64th U.S. Atomic Blast to Launch H-Bomb Tests in Pacific Soon

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(Editor's Note: Another milestone in the 10-year-old atomic age will be marked in the weeks just ahead with new H-bomb experiments in the Pacific. How do such tests fit in with talk of a bright new atomic world? This first of four articles on the growing atom discusses the weapon aspects; what devices will be tested and why the awesome experiments must go on.)

By ELTON C. FAY
AP Military Affairs Reporter

WASHINGTON (AP) — Out in the distant Pacific, where city-killing size weapons are tested, the United States will fire within the next few weeks its 64th nuclear blast since the atomic era began.

This explosion, like the last two at the Eniwetok proving grounds, will emphasize the hydrogen bomb —the weapon to which world strategy now is patterned.

This is the heavyweight member of a family of weapons which the United States has developed through more than 10 years of effort and an investment of 12 billion dollars.

Of what does this family consist?

Into Medium Bomber

A casing small enough to fit into the bay of a medium bomber, containing energy equal to the explosion of 10 million tons (more if desired) of ordinary TNT.

Or a tactical fission bomb, with the power of only 20,000 tons of TNT, suitable for striking enemy troops on a battlefield or taking out a specific group of buildings or an airfield.

Or artillery shells for the same purposes.

Or missiles which can mount warheads ranging anywhere between the energy yield of the little atom bombs or the hydrogen bomb.

Improving Defenses

Unhappily, this fearsome array is not the only such family of weapons in the world. So the Eniwetok tests will be aimed not only at improving their potentialities but devising or improving defenses against them.

Here are some of the awesome considerations involved:

A 10 megaton weapon (10 million tons of energy release) produces a fire ball three miles in diameter. Near the core, objects are vaporized by extreme heat. Farther out, metal melts. Beyond the fire ball itself, thermal radiation instantly touches off all combustible material.

No Survivors

The blast from a 10 megaton hydrogen bomb would leave no survivors, even among those seeking shelter in a reinforced concrete structure, outward for more than three miles from "ground zero." Out to 12 miles average homes would suffer severe damage, with more than ¾ of the people in them killed, the rest seriously injured.

The fall-out peril spreads much farther. A single H-bomb blast could dust an area of 7,000 square miles with lingering potentially lethal radioactive particles.

Then there are other weapons which, while not of nuclear nature, must be considered in planning defenses for the atomic age. These include toxic warfare devices such as nerve gas, which kills almost as quickly and far more agonizingly than the bomb itself. It can be planted by missile or plane.

Germ Warfare

Another potential mass killer is bacteriological warfare —"BW"— which can be applied in two ways: against people and against the food on which they must live. It isn't fully effective in its present form, and its use might entail several applications.

As the United States begins anew its attempts both to improve and to devise defenses against the weapons of the atomic age, their very fearfulness may tend to obscure the brighter side of the forces they involve.

This and other nations, both friendly and unfriendly, are presumed to be on the threshold of a period in which the atom will work wonders for all mankind. But this era might still be far in the future had it not been for war, with its exigencies and emotions.

Under those pressures and with the huge sums of money available for waging World War II, science took the abstract theory of atom splitting and translated it into the atomic bomb.

By Product Knowledge

A considerable amount of medical and industrial knowledge has since been gained almost as a by-product of weapon invention and improvement. Take the matter of reactor development, the business of using atomic energy to turn shafts and produce power.

Its first application was to a submarine. Now a whole fleet of submersibles, capable of cruising unlimited distances underwater at speeds impossible for conventional submarines, is under construction. Next will be a nuclear powered cruiser. Beyond that, aircraft carriers.

Under high priority is the development of another power-producing project—for a military airplane. Tests of atomic engines for aircraft will begin soon at the AEC's Arco, Idaho, reactor test station.

By this summer, the AEC estimates that reactor development costs since 1950 will total about 160 million dollars. Almost 70 per cent has gone into the military reactor program — for submarines, warships, bombers.

Power Shortages

But the atomic reactor has also given bright promise to nations which have been crippled in the past by shortages of electric power.

Why can't more of the nation's money and manpower now go into the peaceful application of the atom to medical, agricultural and industrial purposes.

The answer lies with that other family of weapons—in Russian hands. In the absence of a workable pact with Russia, the weapon and its deterrent potential may hold the answer whether she could impose her will on, or even obliterate, the United States.

So far no such pact has been found. So the vast and costly program of weapon design and improvement must continue.

Saturation Point

Some sources have expressed worry that eventually a point of saturation might be reached, where the amount of cumulative radio-activity in the earth's atmosphere and on the ground might menace mankind.

Government scientists discount these fears. AEC Commissioner Willard F. Libby gives an example. He says that to merely double the feeble natural radioactivity of living matter in the form of the element carbon 14 would require the explosion of 520,000 bombs of standard 20 kiloton size, under normal conditions of dilution by air and sea water. Measured in terms of hydrogen explosive, this would mean 10,400 megatons.

76 Nuclear Weapons

The total number of all types of nuclear explosions to date is believed to be 76.

Of these, the United States has fired 63, Russia 10, Britain 3.

The great majority of them have been in the smaller, kiloton range. Probably not more than three or four have been major, megaton bombs.

This year, both the United States and Britain have announced plans for more hydrogen tests. Russia makes no announcement of plans.

(Tomorrow: Do the coming nuclear tests imperil human existence?)

McKay Gives 4 Persons Hero Awards

WASHINGTON (AP)— Secretary of the Interior McKay Monday presented the department's highest award to four employes who risked their lives to save other persons.

The secretary presented citations and medals to:

Carl J. Gruener, Whitewater, Wis., an employe of the Fish and Wildlife Service. Gruener saved Ray Burdy, a South Dakota State biologist, from drowning in nine feet of water last July 8. Murdy had been banding waterfowl in the water. Murdy, who called for help, was unconscious when Gruener reached him but was revived by artificial respiration.

Miss Sylvia S. Reeves, a lifeguard, Mrs. Ruth M. Heard, a supervisory lifeguard, and John R. Herse, a seasonally employed park ranger, all of whom were associated with the National Park Service at the Lake Mead recreation area in Nevada last Aug. 19. They saved two women whose boat capsized in Lake Mead. Mrs. Heard directed the rescue operation, though off duty at the time, and personally helped in the rescue. She also swam to two boys who were clinging to a buoy and reassured them. Then she swam back to the capsized boat and remained with a man who was clinging to the overturned craft until a boat rescued him and the two boys.

Director Conrad L. Wirth of the National Park Service was among 21 other present and former interior employes given the distinguished service award. Wirth was honored for his contributions to development of the park system during his 28 years with the service.

Christopher C. Mullady, field solicitor at Omaha, Neb., was honored for 50 years of outstanding service.

Others given the top award included: Cleora C. Helbing, Portland, Ore.; Edmund R. Greenslet, Reno, Nev.

J. Bruce Clemmer, Salt Lake City; Jack J. Jenkins, Juneau, Alaska, now dead, and John W. P. Hall, Pawhuska, Okla.

Feed Dealers Slate Meeting

PORTLAND (AP) — Oregon Feed and Seed Dealers will hold their 25th annual convention here Thursday and Friday.

Scheduled speakers include Gov. Elmo Smith; Episcopal Bishop Coadjutor James W. F. Carman Dan Dunham, Lakeview, national president of the Future Farmers of America; and E. L. Peterson, assistant secretary of agriculture.