

NOTES ON THE PROGRAM

By Ken Meltzer

Dr. Atomic (2004-5)

JOHN ADAMS was born in Worcester, Massachusetts, on February 15, 1947. The first performance of *Dr. Atomic* took place at the War Memorial Opera House in San Francisco, California, on October 1, 2005, with Donald Runnicles conducting the Chorus and Orchestra of the San Francisco Opera. *Dr. Atomic* is scored for vocal soloists, mixed chorus, two piccolos, three flutes, three oboes, English horn, three clarinets in B-flat and A, E-flat clarinet, bass clarinet, contrabass clarinet, three bassoons, contrabassoon, four horns, four trumpets, piccolo trumpet in B-flat, three trombones, tuba, timpani, percussion, harp, celesta, computer-controlled sound system and strings. Approximate performance time is two hours, forty-minutes.



These are the first Atlanta Symphony Orchestra performances.

In his recently-published Memoir, *Hallelujah Junction: Composing an American Life* (Farrar, Straus and Giroux, New York, 2008), John Adams describes the genesis of his opera, *Dr. Atomic*:

In 1999, while still working on *El Niño*, I received a call from Pamela Rosenberg, who was then just beginning her tenure as general director of the San Francisco Opera. She had a provocative suggestion, that I compose an "American Faust" opera.

Ms. Rosenberg wanted the "Faust" opera to focus upon J. Robert Oppenheimer (1904-1967). The American physicist served as scientific director of the Manhattan Project, the top-secret research and development of the first nuclear weapons in Los Alamos, New Mexico.

Mr. Adams was immediately captivated by Ms. Rosenberg's suggestion:

The atomic bomb had been the overwhelming, irresistible, inescapable image that had dominated the psychic activity of my childhood. The mushroom cloud was a sinister consort of my young thoughts, a source of existential terror that seemed permanently factored into every one of life's decisions, the ultimate annihilator of any positive emotions or hopes.

John Adams collaborated on the opera with the acclaimed director, Peter Sellars. At Mr. Adams's suggestion, Mr. Sellars fashioned a libretto derived from the actual words of the characters portrayed in *Dr. Atomic*. In addition, the libretto includes writings by John Donne, Charles Baudelaire, and Muriel Rukeyser, the *Bhagavad-Gita*, as well as Native American songs and legends. At first, the creators intended the opera's story to span a period of approximately eight years. But finally, Mr. Adams and Mr. Sellars decided to limit the stage action "to an evening in June 1945 in Los Alamos and then the single night of July 15-16, 1945, when the first bomb was detonated at the Alamogordo Test Range several hundred miles to the south."

The Story of *Dr. Atomic*

Act I Scene 1

The Manhattan Project laboratory at Los Alamos, New Mexico. June, 1945.

Work on the atomic bomb approaches its culminating point. Physicists, engineers and US military personnel are all laboring under intense pressure from Washington in order to have the bomb tested and ready for use within the next month. J. Robert Oppenheimer—"Oppie" to his friends—has brought the brightest minds in physics and engineering to the remote mesa in what was assumed to be a race against their German counterparts. But already Germany has surrendered, and many of the scientists are now beginning to question the necessity of its use on Japan.

General Leslie Groves, Army commander of the project, while aware of Oppenheimer's vague but troubling past involvements with the Communist party, has up to now been able to persuade the government to look the other way because of the Oppenheimer's great value to the program.

After an opening chorus describing the situation as of the end of June, Edward Teller approaches Oppenheimer in the lab. Teller's obsession with his dream of a thermonuclear weapon, the "Super", has caused difficulties in working with the other scientists. Team work is difficult for Teller, and Oppenheimer excuses him from group collaboration.

Teller shows Oppenheimer a letter he has just received from another physicist, the Hungarian Leo Szilard. Szilard is imploring all the scientists involved in atomic energy to take a moral stand on the bomb's use by signing a letter to President Truman: "We alone are in a position to declare our stand." Oppenheimer responds by admonishing Teller and all the others not to involve themselves in "political pronouncements."

Robert Wilson, a young, idealistic physicist also working on the bomb is organizing a meeting in the lab to talk about the social and moral implications of the "Gadget" (code word for the bomb). Oppenheimer, well aware of Wilson's socialist affinities, strongly objects to the idea of this meeting. "I might warn you--you could get in trouble if you had such a meeting." Wilson too has a petition for the President that he hopes everyone will sign: "Atomic attacks on Japan cannot be justified until we make clear the terms of peace and give them a chance to surrender."

Oppenheimer, who has just returned from Washington, describes the decision to bomb Japanese cities, including civilian targets. "We should seek to make a profound psychological impression on as many inhabitants as possible." Wilson is outraged and accuses Oppenheimer of siding with the "Establishment."

Act I Scene 2

Oppenheimer and his wife, Kitty, are alone in their house at Los Alamos. It is a warm summer night, but Oppenheimer is preoccupied with reading reports. Kitty gently chides him: "Am I in your light?" Roused, Oppenheimer responds to her by quoting a rich, atmospheric stanza by one of his favorite poets, Baudelaire. For a brief moment they are both transported into the intoxicated climate of the poem.

Kitty is seized by a vision of the struggle of war and need for love: "A world is to be fought for, sung and built."

Act I Scene 3

The "Trinity" Test Site at Alamogordo, New Mexico. July 15, 1945

It is the night before the test of the first atomic bomb. Truman is already in Potsdam negotiating the spoils of Europe with Churchill and Stalin. The pressure on Oppenheimer and General Groves to achieve a successful test is overwhelming: the Americans want to have their nuclear weapon as a trump card to play against the Russians.

