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Civ. Emp. Board  
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## CIVILIAN EMPLOYMENT BOARD

Minutes of Meeting Held  
16 December 1946, Room 117

The Civilian Employment Board met at 1300 hours, 16 December 1946, with the following named persons present:

Lt. Colonel James H. Frier, Jr., Commanding Officer, Arlington Hall Station  
 Lt. Colonel John M. Libby, Chief, Personnel Section, ASA Staff  
 Major Hamill L. Jones, Executive Officer, Army Security Agency  
 Dr. A. Sinkov, Chief, Security Division, ASA  
 Mr. F. B. Rowlett, Chief, Operations Division, ASA  
 Mr. Mark Rhoads, Assistant Director of Communications Research  
 Mr. Glenn Starlin, Chief, Personnel and Training Branch, ASA

## Also present:

Mr. Leo Rosen, Ass't. Chief, Research and Development Division, ASA  
 Mr. A. I. Lumey, Chief, Cryptologic Branch, ASA  
 Mr. C. R. Deeter, Chief, Technical Staff, R&D Division, ASA  
 Mr. E. T. Rowland, Electronics & Electromechanical Branch, ASA  
 Mr. Alfred Rose, R&D Division, ASA  
 Mr. H. B. Stauffer, Technical Staff, R&D Division, ASA

Following are minutes of the hearing granted Mr. William P. Fletcher to permit him to elaborate upon his written answer to charges of inefficiency placed against him by WLGAS-7C. Mr. Claude L. Dawson, Chairman, Veterans Preference Committee, American Legion, Dept. of the District of Columbia, was present as counsel for Mr. Fletcher.

The meeting was called to order by Mr. Starlin.

MR. STARLIN: In that Mr. Dawson states that he is not cleared to have access to classified material, it is requested that the discussion be limited to unclassified matters.

Mr. Fletcher, the Board met and reviewed your answer to charges as put forth in letter of 4 December 1946. It feels that the statements in A, B, C, D, E, etc., under "Remarks" in the first part of your answer are too general in nature and not a specific refutation of the charges advanced. Likewise, the specific refutation to charges as

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cited in your answer under paragraphs 4, 5, 6, 7, etc., therein is considered written in such an incoherent manner as to be inadequate as a refutation to the specific charges under review. Similarly, the items listed under "Conclusion" in your answer are considered too general and incoherent in nature. It is the opinion of the Board, therefore, that your written answer does not constitute a satisfactory refutation of the charges. It is further the opinion of the Board that, in keeping with your stated desire, this hearing should be conducted. The Board now sits to hear any further statement you might wish to make relative to the specific charges and your answer thereto, a copy of which has been furnished each member of the Board.

MR. LAWSON: For the purpose of the record here, may we have the specifications of the charges which are now under consideration and which are to be considered here. I have not seen the charges because I did not want to get involved in any proposition as to what they might be, and, in matters pertaining to a Secret Board. If it can be written into the record at this time, I would like to have the specifications to the specific charges to which we are now to make answer in an open hearing, i.e., the two specifications which were not classified as secret. I would like to know just what they are so that Mr. Fletcher can answer specifically those charges. Are they very long?

MR. STARLIN: The letter specifically outlining the charges is the one dated 4 December 1946 which went forward to Mr. Fletcher. These charges are based on the two unclassified specifications Mr. Fletcher has written since his employment at this Agency. (A copy of the 4 December letter was given to Mr. Lawson.)

MR. LAWSON: Is there anything in here secret other than the charges?

MR. STARLIN: The charges are not secret. The general nature of the charges are as follows: 1. Frequent omission of relevant engineering details in specification drafts. 2. Inclusion of considerable irrelevant data in specification drafts. 3. Inadequate or improper emphasis on both the general and specific requirements of a device or project as written in the specification. 4. General lack of coherency in specification drafts. The letter of 4 December outlines specific instances of those charges.

MR. LAWSON: Your letter of December 4 covers the matters which we are to discuss today. All relate to those we discuss today and no other matters?

MR. STARLIN: The 4-December letter is supplementary to the one sent 15 November and it is more specific in the statement of charges. These charges relate to the two specification drafts previously mentioned which we have available for review.

MR. FLETCHER: Counsel does not know a thing about this case. He has not seen a copy of the letter and my answer. I feel if he is to be my counsel he should know what has been done. If he is allowed the privilege of sitting in this hearing, he should see all material. Have nothing to indicate it's restricted.

MR. LAWSON: Before we reach this point, it is customary in hearings of this kind, and hearings I have conducted, to have parties who bring the charges before the Board sustain the charges. He who has been so charged is permitted to testify as one would in a civil case or as one would in a U. S. court. Has the matter been discussed and heard in session?

MR. STARLIN: The charges have gone forward only in written statement and the written answer has been returned and reviewed by the Board in accordance with applicable regulations. The letter of 4 December stated that if the reply to the charges, by letter, was considered inadequate, a hearing would be granted at this time to permit further elaboration by Mr. Fletcher.

