NUCLEAR WEAPONS CHART

The dot in the center square above represents all the firepower of World War II: three megatons. The other dots represent the number of World War II equivalents that now exist in nuclear weapons. This is 18,000 megatons or the firepower of 6,000 World War II's. The United States and the Soviets share this firepower with approximately equal destructive capability.

The top left hand circle enclosing 9 megatons represents the weapons on just one Poseidon submarine, equal to the firepower of three World War II's, enough to destroy over 200 of the Soviet's largest cities. We have 31 such subs and 10 similar Polaris subs.

The circle in the lower left hand square enclosing 24 megatons represents one new Trident sub with the firepower of eight World War II's, enough to destroy every major city in the northern hemisphere.

The Soviets have similar levels of destructive power.

Just two squares on this chart (300 megatons) represent enough firepower to destroy all the large and medium-size cities in the entire world.

(United States Senate staff have reviewed this chart and found it to be an accurate representation of the nuclear weapons arsenals.)

(Additional copies of this chart, with its related booklet on The World's Nuclear Weapons, may be obtained for $2.00 ea., postpaid, 10 or more, $1.50 ea., ppd. from The Norwich Peace Center, Box 283, Norwich, VT 05055. Tel. (802) 649-1000.)
THE LAST EPIDEMIC---MEDICAL CONSEQUENCES OF NUCLEAR WAR

Video tape of portions of a symposium held in San Francisco on November 17th and 18th, 1980.
Sponsored by PHYSICIANS FOR SOCIAL RESPONSIBILITY..(PSR).

Notes from the movie.

One megaton nuclear weapon is equal to a million tons of TNT (dynamite). That is enough TNT to fill a train 200 miles in length.

Explosion of a one megaton nuclear weapon must evacuate a 33,000 square mile region for one week! Continue evacuation of 23,000 square miles for one month! (for reference, the State of New York is about 40,000 square miles in size)

The entire planet Earth is surrounded by a protective OZONE shield or layer which helps to absorb ultra-violet rays (UV light)...Without this protective layer our planet would never have allowed for the evolution of eyes in all animal species. (prolonged exposure to UV light causes blindness)
- Nitrogen oxide is produced during a nuclear explosion.
- Nitrogen oxide destroys the ozone layer or causes a reduction of it.
- If only ten percent (10%) of the nuclear weapons of the United States and the USSR (Russia) were exploded...this would result in a severe ozone reduction causing: a 70-80 percent reduction in Northern Hemisphere a 30-40 percent reduction in Southern Hemisphere
- The National Academy of Sciences predicts that a twenty percent (20%) reduction of ozone would blind all unprotected eyes...We may be able to wear sun glasses......but all the other animal species on earth would be blinded within a short time and die! What will be the consequences to our ecosystem if all mammals, reptiles, birds, insects, etc. are killed! Who will pollinate the crops? Remember... this is with only 10% of our weapons exploded using predicted 1985 USA and USSR nuclear arsenals.

Nuclear weapons exchange between the U.S. and the Soviets would produce lethal fallout over the entire United States and Russia...resulting in 20 radiation units per person on the entire earth. (with explosion of 20-30 megatons)

One or two Poseidon Submarines have the nuclear capability to destroy the USSR as a realistic society......We have 30 such subs with 20 on patrol at any one time!

ARMS CONTROL MUST BE GIVEN THE HIGHEST PRIORITY!

The so called LAUNCH ON WARNING system will soon be in operation....this is where computers will initiate the nuclear attacks without the "approval" of any humans! Total dependence on technology as to when to begin a nuclear war.
Many false attacks have been triggered by minor electrical malfunctions....These were stopped by human intervention.........a 46 cent computer chip was responsible for one false alarm......there are many other examples.

30,000 nuclear weapons belonging to the U.S. ..... 10,000 aimed at USSR.
20,000 nuclear weapons belonging to the U.S.S.R. ..... 6,000 aimed at the United States.
1,000 nuclear weapons belonging to other countries.
--------- ABOUT 50,000 nuclear weapons ON OUR PLANET EARTH!!!!

