

SRH-267

HISTORY OF
ENGINEERING RESEARCH ASSOCIATES

DECLASSIFIED per Part 3, E. O. 12356
by [Signature], NSA/Chief, CSS
Date: 6 January 1984

REVIEWER'S NOTE:

First review of this document
was performed by personnel of
the United States Navy.



Section 945
REFER TO FILE NO.

NAVY DEPARTMENT CH/SMC9

NObs-28476(945)
Serial 945-5079

BUREAU OF SHIPS
WASHINGTON 25, D. C.
MEMORANDUM

16 August 1948

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From: 945
To: Secret Files (NObs-28476)

Subj: NObs-28476 - Development Contract with Northwestern
Aeronautical Corporation, St. Paul, Minnesota -
Summary of Background Information

Ref: (a) Code 945 Secret memo serial 945-4813 dated
21 March 1948 to Secret Files (NObs-28476).

1. This memorandum has been prepared for the purpose of recording detailed information concerning the history and all attendant circumstances of subject contract. The data herein includes all information recorded in reference (a) and certain supplementary facts, as well as more recent developments up to the present date. This memorandum can therefore be considered to supersede but not to cancel reference (a).

2. Background Facts. The U. S. Naval Computing Machine Laboratory was established in Dayton, Ohio, in November 1942, for the design and development of special electronic equipment for Communication Intelligence purposes. This laboratory occupied a building on the grounds of the National Cash Register Company and the activities of the laboratory were implemented by Navy development contracts with that company. The Bureau of Ships furnished the Officer-in-Charge of this laboratory, Captain Ralph I. Meader, USNR, who performed this duty as a member of Code 945 of BUSHIPS on additional duty. Capt. Meader maintained for BUSHIPS and NCSL the closest personal liaison with the Chief of Naval Operations (Op-32) in order to translate the specialized technical requirements of CNO as quickly and efficiently as possible into practical equipments and in order to handle highly classified technical information through direct and secure channels involving a minimum number of persons.

3. The equipment which was engineered and built at the Naval Computing Machine Laboratory resulted from the theoretical design approaches generated within the research group of CNO (Op-20-G). This research group consisted primarily of Naval Reserve officer personnel who worked closely with the Naval Computing

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FROM BUREAU OF SHIPS, NAVY DEPARTMENT, WASHINGTON 25, D. C.

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Machine Laboratory during the time their theories were being transferred into machines and, upon completion of the machines, assisted the laboratory in training Navy personnel for maintenance purposes. These arrangements were most effective in obtaining special equipment of vital importance for Communications Intelligence operations and proved far superior to development contracts with other corporations not directly integrated with the naval activity.

4. It became apparent some time before the end of hostilities that the NCML could not be satisfactorily operated at the National Cash Register Company after the war ended, since that company was not interested in continuing the necessary contracts to provide services, facilities or engineering talent to this project in the post-war period. The National Cash Register Company strongly indicated its desire to terminate all existing contractual arrangements as soon as possible after the termination of hostilities with Japan. It therefore became necessary to consider the removal of the Naval Computing Machine Laboratory from the location at Dayton and its re-establishment elsewhere under conditions which would permit a continuation of the design, development and production work in this important field. Continued urgent directives from the Chief of Naval Operations made it apparent that this type of work in the field of Communications Intelligence was to be maintained in spite of the end of hostilities.

5. The subsequent demobilization of Naval Reserve personnel created a situation wherein the future program of Naval Communications Intelligence work would be seriously handicapped, if not completely stopped, unless means were found to permit the continued contribution to the Navy program of the highly specialized research engineers who had engaged in this program under CNO in conjunction with NCML. The limited number of such specialists available for this work made it imperative that efforts be made to assure their uninterrupted service to the Navy as a safeguard to national security. Efforts to encourage a workable number of

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the key men of this group to transfer to the Regular Navy were unsuccessful, as were efforts to recruit them into Civil Service. Since the efforts of this group during the war had resulted in the Navy's great success in the field of Communications Intelligence, special means appeared to be justified in order to insure that their talents were not abruptly lost.

