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RSA7 History Outline

# Atomic Bomb

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I. Introduction
   A. The Atomic bomb is an explosive device unlike any other weapon.
   B. A small atomic bomb has an explosive force equivalent to 20,000 tons of TNT.
   C. It is the first weapon that can potentially cause worldwide damage.
   D. The first atomic bomb
      1. was developed and used under special circumstances
      2. was used for controversial reasons
      3. was followed by lots of research and development
      4. exposed many future dangers

II. Situation
   A. Hitler invaded Poland in 1938- starts WWII
   B. Germans discovered uranium fission in 1939- close to discovering Atomic bomb (A-bomb) technology- sparks fear and research in America and England
   C. The Americans began the Manhattan Project, an effort to build an Atomic bomb
      1. Chicago- assembly of physicists to perfect production of key elements for bomb- plutonium and uranium
      2. Oakridge and Clinton, Tennessee and Hanford, Washington- plants for producing uranium and plutonium
      3. Los Alamos- Secret laboratory in New Mexico, an assembly of scientists and engineers for designing and building bomb
         a) Scientists were opposed to bomb production but were forced to continue by German the threat
         b) "Little Boy" and "Fat Man" bombs produced
   D. The bombs were ready in July 1945

III. Reason why we dropped it
   A. Japanese knew they had lost the war by mid-1945, but they refused diplomatic demands for unconditional surrender.
   B. Americans thought an all-out invasion was required to stop the war.
   C. Truman, the president, announced in April, 1945, that America would apply full pressure on Japan through air raids, tightened blockades, and an invasion as soon as possible (Nov. 1) using 1,532,000 men to occupy strategic points to force a Japanese surrender
   D. An atomic bomb could accomplish the same goal without losing hundreds of thousands of American troops.
   E. The bomb's use, as it came to completion, switched from countering the German threat to ending the war quickly.

F. American military leaders choose targets to bomb that were:
    1. if destroyed, a strong influence on Japan to surrender
    2. military bases, occupied, or military manufacturing
    3. not previously damaged by air raids
    4. big enough to observe full effects of the bomb
    5. forecasted to have good weather

G. America dropped Atomic bombs "Little Boy" and "Fat Man" on Hiroshima and Nagasaki to put Japan out of the War.

IV. What Happened

A. B-29 bomber *Enola Gay* dropped atomic bomb "Little Boy" on Hiroshima on August 6th, 1945
    1. 2:45am- takeoff
    2. 3:00- assembly begun*
    3. 3:15- assembly finished
    4. 6:05- changed course to head to Japan
    5. 7:30- Bomb armed to detonate when dropped
    6. 7:41- began climb to bomb-release altitude, received report of positive weather above the primary target, but a negative report from the secondary
    7. 8:38- leveled off at 32,700 feet
    8. 8:47- fuses tested- positive
    9. 9:09- target sighted
    10. 9:15:30- bombed dropped ½ minute off schedule (9:15)
    11. 9:16:20- Flash followed by two slaps on plane, big cloud
    12. 10:00- 40,000ft tall cloud can still be seen
    13. 10:03- Escort fighter reported
    14. 10:41- Cloud out of sight 363mi. from target

B. B-29 bomber *Bock's Car* dropped atom bomb "Fat Man" on Nagasaki on August 9th, 1945
    1. 3:47am- Takeoff
    2. 4:00- Green plugs switched to red to arm bomb
    3. 9:00- Arrived at rendezvous point
    4. 9:50- Departed with other B-29, received positive weather report from both primary and secondary targets
    5. 10:44- Arrived at Kokura- weather conditions bad for bombing
    6. 11:30- Departed for secondary target
    7. 11:50- Arrived at Nagasaki and dropped bomb
    8. 12:05- Departed for Okinawa for lack of fuel

C. 70,000 people killed in Hiroshima

D. 45,000 people killed in Nagasaki- 20KT bomb

V. Research and development after WWII

A. American development- 1945-1960- Operation Dominic- 331 atomic tests
    1. 1945- Operation Crossroads- Test of atom bombs in the pacific after Nagasaki.

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* The bomb was assembled in flight to minimize the danger during takeoff

a) Armada of crewless ships full of penned animals grouped near two blasts.
b) "Able" dropped from airplane, "Baker" detonated underwater
c) Results-
(1) 5 ships sunk
(2) Most ships too radioactive to approach
(3) Most animals dead and mangled beyond recognition
(4) "Baker" caused more damage

2. 1948- Operation Sandstone- tested new atomic designs: 37-49KT models
3. 1953- Operation Upshot Knothole- 11 tests to
a) Improve atomic strategy and defense
b) Experiment with new atomic artillery cannon-
(1) had yield of only 15KT, but more destruction due to lower altitude
(2) destroyed less area due to lower altitude
(3) could be fired to safely take out the enemy troops without hurting American soldiers
4. 1953- Operation Redwing- designed to counter Soviet threat by developing 3.8MT deliverable H-bomb
5. 1956- Operation Plumbob- biggest bomb test inside atmosphere
6. 1958- Operation Hardtack- 35 nuclear tests using orbiting rockets
a) 3.8MT bomb explosion 50 miles above the earth created an Electromagnetic Pulse (EMP) silencing radios and communication devises for several minutes
7. 1959- Nevada Proving Grounds-
a) Operation Ranger-
(1) tested 5 air-deployed A-bombs
(2) developed H-bomb to counter Stalin and the Soviet threat
b) Operation Ivy- tested new H-bomb technology
8. 1960- Operation Argas- 3mi above earth

B. Russian development
1. 1949- USSR. Gets technology from a Los Alamos scientist- sparks fear of Soviet attack
2. 1955- Soviets develop an aircraft-deliverable Hydrogen-bomb (H-bomb)- power tips to Russia- sparks fear and evacuation drills in America
3. 1961- Russians develop 57MT deliverable H-bomb- sparks panic in America after Soviets had promised to discontinue nuclear testing

VI. Future Dangers
A. Several nations now have A-bomb technology, and twelve had more than one-hundred atomic missiles as of 1980

B. Nuclear war could start between any politically-unsound nations which have the weapons
C. 9 out of 10 people would be killed in an all-out nuclear attack on America
D. Shelters have been advertised as an effective way to avoid the explosion and protect from initial radiation-
    1. This is not enough! Both the radiation and the fallout it produces are more deadly than the actual explosion.
E. Fallout of radioactive material from the atmosphere originating from the blast could kill crops, animals, and humans around the world
F. The current peace policy, deterrence, relies on the Mutual Assured Destruction (MAD) of any countries involved in a nuclear war to prevent any one country from attacking another with atomic weapons
G. Deterrence can't always work-
    1. Nuclear weapons can be delivered more accurately and the risk of full-blown retaliation is becoming less and less probable
    2. It is slowly becoming possible to sufficiently disarm the enemy by taking the advantage and striking first
    3. It is also easier to communicate and organize attack if the enemy has not already attacked
    4. It leaves a small but growing chance that a ruthless ruler will decide to engage an enemy in nuclear war- mathematically, any small chance, played out long enough, will become reality

VII. Conclusion
A. The Allies' situation in WWII hastened the development of the bombs, but their <u>necessity</u> for ending WWII is controversial to this day.
B. We must never forget what happened at Hiroshima and Nagasaki because it can help us understand what could happen if nuclear war ever starts
C. This weapon should remain unused due to all the dangers associated with it
D. The A-bomb is by far the ultimate known weapon, and has influenced history since it was created.