The weather on the desert floor has changed abruptly. A freak summer electrical storm lashes the test site. The bomb, already partially armed for detonation and hoisted on a high tower, is in danger of being struck by lightning. Groves, beside himself with frustration and anxiety, berates the chief meteorologist, Frank Hubbard, as if the storm were Hubbard's fault. Hubbard warns the general that attempting a test in these conditions is extremely dangerous.

Captain Nolan, of the Army Medical Corps, impresses upon Groves the deadly toxic properties of plutonium that are only now beginning to be understood. An accident at the test site could render hundreds of military and scientific personnel fatally ill with painful radiation poisoning. Already panic is beginning to take hold, and several enlisted men have had to be removed under sedation.

Groves dismisses all staff in order to speak with Oppenheimer alone. "Oppie" gently humors Groves about the latter's chronic weight problems, and the general confesses many failed attempts to control his diet.

Completely alone, Oppenheimer recalls a sonnet by John Donne, "Batter my heart, three-person'd God." It is the poem that inspired him to name the test site, "Trinity."

Act II Scene 1

The Oppenheimers' house in Los Alamos.

It is the night of July 15, 1945. The scientists and Army soldiers have left Los Alamos, and are now at the Alamogordo detonation area on the desert floor, more than a hundred miles away. Women have been prohibited from the test site.

Kitty and her Tewa Indian maid, Pasqualita, are sitting alone in the living room, drinking. Kitty scans the dial of her radio while Pasqualita occasionally checks on the Oppenheimers' sleeping children. Kitty, in a long soliloquy, sings of the war, of death and of the resurrection of the spirit: "Now I say that the peace the spirit needs is peace, not lack of war, but fierce continual flame."

Orchestral Interlude: *Rain over the Sangre de Cristos Mountains*

Seven-month-old Katherine Oppenheimer awakens, crying. Pasqualita takes the baby and comforts her by singing a lullaby and continues to watch the rain over the mountains.

Act II Scene 2

The "Trinity" test site at Alamogordo, New Mexico. Midnight, July 16, 1945.

The plutonium bomb has been mounted on the detonation tower and all personnel have been cleared from the surrounding blast area.

Robert Wilson has to climb the tower one last time to attach a measuring instrument to the bomb. From the top of the tower he can feel the wind and rain buffet his face, and he sees flashes of lightning in the distance. Meteorologist Jack Hubbard is at the foot of the tower making wind velocity measurements ordered by Groves. Wilson confesses his extreme anxiety about being around the bomb in the middle of an electrical storm. To Hubbard a test in the middle of such weather is a "blunder of the first magnitude", and he points out that the high winds could scatter lethal radioactive debris for miles.

While Wilson and Hubbard are at the tower, Groves, Oppenheimer and the others wait nervously at the Base Camp observation bunker for the storm to pass.

The scientists' talk returns to a unsettling concern: whether or not the detonation might set off an uncontrolled chain reaction ending in the destruction of the entire earth's atmosphere. Teller muses, "Might we not be setting off a chain reaction that will encircle the globe in a sea of fire?"

A rumor has it that Enrico Fermi, one of the team's most respected scientists, has been taking bets on whether such a calamity might happen. Oppenheimer reminds them that they already have data confirming that such a result is not possible, but it hardly brightens the mood of gloom pervading the test site. With the rain still coming down, Groves disregards Hubbard's warnings about the storm and orders all to prepare for the test shot at 5:30 AM.

Act II Scene 3 (Countdown Part I)

The final countdown begins at 5:10 AM.

Groves complains to his aide about the behavior of the scientists that has caused him endless security headaches: "This program has been plagued from the start by the presence of certain scientists of doubtful discretion and uncertain loyalty."

Everyone waits, each absorbed in his own thoughts, the men in their bunkers at a distance of two miles from the explosion, Kitty and Pasqualita in the house back on the Los Alamos mesa.

Oppenheimer, whose normally thin frame has shrunk even further to 98 pounds, is in a state of extreme nervous exhaustion. He tries to calm himself by reading from a battered book of poetry he has brought along. Instead, he is beset by hallucinations.

Pasqualita, having drunken heavily during the night, has her own visions: "News came on the frost, 'The dead are on the march!'"

At Base Camp the men make a betting pool. Each tries to guess the yield of the bomb. Oppenheimer surprises everyone by his pessimistic prediction of a very low yield—"a fizzle", Teller calls it. Even Groves is unable to conceal his depressed state and also guesses a low yield. Teller scoffs at their timidity and predicts a powerful explosion.

Oppenheimer suddenly is overcome by a terrifying vision of Vishnu described in the Bhagavad-Gita: "At the sight of this, your Shape stupendous, full of mouths and eyes...terrible with fangs...when I see you, Vishnu...with your mouths agape and flame-eyes staring--all my peace is gone; my heart is troubled."

Act II Scene 4 (Countdown Part II)

Groves is concerned that Oppenheimer, "our high-strung director," is going to have a nervous breakdown.

The storm breaks and the sky over Ground Zero suddenly clears. A warning rocket arches in the sky and a siren sounds. Everyone waits in a state of uncertainty. At Zero minus two minutes another warning rocket goes off but sputters out prematurely.

At Zero minus sixty seconds a different third rocket appears in the morning sky, signaling the final sixty-second countdown. Base Camp resembles an outpost of the dead: scientists and Army personnel are scattered about, hunkered in their shallow bunkers. There is no movement or whisper of activity, only the rhythmic voice of the countdown announcer over the loudspeaker. At Zero minus 45 seconds an engineer flips the switch for the automatic timer. The triggering circuits begin to fire in rapid precision.

"Zero minus one." There is an eerie silence, and then the bomb goes off.

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