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Awesome Force of Atom Bomb Loosed to Hasten Jap Surrender

Wonder Weapon Developed In Secret Plants Gives Allies Unprecedented Edge in War

As the atom bomb enters the war, the Japs leave this ancient talisman, which is supposed to ward off evil spirits, carved on a Honshu beach

On Sunday morning, August 5 (Washington time), an American airplane flew over Hiroshima, a Japanese army base on the Inland Sea. It dropped a single, small bomb. When that missile struck the earth, it blew up in the greatest man-made explosion in the history of the world. The United States had loosed an atomic bomb on Japan.

Sixteen hours later the Army could not discover the extent of damage because enormous clouds of smoke and dust covered Hiroshima, but the White House issued a special statement by President Truman to mark this fabulous stride in war and science. The statement said: "That bomb had more power than 20,000 tons of TNT. It had more than 2,000 times the blast power of the British 'Grand Slam' which is the largest bomb ever yet used in the history of warfare. In a test, one of the 11-ton British bombs destroyed a granite island in the English Channel.

"With this bomb we have now added a new and revolutionary increase in destruction . . . In their present form these bombs are now in production and even more powerful forms are in development. It is an atomic bomb. It is a harnessing of the basic power of the universe. The force from which the sun draws its powers has been loosed against those who brought war to the Far East."

Thus the Allied nations had won what the President called "The Battle of the Laboratories" against the Axis. Scientists of all countries had worked on the atom for many years in efforts to secure and control the enormous energy locked inside. As war came nearer, they intensified their research to learn how it could be used as explosive force—particularly in the United States, the United Kingdom, Germany, France, Italy, and Denmark.

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Metal of the Millennium: German scientists nearly succeeded in solving it. Since the surrender of the Nazi armies, Allied officers have revealed that Germany would have been able to strike with atomic bombs by January 1945, if the invasion had not come six months before. The highest Allied officials knew that such explosives could have won the war for the Axis .

The United States had begun research on them in late 1939. In the latter part of 1943, as the result of an agreement between President Roosevelt and Prime Minister Churchill that atomic research and development should be concentrated in the United States, British scientists moved to this country and worked in collaboration with the Americans.

The source of atomic power which occupied the scientists was Uranium, an element second only to radium in radioactivity. Uranium, secured from pitchblende and carnotite (available in Canada and the United States respectively), has several isotopes (variants from the standard atom). The best one of these, called U-235, was isolated in 1940. At that time the scientists estimated that one pound of it would give power output equal to 5,000,000 pounds of coal or 3,000,000 pounds of gasoline—or the explosive power, if detonation occurred in 1/10,000 of a second, of 15,000 tons of TNT.

The Secret Cities: In addition to many small plants, the War Department built two great factories near Knoxville, Tenn., and a third near Pasco, Wash. Probably never before in history were such projects so closely guarded, and, although in the peak of the work 125,000 people were engaged, few of them knew what they were working on. Each had some specific job to perform and the factories were sealed off in many compartments. Many industrial firms played important parts in the development. Day after day the workers saw huge quantities of materials come into the plants but they rarely if ever saw anything leave (the explosive which results is extremely small).

Inside the plant the scientists worked days and nights on experiments. Uranium was the element which the scientists decided to use in the atomic bomb. Somehow in two and a half years all the bugs were ironed out. Components were put together at an isolated spot near Santa Fe, N. M. Tested on the desert on July 16, 1945, the bomb disintegrated a steel tower, sent a great cloud of smoke boiling up 40,000 feet, and knocked down two men more than 5½ miles away. Then the bombs went to the Far East.

The Jap Must Choose: President Truman, having allowed the Japanese sixteen hours to consider the effects and the prospects of the atomic bomb, gave them a cold-blooded choice between surrender and annihilation: "It was to spare the Japanese people from utter destruction that the ultimatum of July 26 was issued at Potsdam. Their leaders promptly rejected that ultimatum. If they do not now accept our terms they may expect a rain of ruin from the air the like of which has never been seen on this earth. Behind this air attack will follow sea and land forces in such numbers and power as they have not yet seen . . ." But beside the actual

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atomic bomb, future invasion probably worried the Japanese less. If anything short of invasion could bring Japan to surrender, atomic power was it.

And for a world which looks forward to peace, the President said: "The fact that we can release atomic energy ushers in a new era in man's understanding of nature's forces. Atomic energy may in the future supplement the power that now comes from coal, oil, and falling water, but at present it cannot be produced on a basis to compete with them commercially. Before that comes here must be a long period of intensive research.

"It has never been the habit of the scientists of this country or the policy of this government to withhold from the world scientific knowledge . . .

"I shall give . . . consideration and make . . . recommendations to the Congress as to how atomic power can become a powerful and forceful influence towards the maintenance of world peace."