Telemetry Encyclopedia Article

Telemetry

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The original definition of telemetry encompassed any form of remote measuring, but the term has become more narrowly defined to describe the observation of variables and physical measurements from a remote point. Early uses of telemetry were primarily for military purposes. The first documented use of telemetry was in Russia in 1812 by a man named Shilling, who applied the concept to the firing of mines. In 1845, a man named Takobi devised a military data-transmission system using telemetry. That same year, Konstantinov and Pouli created a telemeter that could recorde and analyze the flight of cannonballs. By 1857, warships used telegraph signals between the bridge and engine and gun locations.

Soon telemetry began to be applied in other fields. Olland developed a meteorological telemeter which he used to measure weather variables in 1874 and in 1906 seismic telemetering came into use. The Weather Bureau began to use the radio meteorological telemeter in 1913. Telemetering was used extensively to measure variables and conditions during the construction of the Panama Canal in 1913 and 1914.

By 1941, Princeton and Johns Hopkins universities were researching means to apply telemetry to aircraft and missile technology, and the first guided missiles, utilizing a telemetric guidance system, were tested at Eglin Field in Florida in 1946. In 1947, the first missile was fired into the atmosphere for the purpose of conducting upper-atmosphere research. The successes of these projects prompted research into the use of artificial satellites guided by telemetric systems and in 1957, Russia launched its exploratory satellites Sputnicks I and II, while the United States launched Explorer I and Vanguard I.

Industrial telemetry was also being developed during this time, building toward the creation of digital computers. One of the first such machines was put into use by the Louisiana Power and Light Company in 1958. The first television communications relay via satellite occured in 1962. Today, telemetry is applied to a variety of remote applictions, including operation of satellites and antennas. Telemetry is also used to operate land-based mechanical apparati; robots perform a variety of automated functions in various industries and sometimes carry out fundtions too dangerous for humans. Robots performed much of the cleanup after the nuclear disaster at Three Mile Island in Pennsylvania, for instance.