MEMORANDUM FOR: Secretaries, J-6

Subject: Adequacy of LORAN "C" for SAC Missions (U)

References:
   a. JCS 141/107, 28 Jul 61, LORAN Installation Plan 1957 (Revision of) (U)
   b. DOD 4940 (AF IN 47327), dt 28 Dec 61
   c. JCS Message 2874, dt 11 Jan 62
   d. JCS Message 3038, dt 26 Jan 62

Enclosure: Memorandum for Chief of Staff, USAF, w/attachment.

1. The enclosure, approved by the Chief, Electronics Systems Division (J-6), Joint Staff, is forwarded for consideration by The Military Services, the Commandant, US Coast Guard, and the Directors, J-3 and J-5.

2. Permission has been obtained to omit the staff study.

3. Reference a is the LORAN Installation Plan for 1961. By reference b, CINCSAC indicated additional requirements for LORAN "C" coverage that may or may not be met by LORAN "C" chains in the 1961 plan. By references c and d the Joint Chiefs of Staff arranged for representatives of interested agencies to meet at USCG Headquarters to:

   a. Discuss existing LORAN "C" systems and equipment;

   b. Determine if existing and presently planned LORAN "C" coverage is adequate to meet SAC requirements; and

   c. Explore the possibility of flight checking LORAN "C" systems of interest to SAC.

4. The meeting, held as scheduled on 8 February, included representatives from SAC, USCG, and the Joint Staff Working Group. (See attachment to enclosure for report of proceedings).

5. From the discussion it was concluded that LORAN "C" chains currently in operation may meet SAC requirements for area coverage, accuracy and reliability, but that tests using SAC or similar aircraft equipped with LORAN operating and test equipments, are necessary for definite determination.

6. It is requested that telephonic comments and/or concurrence be submitted to this office by 1600 hours, THURSDAY, 1 MARCH 1962.

7. This is an interim action, and does NOT complete A.I. 7.
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    David S. Woods
    DAVID S. WOODS
    Colonel, USAF
    Chief, Electronics-
    Systems Division

(A.I. 7)

DISTR:

EXEC Commandant, USCG (2)
Army C(2) All Divisions
Navy C(2) ESD-1 (2)
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DOWNGRADED AT 12 YEAR INTERVALS;
NOT AUTOMATICALLY DECLASSIFIED.
DOD DIRECTIVE 5200.10.
MEMORANDUM FOR: Chief of Staff, USAF

Subject: Adequacy of LORAN "C" for SAC Missions (U)

References:
   a. JCS 141/107, 28 Jul 61, LORAN Installation Plan (Revision of) (U)
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1. Representatives of Hq SAC and Hq USCG, and the Joint Staff Working Group for LORAN "C" met at Hq USCG on 8 February (see enclosure) to determine if LORAN "C" chains contained in reference a provide adequate coverage to meet SAC requirements stated in reference b.

2. Because some areas of interest to SAC can be covered only by sky wave components of existing systems, and because of the adverse effect of arctic twilight on sky wave transmissions, it was considered necessary to flight check these areas. Flight checks would determine if existing LORAN "C" coverage, mutually supplementing other navigational techniques used by SAC, will provide accuracies required for SAC operations.

3. Conferees considered that operational testing of Project OFFICE BOY aircraft during May-June 1962 would provide a suitable vehicle for the tests, as aircraft should be utilized which have operating characteristics similar to those of SAC operational aircraft. Aircraft must be able to transport two operators and operating and test equipment (approximately 1,000 pounds overall) of the Coast Guard, and provide 500 watts power.

4. To implement the flight checks mentioned above it is requested that the Chief of Staff, USAF:
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4. To implement the flight checks mentioned above it is requested that the Chief of Staff, USAF:
   a. Provide aircraft and crews to conduct flights during a 30-day period along routes to be determined through coordination with the Commandant, USCG.
   b. Prepare a detailed test plan for the flight checks in coordination with the Commandant, USCG.
   c. Furnish the Joint Chiefs of Staff with a copy of the test plan and of the final report of test.
APPENDIX

Summary of Proceedings, Meeting on LORAN "C"
USCG Headquarters, 8 February 1962

1. Agencies represented were Hq USCG, Hq SAC, and the Joint Staff Working Group.

2. After a description of the systems and equipment by Cdr Lipsey, Hq USCG, a discussion ensued involving probability of SAC requirements being met by existing LORAN "C" chains. It became apparent that some of the coverage required necessarily would be sky wave and that accuracy deterioration during long periods of arctic twilight might preclude use of the system in some areas.

3. The "Navdeck" concept used by SAC, whereby several techniques (celestial, doppler, LORAN "C") supplement each other, might reduce the problem of LORAN "C" inaccuracies to an acceptable degree. Required accuracies were estimated informally by Hq SAC representatives at five miles either side of course as minimum for safety and an optimum mission accuracy of .5 mile or .5 degree. Considerations also included a 450-knot maximum velocity of aircraft and altitudes of 30,000 to 40,000 feet.

4. In response to a USCG proposal that SAC make tests over a 30-day period, Hq SAC representatives stated that availability of SAC aircraft for this purpose is doubtful because of operational requirements.

5. It was concluded that:

   a. C/S USAF should be requested to conduct flights during a 30-day period along routes to be determined through coordination with the Commandant, USCG.

   b. Aircraft used should accommodate 1,000 pounds of USCG operating and test equipment and personnel (2 operators).
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5. It was concluded that:
   a. C/S USAF should be requested to conduct flights during a 30-day period along routes to be determined through coordination with the Commandant, USCG.
   b. Aircraft used should accommodate 1,000 pounds of USCG operating and test equipment and personnel (2 operators).
   c. Consideration should be given to conducting the tests during May-June 1962 operational tests of Project OFFICE BOY aircraft.
   d. C/S USAF should coordinate detailed test planning with the Commandant, USCG.

SECRET

2. Appendix to Enclosure