PHYSICS

Shudder at Old-Hat Bomb

"Most horrible book ever written" is preview of possible events in a trigger-happy world. "Diagnostic test" of smaller atomic weapon gave top consideration to civil defense.

See Front Cover

By WATSON DAVIS

Special coverage of the March 17 atom bomb exploded at Yucca Flat, Nev., as written by the director of Science Service.

➤ YOU HAVE not read, in all probability, what one expert described as the "most horrible book ever written." It was officially published nearly three years ago and its title is "The Effects of Atomic Weapons."

Even though it is pre-hydrogen bomb and based largely on what happened to two Japanese cities, Hiroshima and Nagasaki, it is a preview of what might happen anywhere in a trigger-happy world.

Now those charged with civil defense for a blase and "it can't happen to me" population have watched the book go into dramatic, full-scale production with just a tiny, two-house sample against which an atomic bomb was loosed. The observers, most of them, shuddered as their imaginations applied what could happen to the cities from which they had come.

The kind of bomb shown again to the nation, via press, radio and television, on Yucca Flat, and pictured on the cover of this week's SCIENCE NEWS LETTER, was a bit old-hat. Eniwetok is the place they let loose the really big ones nowadays, the hydrogen ones.

But out-moded or not, the A-bomb is something to ponder and fear. There is not much chance of human survival within a mile of the atomic blast. The atomic rescue efforts will have to be made by people who live ten or more miles away. Atomic civil defense that is selfishly concentrated upon one's own city alone will be wasted largely if your city is target zero.

A great show: If only it were not a prologue to possible tragedy.

The March 17 dawn "Saint Pat" atomic explosion in many ways duplicated the world's first atomic "trinity" explosion at Alamogordo, N. Mex., July, 1945.

Not really a bomb in the sense of a military weapon, it was a "nuclear diagnostic test" in AEC language as was the famous first.

The explosion occurred at the top of a steel tower which was completely vaporized as the ball of fire touched the ground, and may have dug a radiologically hot crater.

Rising at dawn like a sudden supersun flash, colorations lacking in recent day explosions were seen. The persisting violet after-glow was due to gamma, or X-ray-like, radiation affecting the nitrogen and oxygen of the air.

Incongruous sounding, nevertheless the glorious white of the mushroom cloud was due to ice particles forming where seconds before were hottest earthly temperatures, about a million degrees.

The March 17 explosion can shake people out of complacency, just as it jarred the two typical houses, over 50 autos and numerous dummies standing in for you and me if sudden atomic attack comes. That's why civil defense was a top consideration in this test.

If you are caught in your auto during an A-bomb alert, be sure to leave your windows open. In the test explosion, autos one and three-quarters and two miles away had their tops dished in when they had closed windows. The smashing-in of the top would have broken the necks or bashed in the heads of occupants. Autos with open windows did not suffer such damage. No windows were broken or tires flattened so far out.

Closer to zero position of the shot, cars were turned over, moved many feet and some set afire.

Typical frame houses at 3,500 feet, about three-quarters of a mile, and 7,500 feet were badly damaged. The house closer in was completely wrecked, dumping debris on air raid shelters in its basement. The most distant house was so damaged as to be uninhabitable without major repairs, with windows, furniture, plaster and dummy inhabitants strewn over weakened floors.

It was probably the world's 40th atomic bomb that exploded as a public show on Yucca Flat.

The serial numbers upon the bombs are a bit vague because the U. S. and Russia have both not told everything that has happened.

For instance, how many hydrogen or other bombs were exploded at Eniwetok last fall in what were officially announced as experiments contributing to hydrogen bomb research? Suppose we guess at about five. Suppose we conservatively (and wishfully) estimate that Russia has made only the three explosions announced by the United States.

That gives us the 40 figure, which may well be too low by five or 10 or even more.

Less important than the number of bombs tested are the number of bombs manufactured and in storage in the United States and Russia. It must be 10, or 20, or more times the number that have exploded. That is, the bombs in existence must be a thousand or two. Most of these are plutonium or fission A-bombs, such as that exploded for demonstration purposes March 17.

The hydrogen bombs being developed and perhaps ready in small quantity are bigger, so much so that one H-bomb is equal to 10 or 100 of the older A-bombs.

It is possible that continental United States is too small to see safely a hydrogen bomb explode. We hope the Russians agree with that statement.

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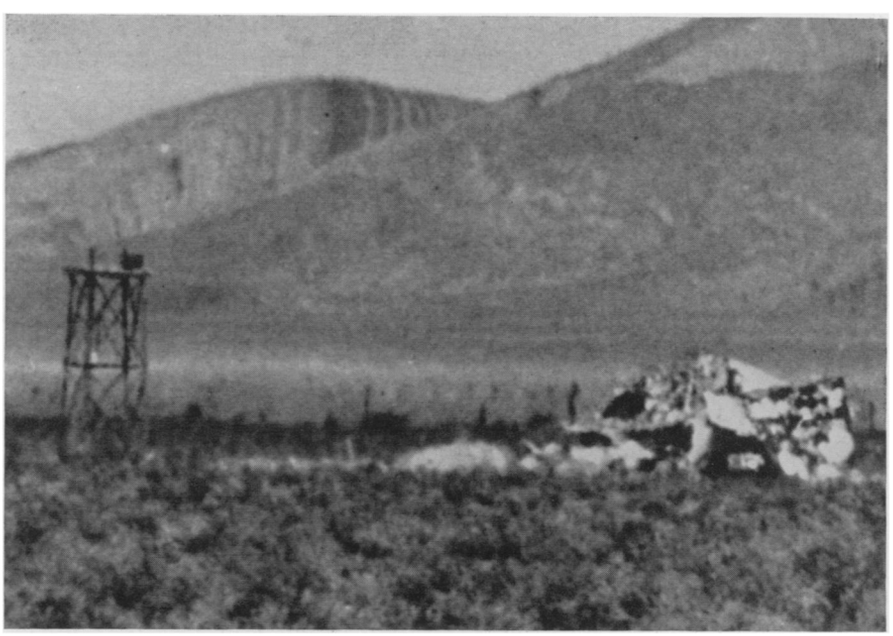

A-BOMBED HOUSE—Only 3,500 feet from Target Zero, this once-typical frame house was completely demolished, as shown in this picture taken with telephoto lens. Tower at left supported cameras.