

## 750 RADAR SQUADRON (SAGE)



### MISSION

### LINEAGE

750 Aircraft Control and Warning Squadron  
Redesignated 750 Radar Squadron (SAGE)

### STATIONS

Edwards AFB, CA 27 Nov 1950-28 Jan 1952  
Boron AFS, CA

### ASSIGNMENTS

### COMMANDERS

LTC Martin D. Mulligan, #1954

### HONORS

**Service Streamers**

**Campaign Streamers**

**Armed Forces Expeditionary Streamers**

**Decorations**

**EMBLEM**

**MOTTO**

**NICKNAME**

## OPERATIONS

In February 1952 the 750th AC&W Squadron assumed coverage responsibilities formerly held by the Edwards AFB site (L-40) and was operating two AN/FPS-10 radars at this new site. The AN/FPS-10 search radar remained until 1959. In 1958 an AN/FPS-6 replaced the AN/FPS-10 height-finder radar. A second height-finder radar (AN/FPS-6A) was installed in 1959. In 1961 the facility provided data for the regional SAGE center and became an operational ADC/FAA joint-use radar. By this time the AN/FPS-10 had been replaced by an AN/FPS-20 search radar. However, this radar was soon replaced by an AN/FPS-35 FD radar. By 1963 this radar operated with AN/FPS-26A and AN/FPS-90 height-finder radars. The 750th was deactivated in June 1975.

750 Boron AFS, CA FPS-10(2); FPS-6; FPS-20; FPS-35; FPS-90; FPS-26A FPS-67; FPS-26A Feb-52 Jun-75 BUIC-II. FAA site now; radar is still FPS-67B. Remote GATR at Shafter, CA (R-10).

Current Use: Still-active FAA radar site. Cantonment area had been converted into a Federal Prison, but was deactivated 8/99. This now-FAA long-range radar site is now data-tied into the Joint Surveillance System

### History of Boron AFS, CA

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750th Radar Sq (SAGE): assigned 1 Jan 51 at Edwards AFB, CA, assigned to 544th AC&W Gp; transferred to 27th AD 6 Feb 52; moved to Atolia, CA Jan 52; site redesignated Boron AFS, CA 1 Dec 53; transferred to L.A. ADS 1 Oct 59; redesignated from AC&W Sq to 750th Radar Sq (SAGE) 1 May 61; transferred to 27th AD 1 Apr 66; reassigned to 26th AD 19 Nov 69; redesignated 750 Radar Sq 1 Feb 74; inactivated 30 Jun 75.

The 750 Radar Sq first became operational in 1951. Since that time, there have been several large changes in both the physical properties and mission of the station. The 750<sup>th</sup> was originally designed to be a Master Direction Center under the manual concept but was converted to a Long Range Radar Site when SAGE came into being.

When the BUIC program was introduced, the NORAD control center was moved from Ft

MacArthur to the 750 order to provide a better defense capability. Many problems were encountered in these changes but now we are welded into a first class combat team capable of accomplishing any task assigned to us.

The squadron has a three-fold mission. Under normal conditions the squadron acts as a long range radar site feeding information to SAGE at Norton AFB. The squadron performs mapping and provides automatic data on all observed air activity. The squadron also furnishes height information of aircraft as directed by the Direction Center. Should the SAGE system become inoperative and a MODE III configuration take place the squadron assumes the second phase of its mission. At this time, under the BUIC program we assume the function of the Los Angeles NORAD Control Center and join the 47<sup>th</sup> Artillery Brigade and assigned fighter interceptor units in the air defense of the Los Angeles Sector. The squadron performs the surveillance requirements, identification function and tactical action requirements on all compulsory reporting tracks entering this area of responsibility. This station is a USAF/FAA joint radar site and provides radar inputs to the FAA Air Traffic Control System

The 750<sup>th</sup>'s search radar is a 13.5 million dollar installation manufactured by the Sperry Gyroscope Company. The set is designed to provide prime search radar for five agencies. The AN/FPS-35 has a coverage range in excess of 190 miles and the pulse compression capability of the set provides better target resolution in both azimuth and range. The radar is a joint use effort between the Air Force and FAA. The Air Force furnishes parts, test equipment and ECCM operators while FAA accomplishes maintenance and operates the equipment. The tower is 85 feet high and the antenna weighing 70 tons is 48 feet high and 135 feet wide. This length with many other features provides better area coverage for aircraft at all speeds and altitudes. The search radar information is processed by a coordinate data transmitter and conveyed via land lines to LAADS DC.