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MR. LAWSON: In other words, the Board hasn't reached any definite conclusions and you are giving Mr. Fletcher a chance to answer more specifically.

STARLIN: That's right. The Board has considered the written statement an inadequate answer to charges as advanced and is holding this meeting to permit Mr. Fletcher to supplement his written answer to the charges.

LAWSON: I am going through the charges and, as Mr. Fletcher has a copy, I am going to ask him that he now explain more in detail for the record. Now, referring to paragraph 1, will you answer that more specifically, in detail?

MR. FLETCHER: I think you have an Exhibit #1 on the left hand side of the specification folder. Is marked "restricted." Refers to ARC or GLOW type device. No. 1 does not make mention only ARC or GLOW device. Fails to make that reference; therefore, is in error.

(Papers marked "restricted" were reviewed and it was determined that Mr. Lawson could have access to them.)

STARLIN: Paragraph 1, charges as submitted.....

FLETCHER: A gaseous arc referred.....

STARLIN: (Read par 1.) "This specification was prepared for a developmental contract for a sub-miniature triode of the cold cathode type which will conduct high currents, and hence, must probably depend on a gaseous arc discharge for operation. Due to the extremely difficult operational requirements, it is not desired to restrict the contractor to any requirements other than operational. Operational requirements consist of certain pertinent current, voltage, and operating data. In addition, physical features such as size and shape may be specified as desirable."

DEETER: From the technical standpoint, it is my opinion that the wording of paragraph 1 is all right for the purposes of the paper.

FLETCHER: I object to that statement. It is not correct with reference to the arc. I would like Mr. Deeter to know that the ARC and GLOW are not the same and he fails to give the difference.

DEETER: I hardly think that is the thing to do in a non-technical introduction of this sort.

FLETCHER: That is not a true description. There are two different types of devices - ARC and GLOW are different. "The operational requirements consist of certain pertinent current, voltage, and operating data." Now, in your exhibit you will find that I follow explicitly the order enumerated on this GLOW disclosure.

STARLIN: Does this have anything to do with the statement of specific charges of inefficiency as outlined in the letter?

FLETCHER: Naturally, because if there is an error in the opening statement, how can you know what is following?

STARLIN: It seems that this first statement is only a general introduction for background purposes. The matter with which you, and the Board, should be concerned is the statement of specific instances of factors which are considered lacking in the specification drafts.

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FLETCHER: You are building a building and you say at the start there is only going to be one door in that building. You would build the building with one door. If you say there are going to be two doors, one a glass door and one a wooden door, you would change the construction, wouldn't you? Here we say there is one type construction of a tube and here we say there are two which operate differently. You will find in the opening paragraph B of this description that I enumerate these two factors.

STARLIN: Would you like to review this specification, Mr. Deeter?

DEETER: On what statement?

STARLIN: The one Mr. Fletcher makes under "B" with regard to ARC or GLOW.....

FLETCHER: Due to the fact that Mr. Rowland wrote this statement, I think he should be the one to elaborate on the difference between the ARC and the GLOW.

ROWLAND: We have already decided that point.....

DEETER: I think I can clarify the question here. The fundamental idea in this development was to build a tube which would carry a certain amount of current. From an engineering standpoint, the tube would be operated to have an electric glow or arc. However, if the manufacturer would devise some other method we would not object. Now, the statement in paragraph 1 where it says, "and hence must probably depend on a gaseous arc discharge for operation," - is nothing more than a descriptive phrase to establish the general type of item with which we are concerned. I don't believe that the paragraph need go into a description of the tube.

FLETCHER: I object to that statement. Would Mr. Deeter distinguish between an arc discharge in a high vacuum tube and a glow discharge in a high vacuum tube. You don't know what that man is going to use. In regards to the device it is stated it is a gaseous arc. I would like to know difference between glow discharge and arc. This specification was not written as an afterthought and was written as a basic disclosure.

STARLIN: Then, you feel it is not permissible to use in this introductory statement, "must probably depend on a gaseous arc discharge for operation,"?

FLETCHER: Reflects a deficiency on the part of Mr. Deeter who wrote that draft. There is nothing about the ability and facts. AR 850-25 calls for facts and no probability. I would like on record that this was on the 18th of September when specification was written to be typed. It was some time in typing and all this material is afterthoughts of basic disclosure.

LANSON: Anything further?

FLETCHER: I went on record what they refer to on GLOW and ARC.

DEETER: I have no further statement. That point referred to in paragraph 1 was not meant as a specification of a tube or complete outline of engineering requirements of the tube. It was merely to set a basis for the remainder of the information as set forth in the charges. Whether the glow or arc discharge tube or both was mentioned is not a pertinent point with regard to the letter of charges.

LANSON: Was this an experimental proposition?

FLETCHER: I don't know. But you have given to him in form. This is a development contract; therefore, there was nothing secret. In regards to the experimental part

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not in the issue, in a development contract, if I am not mistaken, you transfer the rights of that device over to the party or manufacturer who is going to create it. In this particular case, we have a certain type of tube on a basic disclosure. That refers to different classes of tubes which are entirely different. The one depends upon an arc and it does not require that arc, under certain conditions, to be gaseous material. Second, a glow discharge requires inherent.... Cannot answer it, so no tangible specification could be written, only as an afterthought of what they wanted written.

