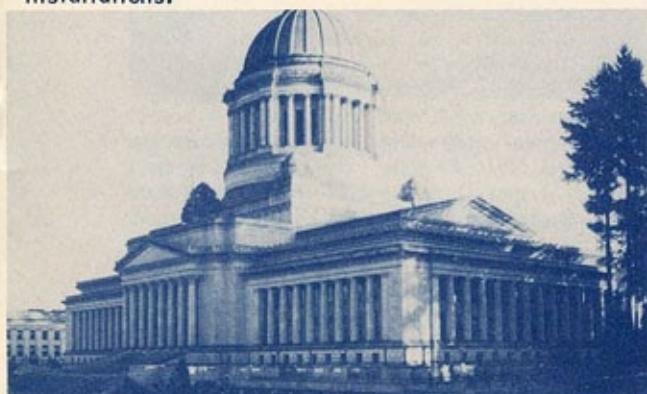
Plant No. 2, of the Boeing Airplane Company, Seattle. Boeing is one of the world's largest manufacturer's of commercial and military aircraft. Shown in the inset is the Boeing C-97, transport brother of the B-29, made in Boeing's Renton Plant.



Air view of Everett Wash., showing extensive dock installations.



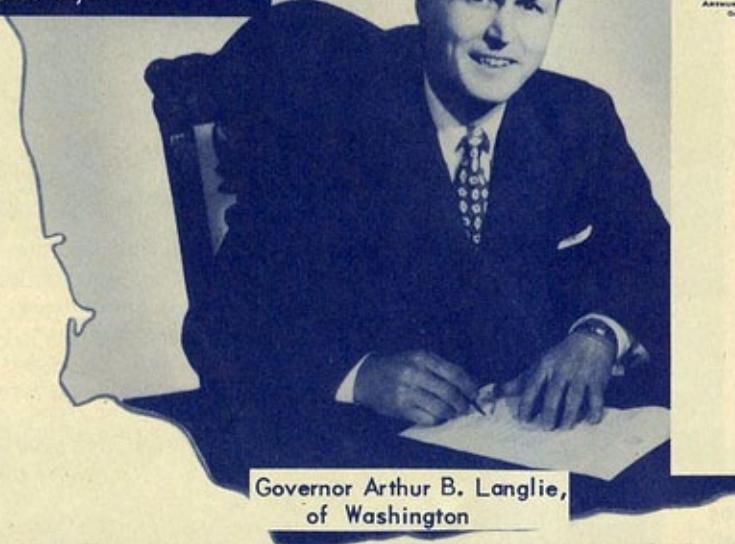
The Puget Sound Naval Shipyard, at Bremerton, has 5 drydocks, including two of the largest in the country. Four destroyers can be built here at one time. (Seattle Cham. of Com. Photo).



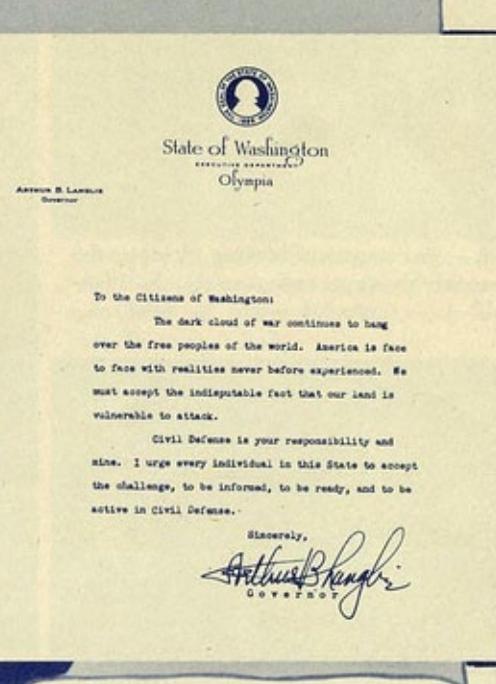
The massive, and impressive Legislative Building of the State of Washington, dominates the Capital City of Olympia.

THE MIGHTY

The following ten pages of this Manual constitute a section devoted to the atom bomb, its effects, and as to how you can protect yourself. All information is from authentic, official sources, and is presented in a condensed but graphic style.



Governor Arthur B. Langlie,
of Washington



A POTENTIAL MILITARY WEAPON

We are currently engaged in a conflict in which use of the atomic bomb is quite probable. It is highly important that you understand the effects of this weapon and how you can best protect yourself. We shall present in the following pages a simple digest of such facts from governmental and other authentic sources we feel to be of greatest value.

The atomic bomb is an extremely potent military weapon but not "absolute" in the sense that its possession alone guarantees victory. Thus far the United States has exploded several atom bombs and we have learned of the devastation that can be caused. In Hiroshima, 71,000 people were killed and 68,000 injured in a city of 245,000. About 75 A-bombs, according to Dr. R. E. Lapp, would probably have done as much damage to target areas in Germany as was done by all the strategic bombing during World War II. With all its tremendous heat and blast effects, accompanied by its unique radiation effects, it is still not unlimited in the amount of damage it can do. You need not worry, for example, about rumors to the effect that atomic explosions might contaminate the earth. It would take something like a million A-bombs to do the trick.

The atomic bomb is certainly to be feared and respected but there is no reason that it should cause panic. Now that the damage that it can cause, and the probable extent of such damage, is known, it has been possible to formulate certain simple rules that will go a long way towards insuring your safety and eliminate to a great degree the element of fear.

In any discussion of the atomic weapon it should be

remembered that constant improvements in design and type, or usage, can be expected. A top military spokesman recently forecast the use of A-bombs as the next probable step in battlefield warfare and said that they can be used with deadly accuracy against troops, tanks and other military targets.

RADIOLOGICAL WARFARE — The use of radioactive gases, dusts or mists as a weapon, is a possibility and we should be prepared for it according to Prof. Ridenour of the University of Illinois, but because it is a mystery weapon its most important effect might be psychological since it probably couldn't be used to kill people. It probably would force them to abandon homes, towns and military installations, however.

H-BOMB (Hydrogen Bomb) . . . It is no secret that research and experimentation on the development of the H-bomb is going on. It is not possible to predict when, or if, such a weapon will be produced. It is interesting to note however that according to the AEC a hydrogen bomb 1,000 times more powerful than the original A-bombs would be 10 times as destructive. It would cause severe destruction to over 30 to 40 square miles. According to a recent article in Science Digest, the H-bomb's most dangerous effect, from the viewpoint of the entire human race, would lie in the virulent radioactive dusts it might be used to produce. Such dusts, blown to the stratosphere would drift about the earth, gradually settling anywhere.

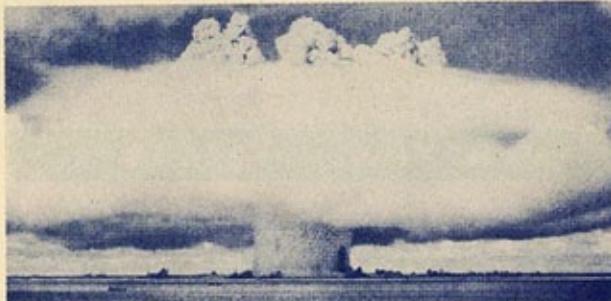
ATOMIC GUIDED MISSILES — or artillery shells, are certainly a future possibility, within perhaps two to five years, according to Army General J. Lawton Collins.

