**Life Magazines List of top 100 events of the Millennium**

**(Top 20 out of order)**

**20.  The Day That Time Stood Still 1945**    
IT TOOK A BLITZKRIEG to start World War II, but only two bombs to end it. The first, on August 6, 1945, leveled most of Hiroshima, annihilating some 80,000 people in a blinding flash. The second hit Nagasaki three days later, killing 40,000. After three years of top-secret work, the Manhattan Project had translated Einstein's theory of relativity into devastating reality: a weapon that harnessed the energy released by the splitting of the atom. The A-bombs' effects were as eerie as they were deadly. Those closest to the blasts were vaporized, leaving bright silhouettes on blackened ground. Others perished slowly, radiation flaying them and devouring their organs. Cancer added to the toll, which eventually approached 200,000 in Hiroshima. Whether or not the atomic attacks were militarily necessary (a question that still stirs debate), one thing was clear from the moment the Enola Gay released its payload: Human beings now had the means to exterminate humanity. The mushroom cloud would shadow politics and culture--and the nightmares of millions--forever after.

**19.  Hitler Comes to Power 1933**    
IN ANY ACCOUNTING of the millennium's monsters, first place must go to the ruler who made genocide a multinational industry--Adolf Hitler. The scale of the enterprise boggles the mind: freight trains carrying Jews to human stockyards from across Nazi-occupied Europe; victims worked to death, shot or gassed; corpses incinerated or processed into soap; gold teeth harvested for the coffers of the Reich. Hitler's megalomania sparked the Holocaust and history's most destructive war. The preparation for both began the moment he became Germany's chancellor in January 1933.

Promising salvation from the chaos of the Depression, Hitler swept aside German democracy. A hypnotic orator, he preached a sort of crank Darwinism: At evolution's pinnacle were the so-called Aryans (Germans and other Nordic peoples), destined to subdue or destroy all "inferior" races--particularly the Jews, whom Hitler blamed for most of humanity's ills. Linking ancient prejudice to wild dreams of glory, this mad ideology galvanized the nation. Herded into lockstep by the propaganda and police forces of a totalitarian state, Germans prepared to conquer the earth.

World War II began in 1939. Six years later, the Axis countries were vanquished; some 17 million combatants and 60 million civilians were dead. And within that horror lay a new benchmark of evil: six million Jews and nearly as many other "undesirables" (Gypsies, homosexuals, leftists, Slavs) systematically slaughtered.

**18 Live From Schenectady 1928**    
AS A TELEVISION show, it had a somewhat limited appeal. Live from General Electric's radio laboratories in Schenectady, New York, it's . . . a guy removing his glasses. And then putting them on again. Then blowing a smoke ring. So went the world's first television broadcast--into three homes. And yet on that January afternoon in 1928, GE's brilliant Swedish-born engineer, Ernst F.W. Alexanderson, laid the crude foundation of one of the most powerful, influential media in history.

Ever since the launch of radio broadcasting in the early 1920s, the race had been on to combine and transmit sound with moving images. Two years before Alexanderson's demonstration, Scotsman John Logie Baird used a mechanical scanner to transmit a flickering image of a human head. But GE surpassed Baird's efforts. Four months after Alexanderson's transmission, the company was broadcasting images three times a week, and the basic elements of television were in place. Then in 1937 an electronic system employing the more sophisticated cathode-ray tube was adopted by the BBC in England. The broadcast of the 1947 World Series clinched television's growing importance. By the end of the 1950s, nearly 90 percent of U.S. homes could boast at least one TV set. The world no longer needed to be imagined--now it could be seen and heard. America had a new communal fireplace.