LAESCH: Referring to paragraph 2, Specification A. What about that?

FLETCHER: What about No. 1 before we go on to No. 2?

STARLIN: It has been stated that paragraph 1 of the charges is not particularly pertinent to the case as it is not a specification. In that the spec itself is a development matter and must have certain elements of probability, it seems that paragraph 1 is acceptable. This particular point you bring up hasn't too much bearing on the specific charges and I think it would be better to move on to the specific deficiencies outlined in the letter so that you can refute them.

FLETCHER: I object to that. (The statement made about paragraph 1.) When you have been given a plan to build a building, this is a basic disclosure to build the specification on. In this spec the wording is not complete with the basic disclosure not in keeping with this. The disclosure of this date is the date of this, as this discloses. (Refers to notes in the folder containing spec draft.) The second disclosure came about after this. This disclosure is lacking.

LAESCH: Is the other condition, that the specification you wrote at an early date in accordance with what you were requested to write, or, secondly, is it an afterthought?

ROWLAND: This original disclosure to which Mr. Fletcher refers was an oral discussion with Mr. Fletcher which took about an hour's time after which those rough notes were written up for him to make up....

FLETCHER: I object to the statement of Mr. Rowland of it being an hour. It was on the 17th of September when Mr. Deeter said, "Mr. Fletcher, Mr. Rowland and Mr. Stauffer have a spec." We went to Mr. Rowland's office. I said, "Mr. Rowland," after being introduced, - "Mr. Rowland, what type of a base are you going to use in this." He said, "press or button base." Second, what type of leads are you using and he said, "fly-type of leads." Now, to get this on record, I asked another question, whether or not this spec was to be affected by any external radiation. That was on the 22nd, and on the 18th, the fly-type leads and base were discussed. We were there about 15 minutes, isn't that right, Mr. Stauffer?

STAUFFER: I left you with Mr. Rowland, and therefore could not verify the time spent in discussion.

FLETCHER: "All right," I said, "give me this dope in writing what I want, Mr. Rowland. There are certain types of tubes. We will put a clause in this. Afterthoughts are a ( ) most operate." I also supplied information as to the different type of tubes from over in the Pentagon Building. The spec was supposedly written for two types here; therefore, the statement is irrelevant. (Mr. Fletcher talked so fast here that the minutes are necessarily fragmentary. Mr. Dawson requested him to talk more slowly.)

ROWLAND: Mr. Fletcher's statements are following the facts. However, one or two minor points: One of them is that "the external radiation was brought up by him afterwards." A couple of days afterwards I told him we could not count on the external radiation to operate the tube. Further, these entire requirements on Exhibit 1 were talked over with Mr. Fletcher at which time he took copious notes on what I told him.... (interrupted by Fletcher).

FLETCHER: I object to that statement.

ROULETT: There is no point of my standing up here when he refutes my words and continually interrupts.

FLETCHER: Let's not get specific about this. It is immaterial to me what is said. The only thing we discussed is this set. (Refers to spec notes) After leaving your office, I went to Mr. Stauffer and we talked this over. On the next occasion I went to you and these were afterthoughts - were after this (again refers to spec draft). One of these afterthoughts was incorporated in the basic communication in regard to the electrodes. Reason why it was incorporated in this was because I asked you in the second or third meeting as to whether you wanted to use this device as a rectifier at a future time. No, you did not want to use it as a rectifier at that particular time. It could be waived at some future time. That was incorporated in this. Now, we will proceed assuming although it has not been answered. Arc and glow discharge, we are taking the afterthought and take the spec. That will be Exhibit 2 shows specification in the afterthought. TSS represents the afterthought in the basic (specification).

ROULETT: One point we might clear up. As Mr. Fletcher has described the exchange of information between the engineer and himself, as specification writer, he has emphasized the point that he was given a sheet of paper on which there was outlined certain specific points. Should the engineer give him on this piece of paper everything which is to be written in the specification or is it to be considered that the engineer gives merely an outline to be followed by the specification writer and the specification writer should obtain such other material as he needs to prepare an acceptable specification?

FLETCHER: To have always operated as follows: There are included on the first notes any pertinent data such as figures on voltage, temperature, and any other necessary and specific matters. In addition, the more general aspects are discussed and anything the spec writer does not understand on the spec is discussed at length. The specification writer takes his own notes. The specification writer - it's his responsibility to make clear what he wants from the engineer in order to write a proper spec.

ROULETT: Is the paper to be supplemented?

FLETCHER: It is presumed the first discussion is not the only discussion - that things will come up as we go along.

ROULETT: Mr. Fletcher says these are thoughts which are not brought out on the outline but things that developed later.

FLETCHER: Fletcher is referring to afterthoughts; i.e., work he did in connection with the specification after the draft involved here had been turned in.

