

April 22, 1968

AEC 907/33

ATOMIC ENERGY COMMISSION

INFORMATION MEETING ITEM

UNDERWATER SEARCH FOR WEAPON DEBRIS AT THULE

Note by the Secretary

1. The General Manager has requested that the attached memorandum of April 18, 1968 from the Assistant General Manager for Military Application, with attachments, be circulated for consideration by the Commission at an early Information Meeting.

2. Related information is contained in AEC 907/28 through AEC 907/32.

W. B. McCool

107036

Secretary

DELETED VERSION ONLY

DISTRIBUTION

Secretary
Chairman Seaborg
Commissioner Ramey
Commissioner Tape
Commissioner Johnson
Commissioner
General Manager
Deputy Gen. Mgr.
Asst. Gen. Mgr.
Exec. Asst. to GM
Asst. GM for Admin.
Asst. GM for IA
Asst. GM for MA

COPY NO.

DISTRIBUTION

COPY NO

1,28-33	Asst. GM for Operations	15
2,34-36	Asst. GM for R&D	16
3	General Counsel	17
4	Biology and Medicine	18
5	Congr. Relations	19-20
6	Controller	21
7-8	Inspection	22
9	International Affairs	23
10	Military Application	24
11	Operational Safety	25
12	Public Information	26
13	Albuquerque Operations	27
14		

This document contains restricted data as defined in the Atomic Energy Act of 1954. The transmission of this information in any manner to an unauthorized person is prohibited.

Excluded from automatic downgrading and declassification

- 1 -

US DOE ARCHIVES
826 U.S. ATOMIC ENERGY
COMMISSION

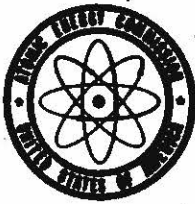
RG
Collection DOS McCraw

Box 17 Job 1320

Folder MHS 3-9 Thule

MEDICINE, HEALTH & SAFETY - 3-9- Thule Incident

51



**UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545**

APR 18 1968

**MEMORANDUM FOR CHAIRMAN SEABORG
COMMISSIONER RAMEY
COMMISSIONER TAPE
COMMISSIONER JOHNSON**

THROUGH GENERAL MANAGER *KHJ*

SUBJECT: UNDERWATER SEARCH FOR WEAPON DEBRIS AT THULE, GREENLAND

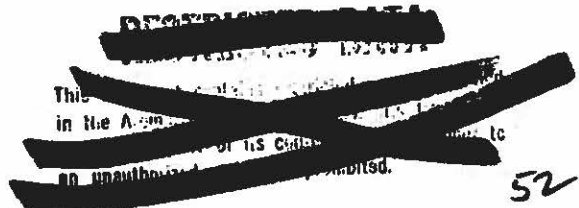
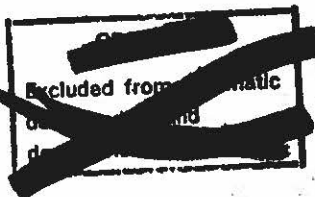
The purpose of this paper is to provide background for discussion of the desirability of conducting an underwater search for missing weapon debris at Thule.

The DoD is interested in the consensus of the Commission regarding the desirability of an underwater search and its possible extent. Additional interest in such an effort is reflected as Article 11 of the "Gentlemen's Agreement" reached during the Danish/U. S. meeting of March 18-19, 1968, in Washington at which time it was agreed that the question of a possible sea bottom search was to be reserved for further study of costs and utility by the U. S. Air Force and the results of such a search, if undertaken, would be made available to the Danish AEC. In a letter to Dr. Walske, dated March 26, 1968, Mr. Hans Koch requested that he be informed in advance if a search is to be made.

DELETED

- 2 -

DOE ARCHIVES



[REDACTED]

DELETED

DELE The Air Force has considered various approaches to conducting a search [REDACTED] The under-ice concept was discarded as not within the current capability of the Navy to conduct and the time remaining to conduct search operations from the ice surface prior to ice breakup is considered insufficient. The Air Force has now funded the Navy in the amount of \$10,000 for the purpose of evaluating various concepts of search operations which could be conducted after the ice has melted and the bay is clear for routine surface operations. The results of the Navy study, which should address a number of approaches and the related costs, are expected to be submitted to the Air Force on May 1, 1968. In the meantime, a group of oceanographers has been working at the Thule site in an effort to estimate where the residue may logically drift as a result of currents. This group is scheduled to brief Dr. Walske on April 24, 1968. At this time the Air Force does not anticipate a very complicated search since the water is relatively shallow (approximately 600 feet at most) and the bottom of the bay has the characteristics of a small desert. Considering the fact that the point of entry into the water is pinpointed and the terrain to be searched is smooth, use of a towed sonar sled and closed circuit TV appears to be a logical search approach based on remarks made by members of the Air Force staff. Once the sonar has located an object, the TV unit is moved in to look and record on tape what it views.

