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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

Approved By:

. FRANK & GRIFFITH

Colonel, USAF

Chief, AF Technical Applications Center

DCS/Plans and Operations

AIR FORCE TECHNICAL APPLICATIONS CENTER HEADQUARTERS UNITED STATES AIR FORCE

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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

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#### FOREIGN NUCLEAR TESTS

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COMMUNIST CHINA

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Communist China exploded its first nuclear device on 16 October near Lake Lop Nor in Sinking 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

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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 (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

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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

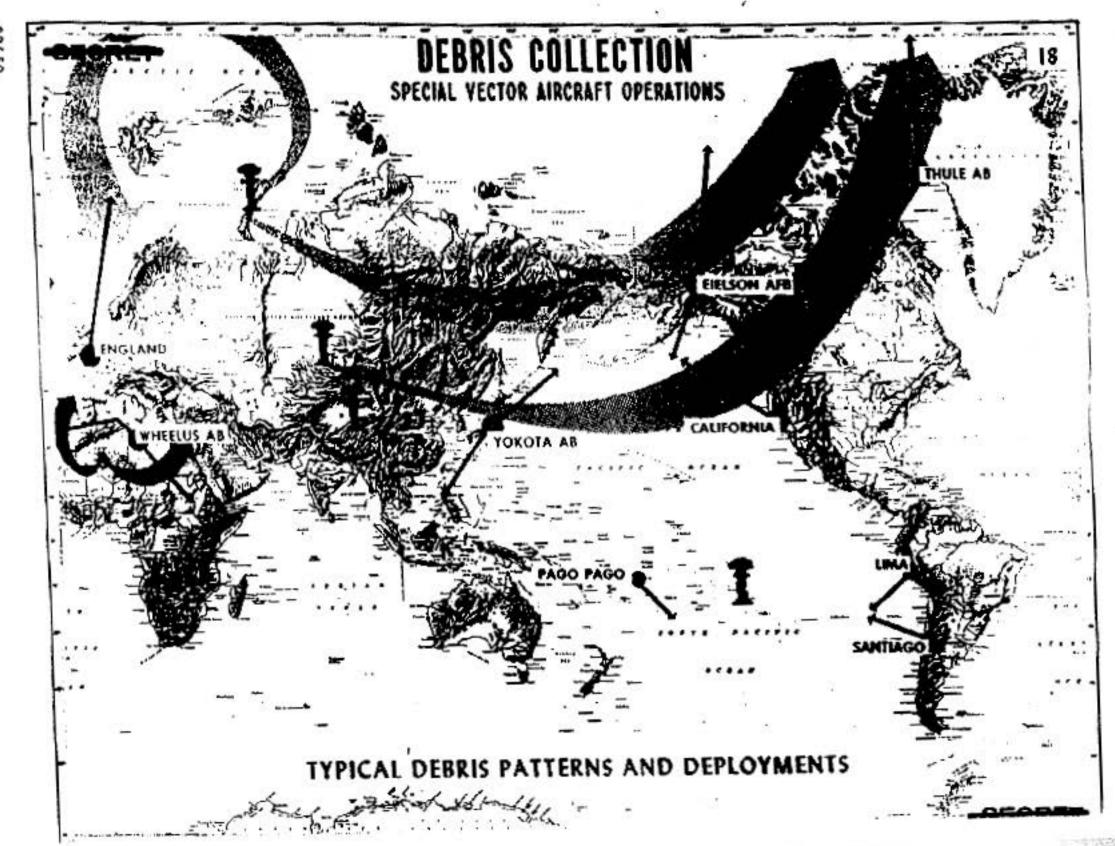
Special (TOE DANCER) operations were conducted subsequent to the first Communist Chinese nuclear test on 16 October 1964. The Air Weather Service provided C-130, WB-50, and WB-57 aircraft from Yokota AB, Japan; Wheelus AB, Libya; Eielson AFB, Alaska; and McClellan AFB, California, for this operation. 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 b(1) collected in 30 minutes or less of filtering. Other good collections, were obtained at 10,000 to 20,000 b(1) feet on the following 3 or 4 days. b(3) Subsequent the mass spectrob(1) metric analysis from the McClellan Central Laboratory and Knolls Atomic Power Laboratory, confirmed this finding. b(3) Debris from this event was also collected from

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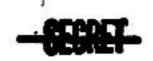
<sup>3.</sup> See Debris Collection, Special, Page 26.





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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ъ(1)	The sampling unit				Alaska collected good samples of debri:						debris	
	from	the	first	Communist	Chinese	test	conduc	ted on	16	October.	Sample	5
	contained											
ь(1)												