FLETCHER: Right. Those afterthoughts are incorporated into another preliminary specification. This preliminary was building on the information here. The second preliminary is the TSS, Standard Spec to be used, JAN Spec. It is all tubes you are to buy for the Navy and Army.

ROULETT: What are TSS and JAN?

FLETCHER: On page 1 of "a, b, c," on 1 May 1946, Joint Army-Navy Specification, "1, a," for electron tubes. TSS indicates the form I am taking from the form Tube Spec Sheet. That TSS is the final word in regard to the basic spec as stated in this sheet.

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ROULETT: You answered my question.

DAWSON: Let's go along on #2.

FLETCHER: It is to be understood that due to the fact that Part 1 of that communication is in error as not disclosed on this sheet, therefore, all other information will be irrelevant.

DAWSON: I think you have explained #2.

FLETCHER: No. 2 omitted much relevant information.

DAWSON: (reading) "Section E, 2a, should definitely contain..."

FLETCHER: Have disclosed this in JAN Spec where distinctly states "tube."

DAWSON: Was 2a covered in specification?

DEETER: It is not covered in specification under review.

FLETCHER: I beg to differ. Manufacturers are partners in JAN spec. The requirements in this spec are in accordance with their own rules and regulations laid down by them in A-1 in basic specification. The specification to be used by American and England manufacturers. Those specifications are part of the (JAN) specification.

STARLIN: Does that definitely mention the "cold cathode" requirement?

FLETCHER: The three specifications mentioned in a, b, c, d, e, f, and g specifications are to be read in light of this basic specification.

DAWSON: That would cover a, b, c?

FLETCHER: All.

DEETER: The interpretation the Agency puts on that JAN spec is that it is fundamentally a specification for procurement of tubes by Army and Navy so that any type of tube will be universal; plastics which will fulfill requirements, etc. will all be standardized. In the development of a new tube you try to follow specifications they set forth so as to swing into line. With respect to the tube, in that specification, we would not buy any great number, especially in a preliminary development. Our fundamental concern is to get a tube which will do what we want and we don't care if glass will stand a certain shock, etc. We want a tube that will operate the way we want it to and we cannot be limited by preconceived standards in developmental work, so we do not follow that specification very closely. Mr. Fletcher has been informed of that fact a number of times.

DAWSON: Would a manufacturer engaged in developing this tube have access to JAN specifications? Would a, b, and c be included?

FLETCHER: Mr. Dawson, I object to the statement of Mr. Deeter. The Under Secretary of War and Secretary of War has chartered the organization and has given specific instructions to all branches of the Government to follow that charter. Mr. Eisenhower has also explicitly stated what they are to follow. The spec is also so broad that it takes into consideration any type of tube. Provision in the spec takes care of that. The tubes before are put into operation that you have to use in experimenting work. All

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ifications for tubes in Signal Corps have been cancelled and are incorporated in spec.

**QUESTION:** Did you understand when you made up the specification that it was experimental? Were the material you were including in the specification include items here listed in a, b, and c of the letter?

**ANSWER:** Army Regulation state you cannot include what is stated in another specification.

**QUESTION:** The statement of charges indicates that certain items were specifically excluded and they should have been included. The question is whether these should be specifically written in the specification.

**ANSWER:** The manufacturer, in reading a specification must know definitely what is required and should have those important items in front of him. Reference may also be specifically to a certain source by page and number. Manufacturers do not want to do too much referring to numbers such as when they have to look at one page of one book or another page of another book. A properly written specification contains sufficient accurate information to require only a minimum amount of reference to outside material. This simplifies the job for the manufacturer.

**FLETCHER:** I object to Mr. Lester's statement, AR 850-25. Not true. Supporting evidence that the JAN specification is directly in conflict with what Mr. Lester has to say. The JAN spec is constituted of the wordings and specifications of the manufacturer who himself is going to create this device; therefore, in making this specification he ought to know the terms used therein. Second, of this particular specification, the general construction and description of a (gaseous) electron tube is in keeping with the information of the information bulletin as supplied by the manufacturer in 1937. The particular tube in question and this particular information bulletin was presented to Mr. Rowland and I don't know about Mr. Lester. In the opening paragraph it is said that specifications of the "tube shall be designed in accordance with Joint-Army-Navy Specification of tubes." That requires (Reading), "(1) Navy Department General Specification for Inspection of Material; (2) A-1b, Institute of Radio Engineers Standards on Electronics; (3) Radio Manufacturers Association Engineering Standards; (4) Id, American Institute of Engineering Standards; (5) Id, the National Electric Manufacturing Standards; (6) Id, Joint Army-Navy JNP-75 - Package and Container Marking for Electric Tube; (7) Id, Inspection Manuals for use in conjunction with this." And further, that Mr. Lester said that the specification did not take care of the particular type in question. I have not a copy of the specification before me. In case of any conflict of any requirements or general requirements and the TA's, the TA's will govern and the TA's is second spec we furnish.

**LR. SINKOV:** Do most of the manufacturers know of the Army Regulation? These are laid down by the Army members? How about the manufacturers?

