GENERAL SCIENCE

U. S. Unprepared for Attack

Not one of more than 250 primary A-bomb targets in U. S. prepared for enemy attack. Civil defense problems mount daily.

➤ NOT ONE of the more than 250 primary target areas in the United States is anywhere near ready for an A-bomb attack—eight months after the President announced national civil defense plans.

The people are not volunteering, the supplies are lacking, there are few shelters, industry has done little about protecting vital defense plants. Finally, Congress has cut down a $400,000,000 budget request for the Federal Civil Defense Administration to $31,000,000.

A rough estimate is that only about five to six percent of the necessary civil defense workers have volunteered. There are three reasons, according to civil defense officials. Many do not believe this country or their city will be attacked by A-bombs, many more believe that it is no use trying to do anything against an A-bomb, and, in some critical areas, civil defense organizations are not prepared to take the few who do volunteer.

Only some small towns—not in the critical target category—have recruited enough volunteers.

This attitude toward civil defense, officials say, can mean two things: 1. If an attack does come, casualties and damage will be much greater. 2. Apathy and a feeling of helplessness could produce panic which would pile casualties up even higher.

There is some preparation in the areas of civil defense which will operate through extension of already existing services—the police and fire departments and the Red Cross. However, even here, there are not nearly enough volunteers. In other areas, like rescue work, special weapons defense, radiation detection teams and warden services, there is almost no preparation at all.

The Federal Civil Defense Administration has always insisted—and the law says—that civil defense is a state and local problem and that its functions are to provide training and guidance, to standardize equipment and procedures, to provide funds for materials too expensive for local governments and to help in writing mutual assistance pacts between states and cities.

It has been criticized by many states and local civil defense directors for moving too slowly. Another criticism has been that it is merely a pamphlet-writing, speech-making outfit. The FCDA, however, has had to operate so far on a small special Presidential fund. It has secured cooperation from other government agencies and from private organizations to produce millions of copies of its pamphlets, which it considers valuable guides to what to do in case of A-bomb attack.

They point to 16,500,000 copies of "Survival Under Atomic Attack," instructions to the average citizen. Only 225,000 of these were paid for by the federal government. The rest were "promoted" by FCDA.

Some industries which already have safety problems—oil and electronics among them—have a good basis of preparation against attack, according to civil defense officials. However, the federal agency has not even heard from other vital industries—machine tools, ball bearings, to name only two. Generally, industry is as badly prepared as are the nation's cities.

Civic organizations, generally, have responded to appeals for help from FCDA. Two thousand representatives of organizations came to Washington for a two-day pep rally early in May. The groups are now making plans to work in civil defense and to recruit volunteers. But they also are up against the general apathy and helpless feeling.

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PHYSICS

It's Still the H?-bomb

➤ SCIENTISTS "in the know" presumably have some hopeful information on atomic fusion of the heavier kinds of hydrogen, called deuterium and tritium, necessary for the H-bomb. If we knew what they know, it would be possible to tell whether it is more or less probable that the hydrogen bomb can be built successfully.

For the Atomic Energy Commission statement that "experiments contributing to thermonuclear weapons research" may be calculated to confuse the Kremlin as well as uncleared Americans.

We can guess that in the recent Eniwetok experiments some of the isotopes of hydrogen were wrapped around, as it were, a plutonium A-bomb. The immense heat of the atomic explosion should, according to theory, fuse together the deuterium and tritium so that some of their mass is converted to energy in the transmutation, somewhat as hydrogen is believed to turn into helium in the immense heats of the sun and stars.

To discover whether the light elements participate in the reaction, the hydrogen-enriched bomb would be compared with an ordinary plutonium bomb of the same size.

A prime problem is to maintain the immense temperature of the triggering A-bomb explosion for the longest possible time. It takes time for the hydrogen reactions to take place and if the extreme ignition temperature of the fission of the plutonium can be prolonged for a very small fraction of a second, the effect should be much greater.

The chances are that much of the research on the H-bomb explosion is concerned with this prolongation of the explosion. This is also important in the non-hydrogen A-bomb, because if the explosion is too fast the material will fly apart before most of it reacts or fissions.

Of course, we have no assurance that the experiments were successful, since a failure could contribute, even though it be negatively, to developing the hydrogen bomb.

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BACTERIOLOGY

Sweet-Sounding Chemical Kills Disease-Causing Fungi

➤ A CHEMICAL with the sweet-sounding name ethyl vanillate will kill or stop the growth of all but two of the serious disease-causing fungi, Dr. David L. McVickar of

SPECIAL INSTRUMENTS—A cerebral palsied child receives dental treatment with special instruments at the Pediatric Cerebral Palsy Clinic of Columbia University's Presbyterian Medical Center. The seamstress thimble protects, yet permits freedom for the dentist's finger.