ATOM BOMB!

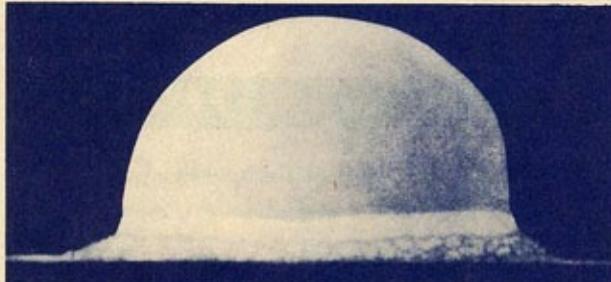
THE ATOMIC BOMB differs from other bombs in several important ways: (1) **ENERGY** released by an atomic bomb is roughly equivalent to that produced by the explosion of 20,000 tons of TNT bombs; (2) the explosion of the bomb produces highly penetrating, invisible **RADIATION** in the form of lethal gamma rays. In addition there

is also; (3) intense **HEAT** (1,000,000° C. in center of fireball) and **LIGHT** (at 5.7 miles, the brilliance is 100 times that of the sun viewed at the earth's surface); and (4) **RADIOACTIVE RESIDUES** which remain after the explosion emitting harmful radiations.

TYPES OF EXPLOSIONS



UNDERWATER BLAST — In test "Baker" off Bikini, a tremendous column of water was produced, which completely absorbed the initial flash of neutrons and gamma rays. When it began to fall back to the lagoon surface a critical base surge — a 200 to 300 foot wave of radioactive fission products — rolled over the ships in the harbor drenching them with highly contaminated radioactive products. Fall-out droplets were a further serious radioactive hazard many miles "downwind." In order to produce a critical base surge the water must be fairly deep. Fortunately little water of such depth exists in harbors or water adjacent to any of our larger cities. However the blast effect of an underwater explosion in even shallow water would cause considerable damage to any nearby docks or shore installations. . . . **AIR BURST OVER WATER** — In an air burst over water exposed structures, such as masts, spars, radar antennae, etc., within a radius of 3,000 to 3,500 feet may be expected to suffer very severe damage.



GROUND LEVEL BLAST — On account of the blocking and shielding effects of the huge skyscrapers a ground level or "basement" blast in say New York, or Chicago, would have a relatively small area of critical destruction. Very close buildings would probably collapse and those nearby would suffer loss of masonry and be materially weakened. Primary radiation would be materially checked by the shielding of the buildings but there would be a small area of intense residual radioactivity near explosion center. It would probably be 6 hours before it would be safe to walk across the area but to stay for any length of time would be out of the question without proper

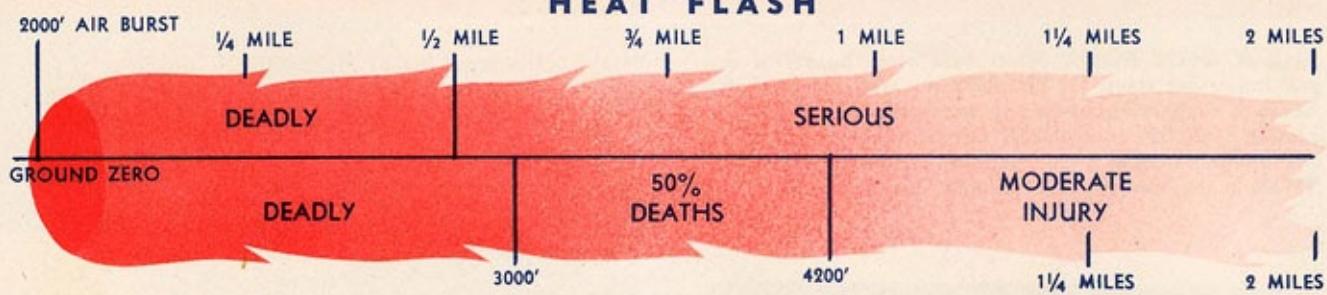
shielding. On account of falling debris, streets would likely be clogged and fire fighting would be rendered very difficult. . . . **SUB-GROUND LEVEL BLAST** — According to the AEC an atomic bomb could be made to burrow 50 feet or more into soft earth before exploding causing a "Grade D" earthquake. It would upset chimneys, collapse weak buildings, etc., to a radial distance of approximately 1350 to 3300 feet.

AIR BURST — An air burst of bomb at a height of about 2,000 feet, setting up thousand-mile-an-hour winds, very powerful suction and deadly, instantaneous radiation, appears to be the most destructive use of atomic energy. The heat wave in this case would not be as important as fires of secondary origin started by falling debris, shorting of electrical circuits, etc. The instant burst of gamma rays that would flash from the bomb would be lethal to anyone in the open up to 3,000 feet. The blast wave would be terrific, destroying almost everything within a half-mile radius of the explosion, and all but the strongest buildings would collapse to about one mile. Radioactive contamination of ground, building structures, etc., is practically negligible in an airburst.



DAMAGE EFFECTS OF AN

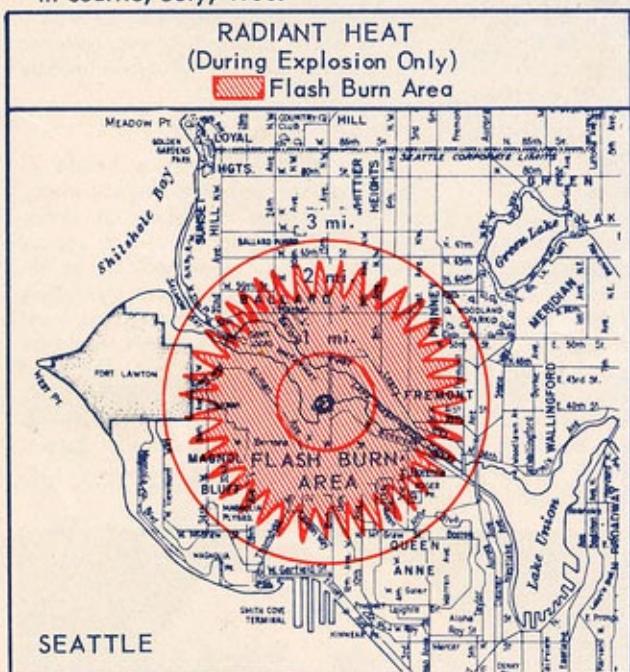
HEAT FLASH



RADIATION FLASH

(Gamma Ray and Neutrons)

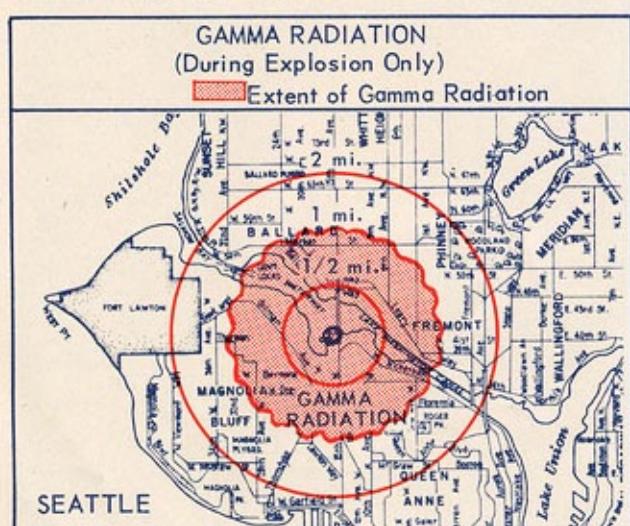
Hypothetical atom bombing problem as worked out
in Seattle, July, 1950.