**FLETCHER:** In the procedure of specification work up to this particular time, the War Department would write our specs. Tentative forms for the manufacturers would come back with comments and then we would forward to purchasing committee of the War Department. After purchasing committee would work on the specs, we would forward them to the A. R. (Note: Should be A. G.) With the assurance of the Under Secretary of War that we would go away with that blockage, we did get consent of all branches of service. The Under Secretary of War would see that we had critical material on hand. When we went into War that blockage came about to a greater degree, and it was put on my particular shoulders to straighten this out. We remedied this with help of several generals. Because of the tube industry, there was no tube we could depend upon so we formed Joint-Army-Navy Specification Board. We took into it manufacturers. AR 850-25 (referred to book....)

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You will find spec matter. Is this specification restricted to one manufacturer in the requirements, such as to prevent price (4,....) So it depended upon us to coordinate with the writers of this trade. Different specifications are not tentative. You cannot have a big spec. You have to coordinate with an individual in your own organization.

SMITH: Do manufacturers have copies of specifications?

SMITH: They are a party to the basic construction of these specifications. You will allow (manufacture) until the manufacturer has been given a certificate from the laboratory to manufacture the tubes and a certificate ~~number~~ when these tubes are to be in operation. You can go into a store in Washington and request a JAN tube for your use. The Army is allowed that privilege.

SMITH: Would these specifications apply to something which is new and not developed?

FLETCHER: Yes... (Refers again to 'R) Special design test is to be conducted on samples (10-1) Government will allow.

SMITH: That does not answer my question. If an engineer thought up a new type of tube, would he have to be in line with those things?

FLETCHER: He has to have permission from the Joint Army-Navy Board to put it in use or use in any set.

LAUSCH: That he (Mr. Rowlett) wants to know is: On a new type of tube would this Army Specification (be binding?) Could any manufacturer know that it would have to be incorporated?

SMITH: Would we be restricted in development of a new tube?

FLETCHER: No. The conventional tube is a filament, grid and plate. This is a development project.

LAUSCH: Let's go on with page 2, #3.

FLETCHER: There is nothing more than what is here.

LAUSCH: Go on down.

FLETCHER: I have explained the next two paragraphs. Glow discharge. These two statements read as follows: 3c. "There shall be no photo-emissive or photo-conductive material requiring an external light energy for producing the starting GLOW discharge, if such material be used it shall be made to function by the tube's inherent and correlated associated member's materials."---and---"The GLOW discharge tube shall be designed to provide a "trigger" action. There shall be no external energy radiation necessary to produce this "trigger" action." Take the two paragraphs in question. The word "photo-conductive." Next we have "no external energy radiation" which takes in the whole spec. These two devices are just the visible part of the spec!

LAUSCH: In your opinion is that just criticism?

FLETCHER: Yes, the Government would not buy a device that would be contrary to the policy both to the Government and the specification.

LAUSCH: Down to 4.

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FLETCHER: I object to the "considerable emphasis." The essential thing in this particular type is the size. The size was the most important factor. All other operating factors depend on size.

FLETCHER: Next one.

FLETCHER: Rectroty is not a responsibility to make this function as a rectifier, but in getting first in way to make the tube function in both directions. No restriction on the man (contractor) because he had to place them in the precise position. He supposed to get the best type, NKT. The reason the gaseous atmosphere --- as he was concerned with high vacuum - it was no --- but in two others. (Discourse followed in highly technical terms regarding the Starting Glow Discharge.)

STARLIN: The content in the charges reads that, "The Agency is not concerned how the tube is constructed but with the way the tube operates." Is your discourse pertinent to the charge?

FLETCHER: We are not trying to get them anything on the construction that is not relevant to it.

STARLIN: The statement is not concerned with how it is constructed but how it operates.

FLETCHER: We told them the construction depends on Joint Army-Navy Specifications.

STARLIN: (To clarify the comments made by Mr. Fletcher, Mr. Starlin reads.) "The tube shall be designed to provide the inherent internal essential elements with a gaseous atmosphere for starting GLOW discharge." That is found on page 2, paragraph 4 c of the letter of charges. Is that the statement to which you refer? It is felt that this element deals with construction.

FLETCHER: No, that is function of tube. You have methods and means. The Government has to get the (methods?) for tube and we have to get means. Although they design the tube for us providing there is a new method, it is the method or means of doing it. (Break---Mr. Fletcher proceeds to next item in letter of charges). This "incoherency" --- what I would like to know is the exact meaning of word "incoherency".

STARLIN: Deeter, would you like to say something about paragraph 5 of the letter of charges which cites examples of incoherency?

DEETER: It means that statements are not written in such a manner as will present the ideas clearly. It means that ideas as presented in the specification do not follow a logical order. I think the matter of logical order and choice of appropriate terms is the most important item there.

FLETCHER: I object to that. But that is a matter of opinion. We will take basic outline of this material in this spec as presented. That next paragraph E-1b. "Critical Operating Features" - #1 - Development, "the sub-miniature tube shall be designed to have the following critical operating features." #2. Starting glow discharge is function of materials, coating of conductive material. Isn't that coherent description?

