**GPS History - How it all started**



The Global Positioning System (GPS) was developed by the U. S. Department of Defense (DOD), Ivan Getting, and the Massachusetts Institute of Technology (MIT). Originally consisting of 11 orbiting satellites, the GPS--official name NAVSTAR (Navigation System with Timing And Ranging)--was launched by DOD in 1978 strictly for military use. The idea for the system began much, much earlier. In fact the basic idea of GPS navigation can be traced back centuries to the first explorer who asked the question, "Where am I?" The technology of GPS history, however, first emerged in the 1950s.

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In 1957, Russia launched a satellite (Sputnik) into space. After the launch, MIT researchers noticed that as Sputnik orbited the planet, its radio signal varied in strength. As it approached their position, the signal strength increased. When the satellite departed the MIT researchers' position, the signal strength decreased. From this increase and decrease of the radio signal, the MIT researchers could determine Sputnik's exact orbit. This recognition that radio signals from a satellite, or "artificial star" could determine distinct positions on the ground was truly the launching pad of the GPS system.

Even before that, however, the seeds for the GPS technology were being planted. In 1951, Dr. Ivan Getting, a graduate of MIT student and a Rhodes Scholar from Oxford, put his Ph.D. in astrophysics to use at Raytheon. The Air Force requested a guidance system for a proposed ICBM traveling via railroad. In response to this request, Dr. Getting developed the first three-dimensional, position-finding system based on time difference of arrival. This system became the basis for the future GPS.

The deployment portion of the GPS history began in 1973 with the decision to develop a satellite navigation system based on existing technology of the U. S. Air Force and the U. S. Navy. The system went through extensive testing during the next three years. In 1977 the first transmitters were installed on the surface of the Earth and tested--even though no satellites have been launched yet. The transmitters were dubbed Pseudolites (pseudo satellites).

Between 1978 and 1985, eleven satellites were launched into space and put into position. In 1979, the decision was made to increase the number of satellites to 18. In 1980, the first Block I satellite was launched. This "bird' had sensors specifically designed to detect atomic explosions, and was placed in orbit as a means of monitoring the Soviet Union's compliance with the 1963 agreement with the United States to refrain from nuclear testing.

Also in 1980, the onboard atomic clocks, the most accurate timepieces in the world, were activated. Developed by physicists, atomic clocks measure time by the change in energy levels of electrons. These clocks are stable, continuous, and accurate to a nanosecond, or one-billionth of a second.

In 1983, the GPS ceased being solely a military system and was made available for public use. President Ronald Reagan declassified the GPS system in response to a tragedy involving a civilian airplane. Korean Airline flight 007 got lost over Soviet territory and was shot down by Soviet fighters. In 1986, the Challenger space shuttle tragedy halted space shuttle launches, and thereby delayed the GPS system, because shuttles were supposed to transport the new Block II satellites. Eventually, Delta rockets, the original transport, were put back into use to launch the satellites, and in 1988, the decision was made to increase the number of satellites to 24, because functionality with 18 satellites was still limited.

Though the GPS system was available for public use, the first Gulf War in 1990 saw temporary deactivation of use by the public, because the military needed more receivers. Public use returned in 1993 along with the decision that the GPS system would be available free of charge to the entire world. Full Operational Capacity (FOC) was achieved in July of 1995 with the placement and activation of the last of the 24 satellites.

Since 1995, GPS history has seen considerable technological advancement. More satellites have been put into orbit, increasing both availability and accuracy. Previously GPS could locate a subject within 100 meters. That accuracy improved to finding subjects within 10-15 meters, and at present can be measured within centimeters in some cases. Availability improved from utilization in military and the position-required industries of aviation, nautical navigation, and land surveying, to include many personal applications. With the use of a fairly inexpensive receiver, employers use GPS to track their fleet of vehicles, parents use the system to keep track of small children and of disobedient teenagers, and pet lovers use it to keep track of their dogs.

See related information at [How GPS Works](http://www.maps-gps-info.com/hw-gp-wrks.html).

Note:

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