We have "nuclearized" all of our armed forces with small mobile nuclear weapons.
WHAT WOULD HAPPEN IF A MAJOR CITY SUCH AS SAN FRANCISCO WERE TO BE HIT BY A ONE MEGATON BOMB?

Seventy (70) Hiroshima bombs are equal to a single one megaton nuclear explosion! .......being dropped all at once!

Maximum of five to fifteen minute warning........assume a one megaton air burst at 7000 feet.......better coverage (damage) this way.
One and one-half mile radius equals total destruction of all structures, all humans are vaporized (turned to gas!) or extensive 3rd degree burns.
Winds at 500 MPH

Three mile radius yields 160 MPH winds.....Eight to sixteen mile radius would have a fire storm which increases the lethality five fold.
.....With the fire storm there are no survivors in shelters.

780,000 instant deaths....Total of 1,652,500, casualties (dead plus injured)
Every 3rd person would be dead or injured....never have had this magnitude of
Casualties in history of world.

If two bombs were to be dropped (which would be much more likely) 94 percent of
the population of San Francisco would be killed at blast time.............
......118 percent of the population would be a casualty!!!!!!!

Hundreds of thousands of burns from the heat of the explosion....not enough
burn "beds" in all of the U.S. combined.

All types of other injuries....crushing,penetrating, fractures, hemorrhage, etc.
People will become missiles themselves, striking the nearest hard object.
Deafness from blast...eardrum rupture.
Blindness...anyone who looks at the bright light (fire-ball) as a reflex act
and is standing 35miles from the blast will be instantly blind.
(note that 35miles is a very conservative figure..... in tests in the Pacific Ocean,
animals 345 miles from blast had focal retinal damage to their eyes)

Destruction of property and lives from blast, high over-pressure, thermal effects,
and radiation.

Central Nervous Syndrome-(destruction of nervous system)
15,000 roentgen (radiation measurement) causes death
1,000 roentgen causes Gastrointestinal Syndrome resulting in death.

There is no way to tell whether a person has received a 100 rem radiation dose or
a 1,000 rem dose. The 1,000 rem dosage will result in death within days.
How will a doctor know who to treat?
Who will respond and what will they respond with?

Hospitals are essentially targeted since they occur in urban areas and are in the areas
of highest lethality.

San Francisco would have approximately 2000 doctors alive that could respond to
this situation......many which have not seen blood in years or are retired, work in
administration, etc.
If each doctor saw a patient every ten minutes and worked at this for twenty hours
each day, it would take eight days to see the first patient for the second time.
Will all physicians be willing to expose themselves to high levels of radiation from contaminated patients? It is further assumed that doctors will not spend time on pre-existing conditions such as heart patients, etc. or on the uninjured who during times of disaster often think that they are injured. All doctors will be working without staff, equipment, supplies, blood, etc. It can be assumed that this ten minute diagnostic visit every eight days will have a minimal effect, if any, on the injured. There will be no water, electricity, transportation, or communications systems.

THERE WILL BE NO HELP FROM THE OUTSIDE. Survivors may be envious of the dead!

During the post attack period both contaminated and uncontaminated supplies of food and water will be scarce. Most San Franciscans use 50 - 150 gal of water per day. After attack only one quart of water per person per day.

Tremendous increase in insect vectors.....Insects are generally much more resistant to radiation than mammals.

300,000 to 500,000 corpse (dead bodies) will not be buried, but will have to rot (decay) creating epidemic disease possibilities.....This amount of dead bodies is unprecedented in human experience.

There is no survival in a nuclear attack in any sense of the social meaning of survival!

Deep shelters with self-contained oxygen supplies could be built at a cost of many times the gross national product (GNP). These shelters in no way attempt to deal with the problems of ecosystem collapse.

Federal Emergency Management Program claims that 80 percent of Americans could survive a nuclear attack through the process of evacuation.....with a eight day notice of the pending attack!!!!!!

Any physician who takes part in preparations for a nuclear attack is profoundly unethical...Fostering a false belief in the mechanisms of survival in any social sense of the word.

Great need to assess the data,...inform,...instruct,...become active in the political process.

