

MEMORANDUM FOR RECORD: Meeting on SIGROD held 6 November 1946

PRESENT: Dr. A. Sinkov	Mr. Mark Rhoads
Colonel K. Kuhn	Dr. S. Kullback
Lt. Col. P. E. Neff	Mr. H. L. Clark
Major J. E. Wood	Mr. Leo Rosen
Captain W. C. Washcoe	Mr. C. R. Deeter
Lt. W. H. Caffey	Mr. Ezra Lander
Mr. W. F. Friedman	

Dr. Sinkov opened the meeting by giving a brief history of the situation concerning SIGROD. We had originally thought of having Teletype Corporation build a few hundred copies of our version (SIGROD) of the Navy's CSP 1700, but we got from them an estimate which was very high. Teletype statements as to rate of production were also discouraging, as we would have no machines for six months after the signing of a contract. The matter of Teletype was consequently held in abeyance.

In the meantime, we had good indications from the Navy that they could put their laboratory to work for us. The Navy said they would make a few hundred modified CSP 1700's (SIGROD) at a price which was less than half of the Teletype quotation. However, at the time the Navy gave us the offer, we had been short of funds. Delays in getting the necessary money had held up the program for a month or two, and now that we have the money we find that the Navy is not in a position to make the machines. Captain Smith has informed us that the Navy has now completed the design of the modified SIGABA (CSP 2900) and the laboratory is going all out on the production of this device. This production will utilize all of their facilities for the next two years. It was felt that to return to Teletype Corporation would be a mistake as there were still the problems of cost and delay and the complications of making contracts with private companies.

It was finally decided that we would make the machines at this Agency. An assembly line procedure could be used with the personnel in Maintenance Branch. The present program of rehabilitating SIGABA would be temporarily suspended. It is estimated that it would be possible to turn out approximately 50 SIGROD per month and by the end of the fiscal year an ample number of machines should be available for the ETO. Many people in Maintenance Branch would have to work overtime and an assurance has already been received from Colonel Hayes that overtime will be approved. Dr. Sinkov continued to say he felt that even with overtime, the eventual cost of the machines to ASA would not be any greater than the Navy price. There are several problems

which will have to be coordinated. We would continually be using the facilities of R and D Division, and in particular the Machine Shop, but it should not interfere with the present functions of R and D Division. Sufficient help for this project could probably be obtained in overtime work. There will also be certain problems of procurement.

A special basket will be required for the SIGABA chassis and there are some minor modifications which will have to be made. Colonel Kuhn reported that the Maintenance Shop could start at once to take the SIGABA's apart for reconditioning and rebuilding up to the point at which the new parts go in. Certain parts will have to be made and others must be altered in different ways. Side frames must be cut and redrilled. Actually there will be very few new parts made in R and D Division. However, we would like to have quite a bit of the altering work done there.

Dr. Sinkov suggested that it would be a good idea if Mr. Rosen could see what the parts are like. Captain Washcos said there were only 14 new parts altogether. Mr. Rosen asked if any of the parts to be machined were classified, and if not why all the machining could not be done outside. Colonel Fuhn said that all of the machine work could be done off the Post in any shop available. Dr. Sinkov explained that we would like to do it in the way which would cause the least disruption in the program. Mr. Rosen said that the grade of work done outside would be better as they have the best machinists. The men in the R and D Shop are being used for mock-up for the MX-519 and the MX-508, etc. Mr. Fosen said, however, that if Security Division felt that overtime would be authorized, he felt that the men would be willing to put in the overtime to do the job. Dr. Sinkov assured the group that Colonel Hayes had said that overtime would be approved. A detailed analysis of the parts required, plus how much work will need to be done, will give a better appreciation of how the R and D Machine Shop could cope with the problem.

The first job is going to be figured with a goal of 400 machines. The side frames are the controlling parts. We cannot give all 400 to R and D Division at the same time. We can probably give them 25 of each side immediately by taking from new parts in stock and follow up with 25 more very shortly, but it will be hard to get more than 50 ahead at any time. This will mean that the Maintenance Shop will have 25 machines laying around disassembled.

There are many unclassified parts which are designed to be stamped, cut down and worked. R and D Division has a punch press, but these parts require a much heavier press. Colonel Kuhn reported that there was a company in Baltimore that would do this work speedily. Colonel Kuhn asked Major Wood if it would be necessary to go through the process of letting a contract for such work. Major Wood replied that he could see no reason why it would

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not be possible to put in a purchase request. The matter could be discussed with the Signal Corps.

Colonel Kuhn said that the same question would arise with regard to the plating of parts. He said that it was desirable to send out parts for 50 machines at a time and he did not want to have to make up a purchase request each time parts were sent out. This paper work, if handled in a normal manner, would take longer than the time available to manufacture the machines.

