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HISTORY OF AIR TASK GROUP 3.4, PROVISIONAL

(1 February 1951 - 31 March 1951)

JOHN C. HATLEM
Lt Col, USAF
Historian

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HISTORIAN: JOHN C. HATLEM
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Major, USAF

JOHN J. MICK
Capt, USAF

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KEY PERSONNEL OF AIR TASK GROUP 3.4, PROVISIONAL

31 March 1951

COMMANDER
Major General R. M. Lee

CHIEF OF STAFF
Colonel W. T. Hefley

DEPUTY CHIEF OF STAFF, PERSONNEL
Lieutenant Colonel K. D. Kienth

DEPUTY CHIEF OF STAFF, OPERATIONS
Colonel W. F. Wise

DEPUTY CHIEF OF STAFF, COMMUNICATIONS
Colonel C. A. Thorpe

DEPUTY CHIEF OF STAFF, MATERIEL
Colonel J. W. Thomson

COMPTROLLER
Lieutenant Colonel C.A. Ousley

INSPECTOR GENERAL
Major V. R. Woodward

ADJUTANT GENERAL
Lieutenant Colonel I. Brown

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AIR TASK UNITS AND COMMANDERS

Hq & Hq Sq, Air Task Group 3.4, Prov (ATU 3.4.1)	Colonel M.M. Munn
Air Task Element, Prov, 3.4.1.1 (ATE 3.4.1.1)	Lt Col L.E. Peaster
Air Task Experimental Aircraft Unit, Prov (ATU 3.4.2)	Colonel T.J. Gent, Jr.
Air Task Element, Prov 3.4.2.1 (ATE 3.4.2.1)	Major G.R. Vandenheuvel
Air Task Communications Unit, Prov (ATU 3.4.3)	Major J.T. McElhone
Air Task Weather Reconnaissance Unit, Prov (ATU 3.4.4)	Colonel A.A. McCartan
Air Task Weather Unit, Prov (ATU 3.4.5)	Lt Col A.W. Throgmorton
Air Task Liaison Unit, Prov (ATU 3.4.6)	Captain A.P. Lovelady
Air Task Rescue Unit, Prov (ATU 3.4.7)	Major C.M. Blakeney
Air Task Photography Unit (Documentary), Prov (ATU 3.4.8)	Lt Col J.L. Gaylord

RADIOLOGICAL SAFETY

The Commander, Task Group 3.4 was responsible for the radiological safety of all personnel assigned or attached to the Air Task Group. Plans were made to prevent any undue exposure to radiation from the atomic explosion, or the collection of radioactivity on any of the manned aircraft participating in the tests.

Specially trained personnel were assigned within the Air Task Units to conduct training programs and supervise the activities of all personnel exposed to radiation. These personnel, called monitors, utilize radiac equipment to detect and measure the intensity of any radioactivity in the working area (Radiac is the abbreviation for Radioactivity Detection, Identification, and Computation).

The monitors will be aboard each of the manned aircraft located within twenty miles of zero point at the time of detonation. Their particular duties, while airborne, are to detect those areas containing hazardous amounts of radioactivity, and advise the pilot of the best flight path to avoid these.

When those drone aircraft that have flown through the radioactive atomic cloud to collect samples, land, they will be towed to a "hot drone" parking area. This is a restricted area where the radioactive samples are removed from the aircraft under the supervision of a monitor using radiac equipment. Special drone recovery crews have been trained to remove these drones from the runway as quickly as possible. Specially constructed, extra long towbars are used to place the tug driver as far as possible from the aircraft and thereby reduce the intensity of radiation to which he can become exposed. These recovery crews

have perfected their techniques of recovery to the point where completed removal and parking of drone aircraft is accomplished in an average time of three minutes.