6. In addition to the peculiar personnel requirements of this problem, a second special factor is the necessity for the maintenance, at all times, of the highest order of security of information. Practically all of the work involved and the equipment produced must be highly classified and at the same time is a direct and vital factor in the national security of the United States. This requires special arrangements for physical security of the laboratory, the equipment itself, and all files and correspondence containing technical details which might reveal the nature or methods of the work.

7. History of Preliminary Planning. As early as 1944 it was realized by interested officers that the very effective arrangements worked out during the war could continue to benefit the Navy and the nation if some workable means could be found to continue them, with as little real change as possible, in the post-war period. In the Fall of 1944, the Director of Naval Communications, Rear Admiral J. R. Redman, USN, verbally requested a study of the problem of continuing, after the war, some arrangement similar to the Naval Computing Machine Laboratory - National Cash Register Company set-up for Communications Intelligence research and development. Captain H. T. Engstrom, USNR (Op-20-G; now Op-20-L) and Captain Ralph I. Header, USNR (BUSHIPS), were assigned the task of formulating plans to this end.

8. The first tentative plan evolved contemplated the establishment of a corporation to be called National Electronic Laboratories. This was to be a private research organization

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under whose auspices the Navy could continue the Naval Computing Machine Laboratory in a manner paralleling the existing system with National Cash Register Company. This plan was the result of exhaustive studies. The use of existing commercial companies was thoroughly considered but was rejected for several reasons. The National Cash Register Company would not continue its participation because of its desire to devote its facilities to its own post-war commercial research. It was considered that most established commercial electronics companies would be so concerned with their own reconversion problems that sufficient resources and attention would not be directed to this Navy problem. Furthermore, no other existing company was considered to possess the experience necessary to begin with. It was also difficult to envision any arrangement with existing companies which would absorb the services of the vital specialist personnel, then still in the Navy, under terms sufficiently attractive to induce these men individually to join the enterprise. The organization of an entirely new enterprise would provide the necessary incentive so that the Navy's own research personnel, who had already developed technical skills of a high order in this special field, could be kept together after their release from active duty as a group in the new organization. These plans envisaged these personnel as naval reservists on inactive duty so that in cases of national emergency, the Navy could take over their entire resources of technical knowledge if necessary. At this time, the plans contemplated that the following naval officers after relief from active duty, would eventually handle the technical direction of the proposed new organization:

Comdr. H. T. Engstrom, USNR
Comdr. R. I. Meader, USNR
Lt. Comdr. W. C. Morris, USNR
Lt. J. H. Howard, USNR

9. While various possibilities had by this time been explored as to the provision of the necessary financial backing for such a new enterprise, no specific financial arrangements had as yet been proposed. Before proceeding with this aspect of the plans, it was desired to crystallize and obtain approval of the general plans for methods of operation and the nature and scope of the proposed corporation.

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10. The tentative plans for the National Electronics Laboratories (a name subsequently abandoned) were therefore submitted to Admiral Redman on approximately 20 February 1946, in a meeting attended by the following:

Rear Admiral J. R. Redman, USN (DNC)
Capt. J. V. Murphy, USN (Deputy DNC)
Capt. J. E. Wenger, USN (Op-20-G)
Capt. F. O. Willenbacher, USN
Comdr. (later Capt.) H. T. Engstrom, USNR (Op-20-G)
Comdr. (later Capt.) R. I. Meader, USNR (BUSSIPS)

Admiral Redman expressed approval of the plans and agreed that a private enterprise was the only satisfactory medium for carrying out this research work. Captain Willenbacher, as legal adviser, gave the opinion that there was no point of controversy concerning the legality of the proposed plans. Admiral Redman then verbally authorized Comdr. Engstrom and Comdr. Meader to proceed with the organization of a private laboratory group in accordance with these plans.

11. The next problem to be met was the definite arranging of sufficient financial backing to establish laboratory facilities. Approaches were made to Admiral Lewis Strauss, then on active duty in the office of the Secretary of the Navy and a partner in Kuhn-Loeb and Company. Before going ahead, Admiral Strauss submitted the plans to the Secretary of the Navy, Mr. James Forrestal, and discussed the plans at a meeting with the Assistant Secretary of the Navy, Mr. Struve Hensel; the Director of Naval Communications, Rear Admiral Joseph R. Redman, USN; and the Chief of the Bureau of Ships, Vice-Admiral E. L. Cochrane, USN, who concurred in the plans. Advice was also solicited from Mr. Elisha Walker, the senior partner of Kuhn-Loeb. Plans called for establishment of this laboratory as an activity of the U. S. Rubber Company. At the end of several months, the group under Admiral Strauss decided that the commercial aspects of the plan were doubtful and that financially

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the laboratory could not support itself. The Navy group was not pleased with the U. S. Rubber international implications and felt that the desired degree of security for the project could not be attained. The discussions were then abandoned.