The 750<sup>th</sup> has one Gap Filler Radar Site, Shafter, located 12 miles north of Bakersfield, CA and 124 miles from Boron. This site is equipped with an AF/FPS-18 search radar which has a range in excess of 40 miles and a data processor. Search radar information is processed by the AN/FST-1 and sent via land line to the squadron and then conveyed via land to the LAADS DC.

The squadron also has two height finder radar sets the AN/FPS-90 and AN/FPS-26. The AN/FPS-26, part of the frequency diversity program being developed throughout NORAD is a new dual channel high powered height finder radar set. This height finder has ECCM countermeasures capabilities which make it effective against every known kind of electronic or mechanical jamming. The set is water cooled and its antenna is protected by pressurized radomes which permits operation in winds up to 100 knots. The circuitry of this set compensates for changing weather and thus provides increased accuracy under rapidly varying temperature conditions.

The identification equipment used at the site uses either IFF (identification friend or foe) or SIF (selective identification features). The system may be used to verify known friendly aircraft, identify unknowns locate aircraft in distress or aid a controller in following aircraft under his control. Using SIF more than 400 aircraft can be identified simultaneously.

A new diesel plant has been built which is capable of producing 2600 kilowatts of electricity. The building itself is 60 feet by 82 feet and is shielded against radioactive fallout. The exterior walls are double concrete blocks and the roof is 18 inches of solid concrete. The operations center within the building is both fallout and sound proof. This building houses four 950 horse power generators capable of producing 650 kilowatts of electricity each. The plant is equipped with semi automatic control and a console that identifies equipment malfunctions. This 1.5 million dollar installation produces enough electricity to completely service a town of about 1000 or light 1000 miles of city street lights.

**Weapons Assignment Officer:** This position is located at the Weapons assignment console and the person in charge is responsible to the Senior Director or during periods of increased alert, the Battle Commander. The WAO orders scrambles on all critical tracks as directed by the Battle Commander and insures an even flow of interceptors to the targets. He normally decides what type aircraft to scramble, the scramble vector, climb schedule, altitude, radio channel and the Interceptor Director that will control the interceptor. He also has the direct line to our subordinate sites on which he coordinates all tactical action.

Assigned to the WAO is a Weapons Assignment Technician who keeps a log of the aircraft scrambled, the airborne time, and the action taken by the aircraft. He also calls the Fighter Interceptor Squadron Combat Alert Center and gives them the scramble information.

The attack coordinator monitors the WAO and knows what aircraft have been scrambled and what they will be controlled by. The attack coordinator also keeps a log of tactical action take and if the aircraft are handed off to another site, what site they are handed off to and to what controller.

**Army ADA officer:** advises, evaluates and disseminates tactical information and intelligence between the agencies during Mode III operations. He provides assistance in coordinating interceptors and or civilian aircraft through the ADA area of coverage without being committed upon. In periods other than Mode III he supervises and insures the ability to perform in Mode III configurations.

**Battle Commander,** normally the squadron commander of the designated NORAD commander fills this position. It is manned only during condition other than normal status of preparedness and or during air defense exercises. The commander and his battle staff coordinate the air defense of our assigned area. Before them is displayed the air picture in our plus the area of our adjacent sites. The Battle Commander is provided with communications to all organization by means of the BUIC phone lines. He also has monitoring capability for all air to ground radio frequencies. The battle commander's assistant is the senior director who coordinate and disseminate vital information to all sites concerned.

**Senior Director.** At all times other than when the battle staff is activated, the senior director is responsible to the operations, 750 Radar Squadron and the senior director at Los Angeles Air

Defense Sector Headquarters. He supervises, the control section which consists of weapons controller and intercept control technicians, the surveillance section which includes the air surveillance officer, supervisor and various technicians; the movements and identification section; and the control technician.

Senior Director Technician must be thoroughly familiar with the capabilities and limitations of the fighter aircraft employed as well as his surveillance and control equipment and that of adjacent units. He coordinates with adjacent units for the accomplishment of the overall mission of air defense of Los Angeles Sector. He is responsible for the timely and accurate collection, display, evaluation and dissemination of information pertaining to air defense. He also supervises the maintenance of a written log and any other necessary forms or records pertinent to the accomplishment of our mission.

Control technician is the administrative assistant to the senior director. He is responsible for receiving, passing and logging of all pertinent information during his tour of duty. He must maintain close liaison with the combat center and adjacent units. He is also responsible for the accurate display of information on the weapons status board.

Surveillance section collects, displays and disseminates information pertaining to the current air picture. This section contains the majority of the crew members.