Hypothetical atom bombing problem as worked out
in Seattle, July, 1950.

THERMAL EFFECTS

At the time of the explosion a terrific heat flash is generated. It goes out in straight lines from the explosion and lasts but a fraction of a second, but during that time it can burn unprotected skin at distances of $2\frac{1}{2}$ miles and has been felt up to 5 miles. It has scorched telegraph poles at 2 miles. FIRE, set directly by the flash of radiant heat, or started by the ignition of gas from disrupted mains, or short circuits, can destroy huge areas. In Nagasaki, it was estimated that almost immediately after the detonation, fires were started in dwellings within a radius of 3,000 feet from ground zero. Debris-choked streets usually hamper or make fire fighting difficult. If survivors will personally fight the small fires in their immediate area, huge conflagrations may never develop.



RADIATION EFFECTS

GAMMA RAYS, pulses of electro-magnetic radiation, traveling with the velocity of visible light, are very penetrating. They are usually lethal to anyone in the open up to 3,000 or 4,000 feet from the bomb burst. They do most of their killing in the first second, or not at all. The second gamma ray hazard comes from the radioactive fission products left from the blast, or deposited from the cloud. Fission products from an air burst bomb must be regarded as something of a nuisance but a negligible factor in causing death. In the case of an underwater burst, however, residual radioactivity is much more extreme and may remain a hazard for a considerable time.

ATOM BOMB EXPLOSION

BLAST DAMAGE

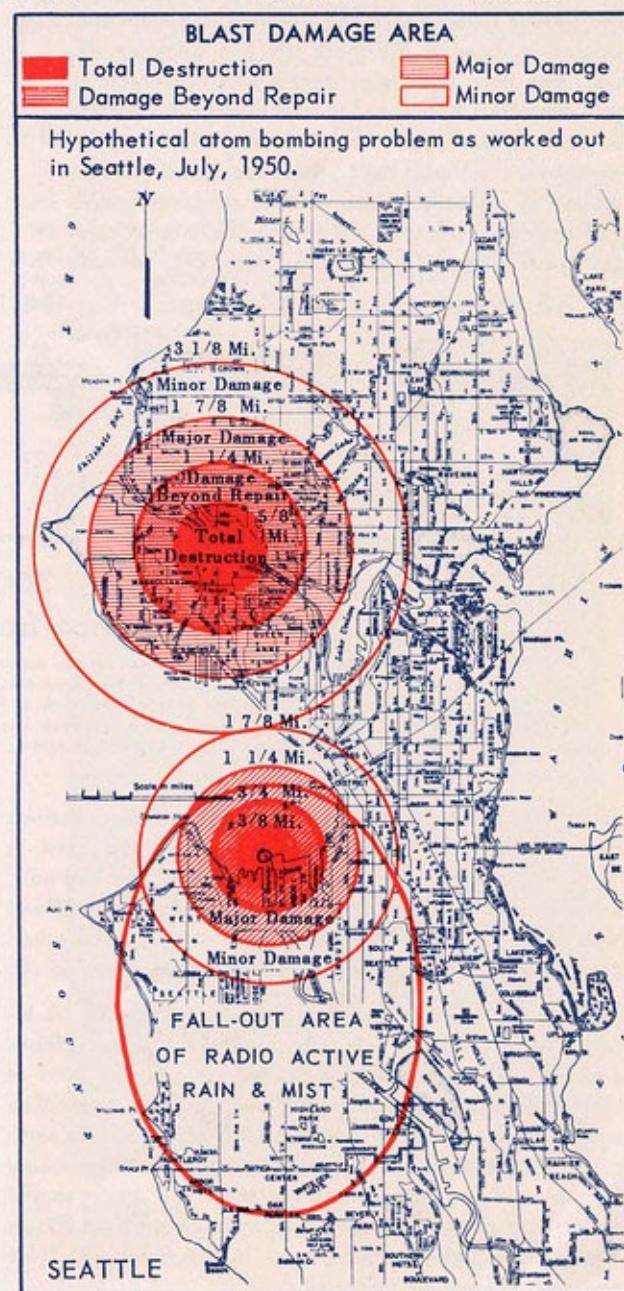


GROUND ZERO COMPLETE DESTRUCTION $\frac{1}{2}$ MILE SEVERE DAMAGE 1 MILE MODERATE DAMAGE $1\frac{1}{2}$ MILES PARTIAL DAMAGE 2 MILES LIGHT DAMAGE

BLAST DAMAGE CHART (Air Burst) (AEC)

Feet	Damage . (Statistics relate to Japanese explosions.)
0	Ground Zero — or directly beneath the air burst.
1,500	Mass distortion of heavy steel frame buildings.
2,000	Limit of severe structural damage to earthquake resistant reinforced concrete buildings.
2,500	To this point virtually complete destruction of all buildings, other than reinforced concrete.
3,500	18-inch brick walls completely destroyed.
4,000	Roof tiles melted by heat.
4,500	Light concrete buildings collapsed.
5,000	12-inch brick walls severely cracked.
5,500	Electrical installations and trolley cars destroyed.
6,000	Severe damage to entire area. Severe structural damage to steel frame buildings.
6,600	Structural damage to multistory brick buildings.
8,000	Severe damage to homes, heavy damage to window frames and doors, foliage scorched.
8,300	Moderate damage to area.
9,000	Heavy plaster damage.
10,000	Blast damage to majority of homes. Severe fire damage. Flash ignition of combustible materials.
10,300	Partial damage to structures in area.
11,000	Flash charring of telegraph poles.
12,000	Light damage to window frames and doors, moderate plaster damage.
8 MILES	— Limit of light damage.

While giant skyscrapers with reinforced concrete structures and long periods of vibration should withstand the shock very well the masonry would be stripped off, girders twisted and people literally blown out of the top floors

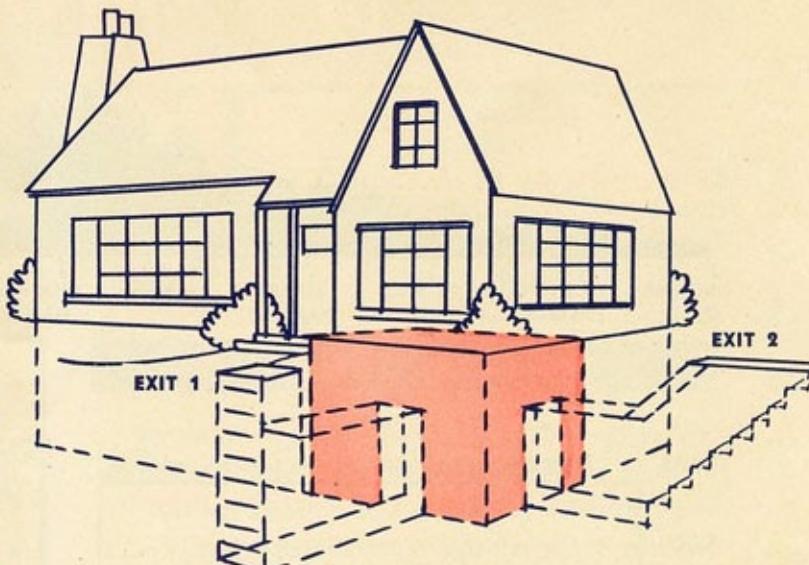


ADVANCE PRECAUTIONS

YOUR BOMB SHELTER

Best protection from an atomic explosion is the properly constructed shelter. This can be built in the open or as a specially reinforced room in your basement as in the diagram to the right. The room can be made any size you wish but should have no windows, since glass transmits the deadly gamma rays. Some means of getting out, preferably two exits, should be provided.

