

New Respiratory Monitor

To the Editor:—Anesthesiologists are frequently called upon to provide support for high-risk patients undergoing lengthy procedures with local or regional block anesthesia. Intravenous sedation is often indicated to control anxiety and supplement an incomplete local or regional block. While cardiovascular homeostasis can usually be monitored with acceptable security by observing the blood pressure, pulse and electrocardiogram, information about respiratory activity has not been so reassuringly available when limited to observation of chest or abdominal movement, often under concealing drapes, and to auscultation of breath sounds from a stethoscope taped to the chest.

In the hope of obtaining more pertinent information about respiratory activity, a microphone-amplifier unit adapted to paratracheal placement was devised by the authors. The monitor consists of a carbon button microphone element,* connected to an integrated circuit amplifier module† with a frequency response of 50–15,000 Hertz, drawing power from a

6-C volt lantern battery, controlled by a single-pole, single-throw switch. The output is fed to a pair of 8-ohm earphones. A 500-ohm variable resistor, in parallel with a 10 μ f, 25-volt electrolytic capacitor, is used for volume control (fig. 1). Clarity and amplitude of the breath sounds as perceived via the amplifier exceed by far that those obtainable from a precordial stethoscope. In instances in which respiratory obstruction developed, it was consistently detected first by the amplifier. We believe that the paratracheal microphone has proved to be considerably more informative than the precordial stethoscope and vastly superior to visual monitoring of chest movements in the early detection of respiratory obstruction or depression. Use of this device increases patients' safety during local or regional anesthesia.

MICHAEL N. SKAREDOFF, M.D.
*Resident, Department of Anesthesiology
The Buffalo General Hospital
Buffalo, New York 14203*

MARCOS G. VIGUERA, M.D.
*Department of Anesthesiology
The Buffalo General Hospital
Buffalo, New York 14203*

* Available for \$2 from Phone World, Inc., 4239 Transit Road, Williamsville, New York 14221.

† Cordover PAA-2 Amplifier Module available at \$5.95 from Poly-Paks, Inc., P.O. Box 942, South Lynnfield, Massachusetts 01940.

(Accepted for publication July 11, 1979.)

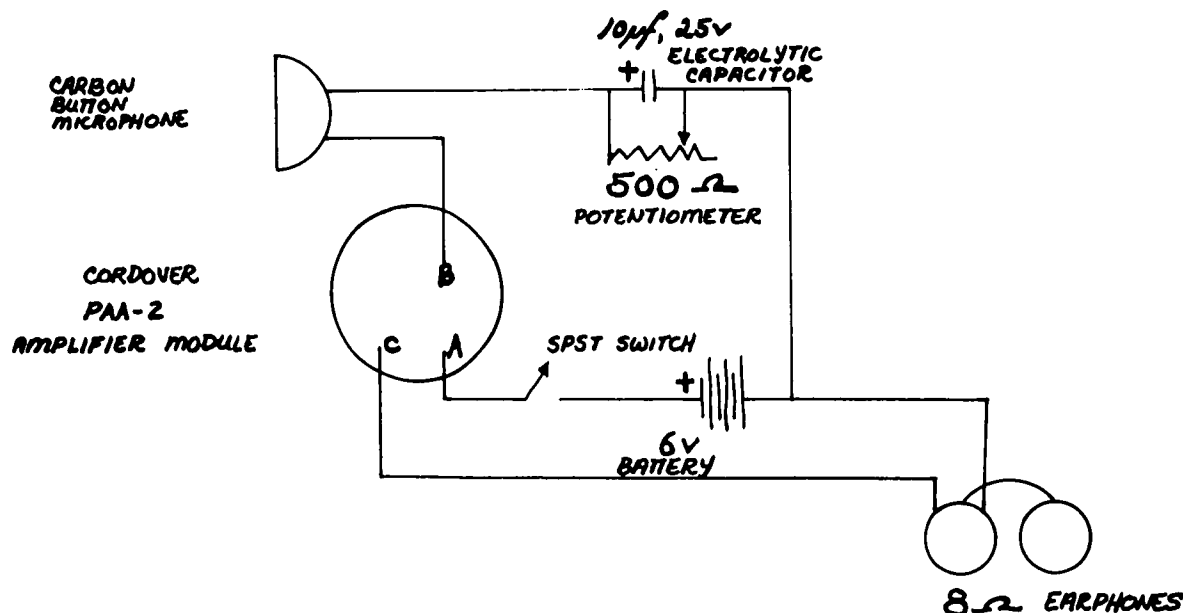


FIG. 1. Circuit diagram of respiratory monitor.