LATSON: Would that be to a man qualified as an engineer?

FLETCHER: This is a description preferably used, whether that is preferably used by this Agency (or not). This Agency should follow War Department policy and direction or War Department and Chief of Staff. I followed in accordance with that.

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FLETCHER: Mr. Fletcher has indicated items to be followed in the specification. I don't think that is all required. The discussion should be properly referenced. Was that the case, Mr. Dawson?

FLETCHER: As I recall the inconsistency involved is illogical from an engineering standpoint and also involves specific ideas as written down.

FLETCHER: Such as construction, English, diameter, etc.

FLETCHER: That is a matter of opinion.

FLETCHER: (Mr. Fletcher was called out of the room for a telephone call and a short recess was held.)

RECORD:

FLETCHER: With kind permission I would like to inject meaning of electron tube in connection with Joint Army-Navy Specifications Pg 1 of a, b, c, 1a. 1946. Quoting--"An electron tube is a device constituted of and containing a number of electrodes containing two or more (?) thru the vacuum so gas may take place." (Unable to check this reference for missing word.) At this point I would like also to refer to Westinghouse Electric Tube Corp., #9, 1937, Section 3. Under term description resembles 3 electrodes to be in construction. Also in the same bulletin the grid tube is a grid gas controlled tube as the Westinghouse is a partner to JAN Spec of object.

DAWSON: Now go back to letter of charges.

FLETCHER: Now we start at 5b. - Attempts to state known scientific principles, I take exception to these two statements. Although at this point I could inject a little evidence in this case. Now we have already discussed the "trigger" action. How to construct tube. We get operating characteristics of the tube but no construction.

STARLIE: You say we did not give anything in regard to construction?

FLETCHER: We gave operating means and methods but did not limit to details - just methods and means. I state in E-2, "The tube shall be of such overall dimensions in accordance with standard practice for sub-miniature tubes." Standard practice in that, is a standard practice but not construction standard practice in accordance with the JAN specifications.

DAWSON: If you take that to a manufacturer would they say what is a standard practice and you two decide it? It says the tube would be in accordance with standard practice. That could mean anything.

FLETCHER: Are you through, Mr. Dawson? We will quote what it says in E-2. Size is this particular size, "sub-miniature" tube which shall be of special dimensions. We did not tell them there what size but what standard practice to be used and because they did not say to go over limits. It could be smaller but no larger than standard tubes. There is no restriction there. Now we are over to general construction we are using same terms as I am using. "Critical Operating Features" - We did not say "critical operating practices" but "critical operating features." "Notwithstanding" is an echo word which refers to prior paragraph. In that development, the sub-miniature tube would be designed to be the most desirable feature. That is size. That answers it. b-E-1a - "General Construction" - "where consistent" - "not where applicable." The word "consistent" (page 3 of letter in answer). There is quite a difference in the word "consistent" and "applicable." They have entirely different meanings. That is in accordance with the specification.

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LESTER: You mean JAR Specification?

FLETCHER: Yes. These two paragraphs are "There consistent" and "where applicable", entirely different meaning. Next, "Tube Control and Voltage Characteristics." See this tube. That did distinctly state that the tube depends on these characteristics. The actual control of that voltage depends on the placing of those elements and the voltage. Due to the fact that it was a gas tube it was not a high vacuum tube. It was not a gas tube action and is dependent on glow discharge. It was thing particularly that glow used and which would produce lower glow.

LESTER: Mr. Lester, what is your opinion of Mr. Fletcher's explanation of this point?

LESTER: I did not understand it.

MCLELLY: I did not follow it.

(The rest as taken in notes and Mr. Fletcher again stated explanation.)

FLETCHER: The tube is a functional device. On all tubes of this particular class, the tube control and voltage characteristics may be somewhat varied by the gas used in the tube. (Referred to McGowan.)

MCLELLY: Was it applicable to this tube?

LESTER: Scientific facts would control the tube. These scientific facts are not of importance in this specification because the manufacturer will have to take those into account in building the tube. We tell them what the tube is to do and let them worry about the gases and geometry.

FLETCHER: If you were going to use this tube for a rectifier, how would you control the use of the tube?

LESTER: That is beside the point.

FLETCHER: It is not.

LESTER: Now you were going to use it does not have anything to do with the situation at hand. Scientific facts are attempted to be presented there and they have no business in the specification at all.

FLETCHER: I object to the sentence of Mr. Lester as irrelevant and not in keeping with the true operation of the device and lacking in knowledge of the tube in operation.

MCLELLY: It states an imperity - "Is the knowledge essential in the specification?"

FLETCHER: All tubes designed for the Army are mandatory on every Department of Government; therefore, it is essential in writing of basic material for disclosure. Would keep uses of tube not restricted to one idea. When you are going to spend money for the Government it is part of the contract that if a requirement is exacting it can be waived but not delete it by including nothing restricted.

MCLELLY: This tube could have in mind more than one use when you make specification.