The most flimsy structure will give you complete protection against heat flash, but protection against the deadly gamma rays and neutrons is a main consideration. Lead is the most effective shielding device, but since lead is expensive and not practical, your next best bet is a shelter of reinforced concrete or perhaps reinforced concrete with a thick layer of earth over the top. If built outside, completely underground or partially above ground, solid earth walls and ceiling 6 feet thick will reduce the intensities of the gamma rays to practically zero even directly



The shelters shown as diagrams above are, according to the book *MUST WE HIDE*, by Dr. R. E. Lapp, effective at the distances given. For neutron shielding a modified concrete made by adding a considerable proportion of an iron (oxide) ore, such as limonite, or magnetite, to the cement is effective. Small pieces of iron, such as steel punchings, may also be incorporated. Concrete should be kept painted to seal its pores, reducing the penetration of gamma rays.

under the bomb burst. Some crude, semi-buried shelters only 900 feet from ground zero withstood the blast in Nagasaki, and none were damaged beyond one-half mile. Semi-buried shelters of the type used in Europe in World War II for protection against conventional bombs would provide worthwhile protection against atomic explosions.

Outside shelters, buried or semi-buried, should be located well clear of buildings to avoid hazards from debris and fire. Outside shelters designed for a static load of 500 pounds per square foot should provide protection against blast at one-half mile from ground zero if an earth cover of at least 2 feet is provided. This cover is necessary for protection against ionizing radiation. The shelter should be capable of being closed up so as to be air tight. Doors should close tightly against seals in the frame. At least two means of exit are essential.

Concrete or hard-packed-earth building materials do not become dangerously radioactive when bombarded by gamma rays.

In your atomic shelter, whether inside or outside, adequate drainage and ventilation should be provided. Basements of homes, especially if they extend beyond the main structure of the house, offer reasonable protection against blast damage, provided they are not too near the center of the explosion and have outside escape hatches to be used in case the house collapses or catches fire.

If you give them an idea of what you need, your local construction company will help in working out the details for an effective shelter. Some of them already have specifications.

MAY SAVE YOUR LIFE

EQUIPMENT AND SUPPLIES FOR YOUR BOMB SHELTER

Your bomb shelter should be equipped with certain necessary items that may be extremely valuable when it

comes time to emerge into the bomb-blasted outer world.

FLASHLIGHT OR BATTERY-OPERATED LIGHTING FACILITIES—will be found valuable since all light circuits may be put out of commission at the time of the burst.



FIRST-AID KIT—will be found essential for rendering aid to injured or to members of your own family or group.



PORTABLE RADIO—to keep you in contact with emergency broadcasts concerning the disaster. (Battery operated)



FOOD AND WATER—A few cans of staple food and water in a tightly sealed jar may be most useful. Properly covered or canned foods should undergo little or no contamination. Contaminated water, when distilled, is perfectly safe for drinking purposes. The radioactive material remains behind in the residual scale and brine. MERE BOILING OF WATER CONTAMINATED WITH RADIOACTIVITY IS OF NO VALUE.

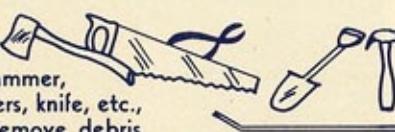


BLANKETS—may be needed for warmth or shock protection.

FIRE EXTINGUISHER—A small hand fire extinguisher will permit you to put out any small fires in your immediate vicinity. This may prevent these fires from spreading into a general conflagration and will be a godsend to the firefighting groups which will have their hands full trying to cope with major fires.



TOOLS—of a simple nature, such as a shovel, saw, hammer, hand ax, crow bar, pliers, knife, etc., may be necessary to remove debris from exit of your own shelter or in doing rescue work.



GAS MASK—An ordinary gas mask is adequate protection against swallowing or breathing sub-microscopic radioactive particles. If a mask is not available a surgical type of gauze face covering would help. In case of a high air burst, this probably would not be necessary, as very little radioactive residue is present.



GLOVES—Rubber gloves will serve to cover any small overlooked skin wounds that might permit entry of the radio-active particles into the blood stream. Heavy work (cotton or leather) gloves to slip over the rubber gloves might



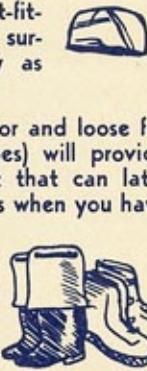
be helpful in the event of attempting to move heavy timbers or working in debris.

HEAD COVERING—Some sort of tight-fitting cap, preferably of the type used by surgeons, covering the hair as completely as possible, should be worn.



COVERALLS—(preferably of a light color and loose fitting to tuck into your boots or overshoes) will provide an effective and practical working outfit that can later be discarded along with your other clothes when you have left the radioactive area.

BOOTS OR OVERSHOES—will prevent radioactive particles adhering to your shoes and at the same time will be most helpful in working in flooded areas. If overshoes or boots are not handy, you can wrap your shoes with cloth which can be discarded later along with any radioactive particles.

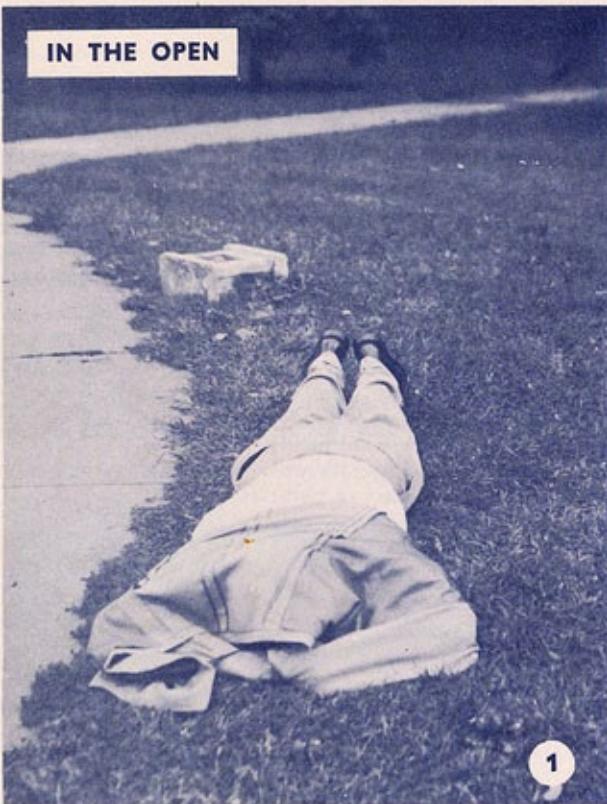


(Above) An advance monitor entering an area of high radioactive contamination. (The average individual would not require such elaborate protective devices.)