The estimated cost of conducting a search employing sonar and a closed circuit TV scanner, coupled with a photographic capability, is \$2,500 to \$3,000 per day. The Navy is presently conducting a search of this type for lost aircraft in Lake Ontario; however, since contract surface vessels are being used, the cost per day is about \$4,000. We understand that the Coast Guard may be willing to support the logistic effort since it conducts routine operations in the Thule area at the time ice breakup occurs. This could serve to reduce the overall cost of a search operation. The estimated cost of using a manned submersible search vessel, such as the Navy's Perry Link, is about \$1,800 per day.

DOE ARCHIVE

Sandia Corporation has completed a study of the accident to develop an estimated "footprint" on underwater trajectories which may be useful in defining the area for search operations. The report of the results

SECRET

of this effort is expected to arrive in Headquarters prior to April 19, 1968. Sandia Corporation contributed significantly in identifying the search area off Palomares, Spain.

The DoD has considered the desirability of conducting an underwater search. On the one hand, a search leads to questions about what might be missing; and, clearly, even a very extensive search may be unsuccessful. On the other hand, even a brief search might find sensitive classified debris which another nation might recover if we did not. A reasonable approach may be to let the extent of the underwater search depend on the results of a brief underwater survey.

Attached are brief summaries of the search efforts conducted at Palomares, Spain, and at Goldsboro, North Carolina.

Edward B. Giller
Edward B. Giller
Brigadier General, USAF
Assistant General Manager
for Military Application

Attachments

1. Palomares Bomb Recovery
2. Goldsboro Bomb Recovery

DOE ARCHIVES

ATTACHMENT 1

PALOMARES BOMB RECOVERY

DELETED
The "splash point" of the **DELETED** weapon which went into the water at Palomares was eventually determined by questioning Spaniards who had observed a large parachute descending into the sea. The task of searching was then taken over by the Navy on or about January 20, 1966.

The sea floor sloped gradually for about 3 miles, then it went down at a moderately steep slant for about 2.5 miles. It then dropped off very steeply and ended in a vast mud hole about 6,000 feet down. Scuba divers searched the shallower parts, a cub submarine took the medium depths and two-manned underwater craft (one called ALVIN and the other called ALUMINAUT) searched the deep water. The weapon was located some three weeks later by the ALVIN which employed powerful search lights, coupled with visual observation. Once the weapon was located, a new unmanned underwater vehicle, the CURV, was used. The CURV was completely automatic with large "crab-like" pinchers, TV cameras and flood-lights. A successful hookup was made, and the bomb was lifted aboard on April 7, 1966, 80 days after the accident.

The cost of the Navy recovery operation, which at its peak involved approximately 25 surface vessels in addition to the previously mentioned underwater craft, was reported to be about six million dollars.

DOE ARCHIVES

EXCLUDED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION
This document is excluded from automatic downgrading and declassification under the provisions of the Executive Order of the President of the United States, dated May 17, 1962, which established the policy of automatic downgrading and declassification of documents in the possession of the Federal Government.

- 5 -

Attachment 1

SECRET

ATTACHMENT 2

GOLDSBORO BOMB RECOVERY

The B-52 crashed 15 miles north of Seymour Johnson AFB near Goldsboro, North Carolina, on January 24, 1961, involved two [redacted] bombs. The parachute on one of the bombs deployed, and the bomb landed intact. The parachute on the second bomb did not deploy, and the bomb impacted in soft earth. Upon impact, the primary and secondary broke through the nose of the bomb and penetrated further into the soft earth.

On the afternoon of January 24, 1961, excavation operations were begun but proceeded slowly due to freezing weather, surface water in the hole, and care dictated by the presence of HE. The primary was recovered from a depth of about 20 feet on January 30, 1961, and excavation operations were continued in an effort to recover the secondary.

The Chairman, MLC, informed the Chairman, AEC, by letter dated April 3, 1961, that the excavation effort had gone to a depth of 42 feet to form a crater 200 feet in diameter. However, recovery efforts were complicated by a high water table, and, although 14 wells had been drilled in an effort to control seepage and the combined output of all pumps was about 6,000 gallons per hour, the water could not be controlled. The Chairman, MLC, expressed an opinion that a reasonable effort had been expended toward recovery of the secondary, and further expenditure of funds would not be justified. The Commission was asked to concur in a determination that the unrecovered residue be considered irretrievably lost.

The Commission staff, after analyzing the problem from the standpoint of security of Restricted Data, cost analysis, and public health and safety, recommended that the Commission concur in the proposal presented by the Chairman, MLC, with a provision that the DoD insure that it retain a right to prevent excavation in the vicinity of the point of impact.

DOE ARCHIVES

On May 22, 1961, the Commission concurred in the Chairman, MLC, recommendation and efforts to recover the missing secondary were terminated on May 25, 1961.

The cost of recovery efforts was reported as \$63,000 plus approximately \$10,000 for site restoration. Excavation and recovery operations were accomplished by the Air Force with the assistance of the Army Engineers.