Mr. Rosen asked if the matter of the policy on the production of the equipment had been settled, as there are rules, regulations, directives, and various statements about the Government doing its own manufacturing work. This stems generally from the idea of the Government going into competition with private industry. Dr. Sinkov said the fact that this is only a minor modification of a machine might get around any such rules. Mr. Rosen said he felt that matter should be looked into and the policy stated clearly in order to prevent later repercussions. Mr. Lander said that inference might be taken from the Navy policy. Lt. Caffey pointed out that it was suggested that ASA have a plant to make all cryptographic machines. Colonel Kuhn said that ASA had tried to let contracts outside for modification and the estimates were very prohibitive, and he felt the manufacture of SIGROD at ASA justifiable. Mr. Friedman said he felt that since the Teletype Corporation estimate was so exorbitant and this was an emergency situation ASA could build the machines. This would cut the cost as well as the important time element involved.

Captain Washcoe said he would like to have Dr. Sinkov name a committee to go to work on the model of the SIGROD after getting it back from the Navy to consider the engineering details. Dr. Sinkov named Mr. Rosen and Mr. Deeter of R and D Division and Colonel Kuhn and Captain Washcoe of Security Division. He said the committee should examine the parts to see which ones are needed, the tasks involved, and where and how best made. Captain Washcoe recommended that Colonel Kuhn be made Chairman of this committee.

Captain Washcoe pointed out that the production of SIGROD will not necessarily mean that the SIGABA rehabilitation will come to an end. The withdrawn SIGABA's will be rehabilitated as they are rebuilt into the SIGROD. Colonel Kuhn said that parts were the main factor. Captain Washcoe said that any parts made outside the Agency would be made in lots of 1,000 each so it will not be necessary to reorder the parts later. This will allow 10 per cent for spare parts. Dr. Sinkov said he felt this should be done in view of the fact that funds are available. Mr. Lander suggested that a very carefully survey be made of the expenses involved and an over-all picture presented at one time. An approval of the over-all cost should be obtained to make sure the funds are available.

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Mr. Friedman asked if the Navy was going ahead on their modification of the SIGABA. Dr. Sinkov replied that Captain Smith had reported that the modification program was about to begin. The Army is not going along with the Navy on this modification. Mr. Clark said he felt that the Navy and the Army should get together and decide to both go along on the idea or to drop it, rather than going in opposite directions. Dr. Sinkov said if we had gone into the original program of the CSP 1700 with the Navy we might not have the present problem of embarking on a program of improving the SIGABA. Mr. Rhoads suggested that ASA get tough and bring the matter up before the Joint Research and Development Board for some joint action on this cryptographic program. Mr. Friedman asked where intercommunication would be if the Navy brought out the new device. Dr. Sinkov said that when the Navy made the decision to embark on the program it was decided to have the new machine operate either as the CSP 2900 or the SIGABA. The Navy intends to spend all of its money this year to build up a big enough supply so that the CSP 2900 could be called into use at a moment's notice. Mr. Friedman asked what our efforts had been to get together with the Navy. Dr. Sinkov replied that in a letter from Security Division, Captain Smith was given the final report on our security evaluation. It was indicated that our studies had proved that the modified machine cryptographically was somewhat more secure than the SIGABA. The covering letter to Captain Smith accompanying these reports, indicated that it was the feeling of this Agency that rather than spend money and time required for building an improved SIGABA, it would be better to spend time and effort on a wholly new and different machine which would be more desirable than the modified SIGABA for use in the future. Dr. Sinkov said that regardless of what is done with the CSP 2900, the Army program for SIGROD is to continue since Colonel Hayes is very much concerned with the physical security of SIGABA in Europe. Colonel Hayes wants to withdraw the SIGABA and replace it by the SIGROD. Colonel Kuhn said if we did not go along with the Navy's modification of SIGABA, two machines would be needed--one for Army-Navy communications and a different machine for combined communications. He said he felt this was something that should be ironed out now.

Mr. Friedman asked if there was any money for an Army production of the CSP 2900. Colonel Kuhn replied that adding the switch to the CSP 2900 would cost less than \$10 per machine if the modification were done with the rehabilitation program. Dr. Sinkov reiterated that Colonel Hayes did not think it necessary. Mr. Friedman said he would talk to Colonel Hayes to see if there was any hope of changing his views on the matter. Ten dollars per machine, in the rehabilitation program, is not much, and it might be worthwhile. It was admitted that we could rehabilitate them here at a very slow rate. Mr. Friedman then asked if the improvement in the CSP 2900 over the SIGABA was sufficient to warrant our going to all this additional construction and what we would gain. Mr. Clark said he was not convinced there was any great gain. Colonel Kuhn

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said it may not be the best or the wisest move, but we may be forced into it. Mr. Friedman again said he would discuss the matter with Colonel Hayes.

Dr. Sinkov adjourned the meeting recommending that the committee meet as soon as the SIGROD is returned from the Navy and prepare a program toward the beginning of the actual construction of the SIGROD.

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