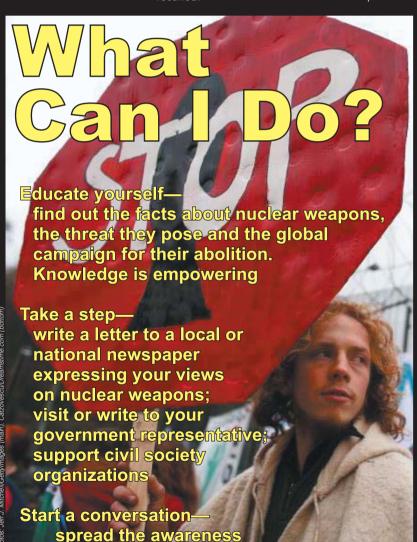
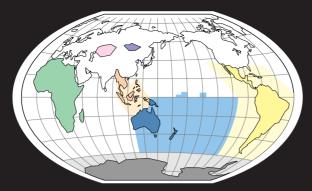
#### Accidental Launch Risks

- There have been over 30 accidents, false alarms and malfunctions involving U.S. nuclear weapons. Several of these have almost caused a nuclear war.
- On September 26, 1983, the Soviet nuclear early warning system showed that the U.S. had launched a nuclear attack. With only minutes to react, Lt. Col. Stanislav Petrov, the officer on duty, decided that the system was in error, saving the world from a nuclear holocaust.
- In 1995, Russia mistook a Norwegian meteorological rocket launch for a nuclear attack. President Boris Yeltsin activated his "nuclear briefcase" for a retaliatory attack. Minutes before the launch of Russia's nuclear arsenal, the alarm was determined to be false.
- Thousands of U.S. and Russian nuclear missiles remain on hair-trigger alert today. Once launched, they cannot be recalled.





Nuclear-Weapon-Free Zones
The power of mobilized public opinion

It has been estimated that since 1945, 50 nuclear weapons have been lost and remain lost at sea.

Stockpiles of loosely guarded nuclear weapons materials are scattered around the world, offering inviting targets for theft or sale.

There were about 1,000 offers to sell nuclear materials in Western Europe and Russia in the period 1991-95. In 1995, German police recorded 35 cases of offers to buy fissile materials.

The U.S. spends \$100 million per day on maintaining its nuclear arsenal.

In the Marshall Islands, from 1946 until 1958, U.S. military scientists tested 67 nuclear devices with the equivalent explosive yield of 1.6 Hiroshima bombs per day for those 12 years. The testing exposed the people of the Marshall Islands to radioactive fallout and contaminated nearby atolls, rendering them uninhabitable.

Radioactive waste, produced at every stage of the nuclear cycle, from the mining of uranium to the production of weapons or energy, can be radioactive for periods up to hundreds of thousands of years. Indigenous people have been disproportionately affected by the international nuclear weapons and power industries.

A 1991 study by the IPPNW predicts that radiation from atmospheric testing will eventually have caused 2.4 million deaths from cancer.

#### Some resources available on the Internet:

- Facts, quotes, ideas for action:
- www.middlepowers.org/dpe/index.html
  Nuclear weapons treaties, overview:
- www.cnduk.org/INFORM~1/treaties.htm
  General information on nuclear issues:
  www.reachingcriticalwill.org/
- I Inspiring and empowering a new generation of peace leaders: www.wagingpeace.org/
- Educational resources: www.nuclearfiles.org/
- WMD Awareness Program begun by Professor Rotblat:
- The effort to secure fissile materials and prevent the spread and use of WMDs: www.nti.org



# Nuclear Facts

#### Who has nuclear weapons?

United States*	10,000
■ Russia*	16,000
■ U.K.*	185
■ France*	350
■ China*	130
■ India	50
■ Pakistan	60
Israel (undeclared)	
<ul><li>North Korea appears</li></ul>	to have tested a
nuclear device in Oct	ober 2006

Source

The Stockholm International Peace Research Institute (SIPRI), 2006

\* The permanent members of the UN Security Council

### Countries which had nuclear weapons and chose to give them up:

- South Africa
- Belarus
- Kazakhstan
- Ukraine

Countries which had programs to develop nuclear weapons which they ended:

- Libya
- Argentina
- Brazil

Number of countries that have signed the Comprehensive Test Ban Treaty: 177

Number of countries that have signed the Nuclear Non-Proliferation Treaty: 190

#### **Destructive Force**

The uranium bomb, nicknamed "Little Boy," that killed an estimated 140,000 people in Hiroshima had a yield of 13 kilotons (one kiloton equals 1,000 tons of TNT). Modernday hydrogen bombs can have yields measured in megatons (one megaton is 1,000 kilotons).

The largest ever thermonuclear bomb was tested by Russia in 1961 It had a yield of 50 megatons.

To picture the amount of TNT needed for a 5-megaton explosion, imagine a 1,000-mile (1,600km) long train filled with TNT.



## What happens when a nuclear weapon explodes?

The temperature of a nuclear explosion is several million degrees centigrade. The explosion creates a fireball of white heat. Intense heat and radiation is released in winds of around 1,500 kmph. The mushroom cloud effect is produced by the powerful updrafts lifting debris from the ground up into the air. The top of the cloud can be several kilometers wide. At Hiroshima, in the vicinity of the hypocenter, all that remained of some of the people caught in the open were their shadows burnt into stone. Under these extreme conditions, the human body is vaporized. Those not in the immediate area of destruction would suffer from non-survivable burns, would be blinded and suffer terrible external and internal injuries. Almost all rescue and medical services would have been destroyed.

Further away from the blast, survivors would soon suffer varying effects of radioactive fallout. High exposure levels would cause bleeding from the mouth and gums, gangrenous ulcers, internal bleeding and hemorrhagic diarrhea, vomiting, fever, delirium and terminal coma and death within days. For a lower level of exposure, the longer-term effects for survivors include: fetuses in the early stages of pregnancy being born with deformities, damage to the immune system, major scars and the risk of developing cancer. The next generation would also be at risk to cancer and birth defects.

The amount of fallout depends on whether the bomb was detonated in the air or on the ground. The area covered by fallout will vary according to wind speed and direction. (www.comeclean.org.uk)

"Some women gave birth to creatures like cats, rats and the insides of turtles... Most of the women had miscarriage, including myself, who gave birth to something unlike a human being... Things are not the same now, and people are not as active and healthy as before the bomb."

—Mili Lotobo, Marshall Islander describing the effects of nuclear weapon testing in their region

SGI Quarterly July 2007 Photos: @CORBIS (main), Masami Onuka (inset,