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HISTORY OF
THE AIR FORCE TECHNICAL
APPLICATIONS CENTER
(AFTAC) (U)

1 July - 31 December 1964

Prepared by
International Affairs Branch
Plans and Programs Division
Operations and Plans Directorate
Air Force Technical Applications Center

CLASSIFICATION CANCELLED
OR CHANGED TO *Unclass*

BY AUTHORITY OF *EO 12958*

DATE *7 May 97*

Approved By:

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AIR FORCE TECHNICAL APPLICATIONS CENTER
HEADQUARTERS UNITED STATES AIR FORCE

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FOREWORD

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] The most important event occurring during this period was the
detection of the first Communist Chinese nuclear test conducted on
b(1) 16 October 1964 [REDACTED]

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CHAPTER 3

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FOREIGN NUCLEAR TESTS

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COMMUNIST CHINA

Communist China exploded its first nuclear device on 16 October near Lake Lop Nor in Sinkiang Province. The test was detected by 7 acoustic and 11 electromagnetic stations and was confirmed by the collection of nuclear debris. The height of the burst was estimated to be less than 3,000 feet and the yield approximately 19 kt.

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ELECTROMAGNETIC PULSE

The electromagnetic pulse network had an almost perfect record in detecting and estimating the time of the first Communist Chinese nuclear test on 16 October 1964. Eleven of the 13 electromagnetic pulse stations detected the detonation. The estimate of time of detonation [REDACTED] b(1) (Greenwich mean time, 16 October) obtained from the electromagnetic pulse equipment recordings became the official time of the event. Yield estimates (19 kt) from these recordings also contributed to the final official estimate of the yield.

[NONRESPONSIVE] With the exception of the Communist Chinese event none were attributable to atmospheric nuclear detonations. In analyzing the data from these alerts the standard yield curve was revised to reflect a continuum without inflection points on log-log scales. This curve was used on the Communist Chinese event and the yield derived was reported in the final scientific summary sheet [REDACTED] b(1)

[REDACTED]

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ACOUSTIC

During this period, AFTAC evaluated acoustic data from 17 alerts
(including the Communist Chinese nuclear test) [

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Seven acoustic stations detected the first Communist Chinese nuclear test on 16 October. The acoustic net provided the initial detection and alerting, and in conjunction with the electromagnetic pulse net, provided estimates of the location and yield of the event. [

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AIRBORNE PARTICULATE SAMPLING

Special (TOE DANCER) operations were conducted subsequent to the first Communist Chinese nuclear test on 16 October 1964.³ The Air Weather Service provided C-130, WB-50, and WB-57 aircraft from Yokota AB, Japan; Wheelus AB, Libya; Eielson AFB, Alaska; and McClellan AFB, California, for this operation. Additional support was provided by SAC B-52's from Castle AFB, California; and WU-2's from Davis-Monthan AFB, Arizona, and Eielson AFB, Alaska. Eighty-five sorties were flown between 16 October and 5 December compiling a total of 721 flying hours.

Nuclear debris from the test was picked up on over 30 individual sorties by aircraft from Yokota AB. The best collections were obtained 1 day after the event at 29,000 to 30,000 feet in the Japan area. Several papers on each of the first 2 contacts [redacted] collected in 30 minutes or less of filtering. Other good collections, [redacted] were obtained at 10,000 to 20,000 feet on the following 3 or 4 days. [redacted]

b(1)

b(1)

b(3)

b(1)

b(3)

[redacted] Subsequent analysis for [redacted] the mass spectrometric analysis from the McClellan Central Laboratory and Knolls Atomic Power Laboratory, confirmed this finding. [redacted]

[redacted] Debris from this event was also collected from [redacted]

3. See Debris Collection, Special, Page 26.

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DEBRIS COLLECTION SPECIAL VECTOR AIRCRAFT OPERATIONS



TYPICAL DEBRIS PATTERNS AND DEPLOYMENTS

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(the surface to 30,000 feet in the Alaska and West Coast area of the US and along the East Coast of the US on 23 and 24 October at 14,000 feet. [

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b(1) The sampling unit [REDACTED] Alaska collected good samples of debris from the first Communist Chinese test conducted on 16 October. Samples contained [REDACTED]

b(1) [REDACTED]