MOST SERIOUS MOST SERIOUS PROBLEM IS NUCLEAR WAR!.....What else really matters?

Medically contraindicated.....Ultimate medical issue of our time.

EACH ONE OF US CAN BE AS POWERFUL AS ANY-ONE ELSE CAN BE !!!

Not communist children or capitalist children.....Just children!

CHILDREN SHOULD BE THE SYMBOL OF LIFE ON OUR PLANET.

NUCLEAR WAR IS TOTALLY BIOLOGICALLY UNACCEPTABLE........

THERE ARE NO WINNERS IN A NUCLEAR WAR.......THERE CANNOT BE LIMITED NUCLEAR WAR........

(Mt. SAC Biology Department..cap.)
The increasingly popular nuclear freeze movement of the 1980s has helped educate a growing number about the dangers of nuclear war. But most people still prefer not to think or even hear about such a horrifying possibility. Somehow we must try and feel the pain and death associated with nuclear war. Listen to the words of a survivor of Hiroshima: “Everything I saw made a deep impression—a park nearby covered with dead bodies waiting to be cremated. . . . Perhaps the most impressive thing I saw was very young girls not only with their clothes torn off but their skin peeled off as well. . . . My immediate thought was that this was like the hell I had always read about.”

**E3-1 Types and Effects of Nuclear Weapons**

**Nuclear Fission and Nuclear Fusion Weapons** In 1945 the United States dropped a single atomic bomb on Hiroshima and another on Nagasaki: 110,000 people in these two Japanese cities were killed in a flash. By the end of the year another 100,000 had died. Tens of thousands more were severely injured. Even today Japanese citizens continue to die because of leukemia and other ailments traceable to radiation exposure from these two explosions. These figures tell us what a “small” nuclear bomb can do.

Modern nuclear weapons are designed to be dropped as bombs from aircraft or sent to their targets by missiles or artillery shells. There are two major types of nuclear weapon. One is based on nuclear fission (Section 15-5) and the other on nuclear fusion (Section 15-7). In both types of weapons enormous amounts of energy are released in a fraction of a second in three forms: heat or thermal radiation (35 percent of the total energy), blast and winds (50 percent of the total energy), and nuclear radiation (15 percent, with 5 percent the neutrons and gamma rays released and 10 percent from radioactive fallout).

The neutron bomb is a combined nuclear fission–nuclear fusion weapon with the outer blanket of nonfissionable uranium removed. This typically reduces the energy from blast slightly (from 50 to 40 percent), the heat effect from 35 to 25 percent, and indirect radiation from fallout from 10 to 5 percent of the total energy released from detonation of a conventional hydrogen bomb. Without the blanket, the direct radiation effect, primarily from high-speed neutrons, is increased from 5 to 30 percent of the total energy released—killing more people in the vicinity of the blast. The United States plans to install such bombs in some of its short-range nuclear weapons based in Europe. Although the neutron bomb is supposed to be a battlefield weapon, it is still a hydrogen bomb that would cause far greater destruction than any conventional weapon.

The nuclear fission bomb dropped on Hiroshima was a 12.5-kiloton weapon (1 kiloton = 1,000 tons). That is, it released energy equivalent to that from the explosion of 12,500 tons of TNT. The approximately 65,000 nuclear warheads in present-day arsenals (30,000 in the United States and 35,000 in the Soviet Union) range in size from 1 kiloton to 50 megatons (one megaton = 1 million tons)—the latter having an explosive force 4,000 times greater than the Hiroshima weapon. By comparison, all the bombs dropped during the 8.5 years the United States used such weapons in Vietnam were equivalent to 4 megatons or 4 million tons of TNT. A single U.S. Poseidon submarine or a single B-52 bomber carries nuclear fire power equivalent to 720 Hiroshima bombs or equivalent to all the explosives detonated in World War II, and 30 to 40 of these submarines and scores of these bombers are always on patrol. Typical strategic nuclear weapons have yields of about one megaton—80 times the explosive power of the Hiroshima bomb.