WHAT TO DO

IF BOMB FALLS WITHOUT WARNING

Your first indication of an atomic bomb burst will be an awesome glare in the sky hundreds of times brighter than the sun. **DON'T LOOK AT THIS GLARE.** YOU WILL EXPOSE YOUR FACE AND BODY TO FLASH BURNS AND DEADLY RADIATION.



1. IF YOU ARE IN THE OPEN, DROP TO THE GROUND INSTANTLY, BACK TO THE LIGHT, AND TRY TO SHADE YOUR BARE FACE, NECK, ARMS AND HANDS. THIS WILL NOT PROTECT YOU FROM GAMMA RAYS BUT WILL PROTECT YOU FROM BURNS which can hurt you far beyond the limits of radiation effects. (See photo No. 1)

KEEP YOURSELF DOWN FOR AT LEAST 10 SECONDS. THE IMMEDIATE DANGER IS THEN OVER AND YOU CAN GET UP AND LOOK AROUND AND DECIDE WHAT TO DO NEXT — IF YOU ARE ABLE.

2. IF YOU ARE IN THE STREET, DUCK BEHIND A TREE OR INTO A CORNER OR A DOORWAY IF IT

IS ONE LEAP OR SO AWAY BEND OVER, BACK TO THE LIGHT, SO AS NOT TO EXPOSE UNPROTECTED PARTS OF THE BODY — BUT IF SHELTER IS SEVERAL STEPS AWAY, DO NOT TRY TO MAKE IT. FALL TO THE GROUND AS IF YOU WERE IN THE OPEN AND THEN WAIT 10 SECONDS.

THEN PRESS YOURSELF TIGHTLY AGAINST A BUILDING IF YOU CAN, TO AVOID SHATTERED GLASS OR FALLING BRICKS. (See photo No. 2)

3. IF YOU'RE AT HOME OR IN THE OFFICE, DROP TO THE FLOOR, BACK TO A WINDOW, OR CRAWL BEHIND A DESK OR TABLE. THERE IS A LITTLE TIME LAG BETWEEN THE GLARE AND THE BLAST WAVE, SO FOR A FULL MINUTE STAY AWAY FROM THE WINDOWS AND THE DANGER OF FLYING GLASS. SAFEST PLACE INSIDE A BUILDING IS AGAINST AN INTERIOR PARTITION WHICH **MAY** BE STRONG ENOUGH TO RESIST COLLAPSE.

(See photos No. 3 and 3A)



AVOID PANIC — BE CALM . . . MASS HYSTERIA

WHAT TO DO

IF YOU HAVE
ADVANCE WARNING

AIR RAID WARNING SIGNALS

"RED ALERT"

(Expect an Attack any moment)

ONE 3 - MINUTE

WARBLING SIREN SIGNAL

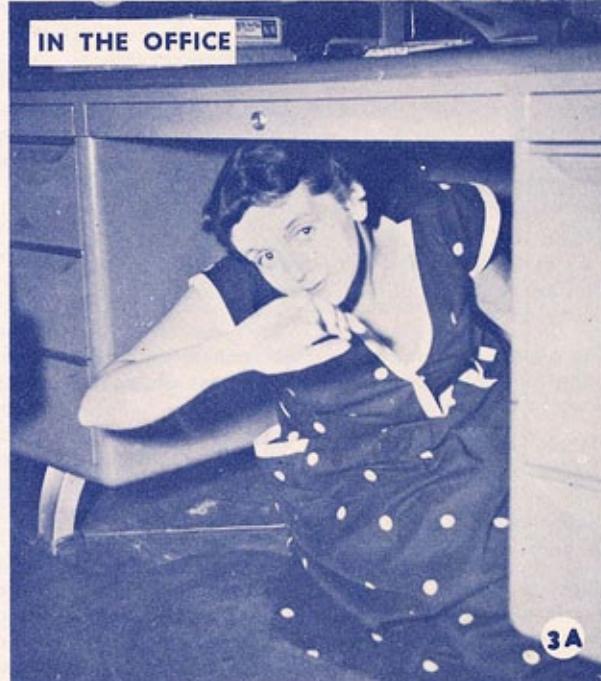
"ALL-CLEAR SIGNAL"

(Enemy aircraft no longer in area)

THREE 1 - MINUTE STEADY SIREN BLASTS

TWO MINUTES OF SILENCE BETWEEN

1. Move at once to designated shelters or disperse as directed. In the event special shelters have not been prepared, go to the nearest subway or deep basement.
2. If no adequate shelter is nearby, you can still protect yourself against flying debris and some of the heat effect. Get away from frame buildings and trees. Lie down, preferably in a ditch, behind a wall, in a ravine. Protect your eyes from the flash by covering your eyes with your arm. If not, you may be temporarily blinded. Remain under shelter for a few minutes after the blast, to be sure all flying debris has landed.
3. If able, try and help any injured people near you. Administer first aid when possible. Put out any small fires in your vicinity. Each home should have a fire extinguisher available, as chances are that city water pressure will be gone.
4. When you have done what you can in your immediate vicinity, report to the place designated by civil defense authorities, as you will be needed to help in rescue work, evacuation of wounded, general fire fighting, and other emergency jobs. If no place to report has been designated, see if you can aid any of the emergency crews who will be in operation.



fense authorities, as you will be needed to help in rescue work, evacuation of wounded, general fire fighting, and other emergency jobs. If no place to report has been designated, see if you can aid any of the emergency crews who will be in operation.

5. After the initial rescue work is done, check with a radiological defense man as to the safety of the area.
6. Take a shower and scrub thoroughly three or four times to remove any radioactive materials that may have gotten on you, using sodium bisulphite or potassium permanganate if badly contaminated, and if advised by competent authorities to do so.
7. Change your clothes, discarding the clothes you wore in the affected areas, especially shoes. **Bury them!** **Do not burn them!**
8. When feasible, check with a radiological defense adviser and a doctor to make sure you are well and safe.
9. Do not spread rumors. Enough confusion will exist without adding to it.

CAN SERIOUSLY HAMPER

ORGANIZED DEFENSE

PERSONAL INJURY EFFECTS

INJURIES FROM ATOMIC EXPLOSION

- I. Those caused by the blast pressure or shock wave directly.
- II. Those caused when buildings are wrecked.
- III. Those caused from radiant heat.
- IV. Those caused by burns, either in the wreckage or otherwise.
- V. Those caused by nuclear radiation.
- VI. Those caused through residual contamination.

BLAST INJURIES

Direct blast injury may occur whenever the greatly increased air pressure comes into contact with body surfaces, causing multiple hemorrhages, particularly of the intestinal tract, the stomach, the lungs, the ears, and the sinuses about the nose. Direct blast is not a significant primary cause of death. Most blast injuries are the result of missiles, such as broken glass, falling bricks, etc.

The shock wave from the blast sweeps outward rapidly from ground zero and, in the case of Japan, took up to 10 seconds to travel 2 miles.

In the water, the dangerous level for pressure is about 500 pounds per square inch. In an underwater atomic explosion, any person immersed in the water probably would be killed or seriously injured up to 2,000 yards from the zero point.

