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RESEARCH AND DEVELOPMENT BOARD  
Committee on Electronics  
Panel on Components.

9 January 1950

Minutes - Eighteenth Meeting  
Held 12 December 1949 at 0930 EST  
Room 3E-1065, National Defense Building  
Washington 25, D. C.

Present:

- Mr. F. J. Given, Chairman
- Mr. A. C. Becker, WL (DM)
- Mr. Maurice R. Hepner, OCSigO (AM)
- Dr. Laurence C. Hicks (CM)
- Lt. Col. T. J. Ice, ASESAs (AM)
- Mr. A. T. Ireland, OCSigO (AM)
- Dr. John H. Koenig (CM)
- Mr. J. C. P. Long, BuAer (DM)
- Mr. Jesse Marsten (CM)
- Mr. T. McL. Davis, NRL (AM)
- Mr. W. V. Organic, SCEL (M)
- Mr. A. W. Rogers, SCEL (M)
- Mr. L. Schlesinger, BuOrd (AM)
- Mr. A. B. Wentzel, NOL (AM)

Also Present:

- Mr. S. Glassman, SCEL
- Mr. H. W. Lord, Chairman Subpanel on Coils, Inductors & Transformers
- Mr. T. R. Meeker, BuAer
- Mr. E. A. Mroz, BuShips
- Mr. H. Randall, RDB
- Mr. F. E. Wenger, USAF

Absent:

- Mr. James I. Cornell (CM)
- Mr. D. J. Dietrich, AMC (AM)
- Mr. R. J. Framme, AMC (M)
- Mr. Leonard O. Goff, ERDL (AM)
- Mr. John N. Hall, BuShips (M)
- Cmdr. Richard Holden, ONR (AM)
- Mr. W. L. May, BuAer (M)
- Mr. Harry B. Mulkey, AFMRD (M)
- Mr. Arnold Raines, Frankford Arsenal (AM)

Secretariat:

Mr. M. Barry Carlton, Panel Secretary

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1. Approval of Minutes - The minutes of the seventeenth meeting were approved as written.

2. Approval of Proposed Membership

The Chairman welcomed Lt. Col. Thew J. Ice, representing the Armed Services Electro-Standards Agency, to the Panel.

The Panel noted the approval, by the Steering Committee, of the nominations for membership on the Subpanels.

5. Master Plan for Components

J. H. Koenig, Chairman of the Ad Hoc Group appointed to study a plan for the adoption of a common code and pattern for use in the Master Plan for Components, discussed the details of the problem. Employment of various types of codes by the Subpanels for their specific needs resulted in complications for unification of coding necessary for a possible single Master Plan Chart. Dr. Koenig suggested that the scheme adopted by the Subpanel on Electro-Mechanical Devices be pursued by other Subpanels in the modification of their present Charts in an attempt to attain a common basis. S. Glassman, Chairman of the Subpanel on Electro-Mechanical Devices, was requested to forward copies of his Chart to all Subpanel Chairmen. In the meantime, the Chairman of the Panel requested the Ad Hoc Group to continue their review and consider additional suggestions from members of the Panel.

4. Program Guidance Report

The Chairman explained the procedure for the assembly of material in the Program Guidance Report. Several Subpanel Chairmen proposed modifications and additions to the Report which were approved. The Panel agreed that this report was a logical presentation of the valid and essential requirements in the departments and that these problems could be overcome by additional funds. The Panel felt that the current program does not have a sufficient amount of fundamental investigation in proportion to the "stop-gap" developments. The Chairman requested all Subpanel Chairmen to review their program with this idea in mind.

The Panel requested the Secretary to disseminate that portion of the report which delineates gaps in the components program to other Panels in the Committee and the Board. This action will stimulate other activities in the RDB to review their needs for electronic components and forward their requirements to the Panel.

The Program Guidance Report was unanimously approved as amended.

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5. Revision of Summary Charts

The Secretary distributed EL 71/3 which is a memo for Panel and Subpanel Chairmen on the proposed form for the New Summary Charts. E. A. Speakman, Executive Director, stated that the form proposed may be modified by the Panel to define specific items more expressively. A. W. Rogers suggested that the "magnitude" (paragraph 2.3 of EL 71/3) be divided into two columns; one for past obligations and the other for future obligations. This suggestion will be considered by the Secretariat in the formulation of the IBM preparation of the Summary Charts. The Chairman requested all Subpanel Chairmen to submit to the Secretary by 1 February 1950 the modified summary charts with the most recent information.

