



Would You Be Safe From Atomic Radiation?

If an enemy bomb should fall on Omaha, Lincoln, Hastings or Sidney, would the residents in this area know how to protect themselves from radiation?

This is one of the points brought out by the Rev. A. J. Paschang of St. Boniface church in Stuart in his talk on civil defense given at a recent meeting of the Parent-Teachers association at the O'Neill public high school.

Since his talk is of such timely interest to all county residents, The Frontier is printing his speech.

The only thing that is really new about Civil Defense is the name. The principle, that individuals and families should take care of themselves to the best of their ability, is as old as the human race.

In our own country, the pioneers, who pushed the frontiers of our country westward, were completely on their own. They had usually, no protection of the government or the military. They therefore saw to it, that they were well supplied with food and shelter, took reasonable precautions as to their health, and kept themselves ready to repel attacks from Indians and other enemies. Through sickness, or maybe severe winters or attacks by Indians, many of them lost their lives. But enough survived so that the nation survived and continued to grow.

We today, are very much in the same position as were the pioneers. Our health problems are simplified, and we are not as helpless in the face of severe weather, and of course, we need no longer worry about Indian attacks.

But in place of Indian attacks, there now hangs over our head, the threat of attack by atomic bomb or nuclear weapon. And in this regard we are really in the same position as were the pioneers, since we are, for a time at least, completely dependent upon ourselves, without aid from government or military. As also with the pioneers, there is a grim side to this picture. Many of us too, will lose our lives. But with proper precaution, enough of us will survive, that this nation can survive and fight back.

Now ours is a food producing area, and our particular problem is this, that production must be

maintained, not only for ourselves but to help feed the other services of the nation, such as the industrial, communications, transportation, police, military, etc. Ours is also a shelter area, so that we must be ready to give aid to those evacuated from the cities. For the cities are most likely the main target areas.

For the present, let us concentrate mainly on survival in case of attack by Nuclear Weapons. All nuclear weapons, whether they be the atom bomb, the hydrogen bomb, the guided missile with a nuclear war-head, or any other type of weapon that gains its effect by nuclear explosion have four main effects. 1) Heat; 2) Blast; 3) Initial Radiation; 4) Fall-Out Radiation.

HEAT: The heat generated in a nuclear explosion, is estimated to be in the millions of degrees Fahrenheit. A nuclear bomb or guided missile, will probably be set to detonate somewhat above the ground, to increase the heat and blast effect. Those dropped in Japan were detonated at about 1800 feet above ground. The bombs dropped in Japan were about 20 kiloton, that is, the equivalent of 20,000 tons of TNT. The nuclear war head of the missiles now in use, is about 1 kiloton. The bombs now on hand, are estimated to be about 20 megaton, that is, the equivalent of 20,000,000 tons of TNT. This kind of bomb, is expected to cause First Degree Burns, within a radius of 27 miles upon anyone exposed to the full heat. Second Degree Burns will probably occur up to a 20 mile radius, and Third Degree Burns can be expected up to a 17 mile radius. This heat effect is of very short duration, about 30 seconds or so, but still long enough to incinerate a person, who happens to be very close to the explosion, and long enough to set fire to most inflammable material.

BLAST: Coupled with this heat, will be the blast of the explosion, which will arrive at ground level within a few seconds. In Hiroshima, this combination of heat and blast, was enough to ruin or destroy every building within a radius of five miles of the center of the explosion. The force of this blast is estimated to be about equal to a 500 mph wind.

INITIAL RADIATION: Is that radiation received directly from

the exploded bomb. It will not last more than a minute or so. However, it is very intense, and anyone close to the explosion, will receive a fatal dose, if he is not properly shielded. Fortunately, the air will absorb this radiation very much, so that those outside of the actual damaged areas, will probably be little affected by it.

