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Instruments

By

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Memorandum To: Col. Warren via D. Collins
From : Fred L. Essler
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Subject : Instruments

Recommendations for Modifications

1. Counting rate meters.
 - a. G.M. voltage to be adjustable by control on front panel.
 - b. Extend range to 25,000 to 50,000 C.P.M.
 - c. Scope jacks on front panel.
 - d. VR dropping resistor lower value at same voltage.
 - e. Terminals in back so H.V. battery can be added.
 - f. Push button bleeder switch on tank circuit.
2. Portable G.M. Model 263.
 - a. Carrying case like camera.
 - b. Louder earphone output
 - c. Increase high range to twice tolerance at least.
 - d. Use flattened shaft on range switch; also double allen set screws.
3. Portable ion chambers model 247.
 - a. A single chamber job with a range switch that would read accurately less than tolerance and still cover on three ranges up to 10 R per day.
4. Cutie Pie.
 - a. 'Looks and is too fragile; also hard to handle; complete mechanical redesign needed.

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5. Deep Sea Probe.
 - a. Use of flange and bolts for water-tight seal.
 - b. Use of low filament drain tube, D.C. if necessary, so long cables could be used without extra transformers.
6. Scott type water chamber G-M.
 - a. New quenching circuit needed; A.C. pentode, standard type recommended.

General Instrument Recommendations

1. Use the low voltage type G-M tube only in portable instruments. Standard type high voltage tubes and circuits should be used in all A.C. non-portable installations.
2. Potter type decade scaling circuits should be used for their simplicity and ease of interpolation.
3. Every instrument should have an operational and service manual.

General Personnel and Training Recommendations

1. Train person using instrument how to determine satisfactory operation of instrument.
2. All instruments should read in common figures like nr/ar to save interpolation of answers for reports.
3. A combination of electronics and monitor training would be ideal. If every monitor could check, service, and calibrate his own instruments greater accuracy of answers and dependability of instruments would be achieved.

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