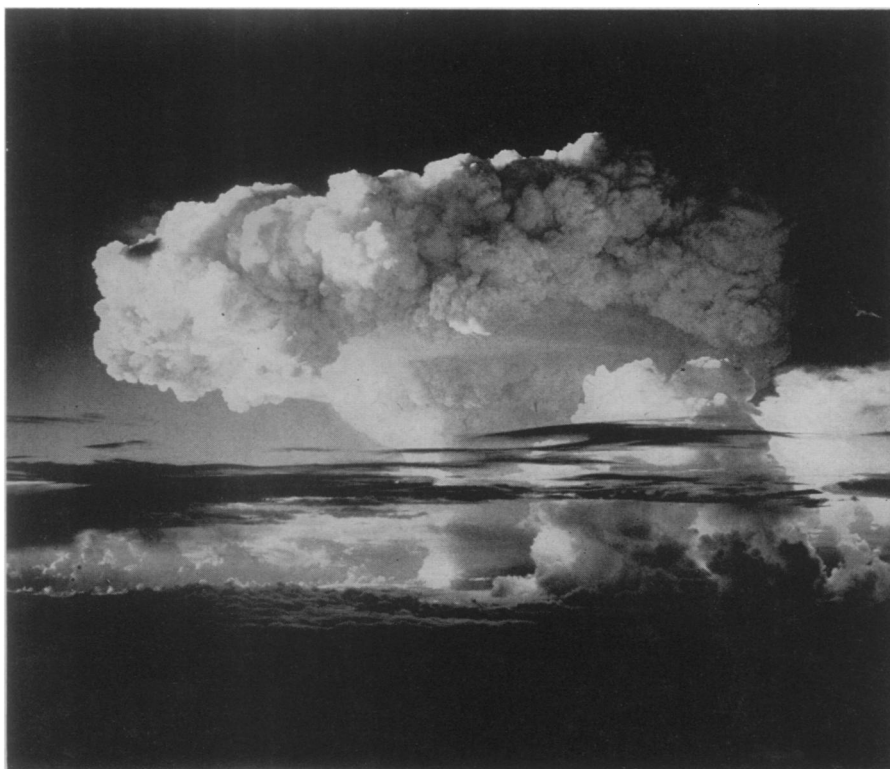


THIS IS THE H-BOMB—Fleeting seconds after the detonation, this is the churning cloud rising from zero as seen from 12,000 feet, 50 miles away. The horizontal clouds are natural formation between the camera and the man-made mushroom. Since this 1952 test, even more powerful hydrogen devices have been exploded.



H-BOMB AT ITS GREATEST—Ten minutes or so after the blast, the mushroom cloud looked like this. The stem poked 25 miles into the stratosphere. The cap seen here had a width of 100 miles at the base of the stratosphere, about 10 miles up.

GENERAL SCIENCE

H-Bomb Damage Officially Bared

See Front Cover

► THE TREMENDOUS destruction of the November, 1952, H-bomb blast, which obliterated an island and left a mile-wide, 175-foot-deep crater in the Pacific, has now been revealed by the Federal Civil Defense Administration.

The facts are set forth in a 28-minute technicolor movie, "Operation Ivy," which is the code name given to the first full-scale hydrogen detonation at Eniwetok in the Marshall Islands.

The shot device itself, called "Mike," produced the fireball shown on the cover of this week's SCIENCE NEWS LETTER. This was the largest fireball then known, three and a half miles in diameter.

"Mike," however, was only a prototype of the two hydrogen tests conducted on March 1 and 26 of this year. These are reported to have been about three times larger than the 1952 device.

Chairman Lewis L. Strauss of the Atomic Energy Commission said at President Eisenhower's press conference on March 31 that "the results which the scientists at Los Alamos and Livermore had hoped to obtain from these two tests were fully realized, and enormous potential has been added to our military posture by what we have learned."

He concluded by stating that the military capability of the U. S. was now such that we should "soon be more free to increase our emphasis on the peaceful uses of atomic power."

These statements have been interpreted to mean that the U. S. can now make bombs of awesome power out of cheaper substances than the deuterium and tritium believed to have been the essential ingredients, along with the primitive A-bomb trigger, of "Mike."

Complete annihilation within a radius of three miles, severe to moderate damage out to seven miles, and light damage as far as ten miles was the destruction wreaked in "Operation Ivy."

Translated to the nation's capital with the Capitol Building as ground zero, this would mean the leveling of an area west to Arlington Cemetery, east to Anacostia River, north to the Soldiers Home and south to Bolling Field.

The three-and-a-half-mile-wide fireball would have engulfed about one-quarter of Manhattan Island. If the Empire State Building were at ground zero, the fireball would have extended from Washington Square uptown to Central Park.

Within two minutes after the detonation, the familiar mushroom cloud soared to 40,000 feet. At its maximum ten minutes later, the cloud stem pushed 25 miles into the stratosphere. The cap of the mushroom, at a height of ten miles, spread out over 100 miles.

Science News Letter, April 10, 1954