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MEETING WITH BUAER SEPTEMBER 11, 1956

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APPLICATIONS ENGINEERING

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TITLE: MEETING WITH BUAER SEPTEMBER 11, 1956 (Memo to G. W. Newton)

AUTHOR & ORIGINATING UNIT: E. B. Delson, Applications Engineering Section

DATE SUBMITTED: September 17, 1956

The Bureau of Aeronautics, Navy Dept., was visited by E. B. Delson on September 11, 1956.

Conversations between Admiral Spangler of NADC and ANP Personnel were reviewed, including changes in the Navy Mission. The Defense Dept. has not given final approval to the Navy for their ANP Mission. It is hoped this will be obtained shortly after September 21.

Application of nuclear power to other missions was discussed. Lockheed has a contract with the Navy to study all naval air missions to determine where nuclear power is most applicable.

The Navy site survey is continuing. The Parsons Co. have the job of coordinating all facility requirements for the Navy. It was suggested that, as soon as ANP receives the official go-ahead for the Navy study, a meeting be set up for interested Navy personnel, the Parsons Co., and ANP facilities personnel to establish officially as many requirements as possible.

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SUBJECT:

MEETING WITH BUAER SEPTEMBER 11, 1956

Cincinnati 15, Ohio, September 17, 1956

G. W. Newton  
Manager - Applications Engineering

The Bureau of Aeronautics, Navy Department, was visited by the writer on September 11, 1956. Personnel contacted were Capt. N. R. Richardson, Capt. Duncan, Cdr. D. Walley, Cdr. J. Terry, Lt. Nay, and Mr. D. Miller. Capt. E. Hribar sat in on part of the discussion.

The conversations between ANPD personnel and Admiral Spangler of NADC were reviewed. Capt. Richardson stated that the Navy mission now required a sea-level sprint of Mach 0.9 to 0.95 for a 500-mile radius. It also includes a Mach 1.5 sprint at 35,000 to 45,000 feet for a 200-nautical-mile radius. The cruise range can be accomplished anywhere from Mach 0.7 to 0.9 at about 25,000 feet for a 6,000-nautical-mile radius. The total dose requirement has also been changed. The Navy will now accept 5 rem per mission for the strike. They want additional removable shielding, however, to reduce this to 2 rem per mission when the aircraft is in a "deterrent" status. In this condition it would still be required to carry an 8500-lb. weapon and 25,000 lbs. of fuel. When the order for the attack is received, it is desired that the extra shielding be removed and the additional required fuel be added. The method of accomplishing this change-over in a reasonable period of time has not yet been determined.

The Navy is still trying to obtain the required funds for their 1957 ANP Program. A release for 1.5 million for Convair has been obtained. The Defense Dept. has not given final approval to the Navy mission and this will be necessary before all required funds can be obtained. The Navy is to make a presentation to the Department of Defense on September 21 and it is hoped that mission approval will be received shortly thereafter.

Capt. Richardson stated that the Assistant Secretary of Defense for Research and Development was making an overall evaluation of the ANP Program.

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Application of nuclear power to other missions was discussed. Capt. Richardson stated that there are a number of missions in which CNO is interested. Some of these are:

1. A patrol aircraft which could be modified for anti-submarine warfare, ocean scouting, or for a DAB application. It should have a wide range of speeds and a long endurance.
2. An aircraft having a good speed potential (300 to 400 knots) to be used for patrol and open sea ASW.
3. An aircraft with good endurance which can loiter on station for long periods of time and which then can then respond to a submarine detection with sufficient speed to intercept and kill.
4. The high-speed, low-level attack mission which is now the major Navy ANP consideration.
5. A high-performance, water-based aircraft for photo reconnaissance.

The Navy now has a contract with the Military Operations Research Division of Lockheed to study all naval aircraft missions and to determine where nuclear power is most applicable. This is to be carried further into a study of the nuclear missions from the viewpoint of which can be best accomplished by seaplanes. Mr. Don James is project engineer of this study at Lockheed.

Capt. Richardson stated that he felt the limitations on the use of a nuclear turbo-prop in a seaplane application were not those of the power plant but of the aircraft design. He feels that no satisfactory design for a propeller-driven seaplane is in existence and that considerable effort will be required to arrive at one which is satisfactory.

The aircraft design competition between Convair-San Diego and the Martin Co., which is based on the General Electric power plant, is unofficially underway. The Navy is to provide an official specification for this study on November 1. However, both aircraft companies are to make their final presentations late in December which means that they must have their reports in a rough-draft form before the end of November. This does not allow them much time. The Navy expects to make a decision by January 1, 1957, give a contract for Phase 1 aircraft design to the winning company by early spring of 1957, and have the mock-up ready by spring of 1958. Only a very minor effort on studies of aircraft for the Pratt & Whitney power plant will be carried on by the losing air frame manufacturer.

The Glenn L. Martin proposals have included the use of two chemical engines before take-off power and for possible use during the altitude supersonic sprint. Convair originally proposed RATO but the Navy would prefer not to use rockets and has suggested to Convair that they incorporate chemical engines.

Capt. Richardson again mentioned that they desired a power plant which would perform at Mach 0.9 at sea level at 100% rpm. He stated that he

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thought the Air Force was also tending toward this requirement and that they had requested a higher GDP pressure limitation. || ?

The Navy site survey, which is being conducted by the Parsons Co., is continuing. The Harvey Point location is definitely out. It is the Navy's desire that the development flight test site also serve as the operating base for the first aircraft. They would then like to advance to a Tender operation in order to develop experience. The next step would be an advanced-base type of site, somewhere out to sea but in U. S. waters, if possible, because of the political considerations. After this, and in view of the operational experience obtained, an attempt may be made to determine the possibility of operating from existing Navy bases. Capt. Richardson was familiar with the four areas suggested by NADC for tactical basing but stated that these were merely in the study stage. They would normally like to operate close to or in territorial waters of the United States.

The Parsons Co. may not serve as the architect engineer for the Navy facilities. It will, however, have the job of coordinating all facility requirements. It was, therefore, suggested that as soon as ANPD receives official go-ahead for the Navy study, a meeting be set up between interested Navy personnel, the Parsons Co., and ANPD facilities personnel, to establish officially as many requirements as possible. They were reminded that the Navy Program will require modification of, or additions to, Air Force and AEC facilities which are now being planned. These requirements should be factored into the program as soon as possible.

Capt. Richardson suggested that all facilities correspondence be routed to Cdr. Terry and to the Industrial Planning Division of BuAer (IP-127) with a copy to Cdr. Walley (PP-24). All power plant correspondence should go to Cdr. Walley with a copy to Capt. Richardson (NP). ||

The Navy would like very much to obtain a power plant for a flight test bed similar to that which will be provided for the Air Force. It was pointed out that this would not be a flight-qualified power plant and, therefore, it should only be used in an aircraft which can take off and maintain flight with conventional chemical engines. Allocation of these power plants for the Air Force or Navy flight test bed will, of course, be made in Gen. Keirn's office.

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