



**AMSAT<sup>®</sup>**

**The Radio Amateur Satellite Corporation**

# **FACT SHEET**

## **What is AMSAT<sup>®</sup> ?**

AMSAT is a worldwide group of Amateur Radio Operators who share an active interest in building, launching and then communicating with each other through non-commercial Amateur Radio satellites. By any measure, AMSAT's track record has been impressive. Since its initial founding nearly 30 years ago, AMSAT has used predominantly volunteer labor and donated resources to design, construct and, with the added assistance of government and commercial space agencies, successfully launch, over two dozen Amateur Radio communications satellites into Earth orbit.

The Radio Amateur Satellite Corporation (as AMSAT is officially known) was first formed in 1969 as a not-for-profit, 501(c)(3) educational organization chartered in the District of Columbia, USA. Its aim is to foster Amateur Radio's participation in space research and communication. AMSAT was founded to continue the efforts, begun in 1961, by Project OSCAR, a west coast USA-based group which built and launched the very first Amateur Radio satellites. OSCAR stands for Orbiting Satellite Carrying Amateur Radio, a term that is still used to identify most Amateur Radio satellites. OSCAR 1 was launched December 12, 1961, barely four years after the launch of Russia's first Sputnik. OSCAR 1 was followed, six months later, by OSCAR 2. These satellites were built, quite literally, in people's garages and basements. They contained relatively simple beacon transmitters that used non-rechargeable batteries which limited their useful lifetimes to a few weeks. However, the "home-brew" flavor of these early Amateur Radio satellites lives on, as most of the hardware and software now flying on even the most advanced AMSAT satellites is still largely the product of volunteer effort and donated resources.

While the original District of Columbia-chartered organization in the USA is still very active, other like-minded groups throughout the world have since been formed to pursue the same goals. Many of these groups share the AMSAT name. For example, the AMSAT group in Germany uses "AMSAT-DL" as its official name. Likewise, the group in Great Britain uses "AMSAT-UK". Japan's AMSAT group is called "JAMSAT" and the group in Brazil uses the term "BRAMSAT" as its official title. All of them, and many others like them throughout the world, share the same goal...fostering Amateur Radio activities in space. In order to prevent confusion, however, the original AMSAT group is now often informally called "AMSAT-NA", for AMSAT-North America. While the affiliations between the various groups are not formal, they do cooperate very closely with one another. For example, international teams of AMSAT volunteers are often formed to help build each other's space hardware, or to help launch and control each other's satellites.

Most launches for AMSAT spacecraft since the Project OSCAR satellites have used non-military launch vehicles, and have been carried, almost exclusively, as secondary payloads. The early AMSAT satellites were principally launched on missions carrying weather satellites into orbit. Since that time, however, AMSAT spacecraft have shared launch vehicles with a whole host of other commercial, scientific and navigational satellites from a number of countries.

Besides building and launching satellites that allow Amateur Radio operators to experiment with new and more sophisticated ways of communicating, AMSAT has also helped both government and commercial space agencies develop new ways of carrying payloads into orbit. For example, in the late 1980s, AMSAT volunteers, working with the European Space Agency (ESA), developed a unique launch adapter to take advantage of unused space on the Ariane 4 vehicle's upper stage. In 1990, this structure was used to successfully launch four very small amateur digital communications satellites (called MICROSATs) along with two additional, albeit somewhat larger, amateur satellites into Earth orbit. The structure has since been used by ESA to carry other small payloads into space, many of them carrying derivatives of the same digital "store-and-forward" satellite communications technology that was first pioneered by AMSAT.

In addition to its unmanned satellite efforts, AMSAT has also been active in manned space and educational activities. Working together with the American Radio Relay League (ARRL) and the National Aeronautics and Space Administration (NASA), AMSAT volunteers helped develop new space-qualified hardware and have since donated their technical communications "know-how" to a number of flights involving Amateur Radio operation aboard the NASA Space Shuttle. In recent years, these Amateur Radio operations, called SAREX (which is short for Shuttle Amateur Radio Experiment), have been used to bring school children in a number of countries into direct radio contact with Shuttle astronauts in Earth orbit. In addition, AMSAT volunteers, in conjunction with the ARRL and NASA, are now beginning construction Amateur Radio equipment that will be carried aboard the International Space Station (ISS). As with SAREX, this equipment will be used as a tool for educational outreach. However, the Amateur Radio equipment will also serve a dual role as a recreational outlet for ISS crews during their anticipated long-duration space flights.

For well over 25 years, AMSAT groups have played a key role in significantly advancing the state of the art in space science, space education and space communications technology. Undoubtedly, the work now being done by AMSAT volunteers throughout the world will continue to have far-reaching, positive effects on the very future of both Amateur Radio, as well as other governmental, scientific and commercial activities in the final frontier. Rarely have a group of "amateur" volunteers managed to do so much...for so many...with so little.

FOR MORE INFORMATION VISIT US ON THE WORLD WIDE WEB AT:

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