In Oppenheimer's Orbit

N.M. man witnessed A-bomb's conception, guided Los Alamos scientists to Trinity site

BY LARRY CALLOWAY
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In the same way J. Robert Oppenheimer discovered Los Alamos, as a youth on horseback, his friend David Hawkins discovered Trinity.

Hawkins, whose father was William Ashton Hawkins, an early New Mexico Republican developer-lawyer, grew up in El Paso and La Luz, near Alamogordo. Now 82 and retired after a career at the University of Colorado capped by a five-year MacArthur Foundation prize, David Hawkins sits in his living room in the Boulder, Colo., foothills and fondly recalls his explorations as a kid in New Mexico.

"I had horses to ride, and I had a Model A Ford pickup truck to drive. We wandered all over the Tularosa Basin, one way or another, looking for minerals, looking for excitement, looking for rattlesnakes, looking for adventure of the desert kind."

Early in 1945 as an Oppenheimer troubleshooter with an assignment to write the official history of the atomic bomb, Hawkins guided the first Los Alamos party to Jornada del Muerto. He believes he was the first to suggest the location.

By July, the arid ranch that David McDonald lost to the Army was a secret laboratory with 20 miles of straight blacktop roads, thousands of miles of cables, a base camp with rows of barracks and hard water, concrete bunkers and a 10-story prefabricated steel tower.

Secrecy had its complications, because the test site was on an active bombing range. "One minor source of excitement was the accidental bombing, with two dummy bombs, of the Trinity base camp by a plane from the Alamogordo Air Base early in May," says Hawkins' official history, which was classified "secret" for the first 15 years and generally unavailable for the next 20.

Among other details kept secure by classification was the history's disclosure that the code name for the Trinity supply room was "Fubar." Hawkins didn't translate the acronym, but it was GI slang for "Fouled Up Beyond All Recognition."

A scratchy phone call

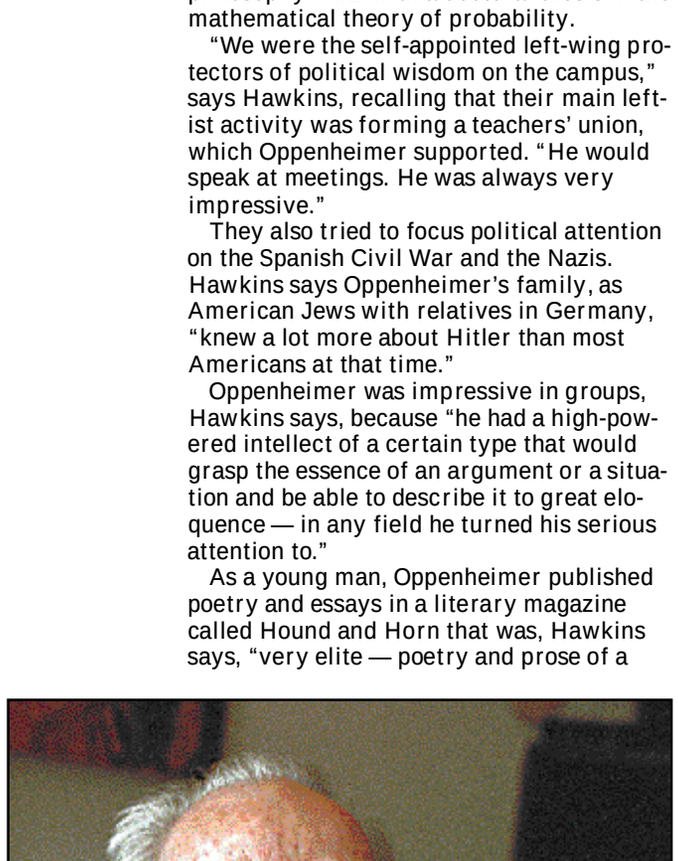
Hawkins is one of the few remaining witnesses to Oppenheimer's flirtation with the 1930s radical left, which was the reason for cancellation of both their security clearances in the 1950s. They met at the University of California at Berkeley, where Oppenheimer was teaching and Hawkins was completing his philosophy Ph.D with a doctoral thesis in the mathematical theory of probability.