**17  Ford Rolls Out the Model T 1908**    
THE AUTOMOTIVE AGE BEGAN in 1908 when Henry Ford unveiled his "car for the great multitude." At $850, the tough and homely Model T was the first car that could fit a farmer's budget. Prices fell still further after Ford introduced a revolutionary system of manufacture--the moving assembly line, which eventually spewed out a Tin Lizzie every 24 seconds. As other automakers adopted Ford's methods, cars altered the face of the planet. Industries arose to serve a flood of travelers. The economics of petroleum decided the fate of nations. Traffic deaths mounted (43,700 fatalities last year in the U.S. alone). Smog spread inexorably. And so did another by-product of the assembly line: the culture of mass consumption.

**16  The Germ Theory of Disease 1882**    
DISEASE WAS ONCE thought to be caused by evil spirits. The connection between sickness and germs remained a mystery until the mid-19th century when experiments revealed that infectious agents can multiply within the human body. By 1864, French scientist Louis Pasteur had concluded that microorganisms were also present in the air. He isolated microbes responsible for fermentation and silkworm diseases, but it wasn't until 1876 that Robert Koch, a German scientist, showed that a specific bacillus caused a specific disease. Koch's work with anthrax and tuberculosis established the germ theory of disease and had immediate implications for diagnosis and treatment. The 1882 report of his discovery of the microbe that causes TB proved the disease's infectiousness and also outlined his famous postulates, still used today, that link a given organism to a specific illness. The work of Pasteur and Koch ushered in the science of microbiology and led to advances in immunology, sanitation and hygiene that have done more to increase the life span of humans than any other scientific advance of the past 1,000 years.

**15  The Wizard of Menlo Park 1876**    
HE TAMED both lightning and thunder in a tiny lab in New Jersey. Born in small-town Ohio in 1847, Thomas Alva Edison parlayed an early fascination with chemistry and telegraphy into a string of business successes that enabled him in 1876 to build a boxy, two-story building in Menlo Park. It was the first factory in the world designed to produce nothing but inventions. The next year he and a colleague created a machine that translated recorded vibrations into a representation of sound--the phonograph. Then, in November 1879, the Menlo Park team tested a carbonized cardboard filament that could glow for days on end. After more than 1,000 trials, Edison had done it: He had given birth to a useful incandescent lamp. His goal had not been to invent electric light--that had been done decades earlier--but to create a lightbulb that would be long-lasting and inexpensive, along with a system, from power station to screw-in socket, that would render it viable on a large scale. Before Edison, the artificial light that people had to live in was harsh, flickering, ephemeral and dangerous.

In 1903 Edison produced an important early motion picture, The Great Train Robbery, to accompany his many other advances, such as his telephone transmitter, stock ticker, fluoroscope, storage battery and the "Edison effect" lamp (it would lead to the tubes used in radio and television). In all, he held more than 2,000 patents, many of them from Menlo Park. It is difficult to overestimate their significance. The can-do intelligence in that little lab let us see and let us hear.

**14  Talking Down a Two-Way Street 1876**    
THE FIRST TELEPHONE transmission, on March 10, 1876, was a one-way message--"Mr. Watson! Come here! I want you!" But Alexander Graham Bell's invention would change two-way communication forever. A professor of vocal physiology at Boston University, the Scottish-born Bell, 29, had dreamed for a decade of sending speech through wires. He was trying to invent an improved telegraph when he discovered the phenomenon that would make the telephone possible: Sound vibrations caught in a drumlike membrane could be translated into electromagnetic waves. Aided by technical assistant Thomas Watson, Bell found a way to transmit those waves to a receiver and turn them back into sound. The company he cofounded, Bell Telephone, morphed into AT&T, one of the largest corporations anywhere.

For businesses, governments and ordinary people, the telephone represented a quantum leap in efficiency. Instead of composing a letter or telegram and waiting for a reply, one had only to get on the horn. But the phone altered human relations on a deeper level, too. Millions isolated by circumstance could reach out and touch someone, if only figuratively. No longer requiring physical proximity, intimacy became both easier and less intimate.

