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Automated Blood Pressure Measurement The Vital-2 unit pictured is a semi-automatic device that permits highly accurate blood pressure measurement, even by untrained personnel. Developed by Meditron Instrument Corporation, Milford, New Hampshire, it is based in part on NASA technology found in a similar system designed for automatic monitoring of astronauts' blood pressure.

Vital-2 is an advancement over the familiar arm cuff, dial and bulb apparatus customarily used for blood pressure checks. In that method, the physician squeezes the bulb to inflate the arm cuff, which restricts the flow of blood through the arteries. As he eases the pressure on the arm, he listens—through a stethoscope—to the sounds of resumed blood flow as the arteries expand and contract. Taking dial readings related to sound changes, he gets the systolic (contracting) and diastolic (expanding) blood pressure measurements. The accuracy of the method depends on the physician's skill in interpreting the sounds. Hospitals sometimes employ a more accurate procedure, but it is "invasive," involving insertion of a catheter in the artery.

For monitoring astronauts in space, NASA sought a compact, automatic system capable of high accuracy and reliability, yet non-invasive and not requiring interpretive skill. Johnson Space Center and Technology, Inc., a contractor, developed an electronic sound processor that automatically analyzes blood flow sounds to get both systolic and diastolic measurements. Meditron obtained a license to use the NASA-patented technology and incorporated a variation of the diastolic measurement technique in developing Vital-2.

Vital-2 weighs only six pounds and can be carried anywhere. It operates either on its own rechargeable battery or by plugging in to a standard outlet. The system requires positioning and inflation of the arm cuff, but after that it operates automatically. The interpretation is handled by its electronic equipment, and the blood pressure readings appear automatically on a digital display. Because it is accurate, reliable and non-invasive, it has proved attractive to the medical profession and Meditron has sold several hundred units to hospitals, medical screening clinics, physicians and anesthesiologists.