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Part III-Weapons Progress Report to the Joint Committee on Atomic Energy

JUNE THROUGH NOVEMBER 1952 (U)

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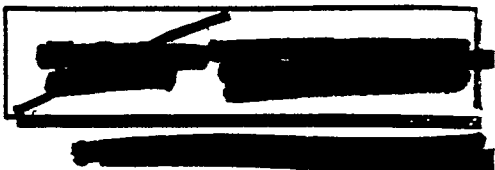
BY R.A. CARPENTER, DATE: 10-20-93 DECEMBER 29, 1952

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PART III

WEAPONS

(TOP SECRET)

The major events of the period included:

Successful detonation of the first full-scale thermonuclear device at Operation IVY, in November, 1952;

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First flights of guided missiles made with atomic warheads (dummy cores).

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Thermonuclear Program

Test of

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The President on January 31, 1950, directed the Commission "to proceed to determine the technical feasibility of a thermonuclear weapon." Less than three years later, on November 1, 1952 (Eniwetok date), a large-yield thermonuclear device, called the

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The detonation, designated the Mike shot of Operation IVY, resulted in the following general phenomena, based on preliminary observations:

All of the island and portions of two adjacent ones were obliterated; a crater four-fifths of a mile in diameter and more than 150 feet in maximum depth was formed. (The earth shock was detected by seismographs in the United States, and presumably the world over.)

The mushroom cloud rose 26 to 28 miles, with a stem roughly 8 miles in diameter and a cloud top about 40 miles across.

Radiation was high on the islands near the detonation, but decayed sufficiently in three days to permit recovery of photographic and other scientific recordings.



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~~SECURITY INFORMATION~~

Nearly ideal weather conditions prevailed and recovery of scientific data was excellent. Radiological conditions permitted manning the aircraft control tower on Eniwetok Island one-half hour after detonation and ships reentered the lagoon the day after the shot. The radioactive cloud drifted circuitously at great height for several days in the general area of the Marshalls, undergoing normal radioactive decay and being diffused and dissipated in the air currents. Airborne radioactivity was detected in the United States and other countries, but the concentration was low and there was no health hazard. (See map of world-wide monitoring stations in Part VI, Biology and Medicine.)

Direction of Thermonuclear Development

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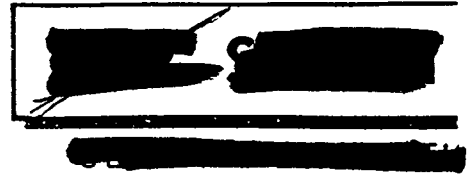
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Full-Scale Weapon Tests

King Shot - Operation IVY

The thermonuclear shot (Mike) at Operation IVY has been described above. On November 14 (Eniwetok date) the highest yield fission explosion to date was successfully executed (King shot).

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Operations-UPSHOT and KNOTHOLE, (Nevada, spring 1953)

Operation UPSHOT, as distinguished from KNOTHOLE, is a weapon development test of primary interest to the Commission. The detonations being planned for this operation will be for the purpose of conducting component studies in connection with the thermonuclear program and of developing further experimental data on external initiators and new configurations of fissionable material in fission weapons. Operation KNOTHOLE, under the cognizance of the Department of Defense,

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The two operations will be run concurrently at Yucca and Frenchman Flats.

Other Tests

Additional full-scale tests are tentatively planned as follows:

Operation CASTLE (Pacific Proving Ground, late 1953 or early 1954). The purpose of this operation is to test several large-yield thermonuclear devices, including one or more deliverable designs. Bikini Atoll has been approved as an auxiliary test location supplementing Eniwetok, and one or more of the tests in this series will probably be carried out there.

Operation DOMINO (Nevada Proving Ground, spring of 1954 or fall of 1953, depending on CASTLE schedule). The purpose is to test new developments in fission weapon field and components of thermonuclear weapons within the limits of the yields permissible in Nevada.

Operation REDWING (Pacific Proving Ground, 1954 or 1955). Purpose: Thermonuclear weapons test.

Weapon Production and Stockpiling

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