FALL-OUT: A 20 mgt bomb, exploded near the ground, will form a crater about one-half mile in diameter and about 150 feet deep. The tremendous heat of the explosion first expands the air. Then after a short time, this heat diminishes, and the air begins to cool and contract, thus creating a partial vacuum. Air from all sides rushes in to fill this vacuum, and gathers with it, dust and dirt and debris from the ground. This is the stem of the well known mushroom form of an atomic explosion. The atomic explosion releases a great number of radio-active particles, and these fasten unto, or are fused by the heat, with the dust and debris. While this cloud of dust and air is cooling, it rises to great heights, 50,000 or even a 100,000 feet or more. When completely cooled, this dust and debris will settle again to the earth, bringing with it the radio-active particles.

Fall out will be most severe rather close to the center of the explosion, say within 15 or 20 miles, because the heavier particles of debris will drop sooner. However, the lighter particles will rise higher, and there will be taken by the prevailing high-altitude winds and carried along until sufficiently cooled, when they will fall again to the ground. This may be several hundred miles from the actual explosion. And this is the fall-out that we are most concerned with. Fall-out is expected to reach our area from about six to twelve hours after the explosion at Omaha, Lincoln, Hastings and Sidney. It is expected to last from twelve to twenty-four hours. After that no more should fall.

Radio-Active fall-out, gives off three main types of radiation—the Alpha, the Beta and the Gamma rays.

The Alpha ray is of very short duration, i. e., it dies out quickly, and is stopped by ordinary clothing, or even a thickness of paper. Hence it is of little concern to us.

The Beta ray, is of concern, because it can cause severe burns. However, just like sunlight, it can be easily guarded against, so that ordinary clothes are quite effective.

The Gamma rays are the most dangerous. They are like X-ray, very penetrating and can cause severe sickness and death, if absorbed in any considerable amount. Radiation is measured in Roentgens. Just like water is measured in gallons, or distance is measured in miles. The rate of radiation is measured in Roentgens per hour (R/h). The hour is the time element, like in gallons per hour, or miles per hour.

The general rule of thumb (not precise because individual tolerances will vary) is that we should receive not more than the following doses: 25r in any one day, 100r in any one week, 200r in a many persons, if received in a short period of a few weeks. Lifetime. 400r will be fatal to the above supposes exposure to radiation over the whole body. We can take much more exposure, if it is confined only to a small part of the body, such as in X-ray therapy.

Radioactivity decreases with time, at a fairly constant rate. Thus for every sevenfold increase in time, radioactivity will decrease to one-tenth of its original intensity. Thus if the outside radiation is 1,000r/hr now, in 7 hours it will be 100 r/hr; in 7 x 7, or 49 hours, it will be 10 r/hr. In two weeks, which is about 7 x 7 x 7 hours, the radiation will be 1 r/hr. That is why protection is critical for the first few days, and of

great importance for about two weeks.

Protection from these rays is by two means: 1) Shielding ourselves, 2) Taking precautions that we do not ingest any radio-active particles in our food or water or air.

SHIELDING: When we take shelter from Fall-out in, say an ordinary house, let us say on the first floor, we take advantage of the fact, that radiation is absorbed to an extent by any substance it passes through, even by air. When we take shelter in the basement, we have achieved more shielding, and so will absorb less radiation.

A cover of 30" of concrete is almost perfect shielding, as also is about 36" of dirt. Glass is practically worthless as protection. The first floor of an ordinary house, will give us about 50% protection. The basement, provided there are no exposed windows or outside doors, will cut down exposure to about 10% of the outside radiation.

Example: If the outside radiation level is 500 r/hr, and we were on the first floor of an ordinary house, we would be absorbing about 250 r/hr, — which would be a fatal dose in a couple of hours. At the same radiation level, if we were in a well shielded basement, we would absorb 25 r/hr — which figures out at somewhere in the neighborhood of 300 r for two weeks, a rather high figure, but not necessarily fatal.

We do not know what the outside radiation is going to be, and as of today, we have no instruments in the county, to measure it, and will have to rely on radio reports, which may not be too accurate.