6. Production of Ductile Bismuth Wire

J. Marsten informed the Panel of the feeling, thus far, that no potential use can be found for ductile bismuth wire in the field of the Subpanel on Resistors. Its coefficient of magneto-resistance is claimed to be approximately 7% per kilogram and it is felt that this is too small to be of any great value. Background information has been forwarded to the Subpanel on Coils, Inductors and Transformers for further investigation. The Air Force representative plotted a series of curves on the determination of resistance variation as a function of magnetic intensity at constant room temperature and resistance variation as a function of temperature. One copy of these charts are available in the office of the Secretariat.

7. Assignment of Component Cognizance

The Chairman discussed the results of his conversation with two Panel Chairmen in the Committee on Equipment and Materials with regard to the responsibility for coordination of specific areas in the field of components. The Panel agreed with the Chairman to transfer to the Panel on Electrical Equipment the responsibility for rotating machinery, such as prime power equipment, on the basis of delegation in lieu of setting up for greater activity within the Panel on Components. It was pointed out that the Panel on Components would still retain the initiative for preparing general requirements for projects in this area. The transfer of cognizance for vibrator pack converters and hook-up and magnet wire was deferred at this time due to the peculiar need within the field of components.

The Chairman further discussed the division of responsibility between the Subpanel on Dielectric Materials and the Panel on Organic and Fibrous Materials. It was pointed out that the Panel on Organic and Fibrous Materials has an almost exclusive interest in the physical properties of plastics and other organic and fibrous materials for end applications in such items as parachutes, clothing, tents, power equipment, etc. Further

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discussion between the two Chairmen is necessary in order to arrive at an appropriate line of demarcation between the two activities to preclude any duplication.

8. Elaboration of Munitions Board Circular No. 39 to Provide Further Information Concerning Strategic and Critical Materials

The Chairman designated H. W. Lord to collate the information submitted by all Subpanel Chairmen into a Panel report due in the office of the Secretariat by 15 February 1950. This report will be available for approval by the Panel at the next meeting and subsequently consolidated into the Committee report.

9. Other Business

9.1 The Secretary advised all Subpanel Chairmen to prepare a record of any agreement concerning the assignment of a project or projects to a department during the Subpanel meeting. The Committee on Electronics has requested a periodic list of such assignments. Attached as LET 40/2.2 is an example of the type of information required.

9.2 The Secretary informed the Panel of a request by the Joint Electronics Committee in the Munitions Board for indication of the service which has been assigned primary responsibility for the research and development of a list of component items. The Panel noted that this list of projects was not concerned with research and development since they were assigned JAN and ASES project members. The Secretary was requested to reply to the Munitions Board.

9.3 The Secretary was instructed to forward a problem, concerned with coordination between the Panel on Components and the Panel on Test Equipment, for research and development on cavities (considered as both a component and frequency meter), to the Subpanel on Frequency Control Devices for implementation.

9.4 The Secretary read a portion of the minutes of the Panel on Electron Tubes, held 14 October 1949, with regard to a recommendation for transferring responsibility of ballast tubes to the Panel on Components. This item was deferred until the next meeting and J. Marsten will discuss this problem at that time.

9.5 Due to the inactivity of the Subpanel on Magnetic Materials in the Committee on Basic Physical Sciences, an Ad Hoc Group on Magnetic Materials was established in the Panel on Components under the Chairmanship of L. C. Hicks. Service members were requested to submit nominations to Dr. Hicks. It was suggested that the original

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members of the former Subpanel on Metals and Alloys be nominated as follows:

<u>Civilians</u>	<u>Army</u>	<u>Navy</u>	<u>Air Force</u>
Dr. L. C. Hicks, Allegheny Ludlum Steel Corp. Brackenridge, Pa.	Mr. L. Reiss Materials Section C & M Branch Squier Signal Lab. Fort Monmouth, N.J.	Mr. Edwin J. Green Bureau of Aeronautics Room 1w66, Navy Dept. Washington 25, D. C.	Mr. F.E. Wenge AMC (MCREES-3) Wright-Patter- son AFB Dayton, Ohio
Dr. A.C. Beiler Materials Eng. Section Westinghouse Elec. Corp. East Pittsburgh, Pa.		Dr. Henry E. Stauss Naval Research Lab. Building 9, Room 200 Washington 25, D.C.	
Mr. R. L. Sanford National Bureau of Standards Washington 25, D. C.		Mr. W. C. Toney Bureau of Ships Code 934B, Room 3327 Navy Department Washington 25, D. C.	
		Mr. Edward A. Gaugler Chief, Magnetic Materials Subdivision Naval Ordnance Lab. White Oak, Silver Spring 19 Maryland	

10. Date and Place of the Next Meeting

The next meeting of the Panel was scheduled for 27 February 1950 in the offices of the RDB, Washington, D. C.

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RESEARCH AND DEVELOPMENT BOARD  
Committee on Electronics  
Panel on Electron Tubes

## Subpanel on Receiving Tubes

## Completed Action on Proposed Projects

2. The actions listed here were taken by the Subpanel on Receiving Tubes at its 21 September 1949 meeting and concurred in by the Panel on Electron Tubes at its 14 October 1949 meeting. The responsible department appears underlined at the end of each description.
- 2.1 Approval for a proposal by Raytheon for internal neutralization for the 6J6. Navy (Bureau of Ships)
- 2.2 Approval for the investigation of a non-microphonic filamentary design on tube types similar to the 1U4, as per Signal Corps specification RTS512. Army (Signal Corps)
- 2.3 Approval for the development of a 26.5 V heater type power output tube similar to the 2E26 and a 26.5 V heater type driver tube, similar to the 5A6, capable of operation up to 70 Mc (preferably 100 Mc) and a power output of 2 W, as per Signal Corps specification RTS 328. Army (Signal Corps)
- 2.4 Approval for the development of a tube for gated amplifier service having a transconductance of a 7AK7 and the size, power handling capacities, and input power of the 6AS6, as per Signal Corps specification RTS178. Army (Signal Corps)
- 2.5 Approval for the development of a low mu twin triode with a 26.5 V heater similar to the 6AS7G for use in voltage regulator circuits. Army (Signal Corps)
- 2.6 Approval for the development of a series of current regulator tubes with improved regulation and temperature control, as per Signal Corps specification RTS 600. (Question of P.E.T. cognizance of ballast tubes is being investigated.) Army (Signal Corps)

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RESEARCH AND DEVELOPMENT BOARD  
 Committee on Electronics  
 Panel on Electron Tubes

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## Subpanel on RF Tubes

## Completed Action on Proposed Projects

3. The actions listed here were taken by the Subpanel on RF Tubes at its 29 September 1949 meeting and concurred in by the Panel on Electron Tubes at its 14 October 1949 meeting. The responsible department appears underlined at the end of each description.
- 3.1 Approval of a general program for providing tubes and crystals in the 3-4 mm. region with individual tube projects to be coordinated as they arise, Army (Signal Corps)
- 3.2 Approval of study phase of the high power klystron development at Sperry. Navy (Bureau of Ordnance)
- 3.3 Approval of the extension of the Signal Corps contract at Raytheon for the development of high power S-band magnetrons. Army (Signal Corps)
- 3.4 Assignment of the high power magnetron anode study (coordinated at 27 May 1949 meeting) to the Navy (Bureau of Ships)

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RESEARCH AND DEVELOPMENT BOARD  
Committee on Electronics  
Panel on Electron Tubes

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Subpanel on Special Tubes

Completed Action on Proposed Projects

2. The actions listed here were taken by the Subpanel on Special Tubes at its 13 September 1949 meeting and concurred in by the Panel on Electron Tubes at its 14 October 1949 meeting. The responsible department appears underlined at the end of each description.

2.1 Approval for the development by National Union of a storage tube utilizing a target of alkali hydride similar to that used in the dark trace storage tube. Navy (BuShips)

2.2 Disapproval of a proposal by the Submarine Signal Co. to the Bureau of Ships for development of a new type PPI for polar display. Although a tube with these general operating characteristics is desired, it was considered that the proposed multiple grid structure was impracticable.

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