Since practically all brick and light masonry buildings with weight-bearing walls in the blast area will be wrecked, wooden buildings flattened, and the doors and other partitions of blast-resistant steel-reinforced concrete buildings blown out, people in or near these buildings will be killed or injured by collapse of structures, and by missile effects of debris.

FLASH BURNS

The flash burns caused by an atomic explosion may be first degree, merely reddening the skin; second degree, causing blisters; or third degree, damaging all layers of the skin.

Severe burns are caused both by the radiant heat from the explosion of the atomic bomb (flash burns) and from the fires that break out in the wreckage (flame burns). The effects of visible light probably are not significant. Even those who look directly at the burst apparently suffer only temporary dazzling and loss of vision.

Atomic bomb flash burns are distinctly different from those caused by other types of explosions, since they are due to radiant heat rather than to hot gases, as in the case of shell bursts or gasoline explosions. Shadow effects are prominent. An ear, for example, might be badly burned, yet the skin behind the ear be unharmed.

As compared with flame burns, flash burns show a much smaller depth of penetration of the skin. This is due to the fact that the thermal radiation flash lasts only approximately 3 seconds. Within the depths to which the thermal radiations penetrate, the tissues appear to be completely destroyed; in a radius of 3600 feet from ground zero blackening

GENERAL

There are no particular problems involved in the treatment of individual injuries received as a result of an atomic attack. Standard treatment procedures can be used in treating mechanical injuries (cuts, lacerations, broken bones, concussions, etc.), burns, shock and radiation effects. Problems of a more serious nature are involved in the necessity of treating thousands of individual cases almost at once, in the immediate need for mountains of medical supplies and prompt evacuation of seriously injured to hospitals outside of the disaster area. There is nothing mysterious about radiation, as man is subject to a constant bombardment of cosmic rays. He accumulates minute amounts of radium in his body through life, and X-rays are used extensively in the treatment of certain illnesses. The only difference in atomic radiation is in the types of rays and the intensity.

FLAME BURNS

A conflagration may be expected to follow any atomic bomb blast. Fire damage light in underwater bursts.

Burns suffered from flames, in such cases, differ in no way from those encountered in any ordinary intense fires unless radiation injury has also been suffered. In Japan, there were many cases where excessive scar tissue (keloids) formed, and many of the survivors have contraction deformities not specifically related to exposure to the atomic bomb, but rather to slow healing, improper care, and infection. Burns suffered in non-atomic bomb raids resulted in comparable amounts of scar tissue, a tendency in Japanese as in race.

It would be unrealistic to prepare for fewer than 40,000 to 50,000 severely burned persons from a single atomic explosion. Fortunately, severe symptoms from radiation in those not killed outright do not ordinarily come on until several days after the acute exposure, so that those suffering from burns and mechanical injuries will actually constitute the chief immediate medical problem and make their heaviest demands on emergency facilities at a time when those suffering solely from acute radiation will require very little attention.

BURNS

indicates that actual charring has occurred.

Direct injury from radiant heat occurs at the explosion of the bomb; Japanese people in the open suffered third-degree burns up to 1,500 yards and second-degree burns up to 2,500 yards. The effect was instantaneous.

Even loose clothing afforded some protection against atomic flash burns, and color also had a protective effect. White clothing tended to reflect the radiant heat, darker clothing to absorb heat. Burns sometimes were cross-hatched where light clothing was marked with dark lines. Tight clothing was less protection, and burns were inflicted at elbows and where straps crossed the shoulders, for example, while other places where clothing was loose were protected or less severely burned.

As far as burning caused by thermal radiation is concerned, the essential points are protection from direct exposure for human beings and the avoidance of easily combustible materials, especially near windows.



TS OF AN ATOMIC BLAST

RADIATION INJURIES

Because of the concentration of ionizing radiation nearly everyone not protected by earth, steel, or thick concrete within a radius of approximately 3000 ft. would probably die. The most serious cases would succumb within a few hours to 4 or 5 days after exposure. A second group would develop susceptibility to infection due to destruction of their white blood cells and would die from 4 days to 6 weeks after exposure. Another group would incur multiple hemorrhages and die within 2 to 3 weeks from this cause.

THEIR TREATMENT

Many people believe that very little can be done in treatment of radiation casualties. This is true of a lethal

GENERAL

There is little about the effects of either old or new weapons which is new to the health professions. The atomic bomb produces burns, lacerations, amputations, crushing injuries, and blast injuries which all surgeons are accustomed to treating. Radiation sickness is a new type of wartime injury, but it is not a new disease and its symptoms are recognized by physicians, particularly radiologists.

When the dose is 400 r or less, many lives can be saved with proper treatment. Immediate hospitalization, so as to insure complete rest, and avoidance of chills and fatigue, is the first step. Whole blood transfusions should be given as required, until the bone marrow has had time to regenerate blood cells. Adequate nourishment should be provided by intravenous feeding to supply necessary sugars, proteins, vitamins, etc. Infection may be controlled by the use of penicillin and other antibiotics.

Findings in Japan show that people exposed to heavy radiation suffer various injuries, sicknesses, and malfunctions which together are called the **acute radiation syndrome**. Physicians find that the severity of the symptoms is related importantly to two factors: The amount of radiation absorbed in a single dose, and the proportion of the body exposed.

No unusual ill effects directly attributable to ionizing radiation have occurred among Japanese survivors. Whether or not such after-effects will occur among these survivors will have to be answered in the future. After-effects from radiation exposure that cannot be fully assessed for many years are effects on heredity and effects on fertility. From investigations, it is found that the likelihood of parents having deformed children after suffering sublethal amounts of ionizing radiation is very slight.

With adequate warning which is heeded and adequate shelters which are occupied, the casualties can be greatly reduced. Furthermore, doctors with ample medical supplies, hospital facilities, and blood banks can save many of those injured by blast or burns.

GAMMA RAYS

Gamma rays are very similar to powerful X-rays and constitute the greatest radiological danger in an atomic blast. They penetrate deeply into the body and ionize the carbon, nitrogen, hydrogen, and oxygen atoms, disrupting the complex body combinations of these elements, changing the proteins, enzymes and other substances that make up our cells and bodies. As a result, the cells are injured or killed; if enough cells are damaged or killed, the person becomes seriously ill or dies.

dose; but many borderline cases can be saved by:

- a. Good medical care.
- b. Whole blood transfusions. It has been estimated that, for a catastrophe such as at Hiroshima, approximately 250,000 pints of blood would be needed, 80,000 per week for the first 3 weeks.
- c. Control of infection by antibiotics such as penicillin and aureomycin.
- d. Intravenous feeding to supply necessary sugars, proteins and vitamins.
- e. Control of the bleeding tendency by use of drugs. Whole blood would be required in great quantities, primarily to treat the casualties suffering from mechanical injuries and burns, secondarily to treat victims of ionizing radiation.

One may receive radiation producing far more serious tissue damage than a severe burn without any sensation and no damage will be apparent for several days.

In the case of such a high air blast as in Japan, some 15 to 20 per cent of the deaths probably will be caused solely by nuclear radiation. The remaining 80 to 85 per cent will be caused primarily by injuries suffered in the collapse of buildings and by burns, although many of these may also suffer severe radiation exposure.

