

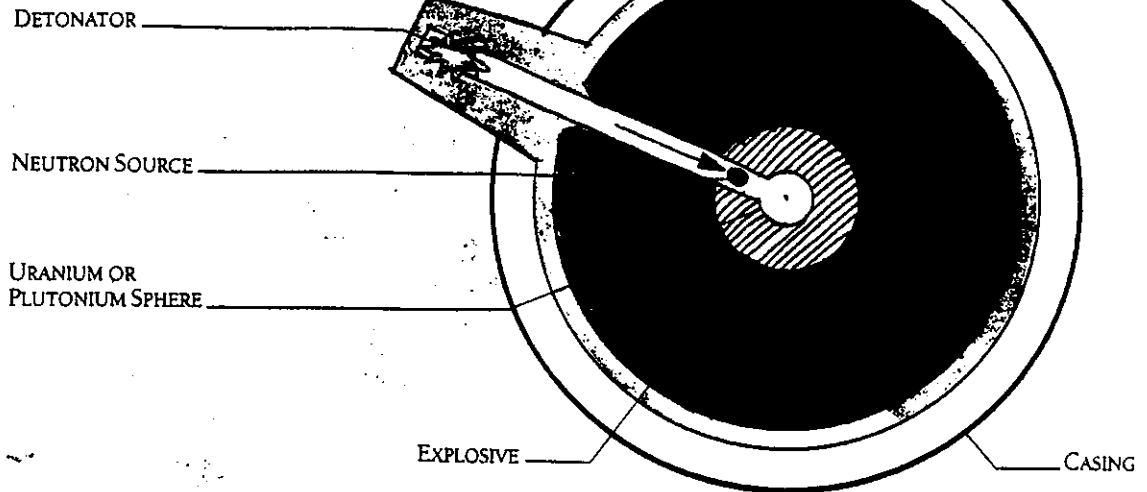
# NUCLEAR WEAPONS

## ATOM BOMB

An atom bomb is better known as a fission bomb because it works by nuclear fission. The bomb contains a hollow sphere of uranium or plutonium. The sphere is too big to initiate a chain reaction because neutrons that occur naturally escape from the surface of the sphere without causing fission.

To detonate the bomb, a source of neutrons is shot by the detonator into the center of the

sphere. Explosives then crush the sphere around the neutron source. The neutrons cannot now escape. A chain reaction occurs and fission flashes through the uranium or plutonium in a fraction of a second. The bomb explodes with a power equal to thousands of tons (kilotons) of TNT. Intense radiation is also produced.



## HYDROGEN BOMB

The hydrogen bomb or H-bomb is a thermonuclear weapon which works partly by nuclear fusion. Two forms of hydrogen — deuterium and tritium — are compressed at very high temperature to produce instant fusion. These conditions of ultra-high temperature and pressure can only be created by a fission bomb, which is used to trigger fusion in a thermonuclear weapon. Explosives crush all the nuclear

materials around a neutron source to detonate the bomb.

Some thermonuclear weapons also contain a jacket of uranium, which produces a blast equal to millions of tons (megatons) of TNT. The neutron bomb, on the other hand, is a fusion weapon of relatively low power that produces penetrating neutrons. The neutrons released by the bomb would kill people while most buildings would survive the weak blast.

## NUCLEAR TESTING

The fallout or debris produced by the explosion of a nuclear weapon is so radioactive that the weapons must be tested in chambers dug deep underground in remote areas. In this way, the atmosphere is not contaminated by the fallout.