Today, there are some 750 million telephone subscribers worldwide. Computers, including 10.7 million Internet hosts, share the circuits. And letter-writing is staging a surprise comeback--this time over the phone lines, via E-mail.

**13  How Did We Get Here 1859**    
HE WAS THE first scientist to come up with a compelling alternative to the biblical account of creation. Observing plants and animals during a five-year voyage around the world, Charles Darwin concluded that evolution explains the diversity of living things. In Origin of Species (1859), the English naturalist posited that random mutations may help an organism--a Galáápagos finch, say--adapt to its environment. Better equipped for survival, it would also be more likely to pass advantages on to its offspring. Over generations, this process of "natural selection" might give rise to whole new species. Indeed, all life might be descended from a few primitive organisms. Darwin was denounced as a heretic, especially for hinting at an ancestral link between humans and apes. But his theory's elegance--its ability to explain so many phenomena that had seemed whims of nature--prevailed. Today evolution is as basic to most people's world view as the idea that the earth circles the sun.

**12  The Machine Age Gears Up 1796**    
A COLUMN OF black smoke splits the millennium. People who lived before the Industrial Revolution could not have imagined what the world would someday look like, just as those living in its wake can scarcely envision a time without its conveniences and ills.

A mathematical instrument maker at Glasgow University triggered the change by tinkering with a model of the Newcomen steam engine, built in 1712 to pump water out of mines. James Watt patented a version in 1769 that saved 75 percent in fuel costs. Soon his superior engines powered coal mines and textile mills, plus the railroads and ships that carried the new technologies to the Continent and the New World. Before, Britons had been agrarian; by 1870, 70 percent of them had moved to cities, living mostly in slums, where overcrowding, poor sanitation and outbreaks of typhus, cholera and dysentery were common. Factories producing iron belched smoke. Mines and quarries scarred the earth.

The landscape of the postrevolution family also changed. Women and children as young as six were exploited by factory bosses. For the upper classes, the result was an elevated quality of life. Rapidly expanding prosperity, combined with the new cost-efficiency of machines, gave bankers, entrepreneurs and merchants wealth on an unprecedented scale. A middle class of managers grew more educated, enjoying better health, more leisure time and greater mobility. Even the lower class could afford better, cheaper products. Despite Luddite attacks on machinery, the revolution kept gathering steam.

**11  A Shot in the Arm 1796**    
THE ERADICATION OF one of the worst plagues ever can be traced to a cow. Smallpox caused scarring and blindness and at its peak in the 18th century killed 60 million Europeans, most of them children. Variolation, a 2,000-year-old practice of inoculating patients using strains of a disease, was often so bizarre--and deadly--as to be worse than the disease itself. In China doctors crumpled smallpox scabs and blew them up the nostrils of otherwise healthy patients, leaving them vulnerable to the risk of other infections.

Enter Edward Jenner, a general practitioner from rural England. Trusting in the popular belief that cowpox built one's immunity to smallpox, Jenner extracted cowpox-infected lymph from pustules on a Gloucestershire milkmaid on May 14, 1796, and inserted a small amount into an 8-year-old boy. Seven weeks later, Jenner injected the boy with smallpox. His immune system held its ground; the science of immunology had become a possibility. Vaccinations for hepatitis, diphtheria, polio and measles revolutionized public health--and created one of the first battle wounds of childhood, a word derived from the Latin vaccinus, meaning "of the cow," a nod to an anonymous English animal to whose stature Mrs. O'Leary's can only aspire.

**10  A Declaration to the World 1776**    
WE HOLD these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights. . . ." Today most governments at least pay lip service to those truths. But before July 4, 1776, when the Continental Congress adopted "The unanimous Declaration of the thirteen united States of America," no nation had been founded on such principles.

