

## THE "BOOMERANG" – A METHOD OF RECORDING ADDUCTOR POLLICIS TENSION

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SEVERAL PAPERS have been published describing methods of objectively recording twitch tension response to motor nerve stimulation. Some have incorporated expensive factory-built transducers.<sup>1-4</sup> One device, while simple and inexpensive, gives only visual results and is not suitable for recording purposes.<sup>5</sup>

Recently a new transducer has been designed at UCLA. The device is simply constructed from inexpensive parts. It is adaptable for use with most DC amplifying and recording devices.

The basic elements of this transducer are a U-shaped strip of spring steel, a strain gauge, and three resistors (Figure 1). We have cemented the strain gauge to the spring at the point of maximum curvature. Squeezing the spring produces distortion of the gauge and a change in its resistance to flow of current. The gauge forms one side of a wheatstone bridge, the other three sides consisting of the three resistors. These resistors are mounted in a plug that attaches the transducer to the strain gauge amplifier of the recording device. We have embedded the spring into

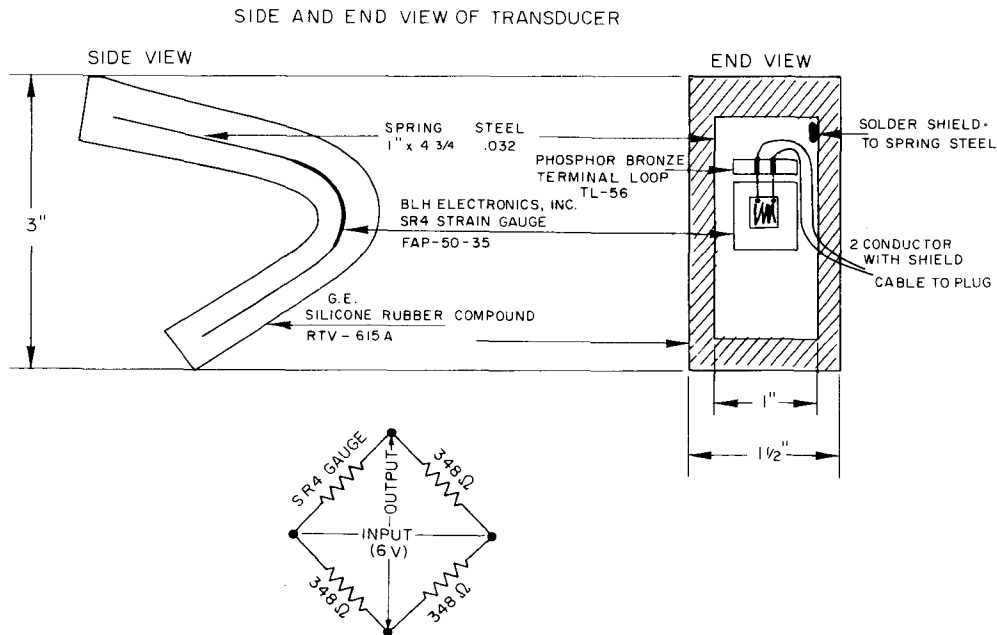


FIGURE 1. Two views of the "Boomerang" showing the component parts.

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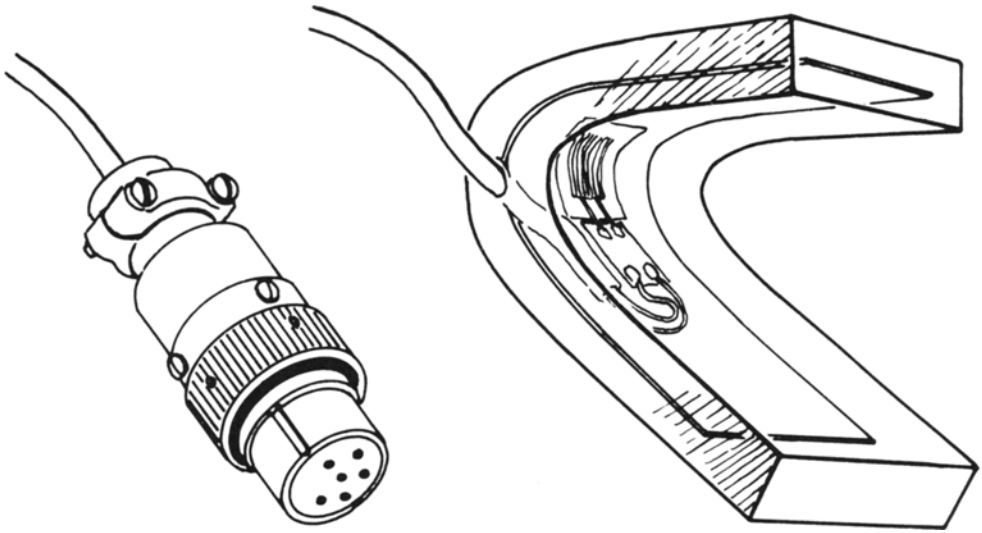


FIGURE 2. The transducer as constructed. Resistors are mounted in plug.

