50 mg. and a placebo (normal saline), each in combination with atropine 0.4 mg. Only adult patients scheduled for general surgical procedures were used in the study. Of these 311 patients, 100 received the placebo, 105 amitriptyline, and 106 were given pentobarbital. Drug combinations, given by random selection, were administered intramuscularly one hour prior to induction of anesthesia. The effects were noted by a trained observer, who followed each patient throughout the operative and postoperative periods. The effect of the premedication was assessed as; (1) sleep, (2) sedated but responsive, (3) relaxed, awake and cooperative, (4) anxious and apprehensive. Direct questions were not used in the determination of the degree of sedation. Side effects noted for each of the three drug categories were: excessive secretions in a single case in each of the amitriptyline and pentobarbital groups, and; vomiting (preoperative) in two patients who were given placebo, and in one patient in the pentobarbital and amitriptyline groups. No significant hypotension was observed either preoperatively or during operation.

Statistical analysis of the results of this double-blind study showed that amitriptyline 10 mg. was equivalent to 50 mg. of pentobarbital as a hypnotic when used for premedication. No significant differences were found in the effects produced by amitriptyline as related to type of anesthesia, sex, race, age, and physical status. The original impression that amitriptyline was an agent which would relieve anxiety and apprehension without hypnosis was not confirmed.

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GADGETS

Shoe-Tester Unlocks the Door

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Among the numerous precautions normally observed in the operating room to prevent anesthetic fires and explosions, the one most difficult to control is the conductivity of personnel entering the operating room suite. Regardless of the method used to insure conductivity, correct and conscientious testing is most essential but is also most likely to be either neglected or improperly performed.

In order to minimize this hazard we have adapted an ordinary shoe tester to the circuit of an electrically controlled door lock, thus making entrance into the operating suite dependent on being conductive.

By modifying the internal wiring of a conventional shoe tester (Lite-Rite, manufactured by W. E. Anderson, Inc., Kansas City, Missouri), a relay was constructed containing a coil which is energized by closing the circuit of the conductometer. The relay has a normally open contactor which acts as a switch through which a low voltage current is supplied to the electric door lock release.

If the individual testing himself is properly conductive, the conductometer circuit is closed, the relay coil is energized and the contactor closes, permitting activation of the door opening mechanism.

The opener buzzes and the individual can then admit himself to the operating room suite. A test circuit has been included consisting of a normally open, momentary contact push button wired in the 24 volt circuit. In the event of

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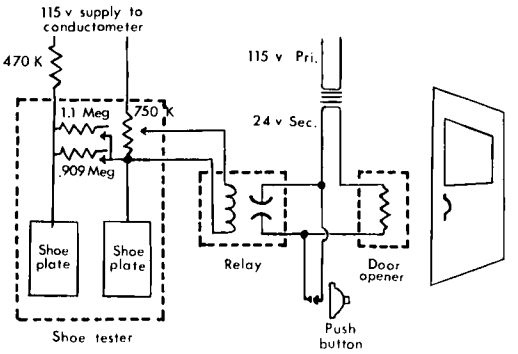
equipment or wiring failure, operation of the door opener by pushing this button will indicate whether this portion of the circuit is intact. The same push button can also be utilized to open the door in emergency situations, when there is no time to change clothing and put on conductive boots. The Shoe-Tester was further modified by constructing a vertical divider two inches high between the two foot plates. This partition makes it impossible to operate the mechanism by stepping on both plates simultaneously with one foot and in this way to defeat the purpose of the tester.

This combined conductometer-door opener was installed early in 1964 and has been used almost without interruption since then. We believe that it has made a significant contribution to the better control of personnel conductivity.



Schematic diagram of circuit of conductometer-door opener.

Humidifying the Air-Shields Respirator

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The Air-Shields electric respirator has been modified to increase humidity and to provide a method for measuring it. The unheated spinning disc nebulizer produces a fog in the inspiratory tube of the respirator. The unheated corregated breathing tube to the nonrebreathing valve which normally acted as a condensing chamber has been replaced with a wide bore plastic tubing which was wrapped with a six-foot 30-watt electric heat-band (fig. 1) such as is used to prevent freezing in exposed water pipes. A T-piece (fig. 2 *C*) through which a thermistor is threaded has been placed adjacent to the nonrebreathing valve (fig. 2 *A*). This measures temperature inside the short plastic tube (dew-point chamber) (fig. 2 *B*) between the T-piece and the valve. When the heat band is activated, the mist deposited on the inside of the plastic tubing is vaporized. The heat band (fig. 2 *D*) terminates at the metal T-piece so that the temperature distal will begin to fall in the area of the thermistor (fig. 2). When moisture condenses out on the inside of the dew-point

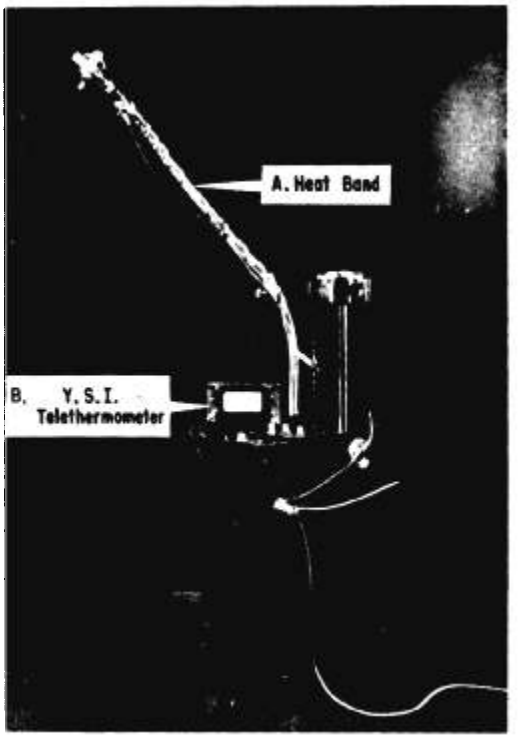

Fig. 1. *A*. Heat Band, extending over breathing tube from just proximal to nonrebreathing valve. *B*. Yellow Springs Instrument Telethermometer, connected to thermistor in dew point chamber.

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