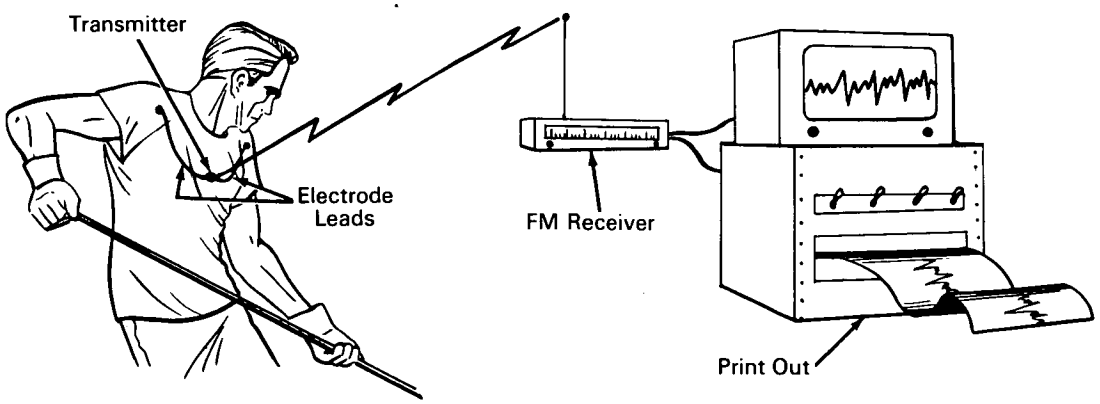
NASA TECH BRIEF

This NASA Tech Brief is issued by the Technology Utilization Division to acquaint industry with the technical content of an innovation derived from the space program.

Subminiature Biotelemetry Unit Permits Remote Physiological Investigations



The problem: The measurement of biopotential response in humans or animals to controlled environmental stimuli has traditionally been impaired by encumbering electrical leads or bulky amplifying and transmitting equipment.

The solution: A subminiature, high-performance, biopotential telemetry transmitter operating in the standard 88- to 108-megacycle FM band.

How it's done: The transmitter was designed using standard, inexpensive, commercially available components and assembly techniques which permit easy and repeatable assembly with no sacrifice of performance or reliability. The transmitter is 0.74 inch in diameter by 0.20-inch thick and weighs two grams. A mercury cell provides power for operation in two modes, selected by the interchange of three components in the basic circuit. In one mode the transmitter has a two-day operating life with a 100-foot range; in the other, the transmitter has a 48-day operating life with a 10-foot range. Conventional biomedical electrodes are used to connect the transmitter to the subject.

Notes:

1. In tests, humans have worn the unit for four or five days without discomfort and have generated useful data while engaged in normal activities.
2. Further information concerning this innovation is described in NASA-TM-X-54068, "A Miniature Biopotential Telemetry System" by Gordon J. Deboo and Thomas B. Fryer, May 1964.
3. A related innovation is described in NASA Tech Brief 64-10025, May 1964.
4. Inquiries may also be directed to:

   Technology Utilization Officer
   Ames Research Center
   Moffett Field, California, 94035
   Reference: B64-10171

Patent status: NASA encourages commercial use of this innovation. No patent action is contemplated.

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