A dose of 400 r (roentgens) of radiation received over the whole body in the course of a few minutes represents the median lethal dose which would be fatal to about 50 per cent of human beings. At the minimum distance of 2100 feet from the explosion, protection from a lethal dose would require something like 20 inches of concrete, 3 inches of lead, or 40 inches of packed earth.

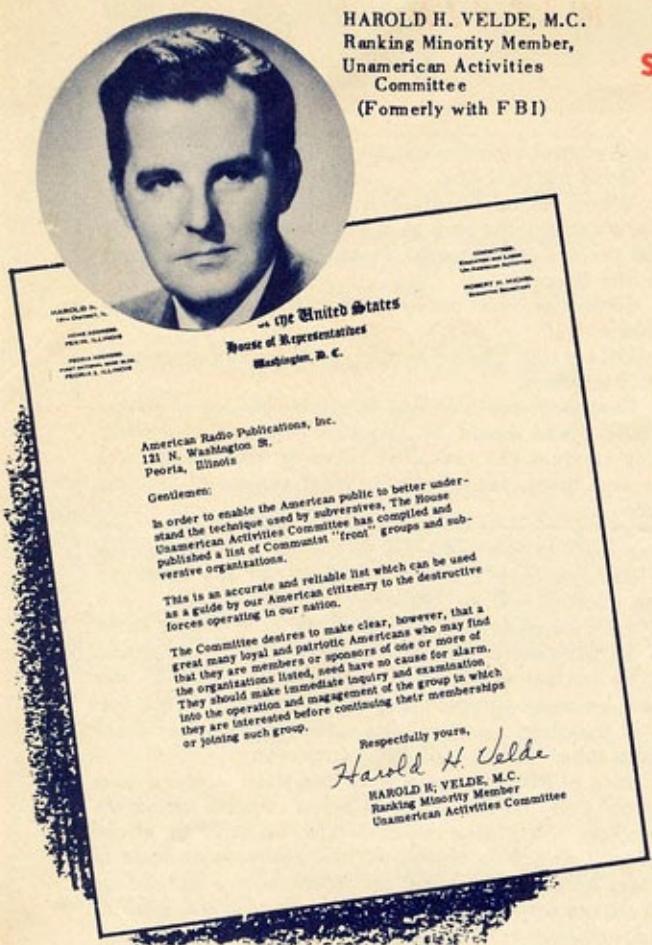
CONTAMINATION

The chief external radiation hazard in a contaminated area will come from gamma rays thrown off by fission products or by materials made radioactive by neutrons or gamma rays during the explosion. Filter masks, clothing tight at the wrists, ankles, and neck, and tight-wristed gloves will afford protection against Alpha and Beta particle contamination. Material heavily contaminated with Beta-emitting material should not, however, be handled, even with gloved hands, since it can cause severe burns. Tongs or equivalent instruments should be used. Clothing should be discarded at the edge of the contaminated area to avoid spreading radioactive contamination. Thorough soap-and-water bathing would be a valuable precaution.

Gamma radiation from contamination will not approach the power of direct bomb radiation, but it still can be severe. The best protection against contamination that gives off gamma radiation is to use instruments to detect its presence and to avoid any areas of dangerous concentration.

At a bomb burst, contaminated particles of the size which will most readily pass from the small airpockets of the lung into the blood stream ascend rapidly into the atmosphere. The chances of inhaling a dangerous amount of these small particles is small unless explosion occurs during rain or heavy overcast. A combat-type gas mask will filter out 99.999 per cent of all such particles.

Any wound suffered in a contaminated area should be cared for in the same manner as any similar injury in an uncontaminated area. Clean such a wound with soap and water or potassium permanganate, cut out the damaged tissue, and cover the wound. Amputation is not indicated.



HAROLD H. VELDE, M.C.
Ranking Minority Member,
Un-American Activities
Committee
(Formerly with FBI)

SUBVERSIVE ORGANIZATIONS IN THE U. S.

- There are easy tests to establish the real character of such organizations:
1. Does the group espouse the cause of Americanism or the cause of Soviet Russia?
 2. Does the organization feature as speakers at its meetings known Communists, sympathizers, or fellow travelers?
 3. Does the organization shift when the party line shifts?
 4. Does the organization sponsor causes, campaigns, literature, petitions, or other activities sponsored by the party or other front organizations?
 5. Is the organization used as a sounding board by or is it endorsed by Communist-controlled labor unions?
 6. Does its literature follow the Communist line or is it printed by the Communist press?
 7. Does the organization receive consistent favorable mention in Communist publications?
 8. Does the organization present itself to be nonpartisan yet engage in political activities and consistently advocate causes favored by the Communists?
 9. Does the organization denounce American and British foreign policy while always lauding Soviet policy?
 10. Does the organization utilize Communist "double talk" by referring to Soviet-dominated countries as democracies, complaining that the United States is imperialistic and constantly denouncing monopoly-capital?
 11. Have outstanding leaders in public life openly renounced affiliation with the organization?
 12. Does the organization, if espousing liberal progressive causes, attract well-known honest patriotic liberals or does it denounce well-known liberals?
 13. Does the organization have a consistent record of supporting the American viewpoint over the years?
 14. Does the organization consider matters not directly related to its avowed purposes and objectives?

This is a condensed list of organizations listed as subversive by the House Un-American Activities Committee and the U. S. Attorney General's Office.

Abolish Peonage Committee
Abraham Lincoln Brigade or Battalion
Abraham Lincoln School
Academic and Civil Rights Committee
Academic and Civil Rights Council of California
Action Committee to Free Spain
Actors Laboratory
Actors' Laboratory Theatre
African Blood Brotherhood
All-American Anti-Imperialist League
All-California Conference for Defense of Civil Rights and Aid to Labor's Prisoners
Allied Labor News Service
Allied Voters Against Coudert
Almanac Singers
American Artists Congress
American Association for Reconstruction in Yugoslavia
American Association of Scientific Workers
American Committee for a Korean People's Party
American Committee for Anti-Nazi Literature
American Committee for Democracy and Intellectual Freedom
American Committee for European workers' Relief
American Committee for Free Yugoslavia (The)
American Committee for Friendship with the Soviet Union
American Committee for a Free Indonesia - San Francisco
American Committee for Protection of Foreign Bombs
American Committee for Russian Famine Relief
American Committee for Spanish Freedom
American Committee for Struggle Against War
American Committee for Yugoslav Relief

American Committee of Jewish Writers, Artists, and Scientists
American Committee of Liberals for the Freedom of Mooney and Billings
American Committee to Aid Korean Federation of Trade-Unions
American Committee to Aid Soviet Russia
American Committee to Save Refugees
American Congress for Peace and Democracy
American Congress to Free Earl Browder
American Council, Institute of Pacific Relations
American Council on Soviet Relations
American Federated Russian Famine Relief Committee
American Federation for Political Unity
American Friends of the Chinese People
American Friends of the Mexican People
American Friends of the Spanish People
American Fund for Public Service (Garland Fund)
American Labor Committee Against War
American League Against War and Fascism
American League for Peace and Democracy
American Negro Labor Congress
American Peace Crusade
American Peace Mobilization
American Round Table of India
American Russian Institute of Southern California
American Russian Institute for Cultural Relations with the Soviet Union
American Russian Institute of San Francisco
American Russian Music Corporation
American Slav Congress
American Society for Cultural Relations with Russia
American Student Union

