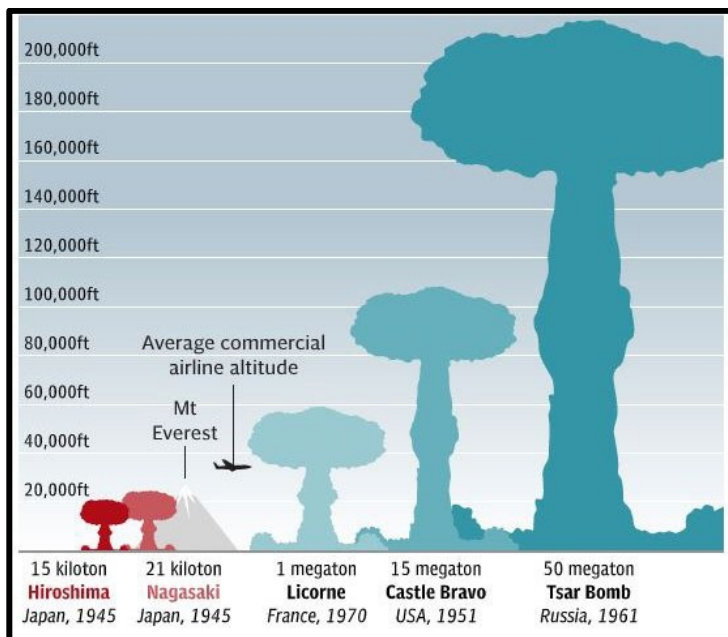


# How Nuclear Weapons Work

The power of nuclear weapons comes from nuclear energy—energy released from the nucleus, or center, of an atom. The energy may be released in two ways: Nuclear fission, through the splitting of the nucleus, or nuclear fusion, through the joining of two nuclei.

## Comparing Hiroshima to Tsar Bomba



### The First Atomic Bomb

Cost \$2 billion, was worked on by 160,000 people at 37 secret locations around the U.S.A.

\*

"I dropped the bomb; I made the decision to stop the war."

~ Truman

\*

America was "fighting an enemy that had not shown any inclination towards mercy."

~ Historian David McCullough

**1 kiloton = 1000 tons of TNT**

**1 megaton = 1 million tons TNT**

**Currently, there are 21,300-30,000 nuclear weapons worldwide. Five thousand can be launched within 30 minutes.**

**"This world of ours is four thousand, six hundred million years old. It would be destroyed in an afternoon."**

**Arundhati Roy**

### Effect on Humans

**Temp reaches 7,000 degrees. Glass melts. People in open melt, people in shelter bake. People as far away as 80 km are permanently blinded. Survivors then face radiation sickness (nerve damage, internal bleeding, rashes and sores) and then death. There are no hospitals as they have been destroyed.**

# Bomb Delivery

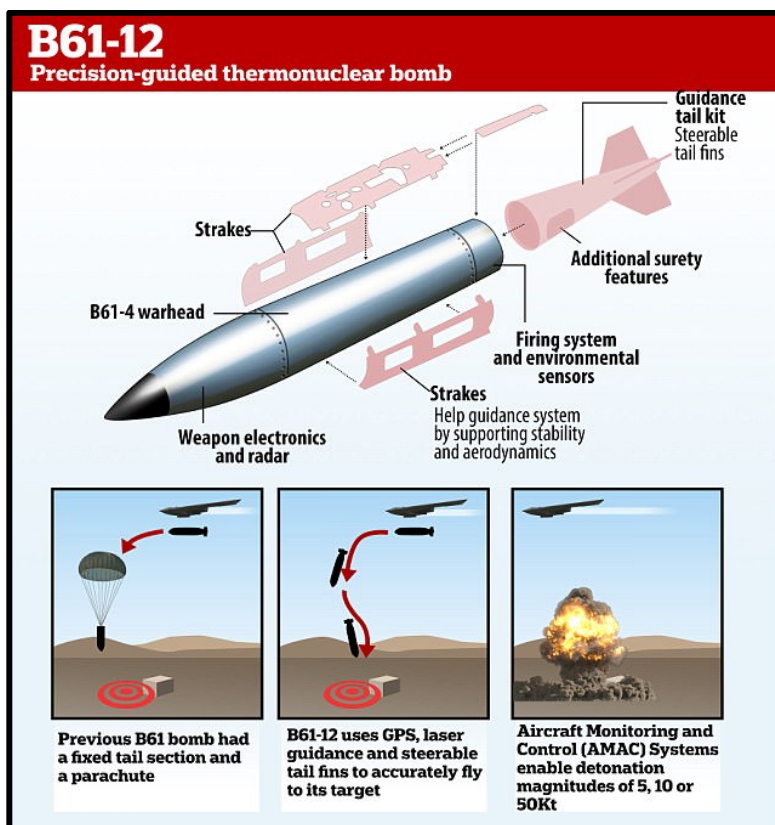
- Gravity Bomb (Hiroshima, Nagasaki)
- Ballistic Missile (perfected by Superpowers in early 1960s)

Missiles using a ballistic trajectory (think of a thrown baseball: beginning thrust of energy leads to flight/landing) usually deliver a warhead over the horizon, at distances of thousands of kilometers, as in the case of **intercontinental ballistic missiles (ICBMs)** and submarine-launched ballistic missiles (SLBMs). Most ballistic missiles exit the Earth's atmosphere and re-enter it in their sub-orbital spaceflight.

IRBMs = Intermediate Range Ballistic Missiles

MRBM = Medium Range Ballistic Missiles

## ICBM



## Ballistic Trajectory