After all samples and test equipment have been removed from the hot drones, they will be towed to the aircraft decontamination area. Here they will be washed down with "gunk", a mixture of aircraft cleaning compound (Specification 20015) and kerosene. After that they'll be washed with soap and water, and lastly, rinsed with fresh water. The decontamination area is an isolated section of the island, near the waters of the lagoon. The area is sloped toward the beach so that most of the radioactive material washed off the drones can drain into the lagoon. Two aircraft can be washed at one time. During the process of washing, monitors will measure the intensity of the radioactivity. The washing process will be repeated until the drones are declared safe.

Aircraft decontamination crews will pass through a Personnel Decontamination Center prior to working in the aircraft decontamination area. In the Personnel Decon Center, they will exchange the clothing they are wearing for special working clothes. These clothes will include caps, underclothes, shirts, trousers, socks, and shoes. Also included are rubber gloves and rubber booties to prevent the hands and shoes of the crews from becoming contaminated. Upon completion of their work in the aircraft decontamination area, they will be monitored for radioactive contamination on their clothes and body. If the clothes are contaminated, they will be placed in containers where they will remain until radioactive decay reduces the contamination to the level at which they may be laundered for reuse. If the level of radioactivity remains too high, the clothes will be thrown into the ocean.

If any of the personnel in the Personnel Decon Center have contamination on their bodies, they will be directed to the showers, where they will scrub themselves with brushes, soap, and water. After showering, the personnel will be remonitored, and either cleared for entrance to the "clean" dressing room, or directed to reshower.

The radiac instruments used by the monitoring personnel are of two general types: Gieger-Mueller Counters, and Ionization Chambers. The first type is used for measuring the rate of radioactivity at low levels of radiation, and the second type for measurement of the rate of radioactivity at medium or higher levels. Some of the instruments that were procured through Air Materiel Command supply channels have proved inadequate for use at higher altitudes (15,000 to 30,000 feet, approximately). However, orders have been placed for other types of Gieger-Mueller Counters. Efforts are also being made to put into operational status the Gieger-Mueller Counters on hand in the event that those ordered do not arrive in time for the first test.

There are other special safety devices, such as pocket dosimeters, which measure the total dosage of radiation accumulated. These are cylindrical, pencil-like instruments, which can be attached to the inside of the pockets in the manner of a fountain pen. They are charged by batteries carried in an instrument known as a dosimeter charger. Unfortunately, these instruments have a tendency to discharge if they are knocked against something, so another type of device is used in conjunction with these. This other type of device is known as the film badge. It consists

of a strip of very sensitive film encased in a small packet. The radiation absorbed results in exposure of the film (blackening). This developed film can then be compared to other film exposed under carefully controlled and calibrated measurements. The comparison is done by an instrument known as the densitometer, which measures light values by means of a photo-electric cell. The readings indicated on the instrument give the operator the amount of radiation absorbed by each film badge, and are therefore indicative of the amount of radiation absorbed by the wearer.

As many of the personnel connected with the project would be working in full view of the detonation, it became necessary to procure special goggles. These goggles are known as 4.5 Nuetral Density Goggles and enable personnel to view the blast directly without harmful after effects on the eyes.

Immediately before and after the detonation, the Headquarters Task Group 3.4 Radiological Safety Section will be engaged in plotting, and transmitting radex plots. A radex plot can be defined as a graphical presentation of the predicted cloud position and radioactive fall-out, at a specified altitude and time following the atomic detonation. It is accomplished to determine areas or altitudes which are unsafe operationally. The results of these radeces will be transmitted by phone to the JTF-3 and Task Group 3.3 Radiological Safety Officers. Radeces are plotted for H plus six minutes, H plus one hour, and H plus six hours. These predicted cloud patterns are cross-checked with the reports of the actual cloud position radioed in from the cloud tracking aircraft. If any discrepancy should arise, the JTF-3 and TG 3.3 Radiological Safety Officers would be notified immediately of the change. One member of the Headquarters Task Group 3.4 Radiological Safety Section will be on duty in the Air Operations Center of Task Group 3.4 during every test.