"We were the self-appointed left-wing protectors of political wisdom on the campus," says Hawkins, recalling that their main leftist activity was forming a teachers' union, which Oppenheimer supported. "He would speak at meetings. He was always very impressive."

They also tried to focus political attention on the Spanish Civil War and the Nazis. Hawkins says Oppenheimer's family, as American Jews with relatives in Germany, "knew a lot more about Hitler than most Americans at that time."

Oppenheimer was impressive in groups, Hawkins says, because "he had a high-powered intellect of a certain type that would grasp the essence of an argument or a situation and be able to describe it to great eloquence — in any field he turned his serious attention to."

As a young man, Oppenheimer published poetry and essays in a literary magazine called Hound and Horn that was, Hawkins says, "very elite — poetry and prose of a rather precious kind."



LARRY CALLOWAY/JOURNAL

David Hawkins guided the first Los Alamos party to Jornada del Muerto in search of the Trinity site.

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A model of the Enola Gay is displayed in a case with newspapers announcing the end of the Pacific war at the National Atomic Museum in Albuquerque.

After his three-year blaze through Harvard with honors, Oppenheimer studied in Germany and Denmark. "He was one of the people who quickly assimilated the ideas of Niels Bohr, which were still new and still causing much distress to traditional-minded physicists."

When Oppenheimer returned, Hawkins says, "he was probably the only physicist in the United States for a while that was a real master of this developing discipline called quantum mechanics. What came out of it was the physics of the atom and in particular the turning of attention to the nucleus of the atom."

Soon physicists were probing nuclei with high-energy particles. Enrico Fermi at the University of Chicago had what Hawkins calls "an intuition about the heavy metals, particularly uranium," and Fermi accomplished the first controlled nuclear reaction.

Leo Szilard had conjectured that some heavy elements might fission in a chain reaction, creating a nuclear bomb. (The persuasive Hungarian, who had barely escaped the Nazis, persuaded the British Admiralty to take out a secret patent on his idea, Hawkins says. Acquiring the patent drove Manhattan Project officials nuts because Szilard insisted on giving it to them rather than taking the customary and legally binding $1.)

In late 1941, Oppenheimer became scarce at Berkeley, and early in 1943, Hawkins got a call from him on a bad circuit, saying, "We need you."

"I knew immediately that this thing was on, and I didn't want to be excluded from knowing about it. I was intrigued by the thought of being part of this extraordinary development. And it was still of course in those days entirely focused on the terrible thought that the Germans might get this weapon and win World War II.

"The spirit at Los Alamos was one of excitement about this extraordinary new technology. These were academic physicists, but they were on their way to becoming — we invented the word — weaponeers."

Hawkins' first assignment from Oppenheimer was to mediate disputes between Los Alamos scientists and the Army. "The military created the place as an Army post, and being in their own traditions accustomed to the fact that the military in such a place would be on top and the civilians would be under them, it was a hard struggle to accept the attitude of the scientists, which was that the military were their servants."

Hawkins never had to mediate between the leaders of the two sides — lab director Oppenheimer and Maj. Gen. Leslie Groves, director of the Manhattan Project. "They were like this," Hawkins says, holding together two fingers. "They needed no mediation."

A remarkable pairing

The usual story is Oppenheimer and Groves were natural-born adversaries. Groves biographer Stanley Goldberg likes to title this story "Godzilla meets Hamlet." On the contrary, "They were surprisingly close," says Goldberg, whose biography is due for publication later this year.

Hawkins says, "It is well known that Groves picked Oppenheimer against the advice of other physicists who considered themselves perhaps senior to Oppenheimer. But Groves had a belief that Oppenheimer was the man who could do this job, and he was right. Oppenheimer had a kind of presence, a kind of style, that enabled quite senior physicist types to accept his leadership happily. It's a remarkable talent.

"He could be quite obtuse about some things. That's not too surprising. Many people with tremendous rapid intellectual qualifications can miss the boat."

