

Safety considerations

If nuclear weapons must exist, they should be as safe and secure as possible. Nuclear weapons should be immune from accidents such as a nuclear explosion or a dispersal of plutonium if a bomb is dropped accidentally, and they should be protected from unauthorized use by both terrorists and armed forces personnel.

Questions of safety and security of nuclear weapons can be explored by analysis and non-nuclear tests. Enhanced control over nuclear weapons can be obtained by refitting modern permissive action links (PAL), but in an era in which there is a massive decrease in numbers of nuclear weapons, older weapons can be destroyed first, leaving the surviving warheads as the safest and most secure.

Not only do reduced numbers of warheads contribute to enhanced overall safety and control, but the lack of a requirement for a hairtrigger response allows them to be stored and maintained more securely.

Development of new warheads

The principal argument for nuclear testing, now as always, is to support the development of new nuclear weapons. Whatever the urgency in the past of weapon tests to develop new warheads in order to respond to developments on the other side, it is far less now.

Indeed, the argument was never compelling. When the United States sent John Glenn, the astronaut, into space, it did not redevelop him. Instead, NASA packaged him, so that he would be protected against the vacuum, cold, heat, and shock of the flight.

New delivery vehicles can be built around the existing designs of warheads. It is not necessary to develop new warheads to achieve this aim.

Finally, there are experiments in physics that can best be done with nuclear explosions and sometimes in no other way. But the physics community, in fact, has not in general proposed to spend money on such experiments, even when there was no bar to doing so.

Stockpile confidence

Much of the nuclear nations' drive for nuclear testing in the past arose from the desire to gain an advantage over the other side, or to learn what the other side might already have learned in nuclear testing or might be able to learn, so as not to be "behind" the other side.

It was argued that many deficiencies had been discovered in stockpile nuclear weapons through nuclear testing, and that they required nuclear testing to remedy. In reality, no weapon that had been thoroughly tested in development revealed unexpected troubles in stockpile testing, within the range over which it had been tested. Nuclear tests did reveal deficiencies at