Food and Water may be preserved from contamination, by simply taking care that radio-active particles do not get into the food or water, and thus enter our system. Radiation will not contaminate anything, or make it radio-active. It is of damage only to living tissue. Anything in dust tight containers, is perfectly safe. Even fruits and vegetables, that have been contaminated with radio-active dust, can be thoroughly washed and thus are safe for use. Food in deep-freezers, refrigerators, lockers, etc. is safe.

Cattle will eat contaminated grass and drink contaminated water, and thus ingest radio-active material. The main danger here is that radio-active Iodine and Strontium 90, will settle in the milk, and thus make it unfit for human consumption. Radio-active Iodine will decay in about 60 days, so if cows have been on uncontaminated feed for that period, the danger from Radio-active Iodine is past. However, the radio-active Strontium 90 has a long life, and milk should be checked for it before use. Just recently, two professors from Minnesota University have successfully filtered Strontium 90 out of milk, in their laboratory. For the present, canned or powdered milk seem to be the safest answer.

Meat from animals that have been contaminated by exposure to radiation, or that have ingested radio-active particles, is not in itself contaminated. Such cattle may get sick and die, because radiation has upset their normal bodily functions, but the meat itself, is not made radio-active. However, Strontium 90, besides settling in the milk, will also settle in the bones, and so these should be discarded. Naturally after an animal has become sick, the meat would be unfit for consumption.

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Stuart News

By Mrs. Herb Skala

Mr. and Mrs. Dwane Lockmon attended the Denver Stock Show Thursday to Sunday and also visited Mr. and Mrs. Darol Miller and family at Greeley, Colo.

Sam Marcellus and Henry Waechter attended the funeral of Henry Spahn at Naper Thursday. Mr. and Mrs. Neal Muharter also attended. Mr. Spahn was a brother of Mrs. Muharter.

Sunday dinner guests of Mr. and Mrs. Sam Marcellus were Mr. and Mrs. H. Mulhair of Lynch and Mr. and Mrs. Wayne Marcellus of Bassett.

Mr. and Mrs. Adolph Minar of Atkinson visited Mr. and Mrs. Tony Kaup and family Friday evening.

Friday afternoon guests of Mr. and Mrs. Fred Kaup were Mr. and Mrs. Karo Moseman of Hooper.

Thursday evening callers of Mr. and Mrs. Vic Kaup were Mr. and Mrs. Ernest Greenfield and Ernie Smith.

Jake, Joe and Theresa Levi entertained three tables of pitch players Sunday evening. The next party will be with Mr. and Mrs. Pete Jensen. Lunch was served.

Mr. and Mrs. Frank Hamik sr. spent Saturday afternoon and Sunday in O'Neill with the children of Alfred Hamik while he went to Omaha for his wife who has been in the hospital there for three weeks.

Mr. and Mrs. Frank Johnson and girls and Mr. and Mrs. Jim Hoffman and Danny were Sunday dinner guests of Mr. and Mrs.

Jimmy Hoffman and girls.

Jim Hoffman spent Friday and Saturday at Lincoln with Norris Coats. They returned home late Saturday night.

Mr. and Mrs. Andy Goebel accompanied Mr. and Mrs. Bill Paxton to the Denver Stock show and returned home Thursday evening. Sunday dinner guests of Ethel Stracke were Mr. and Mrs. Ray Greenfield, Mr. and Mrs. George Wallinger and Bev, Larry Addison, Mr. and Mrs. Bill Stracke, Bill and Mel Roy, Marge Ries of Atkinson, Mr. and Mrs. Jule Korman of Ainsworth and Bessie Greenfield.

Mr. and Mrs. Delbert Addison were Sunday dinner guests of Mr. and Mrs. N. L. Robinson at Bassett.