**Effects from a Nuclear Explosion** When a nuclear weapon is detonated, so much energy is released that everything in the immediate vicinity of ground zero—the spot directly beneath the point of detonation—is heated to temperatures of tens of millions of degrees. This is high enough to melt any material. The first effect is a silent pulse of heat or
thermal radiation traveling at the speed of light. In a fraction of a second this heat can cause third-degree burns, char the skin of unprotected persons, and blind anyone looking at the explosion up to several miles from ground zero. The initial heat pulse ignites paper and combustible material within several miles from ground zero, as well.

This heat pulse is followed by a gigantic fireball expanding outward from ground zero. A few seconds after detonation the fireball cools to several hundred thousand degrees and continues to expand at the speed of sound—about 1,190 kilometers (740 miles) per hour. At this point the superheated and highly radioactive debris blown outward from ground zero catches up with the outer edge of the fireball and moves forward with it as a devastating shock wave called blast. This shock wave produces an increase in air pressure, known as overpressure, and winds with speeds up to 322 kilometers (200 miles) per hour—higher than those from any recorded hurricane. This overpressure crushes wooden, brick, and concrete structures for miles from ground zero. Many people and animals not killed by the heat and falling buildings die when hurled through the air by the hurricane-force winds or when struck by flying debris.

The combination of overpressure and winds creates fires for miles around, from overturned furnaces and stoves, electrical short circuits, and ruptured gas lines and fuel storage tanks. Under certain conditions, these individual fires could combine to form a single firestorm that would burn over a large area for days. Violent winds would rush in and feed the flames, producing extremely high temperatures. If a firestorm occurred, many people in underground shelters would be killed by heat, lack of oxygen, and carbon monoxide entering through ventilation systems.

Near ground zero large amounts of direct radiation in the form of highly penetrating gamma rays and neutrons are released. Although this intense radiation does not last long, it would kill people and animals not killed by the fireball and blast wave within 1 to 14 days. Additional indirect radiation is produced when neutrons from the explosion collide with earth and other matter to produce radioactive debris, which is sucked up into the mushroom cloud. Depending on weather conditions, this radioactive material is carried by winds hundreds and in some cases thousands of miles downwind from the blast. This matter, known as radioactive fallout, settles out of the atmosphere and contaminates large areas of land, water, and food supplies. Fallout contains many different types of radioactive material, decaying at different rates (Section 15-5). Thus, areas receiving heavy fallout would remain dangerously contaminated for several weeks. People in these areas who did not remain in shelters would be exposed to enough radiation to cause acute radiation sickness and death, and those exposed to nonlethal doses could develop cataracts, leukemia, and other forms of cancer years later (Table 15-3). There would also be an increase in the number of stillbirths and deformed births, and genetic defects passed on to future generations.

If a nuclear weapon is exploded on the ground or at an altitude low enough for the fireball to reach the ground, large amounts of fallout are produced. An air burst high in the atmosphere would not produce as large a local fallout hazard as a ground burst. Instead, fission products would be carried into the upper atmosphere and dispersed as global fallout.

E3-2 Health and Environmental Effects of Global Nuclear War

Increasing Risks of All-Out Nuclear War Some military planners talk of limited nuclear war. Most analysts, however, believe that the chances of a limited nuclear war escalating into an all-out nuclear war are very high. All-out nuclear war or global nuclear war is usually defined as a massive first strike by either the United States or the Soviet Union against strategic military targets and major economic-industrial centers, followed by a retaliatory strike by the other country. Thousands of high-yield nuclear warheads would be detonated in such an exchange, which could take place within an hour.

The risk of accidental nuclear war increases as the size of the arsenals and the number of people involved with nuclear weapons increase. In the United States about 100,000 carefully screened people are authorized to work with or around nuclear weapons. Between 1975 and 1977, however, 15,067 of these individuals were removed from access to nuclear weapons for a variety of reasons including alcohol and drug abuse, aberrant mental behavior, negligence, and evidence of a contemptuous attitude toward the law. The record of mistakes by the computers that are supposed to warn of a nuclear attack is equally alarming. During an 18-month period the North American Air Defense Command had 151 false alarms. Four resulted in orders to alert B-52 bomber crews and intercontinental ballistic missile units for possible attack. One major false alert, lasting 6 minutes, occurred when a technician mistakenly put a training tape of a Soviet attack on an American military computer.

