

UNITED STATES ATOMIC ENERGY COMMISSION

WASHINGTON, D.C. 20545

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Folder MHS 3-9 Thule Incident (1968 APRIL - MA

SUBJECT: UNDERWATER SEARCH FOR WEAPON DEBRIS AT THULE, GREENLAND

The purpose of this paper is to provide further information relative to the above subject which was addressed in my memorandum to the Commission, dated April 18, 1968, and which was reproduced for consideration of the Commission as AEC 907/33.

The above memorandum made reference to a Sandia Corporation study of the accident at Thule to develop an estimated "footprint" on underwater trajectories. Copies of the study have been reproduced and are forwarded for the information of the Commission.

Copies of the report have also been forwarded to the Assistant to the Secretary of Defense (Atomic Energy) and Headquarters, U. S. Air Force.

CLASSIFICATION CANCELLED

WITH DELETIONS

BY AUTHORITY OF DOE OG

Attachment: Ltr. fm SC to ALO dtd 4/16/68, RS_1500/1547

MEMORANDUM FOR CHAIRMAN SEABORG

THROUGH GENERAL MANAGER

COMMISSIONER RAMEY

COMMISSIONER TAPE COMMISSIONER JOHNSON

(signed) Edward B. Giller

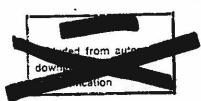
Edward B. Giller Brigadier General, USAF Assistant General Manager for Military Application

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CC: Division of Biology & Medicine w/cy 13A of attachment

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SANDIA CORPORATION SANDIA BASE, ALBUQUERQUE, N. M.

W. A. GARDNER

DRICTOR OF SYSTEMS DEVELOPMENT



APR 1 6 1958

RS 1500/1547

U. S. Atomic Energy Commission Albuquerque Operations Office P. O. Box 5400 Albuquerque, New Mexico 87115

Attn: W. L. Hancock

Re: Results of Study to Determine Sea Floor Search Area for Missing Debris (U)

On April 4, 1968, AEC/ALO requested Sandia Corporation to assist in defining an underwater search area off the coast of Thule AFB, Greenland. A missing weapon part is presumed to be located in the area as the result of a recent B52 aircraft crash. This letter presents the results of theoretical underwater trajectory studies performed by Division 9324.

Several assumptions were necessary in regard to the B52 flight characteristics at the time of impact (Point Zero). These assumptions are as follows:

Velocity: 10

1000 fps

Flight Path Angle: -30°

Aircraft Attitude: Left wing down with aircraft

in a gradual left turn

Assumed water conditions:

Density:

2.0 slugs/ft3

Temperature: 2°C (constant to 750 ft.)

Depth:

. 750 ft.

Currents:

negligible

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Physical characteristics of the missing objects:

Weight: Length: Diameter: Spherical Radius of Ends: Cross Sectional Area Side on Area:

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Hydrodynamic characteristics of object:

Drag Coefficient (end on): 0.6 Drag Coefficient (eide on): 1.0

Note: The drag coefficients include cavitation effects.

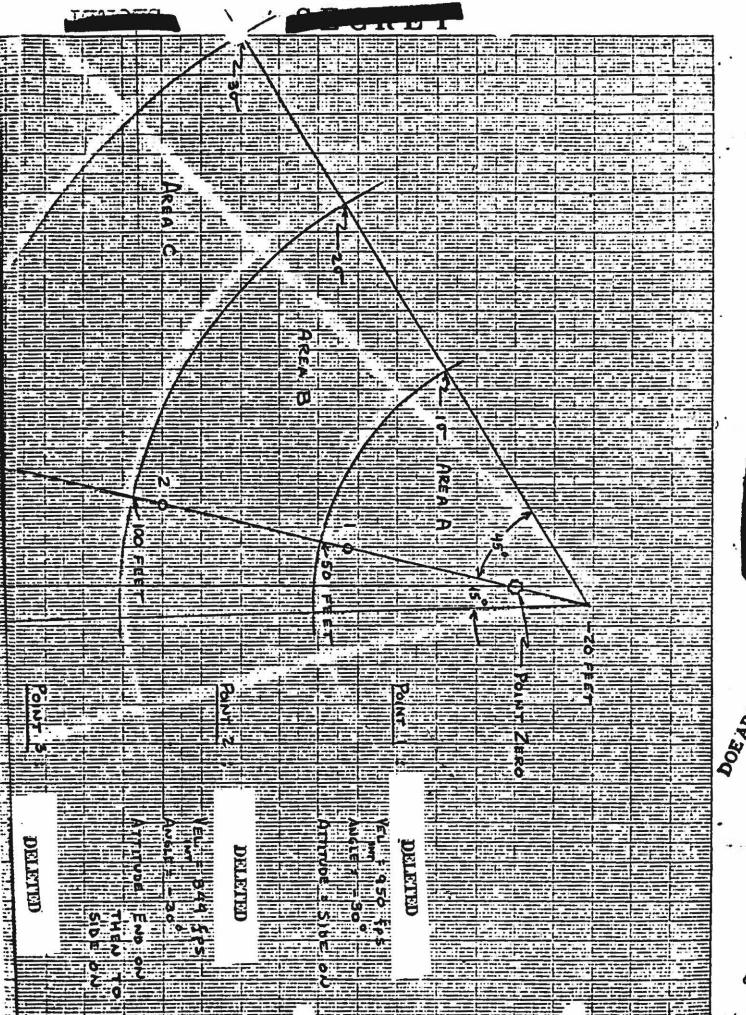
A study to determine the velocity degradation, assuming the object penetrated two feet of ice, showed a loss of approximately 50 fps might be expected (Point 1). This effect, plus any effect on velocity due to contact with other debris, is adequately covered in the variations of impact conditions assumed.

The attached chart shows the results of several trajectories and defines a suggested search area with probabilities. The angular limits were determined from the pattern of debris found on the surface of the ice.

W. A. Gardner

RPL: 1544:gl

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