

### **A simple method of photomultiplier tube calibration**

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A simple method of calibrating photomultiplier tubes in terms of a single electron released at the photocathode is described. The method employs thermally released electrons. The pulses from the tube anode are displayed, with a delay sufficient to make the rise visible, on an oscilloscope which is photographed for several minutes on a single frame of film. The resulting picture shows two separate trace bundles, the higher one containing pulses due to electrons released from the cathode, and the lower one released from the first dynode. The pulses due to the thermal emission from higher dynodes are too small to be seen. By photometering the cathode bundle across the maximum one finds the voltage corresponding to the most frequent pulse size, which can be shown to coincide with the mean value of the pulse due to a single electron. A visual inspection is sometimes sufficient. The method surpasses in speed and accuracy the one proposed by Morton<sup>1</sup>.

#### REFERENCE

1. MORTON, G. A., 1949, *R.C.A. Rev.*, **10**, 525.