The risk of nuclear war also increases as the number of countries having nuclear weapons increases. By mid-1984, the United States, the Soviet Union, Great Britain, France, China, and India had...
built and tested nuclear weapons. Another 10 countries are believed to have the knowledge and materials necessary to build a nuclear bomb, and 16 others could have the bomb by 1990. Between 1990 and 2000, it is estimated that the total of nations capable of building nuclear weapons could increase from 32 to 60—one out of every three nations in the world (Section 15-5). Most of the knowledge and materials enabling an increasing number of nations to join the global “nuclear arms club” is the result of the United States, the Soviet Union, France, Italy, and West Germany giving or selling them commercial nuclear power plants and small research nuclear reactors (Section 15-5).

Health Effects A number of studies of the likely consequences of all-out nuclear war have been made. According to the World Health Organization, an exchange involving about one-third of the U.S. and Soviet nuclear arsenals—about 5,000 megatons—would kill at least 1.1 billion people in the Northern Hemisphere (mostly in the United States, Europe, and the Soviet Union) immediately, with another 1.1 billion so seriously injured and lacking medical care that they would soon die. Since atmospheric circulation patterns would carry radioactive debris over most of the world, at least 1 billion more people in the Southern Hemisphere—not under direct nuclear attack—are likely to die prematurely. Thus, a nuclear war (5,000 megatons) between the superpowers would probably kill from 50 to 75 percent of the world’s population.

The U.S. Federal Emergency Management Agency has determined that 65 percent of the U.S. population lives within 32 kilometers (20 miles) of at least one prime military-industrial target, and 95 percent are within 160 kilometers (100 miles) of such targets. Thus, in the United States an estimated 165 million to 200 million people would be killed—almost half the population. Another 60 million would be injured, with 30 million contracting radiation sickness, 20 million experiencing trauma and burns, and 10 million suffering from a combination of trauma, burns, and radiation sickness. An estimated 80 percent of all physicians would be killed and 80 percent of the hospital beds would be destroyed, along with most stores of blood plasma, antibiotics, and other drugs. Most of the injured would have no morphine for pain, no facilities for emergency surgery, and no antibiotics to fight infection.

There would be little food or water that was not contaminated with radiation or with toxic chemicals released into the atmosphere from the destruction and burning of chemical plants and storage tanks. Epidemic diseases long under control—such as cholera, dysentery, typhoid fever, hepatitis, tuberculosis, and plague—could reemerge to threaten all survivors. The severe psychological shock caused by exposure to overwhelming death and destruction would contribute to the deaths of many of those already sick or injured.

Even the estimated third of the population who escaped death and serious injury would face immense hardships and danger. Most would have to stay in shelters under grim conditions for from 1 week to 3 months or more, depending on location, to avoid exposure to dangerous radiation levels. Many shelters would be overcrowded and supplies of food, water, and medicine would be inadequate. Since national electric power and communications systems would be knocked out by the explosions and by the electromagnetic pulses (EMPs) produced during the first few billionths of a second of the attack (Section 15-5), shelters would be dark, damp, cold, and isolated from the outside world. Sick people would vomit frequently; waste disposal systems would be primitive; and diseases such as cholera and dysentery would run rampant—all adding to the panic, stress, and acute psychological shock.