Penned by 33-year-old Virginia delegate Thomas Jefferson, the Declaration was meant to explain, after a year of war, the American colonies' break with Britain. The document listed the offenses of King George III, ranging from restriction of trade to the use of foreign mercenaries. (A passage denouncing the king's promotion of slavery was cut to placate some delegates.) More important, it laid out the concept of natural rights--borrowed largely from British philosopher John Locke--that would form, in the words of Congress president John Hancock (one of 56 signatories), "the Ground & Foundation" of the U.S. government.

The Declaration was more than just one country's manifesto. It spurred Latin Americans to sever ties with Spain and the French to overthrow a king. Vietnam's Ho Chi Minh paraphrased it when he defied France. And its avowal that all men are born equal moved more than males: When the U.S. women's suffrage movement was launched in 1848, its founders modeled their declaration on Jefferson's.

**9  Galileo Sees the Moons of Jupiter and The Earth Moves 1610**    
THE TENSION between religion and science can be symbolized by one man: Galileo Galilei. He did not originate the theory that the earth revolved around the sun. Nor did he invent the telescope. But Galileo's skill as a mechanic enabled him to improve the telescope so that he saw the moons of Jupiter in 1610. He used the sightings to support the idea that Jupiter and Earth revolve around the sun. And at least when he published his arguments, he possessed a spine stiff enough to stand up to the Catholic Church, which saw the earth as the center of the universe.    
The textbook version of Galileo's life calls him the father of modern mechanics because of his work on the laws of motion. Born in Pisa in 1564, he became a math professor and developed the law of falling bodies--that falling objects accelerate at the same rate regardless of their mass.    
The breathing, pulsing Galileo was a complicated character whose sense of self-importance knew few bounds. He abandoned his mistress and stashed his two daughters in convents. He used political connections to impede competing inventors. His arrogance ultimately helped cause the quake within the Church that a more diplomatic scientist might have avoided.

With its armies facing Protestant forces to the north, the Catholic Church was in no mood to accept any questioning of its authority. Pope Urban VIII, convinced that Galileo had mocked him, felt compelled to call the astronomer before the Inquisition. Under threat of torture, at the age of 69, Galileo recanted and was placed under house arrest until his death nine years later. To this day, the world remembers him for an exchange that may in fact be fiction. After recant- ing, Galileo is said to have muttered, "And yet it [the earth] does move." Whether true or not, it took more than 300 years for the Church, under Pope John Paul II, to do its own recanting.

**8  Luther Knocks Down the Door 1517**    
MARTIN LUTHER was tortured by anxiety about his own sinfulness. How, he wondered, could the Vatican promise forgiveness of sins in exchange for donations? Didn't the powers of mercy and redemption belong to God? Finally, on October 31, 1517, unable to contain his skepticism, Luther nailed "Ninety-Five Theses" to the door of the All Saints Church in Wittenberg, Germany. A criticism of papal policy, particularly the selling of "indulgences," the document stressed the inward, spiritual character of the Christian faith. It denounced those who would pay fees to avoid having to embrace the cross and share privately in the suffering of Christ, and it rejected the notion that Church doctrine and canon law have authority approaching that of Scripture. The Vatican quickly moved against Luther for heresy; in 1521 it formally excommunicated him. "Here I stand," Luther said. "I can do no other." Unless convinced of his error through Scripture or evident reason, he would not contradict his own conscience, which was bound by the word of God.

When the Edict of Worms declared Luther a political outlaw, his anticlerical message was taken up by others. As the laity moved against monasteries and their landholdings; as priests began to marry; as princes and other powers allied against the Holy Roman Empire; and as bishops came to be appointed by secular authorities, the Reformation was begun in earnest. Political authority would never again be fully subject to the dictates of a distant clergy, and the map of Europe would be determined by the nationalism that still dominates world politics today.