12. After additional months of unsuccessful effort, Captain Meader discussed the plans with Mr. Nelson Talbott of Dayton, Ohio, who referred him to Mr. John Parker, a partner in the firm of Auchincloss, Parker and Redpath, and President of the Northwestern Aeronautical Corporation of St. Paul, Minnesota. Mr. Parker, a graduate of the U. S. Naval Academy, and Mr. Talbot, who had served during World War II as a Colonel in the Army Air Forces, caught the spirit of the plan immediately and reached a solution to the organizational problem. The Northwestern Aeronautical Corporation had carried out a large amount of development and production work for the Army Air Forces during the war. The need for their facilities at St. Paul was being curtailed as a result of the cessation of hostilities. These facilities, which were under lease from the Defense Plant Corporation, were therefore available for any new Navy program. The financial position of the Northwestern Aeronautical Corporation was considered satisfactory. Subsequent to these initial conversations, Mr. Talbott became a vice president of Northwestern Aeronautical Corporation.

13. Final Arrangements and Negotiations. After this point had been reached, the Northwestern Aeronautical Corporation became the definite vehicle for the creation of the organization capable of performing the C. I. research program. An arrangement was worked out within the Northwestern Aeronautical Corporation for the financial support of a new private research organization, named Engineering Research Associates, Incorporated. The members of this corporation (administrative officers and engineers) were to be recruited from the technical personnel who had been engaged in research and development in this field during the war and who expected to be released from active duty in the Navy in the near future. An arrangement was made under which the Engineering

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Research Associates would carry out research and development as required by the Northwestern Aeronautical Corporation. The latter corporation would therefore be in a position to undertake the work envisaged in the plan, having excellent facilities, its own financial resources, and the services of the necessary technical specialists through the Engineering Research Associates.

14. A contract could then be negotiated with Northwestern Aeronautical Corporation to provide laboratory space and facilities for the establishment of the Naval Computing Machine Laboratory in quarters adjacent to those to be occupied by the personnel of Engineering Research Associates. This laboratory is a Navy unit under direct control of the Navy, administered by an officer representative of the Bureau of Ships (at present, Captain Meader). The laboratory personnel will be provided by the Bureau of Ships and the Chief of Naval Operations. At present this activity has three officer billets under BUSHIPS and all other naval personnel are provided by CNO. There are no civilian billets. The Navy-owned equipment located at Dayton, Ohio, was to be moved to the new site in St. Paul, Minnesota. The success of this portion of the program depends upon the close liaison between the personnel of Engineering Research Associates and those of the Naval Computing Machine Laboratory. This close association of Navy laboratory personnel, who of necessity will be mostly new engineers, inexperienced in this special work, with the capable and experienced engineers of ERA in the solution of Navy problems, should produce, within a year or two, experienced Navy engineering personnel. These engineers should thereafter, if necessary, be capable of carrying on the independent operation of a Naval Computing Machine Laboratory both for research and for engineering design and development. The latter was the primary function of the existing Naval Computing Machine Laboratory.

15. The foregoing proposed arrangements were explained to various officers of the Electronics Division of the Bureau of Ships at a conference attended by the following, on 5 January 1946:

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Captain D. R. Hull, USN (BUSRIPS 901)
Captain J. M. Wanger, USN (CNO, Op-20-G)
Captain Rawson Bennett, USN (BUSRIPS 910)
Captain J. E. Berkley, USN (BUSRIPS 914)
Captain H. T. Engstrom, USNR (CNO, Op-20-G)
Captain E. M. Ragsdale, USN (BUSRIPS 1701)
Captain R. I. Keeler, USNR (BUSRIPS 945)
Comdr. J. J. Kelley, USNR (BUSRIPS 945)
Lt. Ernest F. Leatham, USNR (BUSRIPS 1710)
Mr. L. D. Whitelock (BUSRIPS 945)

16. As a result of this conference, the subject development contract was initiated by the Navy with the Northwestern Aeronautical Corporation. Contractual arrangements were made by Col. E. W. Dichenan (formerly AAF) for Northwestern Aeronautical Corporation and Captain E. M. Ragsdale, USN, for the Bureau of Ships. Arrangements were initiated for the transfer of the Naval Computing Machine Laboratory from Dayton to St. Paul, where it now occupies on a rental basis a portion of the existing facilities of NWA.