American Writers Congress
American Youth Congress
American Youth for Democracy
All Harlem Youth Conference
American Friends of Spanish Democracy
American Investors Union, Inc.
American Jewish Labor Council
American Labor Alliance
American Labor Party
American League of Ex-servicemen
American People's Fund
American People's Mobilization
American Polish Labor Council
American Pushkin Committee
American Relief for Greek Democracy
American-Russian Fraternal Society
American Russian Institute (New York)
American Russian Institute (Philadelphia)
American-Soviet Science Society
American Soviet Music Society
American Youth for a Free World
Appeal for Lawrence Simpson
Artef
Artists' Front to Win the War
Associated Film Audiences
Associated Magazine Contributors
Book Find Club
Book Union
California Committee for Political Unity
California Conference for Democratic Action
California Labor School
California Legislative Congress
California Youth Legislature
Carpatho-Russian People's Society
Cervantes Fraternal Society
China Aid Council
Citizens' Committee for Better Education

ENEMIES FROM WITHIN

Citizens' Committee for Harry Bridges
 Citizens' Committee on Academic Freedom (The)
 Civil Rights Congress
 Civil Rights Council of Northern California
 Committee for Citizenship Rights
 Committee For the First Amendment
 Committee on One Thousand
 Congress of American Women
 Consumers Union
 Council on African Affairs
 Citizens' Committee for the Defense of Mexican American Youth
 Citizens' Committee for the Motion Picture Strikers
 Citizens' Committee to Support Labor's Right
 Civil Rights Federation
 Committee for a Democratic Far Eastern Policy
 Committee for Civil Rights for Communists
 Committee for Peace through World Cooperation
 Committee for the Care of Young Children in Wartime
 Communist Information Bureau (Cominform)
 Conference for Democratic Action
 Conference on Constitutional Liberties in America
 Conference on Pan American Democracy
 Consumers' National Federation
 Contemporary Theatre
 Council of United States Veterans
 Daily Worker Press Club
 Daily Worker Publishing Co.
 Daughters of the American Depression
 Descendants of the American Revolution
 Down Town Forum
 Dramatic Workshop
 Exiled Writers Committee
 Federated Press
 Film Audiences for Democracy
 Films for Democracy
 Four Continent Book Corporation
 Free Italy Society
 Film and Photo League
 Freedom from Fear Committee
 Friends of the Campus
 Friends of the Chinese People
 Frontier Films
 Group Theatre
 Galena Defense Committee
 Garrison Films Distributors, Inc.
 Harry Bridges Defense Committee
 Harry Bridges Victory Committee
 Hawaii Civil Liberties Committee
 Hollywood Democratic Committee
 Hollywood Motion Picture Democratic Committee
 Hollywood Peace Forum
 Hollywood Theatre Alliance
 Hollywood Writers Mobilization
 Holyoke Book Shop
 Hold the Price Line Committee
 Hollywood Community Radio Group, Inc.
 Icor
 Independent Citizens Committee of the Arts, Sciences, and Professions
 Independent Progressive Party
 Independent Socialist League
 Independent Voters Committee of the Arts and Sciences
 International Book Store, San Francisco
 International Committee on African Affairs
 Industrial Workers of the World
 International Congress of Women
 International Democratic Women's Federation
 International Juridical Association
 International Labor Defense
 International Publishers
 International Union of Students
 International Workers Order
 Jewish Blackbook Committee of Los Angeles
 Jewish People's Committee
 Jefferson Chorus
 Jewish Peoples Fraternal Order
 Joint Committee for Trade Unions on Social Work
 Keynote Recordings, Inc.
 Korean Culture Society
 Korean Independent News Company
 Labor Research Association
 League of American Writers
 Labor Youth League
 League of Workers Theatres
 League of Young Southerners
 League of Struggle for Negro Rights
 Lincoln Book Store, Hollywood
 Maritime Book Shop, San Francisco
 Methodist Federation for Social Service
 Metropolitan Interfaith and Interracial Coordinating Council
 Modern Culture Club
 Motion Picture Artists Committee
 Mobilization for Democracy
 Model Youth Legislature of Northern California
 Modern Book Shop, Santa Barbara
 Motion Picture Democratic Committee
 Musicians' Democratic Committee
 National Committee for People's Rights
 National Committee for the Defense of Political Prisoners
 National Council of Negro Youth
 National Emergency Conference for Democratic Rights
 National Federation for Constitutional Liberties
 National Lawyers' Guild
 National Negro Congress
 National Negro Women's Council
 National Student League
 National Youth Assembly Against Universal Military Training
 National Civil Rights Federation
 National Committee Against Censorship of the Theatre Arts
 National Committee to Abolish the Poll Tax
 National Committee to Win the Peace
 National Conference on Civil Liberties
 National Congress for Unemployment and Social Insurance
 National Council of the Arts, Sciences and Professions
 National Institute of Arts and Letters
 National Joint Action Committee for Genuine Social Insurance
 National Labor Committee Against War
 Negro Cultural Committee
 Negro Labor Victory Committee
 New Union Press
 New Theatre League
 New Union Press
 New York Conference on Civil Rights
 New York Peace Association
 Non-Partisan Labor Defense
 Non-Sectarian Committee for Political Refugees
 Northern California Civil Rights Council
 Open Road
 Pacific Northwest Labor School
 Pacific Publishing Foundation, Inc.
 Pax Productions
 People's Artists, Inc.
 People's Educational Center
 People's Chorus
 People's Committee to Investigate Un-American Activities
 People's Institute of Applied Religion
 People's Orchestra
 People's Peace
 People's Radio Foundation, Inc.
 Progressive Citizens of America
 Progressive Book Shop, Los Angeles and Sacramento
 Progressive Women's Council
 Prompt Press
 Provisional Committee for Democracy in Radio
 Public Use of Arts Committee
 Seattle Labor School
 Second Annual California Model Legislature
 School for Democracy
 Scientific and Cultural Conference for World Peace
 Slavic Council of Los Angeles
 Southern Conference for Human Welfare
 Southern Negro Youth Congress
 State-Wide Legislative Congress (California)
 Student Conference Against War
 Stage for Action
 State-Wide Civil Rights Conference (California)
 Theatre Arts Committee (TAC)
 Theodore Dreiser Work Shop
 Trade Union Advisory Committee
 Trade Union Service
 Trade Union Theatre
 Twentieth Century Book Store
 Teen-Age Art Club
 Tom Mooney Labor School
 Trade-Union Unity League
 Twentieth Century Book Shop, Oakland, Calif.
 United American Artists
 United Committee of Action
 United Veterans for Equality
 Vanguard Press
 Veterans and Wives, Inc.
 Veterans National Liaison Committee
 Veterans of Equality
 Victory Book Store
 Western Council for Progressive Labor in Agriculture
 Western Writers Congress
 Wives and Sweethearts of Servicemen
 Workers Cultural Federation
 Workers Ex-Servicemen's League
 Workers Alliance
 Workers Library Publishers
 Workers' School of Los Angeles
 World Federation of Democratic Youth
 World Congress of Intellectuals
 World Peace Congress
 World Youth Council
 Young Communist League
 Young People's Records
 Young Pioneers of America
 Young Progressive Citizen's Committee
 Young Workers League

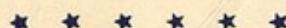


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