**7  Of Human Bondage 1509**    
SLAVERY WAS WITH US long before the second millennium began. Ancient, medieval, Asian, European, African--almost every society practiced it in some form. But from the 16th through the 19th centuries, the transatlantic slave trade transformed four continents, as Europeans shipped 10 to 15 million African slaves across an ocean and into the horrors of perpetual servitude.    
The largest forced migration in world history started slowly and followed the expansion of European trade and conquest. The earliest African slaves arrived in the New World in 1509, but their numbers remained small until 1530 when Portugal, the first European nation to trade with the kingdoms of West Africa, began sending slaves to work on sugar plantations in Brazil, then in the West Indies. The suffering during the Middle Passage was enormous. Uprooted from family, shackled and marched to Africa's coast to be placed in pens before shipping, the slaves knew no end of degradation. For weeks or months, they stayed chained together in hulls of ships, packed in rows, shoulder-to-shoulder, next to the sick and dying, not knowing their destination or their fate.

**6  A Global Civilization 1492**    
CHRISTOPHER COLUMBUS died a magnificent failure. Four times he tried to find a route to Asia by sailing west across the Atlantic. When his quest ran aground against another continent, he simply insisted Cuba was part of China.

Columbus lifted sail in August 1492--and got lost. Only shouts of "Tierra,tierra!" on October 12 ended threats of mutiny. The island the natives called Guanahani, and renamed San Salvador by Columbus, is believed to have been his first landfall. He thought the native people simple and naturally good, "easy to conquer," until they resisted. Then things got ugly. His governorship of Hispaniola was the low point, an outburst of gold fever accompanied by the enslavement and slaughter of the native people. In December 1500, Columbus was arrested for his mismanagement and sent home in chains. Ideas, goods, deadly microbes and African slaves followed in the wake of his crossing. He may have stumbled on a "new world," but his adventurous spirit played no small role in creating a new, global, civilization.

**5  Gutenberg Prints the Bible 1455**    
OF ALL THE millennium's technological revolutions, the most far-reaching started just before the era's midpoint. Throughout history, the ability to read and write had been confined mostly to tiny elites of nobles, priests and scribes. But in the 15th century a literate middle class arose in Europe. Its hunger for knowledge led inventors to seek a way to mass-produce the written word. And when German goldsmith Johann Gutenberg succeeded--creating his masterpiece, a run of 200 gorgeously typeset Bibles, in 1455--he unleashed an information epidemic that rages to this day.    
    
To appreciate Gutenberg's achievement, it is necessary to understand what he did not do. He didn't invent printing: The craft emerged in 8th century China, using multiple characters carved on a single woodblock. He didn't invent movable type (letters rearranged for each new page): Chinese printer Pi Sheng did, around 1040. Gutenberg didn't even invent movable metal type: The Koreans did, in the 14th century. But wood-block printing of text reached Europe only in the early 1400s, and it appears that no one on the continent knew of Asia's more advanced techniques. Movable type had not, in fact, caught on widely in China or Korea, where writing involved 10,000 characters. In Europe, however, such technology seemed full of promise. What Gutenberg devised was the first Western movable-type system that worked--so well that it remained virtually unchanged for 350 years.

Gutenberg designed a new kind of press, based on those used to squeeze olives. He came up with an alloy of lead, tin and antimony, and a precisely calibrated type-mold to pour it into. He concocted a smudge-resistant ink of lampblack, turpentine and linseed oil. Each page of his Bible probably took a worker a day to set, but once the type was in place, the rest was relatively easy.    
Gutenberg's methods spread with stunning rapidity. By 1500, an estimated half a million printed books were in circulation: religious works, Greek and Roman classics, scientific texts, Columbus's report from the New World. An acceleration of the Renaissance was only the first by-product of the Gutenberg press. Without it, the Protestant movement might have been stillborn, as well as the industrial and political revolutions of the succeeding centuries. Gutenberg, however, got none of the glory. His brainchild bankrupted him; in 1455 a creditor took over his business. Little more is known of the inventor--in part because he never put his own name into print.