FLETCHER: I asked the engineer and he said perhaps we should put it in.

MCLELLY: That is why?

FLETCHER: (Mr. Fletcher turns to discussion of second specification in question). In regard to this specification as pertains to prior specification, as exhibits on record will show that the spec shown to be was in error. It will be impossible to write spec keeping with the desired spec. Are out of line and distinctly mistaken. Between the above operating part and the 7. Coors 30 seconds of clearance. There was a clearance (or a (clearance?) clearance) error. I pointed out discrepancy and made a model to illustrate. That will show there is an error. It is a known fact that I supplied two copies of specification (1) paragraph before in drawing, with detailed information. It is the practice of the War Department to supply specification and drawing. On drawing will give detailed information. Say certain type of screw and certain kind. You will find that is the method I used in one drawing. It is not essential to put following error in specifications: "see inclosed drawing." It is (enough) to see that it is without elaborating. If I say "five screws" that is all right unless there is a restriction on it. He mentioned the fact of the certain kinds of screws. There is no obvious error. Will go to page 6 of letter of 4 December. Drop down to 5d. - Connections, as follows, "Each (one) normal actuate signal contact shall have one each of S. C. Terminal (Solderless) or "equal." Contents of this letter - "This statement as written is decidedly incoherent. Nowhere in the specification is a 'normal actuate signal contact' described." It is common practice to write the word "each" out. Manufacturer would know what is meant by that (Reads) "Normally in operation" Signal Corps Laboratories SC-A-927. I attached drawing on that in 927. (See Plan One in specification draft). There is a note for reference to "Westinghouse Type Terminal. AR-850-25 says you cannot use that term unless you use the word "or equal". On bottom Signal Corps drawing, 927, you will find note on T<sup>1</sup> of "Westinghouse Electric. AR 850-25 states you have to use the word "or equal" Page 13, Sect. 23, AR-850-25, 30 June 1943, par. e. "The use of proprietary names in specifications as an expedient in lieu of an accurate description will be held to a minimum and in no case will be used unless followed by the phrase "or equal."

LAWSON: I think the point is in "or equal."

FLETCHER: That is self explanatory, which means no ( ? ) was placed in the model. There was very small clearance and it was possible that one screw and vibration of segment that was loose would cause a short circuit. The other connection was ( ? ). Mr. Stauffer and I discussed that the outside of those segments had considerable surface and put a screw on and it would tighten up. Because the manufacturer thought it not advisable to put that on.

LAWSON: Do they use that specification in the War Department?

FLETCHER: Yes, the same terminology.

SINKOV: One of the points of consideration is the general point of intelligibility. The reply by Mr. Fletcher of December 4 which I may not understand because of lack of engineering knowledge or different reasons but I would like to read one or two statements which could be brought to the Committee; for example, (pg 4) "As a matter of fact, the above named features are involved in the construction due to the inherent size having marked features. Yes, are to say the least very marked in the Tube's wall performance and construction details."

LAWSON: Let him explain this paragraph by paragraph.

FLETCHER: That is wrong with this paragraph? That is the trouble... specifications are very comprehensive but are known to those skilled in that art. As a matter of fact, in the above named features I have enumerated the "echo words" by reference to the above paragraphs. There are a number of reference words used by reference to above paragraphs. All these particular words are embraced in above paragraphs. Sub-miniature tube was a feature of the device.

SINKOV: The statement which begins, "Yes" is not even a complete sentence.

FLETCHER: I have answered that. The tube wall performance in regard to a certain type of tubes it is essential to put operation of the tubes. May I ask this question? What caused the slow discharge in this particular type of tube?

SINKOV: I cannot answer that type of question. I am merely pointing out that this paragraph in your reply conveys absolutely no meaning to me.

FLETCHER: Now in this particular tube we find there is a gaseous atmosphere. In this particular tube there is something to create a glow in that tube and that is usually produced by (gas).

SINKOV: On this same basis, the sentence, "For this reason size must represent a special feature is it not?" I think there might be a typing error but it is certainly incoherent.

FLETCHER: The draft says this is for a special type, a sub-miniature tube. The size was the particular thing. At a certain voltage the tube would break down and not function. That was the main characteristic.

SINKOV: You are getting away from my particular point. Correct writing should follow grammatical rules. Unless material is put down in correct form, people are going to misunderstand it.

FLETCHER: The whole thing started with misunderstanding.

COL. BRILL: Here is another such example at the top of page 5. (Reads) - "This would indicate to eliminate a 'development' rather being of it would appear a 'prophecy'. Whereas there are metallic particles of a 'colloidal nature' interposed for example such as metallic mercury, usually found therein, which provide a means for, such a phenomena, in this light the statement is first non-essential verbiage Second mis-descriptive, lacking in true knowledge of the 'development device'." I am not an engineer, but the language used is illogical and incoherent. If you can't write a specification so the person can read it, you can't write a specification.

FLETCHER: I took points out and put them into one paragraph. That is what had already been said.

BRILL: This specification never did get to the manufacturer. If it had been sent what would have happened?

