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SAC RECONNAISSANCE HISTORY

JANUARY 1968-JUNE 1971

~~SPECIAL ACCESS REQUIRED~~
~~PAR - SENIOR CROWN~~

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PREPARED BY: HISTORY DIVISION
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BURNING LIGHT

U ~~(S-NOFORN)~~ To conduct operation BURNING LIGHT, the 55th SRW was assigned two KC-135Rs aircraft, configured for the collection of nuclear detonation and measurement data of nuclear tests anywhere in the world.²¹⁹ Because both the United States and the Soviet Union refrained from atmospheric nuclear testing throughout the reporting period, the 55th SRW flew BURNING LIGHT sorties only against French nuclear tests at that country's test range on the Tuamotu Archipelago, in the Western Pacific. Not only did these sorties gather information on France's current testing, but they also provided an opportunity to perfect equipment and collecting techniques for use if SAC was ever required to monitor a Soviet nuclear blast.

U ~~(S-NOFORN)~~ When covering the French nuclear tests, the KC-135R platform flew round-robin from Hickam AFB, Hawaii. The Air Force's Technical Applications Center (AFTAC) assisted the wing in configuring the sensors for operational flights.²²⁰ The 55th SRW flew no BURNING LIGHT sorties during 1969, but 15 missions were flown in 1968 and 13 in 1970. Two more operational sorties were completed in June 1971, for a total of 30 during the three and one-half year period.²²¹

U (S) The primary sensor system carried on the KC-135R measured and recorded the electromagnetic pulses that emanated from nuclear detonations. Secondary sensors photographed the density and the opacity of the nuclear cloud.²²² After the National Security Agency (NSA) notified SAC of the approximate time that a nuclear test was scheduled to take place, a KC-135R would orbit in vicinity of the test range until the detonation.²²³ Although the two KC-135Rs were assigned to SAC and were manned by crews from the 55th SRW, personnel from the Air Force Technical Applications Center (AFTAC) operated the sensor systems on the aircraft while in flight. AFTAC personnel installed the sensor systems prior to each NUDINT collecting sortie.

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and removed them upon completion of the mission. When the two KC-135Rs were not being flown for NUDINT collection, one aircraft was used by the 55th SRW for training purposes. The other was retrofitted to the KC-135T configuration and assisted with SIGINT collection in the Cuban area.²²⁴

u (S) Although SAC flew relatively few BURNING LIGHT sorties, the operation required considerable personnel, money, and materiel. In the June 1971 project, for example, the 55th SRW deployed seven KC-135A tankers, eight tanker crews, and four crews to fly the two KC-135Rs from Hickam. In addition, SAC sent 50 officers and 125 airmen TDY to support the operation. These were joined by seven officers and 43 airmen from AFTAC--a total of 225 men working in support roles for the two BURNING LIGHT sorties flown in June 1971.²²⁵

Sensors, Future, and Improved Systems

SR-71 Cameras

u (S) Some aspects of the SR-71's photo-sensors, ELINT systems, and defensive equipment were unique. It was of considerable significance that all equipment operated under conditions of extreme heat, high speed and altitude. The aircraft carried three different photo systems, each consisting of two cameras each. Although SAC used the same cameras on the SR-71 throughout the period, minor improvements were regularly made on each of them.

u (S ~~Senior Crown~~) The Fairchild F489 (terrain objective camera (TROC)) was a high-precision mapping camera carried exclusively by the SR-71. The TROC consisted of a wide-angle mapping camera located in the C Bay. It operated for the full length of the sortie. Producing a single overlapping exposure of the terrain beneath the SR-71, it covered a square approximately 21 nautical miles on a side directly below the aircraft with a ground resolution of [] A full film supply of 663 feet provided track coverage for a mission of approximately 15,500 nautical miles in length. The camera could use special emulsion and color film as well as black and white, although color film remained in the test stage throughout the period. Photo interpreters (PIs) compared the track film with the aircraft's navigation

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