Air Surveillance is responsible to the senior directive and or battle commander for the accurate and timely display and dissemination of all information pertaining to the air activity in our assigned sector. To accomplish this he must perform the following duties; he must continually analyses the air surveillance system, keeping the battle commander advised of its current capabilities and limitations. He coordinates with the air surveillance officers of adjacent units so as to insure that information passed to or received is accurate, timely and complete. He determines priority of plotting and telling and assures that the plotting board does not become so cluttered as to preclude accurate and timely telling of tracks. He monitors communications and electronic status board for accuracy. He assures that aircraft movements subsector are disseminated to the sub sites.

Air surveillance supervisor is the assistant to the air surveillance officer and is responsible to him for maintaining a rotation roster which he will use to assign the men to the various position. Supervising the display receipt and dissemination all air surveillance data to ensure that it is complete, accurate and timely and maintained in accordance with existing directive. Maintaining a continuous check of com and electronic equipment and immediately notifying the control tech and

Data maintenance control center and air surveillance officer of any difficulties encountered. Ensuring that any changes and electronic status are placed to LAADS and are posted on the status board. Maintaining close surveillance over tracks passed from the scope operators to the plotters and over those received from adjacent stations so as to ensure track continuity and accuracy. Directing the plotting and telling of ECM activity in accordance with existing directives and reporting of EMC to the ECM officer. Maintaining the air surveillance log, recording all

information pertinent to surveillance activities.

Scope operator monitors PPI scopes and have a hot line to the station plotters. They report to the plotter the position, number of objects, speed and course of all airborne objects observed in their assigned area. They must continue to report these objects every two minutes until the air surveillance supervisor informs them they may discontinue. They must be fully capable of recognizing, jamming and interference and report them to the plotter and air surveillance supervisor as soon as they are observed.

The height scope operators located in the back of the operations building, determines height on newly established tracks appearing on the surveillance plotting board and report this height in thousands of feet to the station plotter. They check continually on compulsory tracks to verify height and report all changes. When close coordination is required with the weapons controller, they provide absolute and relative heights on specific tracks as directed or requested by station ICTs.

Air movements and identification supervisor is responsible to the air surveillance officer for the accurate and timely classification of all aircraft penetrating the air defense identification zone and our area of responsibility and for the collection of all possible flight information to help in identification. He supervises the work of the air movements and identification clerk and ensures that flight plan information is processed in accordance with current directives. In addition he position correlation aids on the pre-plot moving them forward at designated time to apposition which indicates the presumed position of the aircraft unit the aircraft is classified.

Air movement and identification clerk processes flight plan information passed by Los Angeles and Oakland AMIS by telephone and teletype and records it on flight plan strips. They are used in identifying all established tracks. He then transfers this information as soon as practical to the correlation records, places the flight plan data cards in the proper correlation aids depending on the speed of the aircraft.

Lateral Tellers tell tracks to POADS, EADS and PHADS and back tell tracks. They keep passing this surveillance information on tracks until the receiving station assumes tracking responsibility.

Plotters plot the track or wing board information called to them over intercommunication, telephone, teletype or radio. The information they comes from our station, adjacent station, picket vessels, AEW&W aircraft. There are usually two station plotters, one plotter for picket vessel, three plotters for information received from the MGCI, one tactical mission data board plotter and one weather interceptor status plotter.

Forward teller has a direct line to the 28<sup>th</sup> NORAD Region and tells all tactical action taken, forwards interceptor and equipment status.

Battle Staff Support Center is composed of the forward teller, battle staff support center officer and intelligence officer, disaster control office. The BSSC officer collects, receives, and

disseminates all vital information. He is helped by the intelligence officer and disaster control officer. The disaster control officer keeps track of fallout and is in charge of the fallout shelter and protection of all personnel, both military and civilian dependents in case of fallout.

The intercept director is responsible for the successful interception and safety of all targets and of all interceptors assigned to him. He also keeps the aircrew advised of target information such as number of aircraft, heading, airspeed, altitude and interceptors position in relation to the target. He is thoroughly familiar with the capabilities of the radar, both airborne and ground, communications and all weapons with which he works. In addition he is responsible for knowing prominent check points with the normal control area, recovery and alternate recovery bases and the rules of engagement. At the completion of the mission he debriefs the aircrew.

The intercept control technician is a well qualified assistant to the intercept director who records airborne times, weapon safety checks, intercept results, fuel status, recovery times. In addition he is responsible for keeping the intercept director informed of current weather, changes in altitude of target and relative altitudes between fighters and targets. The ICT coordinates the assistance of other units and agencies when an aircraft is in distress and keeps the agencies informed of the current status of the aircraft. An extensive report is maintained by ICT on all of his activities.

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Air Force Lineage and Honors

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#### Sources

Air Force Historical Research Agency. U.S. Air Force. Maxwell AFB, AL.

Unit yearbook. *27 Air Division (Defense)*. @1955.