Groves, on the other hand, "wasn't an ideologue. He had some kind of imagination. It didn't make him more attractive, but it made him more respectable," says Hawkins, adding:

"Oppenheimer really did, I think, make a deal with Groves."

The deal was Oppenheimer would be free to run the lab as he wished and Groves would protect him from the FBI and G-2 military intelligence. "They'd already reported to him about Oppenheimer's left-wing activities, and of course this was a time when the anti-Communist scare wasn't what it became later publicly, but it was very powerful then. Communists were demons, especially in the intelligence world," says Hawkins, who for a short time was a member of the Communist Party.

Goldberg, the historian, confirms this account. He even has a document noting that when Col. Boris Pash, in charge of G-2, refused to clear Oppenheimer, saying it could lead to a court-martial, Groves responded, "I order you to give him clearance, on my authority."

When Pash then asked how the general could be so sure that Oppenheimer wouldn't tell secrets to left-wing contacts who would tell the Russians, Groves answered that he was counting on Oppenheimer's ambition because successful completion of the atomic bomb was Oppenheimer's ticket to immortality.

A Faustian bargain?

Hawkins says Oppenheimer's deal with the Army was not, as author John Freeman Dyson and others have said, a deal with the devil.

"Oppenheimer and, indeed, all of us who knew what a factor of a million meant knew that this was a change in the nature of world affairs and it couldn't be blinked. It couldn't be set aside. It was there, and something would happen with it," Hawkins says.

The binding energy of matter let loose in a nuclear reaction is millions of times greater than the energy released by the same mass in an explosive chemical reaction.

"If it wasn't developed in World War II, it would appear secretly in the arsenals of nations after World War II during peacetime. And the greatest hope for coping with this new development was to recognize and to persuade the world to recognize that this was not a military weapon. This destructive power was beyond anything that warfare itself as an institution could tolerate," Hawkins says.

"If we're going to continue to have wars, they can't be this bad."

Niels Bohr was the first to propose international openness. The Danish physicist proposed it when he visited Los Alamos in 1944 under the code name Nicholas Baker.

"Oppenheimer knew it already in some way," Hawkins says. "We all knew it in some way, and we had therefore this idealistic side to the contract with the devil, if that's what it was, that it would be necessary to develop the weapon to have it known to the whole world, in order that the world could protect itself."

RICHARD PIPES/JOURNAL

A life-size model of J. Robert Oppenheimer stands in the history section of the Bradbury Science Museum in Los Alamos.

And Hawkins tells a story he says is documented in a wartime memo he wrote on request from the notes of Oppenheimer's secretary. The physicist Robert Wilson, who in recent years has expressed great regrets about failing to quit Los Alamos as soon as the Nazis were defeated, came to Oppenheimer sometime in June 1945.

"Wilson among all that group was probably closest to being a real pacifist and was doing what he was doing with reluctance and had been persuaded by this argument: 'If we don't do it, the Nazis will.' Now the (European) war was over, and therefore the Nazis wouldn't, and therefore why shouldn't we stop? He wanted a new argument."

Oppenheimer provided it in a brilliant impromptu speech at a meeting of Wilson's Cyclotron Group. "He spelled out his conviction that this weapon must be known to the world in World War II, must be used as a weapon of destruction in World War II, because that was the only way in which its potential destructiveness as a weapon would be understood worldwide: that it must be known all over the world," Hawkins says, adding, "Wilson was satisfied."

Sacrifice Japanese cities for the good of the rest of the world?

"It wasn't put in those words," Hawkins says. "In that period of time everybody that was directly or indirectly involved after that long warfare got kind of bloodthirsty."

Hawkins was essential enough in the Manhattan Project that he had held in the palm of his hand one of the plutonium hemispheres for the Trinity device. It was warm, like a living thing. "It warmed itself," he says.

And he was essential enough as official historian to see its energy unbound in the desert.

But Hawkins quietly boycotted Trinity. He said nothing at the time, but he didn't go. "I didn't want to see it," he says. He finished his history and left Los Alamos, dating the preface Aug. 6, 1946, the first anniversary of Hiroshima.