FLETCHER: I would never have allowed it to go. I would not have disclosed I wrote that spec in 20 minutes. From that time to this particular date it took them to type it. Wanted to get their comments and then make a finished product. It was no completed spec in any manner or form.

LANSON: Is that true of all specs?

FLETCHER: I would make preliminary specs and make a finished product.

DEETER: For the information of Mr. Dawson, Mr. Fletcher is supposed to prepare for me what he considers a draft of the specification in its final form. I go over the draft and make specific comments on the draft so he can take any information, plus any discussion, and produce final specification. After I have seen it once and have gone over it with him, I don't expect to see it again. That is the form in which these two drafts came to me. That particular draft may have been produced in 20 minutes. How many ahead of that were made?

FLETCHER: None were made.

LAWSON: From time to time are preliminary specifications given to you?

LEETER: On the tube specification I did not see any preliminary specifications.

LAWSON: At any time did he submit any specifications which were tentative or rough drafts?

LEETER: Mr. Stauffer showed me one or two handwritten by Mr. Fletcher on the commutator.

LAWSON: How long has Mr. Fletcher been under your supervision?

LEETER: Since the time he came here.

LAWSON: March 46? I understand he worked for a short time and then he was sick. Has it been about 3 months?

LEETER: It was longer than 3 months.

LAWSON: Was he under your supervision during the entire time employed here?

LEETER: He was employed in a section under my supervision.

LAWSON: Did he submit drafts other than this one of mechanical nature?

LEETER: More than these two but they are classified.

LAWSON: Was this one ever completed and furnished to manufacturer?

LEETER: No.

LAWSON: Were any other specifications of Mr. Fletcher ever submitted to manufacturers?

LEETER: Not as he prepared them. Last spring some were - they were copies written by me. They are all reviewed by me before being submitted.

LAWSON: All of your specifications are prepared as rough drafts or preliminary specifications and all subject to change?

LEETER: By myself.

LAWSON: You also change specifications of other persons under your supervision?

LEETER: Any person under me would forward it to me.

LAWSON: How many engineers did you have under you?

LEETER: 6 or 7.

LAWSON: They all prepared preliminary specifications?

LEETER: At the time I had one engineer preparing preliminary drafts but it is a job he shouldn't have to do. It is the job of the specifications writer.

LAWSON: Whether they are Mr. Fletcher's or someone else you make final drafts?

LEETER: They prepare what they assume to be final drafts and I look them over and make comments and recommendations for them to make final copies. I am the approving authority.

DAWSON: You did that for all engineers under your supervision?

DEETER: Yes, all engineers in the division.

DAWSON: Mr. Fletcher, when were you first employed with the War Department?

FLETCHER: I received communication from Signal Corps in '41. Accepted appointment October 9, 1941 and worked for Signal Corps until 1944. Equipment in (question?) was transferred to the Air Corps and the Air Corps requested my service.

DAWSON: What type of work?

FLETCHER: Would supply technical information to technical staff. Basic work was instructor to Labs as to what to do in specifications. My Civil Service appointment was that of an engineer, qualified under Civil Service.

DAWSON: Prior to time you came with the Army Security Agency, had you gotten along satisfactorily with people you worked with?

FLETCHER: Yes.

DAWSON: What were your efficiency ratings?

FLETCHER: "Very Good."

DAWSON: Prior to the time you came with this organization did you have rating of lower than "Very Good?"

FLETCHER: Not to my knowledge.

DAWSON: How long have you been an engineer?

FLETCHER: Since before the last World War. I worked for the American Electric Heater Co., Michigan.

DAWSON: Have you since prior to the 1st World War, 1917, to the present time engaged in the profession of electrical engineer?

FLETCHER: I have.

DAWSON: Did you continuously?

FLETCHER: Since 1912 to the present time in electrical engineering and (working on) my patents.

DAWSON: Are there many?

FLETCHER: Two - (Flourescent lamp and radio circuit) others pending on atomic energy.

DAWSON: How long were you employed in the Army Security Agency before you got an efficiency rating?

FLETCHER: 30 days and was "Unsatisfactory." There was an error in the efficiency rating and they requested I return it so they could correct the error.



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DAWSON: Are you honorably discharged of first World War?

FLETCHER: I am. Volunteered my services. (Pause) -----

STARLIN: Any further questions or comments?

DAWSON: On basis of explanation, it seems to me as a layman and one who has little knowledge of engineering, that he should have satisfactorily answered the questions. Some of his language to the answers to the charges was not the best choice that the student of English would use but I think that is beside the point. I think he satisfactorily answered all of the charges. I think you gentlemen who are engineers have heard his explanations and he certainly knows what he is talking about.

STARLIN: Any further statements?

DAWSON: There was something Mr. Fletcher wanted ----- some technical knowledge he wanted to submit. A written statement which he wanted incorporated in the record. Is it permissible for him to do so?

STARLIN: It is, we will wait for it before the Board decides the case.

DAWSON: That is all

Meeting adjourned.



C. GLENN STARLIN  
Chairman, Civilian Employment Board

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