Brent Fry of Scottsbluff spent the weekend with his grandparents, Mr. and Mrs. Karl Berni. Monday dinner guests of Mr. and Mrs. Harry Cadwallader were Mr. and Mrs. L. H. Cadwallader of Atkinson.

Sunday dinner guests of Mr. and Mrs. Wardell Alexander were Mr. and Mrs. Tom Sharp and daughters of Ainsworth.

Mrs. Edwin Engler, accompanied by Mr. and Mrs. Nick Simmons, drove to Grand Island Wednesday to get her brother, Charles Simmons. They accompanied him to his home at Norfolk.

Mr. and Mrs. B. C. Engler left Tuesday for Omaha to visit Mr. and Mrs. Mel Engler and family. D. R. Mounts accompanied them to Omaha where he left by plane for Tonkawa, Okla., to visit his sister, Mrs. Grace Lucas.

Sunday dinner and supper guests of Mr. and Mrs. Edwin Engler were Mr. and Mrs. Al-

fred Straka and family. Supper guests were Mr. and Mrs. Gilbert Engler of Atkinson.

Mr. and Mrs. Herb Skala, Barbara, Jo Ann, Dick, Clifford and Mylon were Sunday dinner and supper guests of Mr. and Mrs. Harry Appleby at O'Neill. Other guests were Mr. and Mrs. Charles Cadwallader and Mrs. Grow of Inman.

Mr. and Mrs. Earl Cadwallader were Sunday dinner guests of Mr. and Mrs. Rudolph Jackson at Dallas, S. D. Afternoon guests were Mrs. Harry Hall and two children of Spencer.

Mr. and Mrs. L. H. Steinhauser spent January 17 at Yankton and stopped to visit Mrs. Steinhauser's parents, Mr. and Mrs. John Mauch, of Fordyce.

Mrs. James Steinhauser was host at a baby shower honoring Mrs. Gary Lockman Wednesday evening. Nine guests were present and the evening was spent playing cards and games. Lunch was served.

Sunday dinner guests of Mr. and Mrs. James Steinhauser and son were Mr. and Mrs. L. H. Steinhauser and Tony, Mr. and Mrs. Tom Dobrovolsky, Dave and Dick.

Mrs. L. H. Steinhauser entertained the Catholic guild January 19 at her home. Three guests received guest prizes, Mrs. Tom Dobrovolsky, Mrs. John Steinhauser and Mrs. Merle Armstrong. Hi Five prize winners were Mrs. Francis Steinhauser, Mrs. Anna Ramm, and Mrs. John Hytrek. Lunch was served and Mrs. Francis Steinhauser invited the members to her home February 2.

January 15 guests of Mr. and Mrs. Francis Steinhauser and boys were Mr. and Mrs. William Morgan, Mr. and Mrs. Frank

Steinhauser, Mr. and Mrs. Arthur Pacha and family and Mr. and Mrs. Leonard Davis.

Mr. and Mrs. Frank Jauernig called on Mr. and Mrs. Owen Lane January 15.

Mr. and Mrs. Ora Yarges entertained the couples pinocle club Sunday evening.

Saturday guests of Mr. and Mrs. Frank Wilson were Robert Blinn and son Gary of Norfolk.

Brownie Scout meeting January 18 was called to order by President Connie Bahl. Colors were advanced by Diane Wallinger and Sally Hytrek. The Pledge of Allegiance was given and roll call was answered with Brownie Promise. There was a visitor, Mary Kay Cotay. Diane Wallinger served at this session. Sally Hytrek served January 25. The Scouts finished their hand work project.

Sunday afternoon callers of Mrs. Alta Lockmon were Mr. and Mrs. Claude Humphreys and Mrs. Alka Campbell of Atkinson.

Mrs. Herbert Young was host January 18 to the Cleveland Ladies aid at her home with 14 members present.

The Rev. and Mrs. Ralph Chamberlain of Broken Bow were Monday afternoon callers of the Rev. and Mrs. Herbert Young and Mark.

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