Environmental Effects Studies published in 1983 and reviewed by more than 100 prominent scientists indicate that survivors emerging from fallout shelters would face a number of short- and long-term survival problems. Within one to two weeks, the massive amounts of dust and soot injected in the lower atmosphere and into the stratosphere would coalesce into a massive dark cloud that would prevent 96 percent of incoming sunlight from reaching most of the Northern Hemisphere, particularly the mid-latitude belt encompassing most of the United States, Canada, Europe, the Soviet Union, and Japan. Incoming sunlight would remain at less than 50 percent of normal for nearly two months. With most of the sunlight blocked, temperatures would drop well below freezing, whatever the season, and remain that way for many weeks. A 5,000-megaton exchange could drop average continental temperatures in the Northern Hemisphere to about –23°C with recovery taking about three months. Even a relatively small nuclear war involving bombs totaling 100 megatons—0.8 percent of the combined nuclear arsenals of the United States and the Soviet Union—would produce sufficient smoke and dust to blacken skies for about six weeks and cool average temperatures in the Northern Hemisphere to –20°C for over two months.
During the resulting "nuclear winter" of darkness and subfreezing temperatures, most livestock, wild mammals, cultivated and uncultivated food supplies, at least in the Northern Hemisphere, would die from the effects of radiation and cold. Food supplies from crops, livestock, wildlife, or fish and other aquatic species would be very scarce for at least a year because photosynthesis by plants on the land and phytoplankton in the sea would cease from lack of sunlight. Thick ice would cover inland surface waters and plagues of insects—the animal life best equipped to survive nuclear war—would damage stored food and spread disease. In addition, huge coastal storms created by land-sea temperature gradients would cause further destruction.

Most crops not destroyed would be contaminated with radioactive fallout particles such as strontium-90, which can be concentrated to higher levels as it passes through food chains and webs. In humans this radioisotope concentrates in the bones, where it can cause leukemia. Radioactive fallout particles such as iodine-131, which can cause thyroid cancer, would contaminate the soil and exposed water systems, also being concentrated to higher levels in the food chain. Radioactive isotopes also tend to concentrate in freshwater fish, and eating contaminated fish would be more dangerous than drinking contaminated water. Humans would only be able to drink groundwater supplies and only then if they had hand-operated pumps or emergency diesel-fueled generators to operate electric pumps.

Countless populations of plant species and animal wildlife would be extinct or contaminated, reducing for years the feasibility of trying to stay alive by hunting and gathering. Large areas of forest and grasslands would be devastated by blast and by fires that would burn out of control for weeks, perhaps months, adding more soot to the atmosphere. The soil—essential to the reestablishment of both plants and animals—on the denuded land would begin to be washed into rivers and eventually, when the rains from winter storms arrived, into the sea. People who went to the shore hoping to subsist on seafood would find most aquatic species surviving the nuclear winter contaminated with radioactivity, silt, and runoff from ruptured tanks of industrial liquids and oil pouring out of damaged offshore rigs. Any farmers in areas where crops could still be grown would be cut off from supplies of seeds, fertilizer, pesticides, and fuel.

The numerous nuclear explosions would cause nitrogen and oxygen in the stratosphere to combine and produce large amounts of nitrogen oxides which would destroy most of the thin and fragile ozone layer that shields the earth from damaging ultraviolet radiation. According to a study by the National Academy of Sciences, all-out nuclear war could cause within a year a 30 to 70 percent reduction of ozone in the Northern Hemisphere and a 20 to 40 percent reduction in the Southern Hemisphere. It would take from 2 to 20 years for the ozone layer to regenerate itself. Meanwhile, the sharp increase in ultraviolet rays reaching the earth's surface would lead to an increase in skin cancers, lethal sunburns, and lethal levels of vitamin D in unprotected people, and blindness and genetic damage (mutations) in many forms of plant and animal life. Levels of nitrogen oxides would also be increased 5 to 50 times in the lower atmosphere—causing large increases in acid deposition (Section 19-4). This would further threaten food crops and many aquatic and land-based life forms.

The partial destruction of the ozone layer and the reduction of sunlight from particulate matter in the atmosphere could also change the climate in unpredictable ways throughout the world. This, along with global fallout and the breakdown in international trade in food, fertilizers, fuel, farm machinery, and technology, could cause waves of famine, disease, severe economic depression, and social unrest in the surviving nations, mostly in the Southern Hemisphere. Although global nuclear war would probably not extinguish the human species, technological society as we know it wouldn't survive. The soils and forests would gradually regenerate themselves after a global nuclear war. But much of humanity would be reduced to small scattered bands of survivors, necessarily returning to a species of hunters, gatherers, and simple farmers (Enrichment Study 1).