17. It should be clearly understood that at no time during the discussions referred to above was the U. S. Navy (Bureau of Ships in particular) committed to any definite action or contractual agreements, nor were any inferences made that Navy production contracts would be guaranteed or placed on any other basis than by competitive bid except in cases where the National Security was involved, in which case the Navy would be free to select the contractor on other than a competitive basis.

18. These conferences held between the individual Naval personnel of CNO (Op-20-G) and the contractor, concerning the prospective employment of these persons, although attended in some instances by Bureau of Ships representatives, were in a purely private business vein between the prospective civilian employees of the Northwestern Aeronautical Corporation (Engineering Research Associates, Inc.) and the executives of that corporation.

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19. History of Contract. Subject contract was let in February 1946. Work thereunder is now fully underway and all work under the previous National Cash Register Company contracts has ceased. The Naval Computing Machine Laboratory completed, as of 8 August 1946, its transfer from NCR premises at Dayton to ERA premises at St. Paul. This involved transfer of all government-owned equipment of the laboratory as well as the naval personnel. Demobilization has so reduced the personnel that at present only a portion of the billets are filled. A total of 95 billets are at present authorized, 3 officers supplied by BUSHIPS and the remaining officers and men by CNO. This activity was established for the post-war period as a result of CNO secret memo. serial 00510P20 of 2 May 1946, approved by CNO secret endorsement serial 00817P20 of 3 May 1946, as an activity under COMNINE for military command and coordination control and under BUSHIPS for management and technical control. Capt. Meader remains at present as Officer-in-Charge.

20. Engineering Research Associates has been incorporated as a separate enterprise and now has in its employ nearly all the former naval personnel who have agreed to remain in this field as civilians. When this corporation was formed, the following officers were invited to accept positions as Vice Presidents:

Capt. H. T. Engstrom, USNR
Capt. R. I. Meader, USNR
Comdr. W. C. Norris, USNR

Captain Meader and Captain Engstrom were also invited to become directors and vice presidents of Northwestern Aeronautical Corporation. It was understood that such positions could and would be filled by these persons only after their release from active duty in the Navy. Although all of these officers intended to accept these positions after their release by the Navy, they have all stated in writing that they were not officers or employees of either ERA or NWA, nor have they received any remuneration from ERA or NWA, while still on active duty in the Navy. Comdr. Norris has now been released from active duty and has assumed the position of Vice President

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Capt. R. I. Meader, USNR
Comdr. W. C. Norris, USNR

Captain Meader and Captain Engstrom were also invited to become directors and vice presidents of Northwestern Aeronautical Corporation. It was understood that such positions could and would be filled by these persons only after their release from active duty in the Navy. Although all of these officers intended to accept these positions after their release by the Navy, they have all stated in writing that they were not officers or employees of either ERA or NWA, nor have they received any remuneration from ERA or NWA, while still on active duty in the Navy. Comdr. Norris has now been released from active duty and has assumed the position of Vice President

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for Research and Engineering at ERA, as a civilian. Capt. Engstrom expects to be released from active duty in the immediate future, after which he will also join the corporation as a civilian. Capt Meader expects to remain on active duty for some time longer and meantime states that he is not an officer, director or stockholder of either NWA or ERA.

21. The following are among the personnel now employed by Engineering Research Associates. These persons were all naval reserve personnel formerly engaged in communications intelligence work under CMO, with the ranks indicated. All were released from active duty in the Navy before entering the employment of this company. Several of them are now not only officers or employes, but are stockholders in this corporation as well.

