The Files   30 April 1959

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Trip Report - IRE Convention

1. On 25 and 26 March 1959, a visit was made to New York City for the purpose of attending the IRE National Convention. Time was devoted each morning to attending the presentation of technical papers at the Waldorf-Astoria Hotel, and afternoons were spent touring the many exhibits at the Coliseum. A synopsis of each of the technical sessions attended are given below:

2. Component Parts - I

   Progress Report on ad hoc Group Study on Specifications. This paper dealt with the addition of reliability techniques that should be added to component equipment specifications. Manufacturers of component parts must strive to maintain high standards for component parts throughout an entire "production run." Many times the "line item" of a component part will not meet the specifications given by a manufacturer in an engineering data sheet. In addition, manufacturers making similar components must be brought together to standardize on component parts. Since equipments being built today use hundreds and even thousands of component parts, there is an outstanding need for standardization and reliability. This committee will coordinate military parts specifications for the government and then disseminate the parts characteristics to interested parties.

   Trend of Things to Come. In the past, equipments could be designed by refining existing methods, materials and techniques. However, it is anticipated that the current trend will be toward what was termed as "molecular engineering." The Air Force speaker felt that conventional type components are on the way out. These components (resistors, capacitors, etc.) will disappear and their function will be replaced by specially designed materials capable of performing single and multi-purpose functions. Currently, the big drawback is the fact that there are not any accurate instruments available to measure the purity of the molecular substances. Once they do become available, the speaker felt that molecular engineering would proceed rapidly.

<u>Review of the Capacitor Art</u>. This paper gave the history and technological progress that has been made in the capacitor field from the year one. A large number of slides presenting data for the design engineer were given. These were in respect to choice and application of capacitors and would prove very helpful in published form for the Design section of the R & D Laboratory.

<u>Theory and Practice in Russian - Technology - Part I</u>. This was an all morning session dealing with current trends in Russian electronics. All of the speakers had recently toured various technical installations in the Soviet Union. Obviously the information obtained by these people was somewhat one sided since the Soviet hierarchy permitted them to observe only what they wished. However, some interesting comments were made.

The basic research in the Soviet Union was felt to be very good and the engineering progress is slowly equalling that of the United States. However, Mr. N. R. Scott, who spoke on Digital Computer Activity in the U.S.S.R., felt that their computer theory was a good deal behind ours.

Their mechanical packaging is very poor and very few equipments utilized printed circuit techniques. A 20 line/sec print-out unit was the fastest machine of its kind shown to the group. A minimum of transistorisation in component circuitry was observed.

The group felt that the reliability of the Russian equipment was very poor. On many occasions the equipments shown failed to function properly. In general it was felt that the Russians are 6-8 years behind the United States in Computer Activities and Industrial Automatic Control.

3. A general tour was made each afternoon of the many exhibits at the Coliseum. Because of the wide scope of the QRF contracts, I felt that this would be more beneficial than concentrating on any one specific category of equipment.

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