The choice is really between two ways of life. One response is to decline to face the peril, and thus to go on piling up the instruments of doom year after year until, by accident or design, they go off. The other response is to recognize the peril, dismantle the weapons, and arrange the political affairs of the earth so that the weapons will not be built again.

Jonathan Schell
Status of World Nuclear Forces

More than two decades after the Cold War ended, the world’s combined inventory of nuclear warheads remains at a very high level: more than 17,000. Of these, some 4,300 warheads are considered operational, of which about 1,800 US and Russian warheads are on high alert, ready for use on short notice.

Despite significant reductions in US, Russian, French and British nuclear forces compared with Cold War levels, all the nuclear weapon states continue to modernize their remaining nuclear forces and appear committed to retaining nuclear weapons for the indefinite future.

The exact number of nuclear weapons in each country’s possession is a closely held national secret. Despite this limitation, however, publicly available information and occasional leaks make it possible to make best estimates about the size and composition of the national nuclear weapon stockpiles:

<table>
<thead>
<tr>
<th>Country</th>
<th>Operational</th>
<th>Reserve/Nondeployed</th>
<th>Military Stockpile</th>
<th>Total Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strategic</td>
<td>Nonstrategic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Russia</td>
<td>1,800(^a)</td>
<td>0(^b)</td>
<td>2,700(^c)</td>
<td>8,500(^d)</td>
</tr>
<tr>
<td>United States</td>
<td>1,950(^e)</td>
<td>200(^f)</td>
<td>2,500(^g)</td>
<td>7,700(^h)</td>
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<tr>
<td>France</td>
<td>290</td>
<td>n.a.</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>China</td>
<td>0(^i)</td>
<td>180</td>
<td>250</td>
<td>250(^j)</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>160(^k)</td>
<td>n.a.</td>
<td>225</td>
<td>225(^k)</td>
</tr>
<tr>
<td>Israel</td>
<td>0</td>
<td>n.a.</td>
<td>80</td>
<td>80(^l)</td>
</tr>
<tr>
<td>Pakistan</td>
<td>0</td>
<td>n.a.</td>
<td>100-120</td>
<td>100-120(^m)</td>
</tr>
<tr>
<td>India</td>
<td>0</td>
<td>n.a.</td>
<td>90-110</td>
<td>90-110(^n)</td>
</tr>
<tr>
<td>North Korea</td>
<td>0</td>
<td>n.a.</td>
<td>&lt;10</td>
<td>&lt;10(^o)</td>
</tr>
</tbody>
</table>

Total: \(~4,200\) ~200 ~5,800 ~10,200 ~17,300

\(^*\) All numbers are approximate estimates and further described in the Nuclear Notebook in the Bulletin of the Atomic Scientists, and the nuclear appendix in the SIPRI Yearbook. See also status and 10-year projection of U.S. and Russian forces. Additional reports are published on the FAS Strategic Security Blog. Unlike those publications, this table is updated continuously as new information becomes available. Current update: 2013.

\(^a\) This number is higher than the aggregate data under the New START treaty because this table also counts bomber weapons at bomber bases as deployed. Detailed overview of Russian forces is here.

\(^b\) All are declared to be in central storage. Several thousand retired non-strategic warheads are awaiting dismantlement.

\(^c\) Includes all non-strategic warheads, strategic warheads assigned to delivery systems in overhaul, and most bomber weapons.

\(^d\) In addition to the 4,500 in the military stockpile, 4,000 retired warheads are estimated to be awaiting dismantlement. Details are scarce, but we estimate that Russia is dismantling approximately 1,000 retired warheads per year.
New SIPRI data on military expenditure—world military spending falls, but China, Russia’s spending rises

World military expenditure totalled $1.75 trillion in 2012, a fall of 0.5 per cent in real terms since 2011, according to figures released today by SIPRI. Read the full press release in English (online), and Swedish, French, Catalan and Spanish.

The fall—the first since 1998—was driven by major spending cuts in the USA and Western and Central Europe, as well as in Australia, Canada and Japan. The reductions were, however, substantially offset by increased spending in Asia, Eastern Europe, the Middle East and North Africa, and Latin America.

