SOME IMPROVEMENTS ON THE CATHODE RAY DIRECTION FINDER OF ATMOSPHERICS.

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Up to the present time, cathode ray direction finders of electrostatic deflection type, described in a previous paper, have been employed for measuring the directions of arrival of atmospherics.

The imperfections of these C. R. D. F. were as follows:

- (1) The excursion of the spot of the C. R. T. and the distortion of the screen image were caused by the brilliance modulation of the electron beam.
- (2) The right angles between the deflection axes of the C. R. T. were not accurate.
- (3) The deflection sensitivity was so small that large output voltages were required.
- (4) The spot of the C. R. T. was disturbed by the high power transmitting station of low frequency.

In order to eliminate this trouble, we devised a cathode ray direction finder of new type, in which a newly designed electro-magnetic deflection cathode ray tube with a

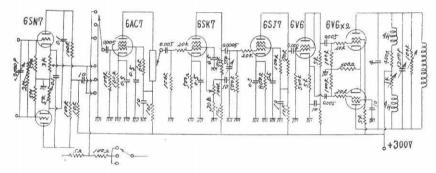


Figure 1. Circuit diagram of the main amplifier of the cathode ray direction finder of atmospherics.

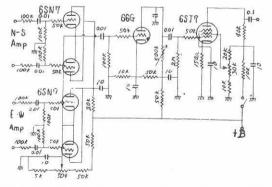


Figure 2. Circuit diagram of the brilliance modulator of the cathode ray direction finder of atmospherics.

metal-backed fluorescent screen was employed.

In consequence, troubles described above vanished and problem (4) was reduced by means of tuning the deflection coils of the output stage of the receiver.

Test observations showed favorable results. Details of this improved system will be found in following circuit diagrams.

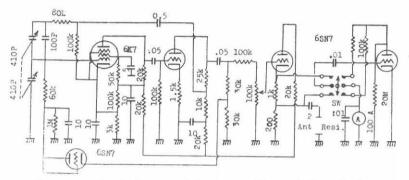


Figure 3. Circuit diagram of the test oscillator of the cathode ray direction finder of atmospherics.

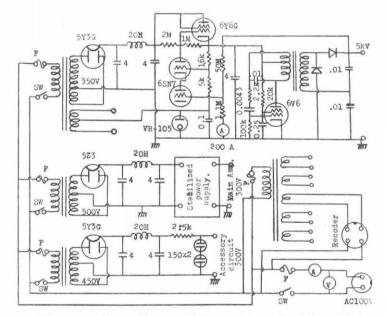


Figure 4. Circuit diagram of the power supply of the cathode ray direction finder of atmospherics.