<u>Name</u>	<u>Former Naval Rank</u>
Norris, W. C.	Comdr.
Steinhardt, L. R.	Lt. Comdr.
Roening, W. R.	Lt. Comdr.
Tompkins, C. B.	Lt. Comdr.
Chaloux, L. Y.	Lt.
Howard, J. H.	Lt.
Clafson, E. C.	Lt.
Walsh, J. M.	Lt.
Ammerman, D. W.	Lt. (JS)
Duncan, H. S.	Lt. (JS)
Kobie, D. L.	Lt. (JS)
Koe, W. J.	Ens.
Killea, H. G.	Ens.
Goss, L. W.	CRM - P
Lund, G. W.	CRT - A
Einfeldt, R. E.	KM 1/c
Grogan, W. L.	RT 1/c
Kotz, A. A.	KM 1/c
Stallard, J. H.	EM 1/c
Vandell, W. L.	ETK 2/c
Zimmerman, H. F.	ETH 2/c
Horton, W. P.	RT 3/c
Robinson, T. O.	S 1/c

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21. The following are among the personnel now employed by Engineering Research Associates. These persons were all naval reserve personnel formerly engaged in communications intelligence work under CNO, with the ranks indicated. All were released from active duty in the Navy before entering the employment of this company. Several of them are now not only officers or employees, but are stockholders in this corporation as well.

<u>Name</u>	<u>Former Naval Rank</u>
Norris, W. C.	Comdr.
Steinhardt, L. R.	Lt. Comdr.
Roening, W. R.	Lt. Comdr.
Tompkins, C. B.	Lt. Comdr.
Chalouz, L. Y.	Lt.
Howard, J. H.	Lt.
Clafson, E. C.	Lt.
Walsh, J. M.	Lt.
Ammerman, D. W.	Lt. (jg)
Duncan, H. S.	Lt. (jg)
Noble, D. L.	Lt. (jg)
Moe, W. J.	Ens.
Nilles, H. G.	Ens.
Goss, L. W.	CRM - P
Lund, G. W.	CRT - A
Einfeldt, R. B.	MM 1/c
Grogan, W. L.	RT 1/c
Kotz, A. A.	MM 1/c
Stallard, J. H.	EM 1/c
Vandall, W. L.	ETM 2/c
Zimmerman, H. F.	ETM 2/c
Horton, W. P.	RT 3/c
Robinson, T. O.	S 1/c

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It is probable that a few additional persons who have previously been on active duty in the naval reserve, will at some future date similarly enter the employ of Engineering Research Associates as civilians.

22. On 21 May 1946, a conference was held at which the connection of the above mentioned personnel with ERA was discussed. The following persons attended:

Capt. J. M. Wenger, USN	CNO
Capt. D. R. Hull, USN	BUSHIPS
Capt. R. Bennett, USN	BUSHIPS
Capt. B. M. Ragsdale, USN	BUSHIPS
Comdr. G. Hunter, USN	BUSHIPS
Comdr. L. P. Kimball, USNR	BUSHIPS

Captain Wenger pointed out that because of the peculiar nature of the work to be carried on by ERA, the former connection of its key personnel with the CNO communications intelligence organization and the close relationship which would be necessary in the future between ERA and CNO for optimum results, it was important that all these relationships be clearly established and brought out into the open. He emphasized the desire of CNO to avoid any irregularities, accidental or otherwise, and stated that CNO would rely upon BuShips to insure that the Navy's interests in this respect were safeguarded. BuShips representatives agreed that the necessary action would be taken to this end.

23. As of the present date, the Bureau of Ships has not yet approved a proposed subcontract arrangement between Northwestern Aeronautical Corporation and Engineering Research Associates under which the latter, as subcontractor, would furnish to NWA the special technical services of its engineering staff to perform the research work required by subject contract. Bureau approval of such agreement now awaits receipt from the contractor (NWA) of a statement concerning the amounts of salaries being paid to ERA officers and employees.