States with the highest military expenditure in 2012

More than four-fifths of all military expenditure in 2012 was made by 15 states:

- China, 9.5%
- Russia, 5.2%
- USA, 39%
- UK, 3.5%
- Japan, 3.4%
- France, 3.4%
- Saudi Arabia, 3.2%
- India, 2.6%
- Germany, 2.6%
- Italy, 1.9%
- Brazil, 1.9%
- South Korea, 1.9%
- Australia, 1.9%
- Canada, 1.8%
- Turkey, 1.6%
- Others, 18%

China, the second largest spender in 2012, increased its expenditure by 7.8 per cent ($11.5 billion). Russia, the third largest spender, increased its expenditure by 16 per cent ($12.3 billion).
Nukes Are Nuts
by David Krieger
August 22, 2013

This article was originally published on Truthout.

When asked by a reporter why nuclear weapons are useless, Colin Powell, former US secretary of state and four-star general said: "Because they're such horrible weapons. And so no sane leader would ever want to cross that line to using nuclear weapons. And, if you are not going to cross that line, then these things are basically useless." In other words, one could say, nukes are nuts.

There are innumerable global security issues that need to be addressed, some of which are poverty, terrorism, the climate crisis, pollution of the oceans, loss of biodiversity and forest depletion. Not one of these issues can be addressed with nuclear weapons. In fact, nuclear weapons draw much-needed resources away from solving these global problems. Nukes are nuts.

Nuclear weapons are justified by their possessors for nuclear deterrence, but nuclear deterrence is only a hypothesis about human behavior. While "no sane leader would ever want to cross that line," even the best of political and military leaders can be less than rational at times, particularly when they are under stress. Nuclear deterrence is only as sound as the craziest political or military leader with a finger on the nuclear button. Does the name Kim Jong-un raise any concerns? Nukes are nuts.

Nuclear weapons are weapons of vast overkill. They are equal-opportunity destroyers of men, women and children. The radioactive effects of these weapons cannot be contained in time or space. They affect not only the living, but generations yet to be born. Their radioactive material will affect countless future generations. Even a small regional nuclear war could result in a global nuclear famine, killing a billion people. Nukes are nuts.

Nuclear weapons can destroy everything we hold dear and love most. They can destroy every special thing, every sacred thing that has ever been created. Nuclear weapons are anti-human weapons: they threaten us all, even their possessors, and place all of humanity at risk of annihilation. But they also place all of complex life at risk of destruction. The possession of these weapons makes us irresponsible stewards of our environment and of all the creatures dependent upon our stewardship. Nukes are nuts.

Nuclear weapons are extremely costly, with anticipated global expenditures for the next decade at over $1 trillion. The US plans to modernize its 661 bombs, which it deploys in five European countries, at a cost that is more than twice that of building them out of solid gold. Nuclear weapons take away resources from the education of the world's children, medical treatment from the world's sick and infirm and food from the world's hungry. Nukes are nuts.

Nuclear weapons divide us when we need to unite to find cooperative, diplomatic and nonviolent solutions to the great global issues of the 21st century. Only nine countries have nuclear weapons and, of these, only two countries, the US and Russia, possess more than 90 percent of the more than 17,000 nuclear weapons in the world. Nukes are not useful, nor are they status symbols. Nukes are nuts.

Every man, woman and child on the planet can understand that nukes are nuts. So, if we understand that, what are we going to do about it? My answer is to wage all-out peace with a sense of urgency until the last nuclear weapon is eliminated from the planet. We would be nuts to settle for anything less.

David Krieger is President of the Nuclear Age Peace Foundation.

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Even a "limited" nuclear war between India and Pakistan, using 100 Hiroshima-size nuclear bombs on the other side's cities, would put enough soot from the burning cities into the upper stratosphere to reduce warming sunlight for ten years, lowering surface temperatures on Earth and shortening growing seasons, resulting in a global famine taking hundreds of millions of lives.

A large-scale nuclear war would be an extinction event for most of all of the human species and other forms of complex life.

Imaginably no future. That's the threat posed by nuclear weapons.