

The Blind Saw the Light

It is no exaggeration to say that the event that occurred in a remote area of New Mexico just before dawn on July 16, 1945, was not only unprecedented and world-changing but also indescribable. The event, code-named "Trinity," was the first detonation of an atomic weapon, marking the culmination of the Manhattan Project headed by Army Maj. Gen. Leslie Richard Groves. Two days after the historic blast, Groves set about trying to capture, in print, the indescribable. He produced a top secret memorandum for the then-Secretary of War, Henry L. Stimson, detailing the event he had witnessed. What he produced is a classic of Cold War history—the effort of a straightforward military man to comprehend the incomprehensible. In so doing, he immortalized an unidentified blind woman who also was present at the creation.

At 0530, 16 July 1945, in a remote section of the Alamogordo AB, N.M., the first full-scale test was made of the implosion type atomic fission bomb. For the first time in history there was a nuclear explosion.

And what an explosion! ...

The test was successful beyond the most optimistic expectations of anyone. Based on the data which it has been possible to work up to date, I estimate the energy generated to be in excess of the equivalent of 15,000 to 20,000 tons of TNT; and this is a conservative estimate. Data based on measurements which we have not yet been able to reconcile would make the energy release several times the conservative figure.

There were tremendous blast effects. For a brief period there was a lighting effect within a radius of 20 miles equal to several suns in midday; a huge ball of fire was formed which lasted for several seconds. This ball mushroomed and rose to a height of over 10,000 feet before it dimmed. The light from the explosion was seen clearly at Albuquerque, Santa Fe, Silver City, El Paso, and other points generally to about 180 miles away. The sound was heard to the same distance in a few instances but generally to about 100 miles. Only a few windows were broken although one was some 125 miles away.

A massive cloud was formed which surged and billowed upward with tremendous power, reaching the stratosphere at an elevation of 41,000 feet, 36,000 feet above the ground, in about five minutes, breaking without interruption through a temperature inversion at 17,000 feet which most of the scientists thought would stop it.

Two supplementary explosions occurred in the cloud shortly after the main explosion. The cloud contained several thousand tons of dust picked up from the ground and a considerable amount of iron in the gaseous form. Our present thought is that this iron ignited when it mixed with the oxygen in the air to cause these supplementary explosions. Huge concentrations of highly radioactive materials resulted from the fission and were contained in this cloud.

A crater from which all vegetation had vanished, with a diameter of 1,200 feet and a slight slope toward the center, was formed. In the center was a shallow bowl 130 feet in diameter and six feet in depth. The material within the crater was deeply pulverized dirt. The material within the outer circle is greenish and can be distinctly seen from as much as five miles away. The steel from the tower was evaporated. One thousand, five hundred feet away there was a four-inch iron pipe 16 feet high set in concrete and strongly guyed. It disappeared completely.

"Subject: The Test"

Maj. Gen. Leslie Richard Groves
Top Secret Memorandum
to Secretary of War Henry Stimson
Washington, D.C.
July 18, 1945

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One-half mile from the explosion there was a massive steel test cylinder weighing 220 tons. The base of the cylinder was solidly encased in concrete. Surrounding the cylinder was a strong steel tower 70 feet high, firmly anchored to concrete foundations. This tower is comparable to a steel building bay that would be found in [a] typical 15- or 20-story skyscraper or in warehouse construction. Forty tons of steel were used to fabricate the tower which was 70 feet high, the height of a six-story building. The cross bracing was much stronger than that normally used in ordinary steel construction. The absence of the solid walls of a building gave the blast a much less effective surface to push against. The blast tore the tower from its foundation, twisted it, ripped it apart, and left it flat on the ground.

The effects on the tower indicate that, at that distance, unshielded permanent steel and masonry buildings would have been destroyed. I no longer consider the Pentagon a safe shelter from such a bomb. Enclosed are a sketch showing the tower before the explosion and a telephotograph showing what it looked like afterwards. None of us had expected it to be damaged.

The cloud traveled to a great height first in the form of a ball, then mushroomed, then changed into a long trailing chimney-shaped column and finally was sent in several directions by the variable winds at the different elevations. It deposited its dust and radioactive materials over a wide area. ...

Just before 1100 the news stories from all over the state started to flow into the Albuquerque Associated Press. I then directed the issuance by the commanding officer, Alamogordo Air Base, of a news release as shown on the enclosure. With the assistance of the Office of Censorship we were able to limit the news stories to the approved release supplemented in the local papers by brief stories from the many eyewitnesses not connected with our project. One of these was a blind woman who saw the light. ✪



Photo by Jack W. Arby