24. On 12 August 1946, a conference was held in the office of the Director of Contracts, Bureau of Ships, to discuss certain aspects of the subject contract. The following persons were present:

Rear Admiral F. J. Wille	BUSHIPS
Rear Admiral E. E. Stone	CNO
Capt. J. H. Wenger	CNO

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Comdr. G. Hunter, USN	BUSHIPS
Comdr. L. P. Kimball, USNR	BUSHIPS

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Rear Admiral F. J. Wille	BUSHIPS
Rear Admiral E. E. Stone	CNO
Capt. J. N. Wenger	CNO

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Capt. D. R. Hull	BUSHIPS
Capt. G. N. Robillard	BUSHIPS
Capt. E. M. Ragsdale	BUSHIPS
Capt. J. B. Berkley	BUSHIPS
Capt. H. T. Engstrom	CNO
Capt. R. I. Meador	BUSHIPS
Comdr. G. Hunter	BUSHIPS
Mr. L. T. Harrison	BUSHIPS
Mr. R. C. Kiser	BUSANDA

One of the subjects discussed was the above described employment of former Naval personnel by Engineering Research Associates. It was brought out that Comdr. Morris is no longer on active duty and is now employed by ERA and that Capt. Engstrom was soon to be released from the Navy and would thereafter be employed by ERA. The possibility of his also being employed by the Navy under a personal services contract was discussed. It was decided that Capt. Engstrom would not enter into such a personal services contract at this time but that his technical services could be obtained by the Navy under a task set up for that purpose under subject contract, after he became an official or employee of ERA.

25. The question was discussed as to whether the use of the contractor's private plane for the transportation of naval personnel connected with subject contract or with NCML, should constitute an allowable charge under the contract. It was decided that costs of such air travel would be disallowed unless BUSHIPS was directed otherwise by higher authority and that a letter would be written to the contractor accordingly.

26. It was also brought out that the contractor intended to maintain a local Washington office. It was agreed that such office was not necessary to the Navy and it was therefore decided that the contractor would be informed by letter that expenses for the maintenance of such an office would be disallowed under this contract from 30 June 1946.

27. It was also decided that a full statement of the facts concerning subject contract, particularly the employment of former naval personnel by ERA, should be prepared by the Bureau of Ships and forwarded via CNO to the Secretary of the Navy, in order to acquaint the latter with the situation and request his comments thereon.

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Capt. D. R. Hull	BUSHIPS
Capt. G. N. Robillard	BUSHIPS
Capt. E. M. Ragsdale	BUSHIPS
Capt. J. B. Berkley	BUSHIPS
Capt. H. T. Engstrom	CNO
Capt. R. I. Meader	BUSHIPS
Comdr. G. Hunter	BUSHIPS
Mr. L. T. Harrison	BUSHIPS
Mr. R. C. Kiser	BUSANDA

One of the subjects discussed was the above described employments of former Naval personnel by Engineering Research Associates. It was brought out that Comdr. Norris is no longer on active duty and is now employed by ERA and that Capt. Engstrom was soon to be released from the Navy and would thereafter be employed at ERA. The possibility of his also being employed by the Navy under a personal services contract was discussed. It was decided that Capt. Engstrom would not enter into such a personal services contract at this time but that his technical services could be obtained by the Navy under a task set up for that purpose under subject contract, after he became an official or employee of ERA.

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28. Immediately after this conference, the following persons conveyed the results of the meeting to Vice-Admiral E. W. Mills, Assistant Chief of the Bureau of Ships:

Rear Admiral F. J. Wille
Capt. D. R. Hull
Capt. E. M. Ragsdale
Capt. R. I. Meader

At this time it was agreed that after the contractor had furnished the list of salaries of ERA personnel, and if such list is then approved, no change could later be made in such list without BUSHIPS approval. Adm. Mills approved the previous decision to disallow expenses for travel in contractor's airplane and the decision to submit the data concerning this contract to the Secretary of the Navy.

Gould Hunter

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O:NC, NCML ←

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28. Immediately after this conference, the following persons conveyed the results of the meeting to Vice-Admiral E. W. Mills, Assistant Chief of the Bureau of Ships:

Rear Admiral F. J. Wille
Capt. D. R. Hull
Capt. E. M. Ragsdale
Capt. T. I. Meader

At this time it was agreed that after the contractor had furnished the list of salaries of ERA personnel, and if such list is then approved, no change could later be made in such list without BUSHIPS approval. Adm. Mills approved the previous decision to disallow expenses for travel in contractor's airplane and the decision to submit the data concerning this contract to the Secretary of the Navy.

Gould Hunter

cc: Op-20-3
OinC, NCML

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