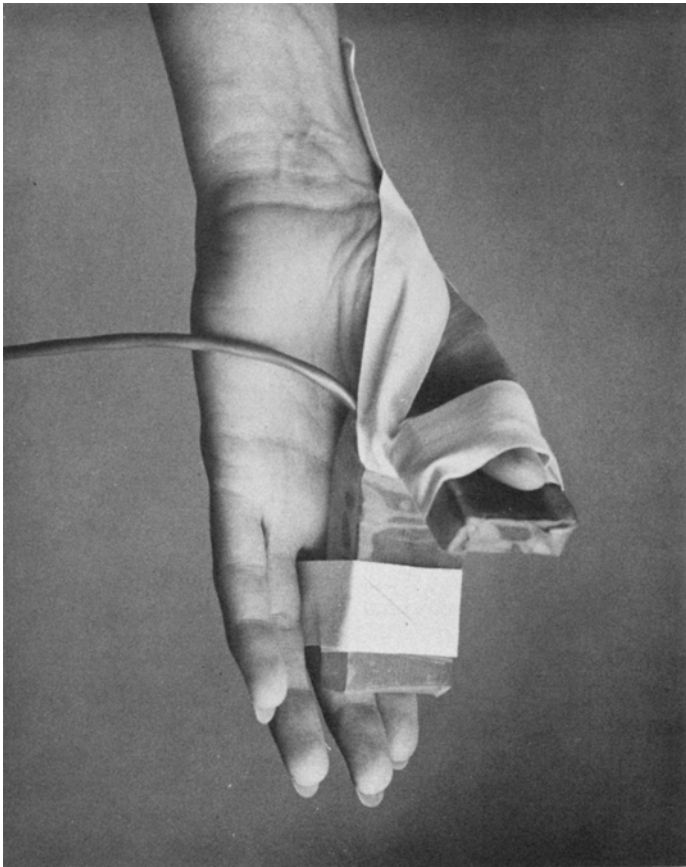


FIGURE 3. Transducer taped to patient's hand.

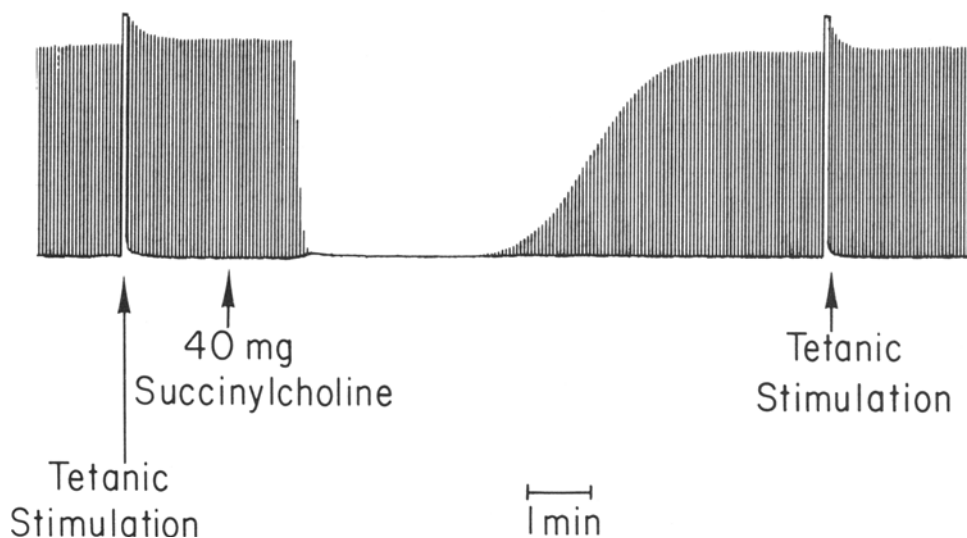


FIGURE 4. Tracing made of the response to 40 mg succinylcholine using "Boomerang."

silicone rubber to allow it to fit comfortably in the hand (Figure 2). Shorter lengths of thinner steel can be used to make transducers suitable for children. A transducer has been built that is satisfactory for the hand of a newborn.

Figure 2 shows the gauge taped to a patient's hand. Figure 3 illustrates a tracing made with the gauge.

I believe this inexpensive gauge can be useful both in the study of neuromuscular blocking drugs and in the monitoring of patients during anaesthesia.

#### ACKNOWLEDGMENT

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