**4  Seeds of Democracy 1215**    
KING JOHN OF ENGLAND was a knave. He waged costly wars, sold legal judgments, imposed crushing taxes, seized hostages from his barons' households. Then in 1215 the barons rose against him, forcing John to sign the Magna Carta--and securing the unsavory king a place in the annals of human freedom.

Most of the document simply held the monarch to his feudal obligations. But it also contained seeds of democracy. No free man was to be imprisoned without "the lawful judgment of his peers." Justice was not to be sold or impeded. No property was to be seized without compensation. Should the king renege on the charter, the barons had the right to revolt. John reneged, and died fighting in 1216. The Magna Carta lived on. Its promise of due process came to cover all social classes. Its requirement that the king consult the barons on decisions was used to justify parliamentary limits on the monarchy. It influenced Locke and Rousseau, who preached that governments must protect citizens' rights or perish--a notion central to the American and French revolutions. Its echoes persist in many constitutions. And when the U.N. adopted the Universal Declaration of Human Rights in 1948, coauthor Eleanor Roosevelt called it the "Magna Carta of all mankind."

**3  The Compass Goes to Sea 1117**    
IT WAS LITTLE MORE than a magnet floating in a bowl of water, but without the nautical compass the millennium's great voyages of discovery could never have occurred. First used in feng shui (the Taoist system of environmental design), compasses appeared in China in the 4th century B.C. Lodestone pointers were replaced by flat slivers of iron, and then by needles, which arrived in the 6th century A.D. But the first account of seagoing compasses doesn't come until 1117, from Zhu Yu's P'ingchow Table Talk: "In dark weather, sailors look at the south-pointing needle." The compass reached Europe around 1190, almost certainly from China. (Its powers were so little understood that captains forbade their crews to eat onions, which were thought to destroy magnetism.) For Mediterranean sailors, used to long periods when overcast skies made navigation difficult, the device meant liberation. By the 15th century, they were ready to venture be- yond familiar seas.

**2  China Develops Gunpowder Weapons c.1100**    
CHINESE ALCHEMISTS discovered the recipe for gunpowder--saltpeter, sulfur and charcoal--in the 9th century. But the great development of gunpowder weapons began in the early 1100s when the Song dynasty was besieged by the Jurchen Jin Tatars. Over the next 200 years, as the Jin conquered northern China and were in turn overrun by the Mongols, an arms race raged between defenders and invaders. Bamboo flamethrowers evolved into metal-barreled guns. Paper incendiary grenades gave way to iron bombs that shattered stone walls. When gunpowder technology reached Europe--it was first used at the siege of Metz, now in France, in 1324--the effect was explosive. Since only kings could afford large numbers of muskets and cannons, the nobility's power declined. Centralized states, backed by standing armies, replaced feudal fiefdoms. Guns gave colonizers a big advantage over native peoples. But the spread of such weapons eventually leveled the field--making possible an age of revolutions, world wars, guerrilla conflicts and terrorist bombings.

**1  The Crusaders Were Here 1095**    
THE 200-YEAR Christian campaign to reclaim Jerusalem from Muslim rule brought Europe's greatest military and commercial expansion since the fall of Rome. It inspired a wealth of art and literature--most notably Chaucer's Canterbury Tales. It was also a bloody episode, a portent of ethnic strife to come.

Purported relics from the era of Jesus, unearthed in Jerusalem (the Holy Lance, John the Baptist's remains), proved to Western Christians that the city belonged to them. Almost from the moment Pope Urban II launched the First Crusade in 1095, zealots plundered their way toward Palestine, slaughtering unbelievers--including thousands of European Jews.

In 1099 the Christians took Jerusalem. But battles continued there and throughout the Middle East, and in 1244 the Muslims regained the city. Still, Europe won much from the Crusades. They helped revive mining and manufacturing. New trade routes opened, conduits for Eastern imports that enriched the West: silk, spices, gunpowder, algebra. A less popular novelty was the income tax--instituted to help pay for the holy wars.