

5.4 AIRSPACE

5.4.1 Affected Environment

The affected airspace environment is described below in terms of its principal attributes, namely controlled and uncontrolled airspace, special use airspace, military training routes, en route airways, airports and airfields, and air traffic control. Jet routes, all above 18,000 feet (549 meters), are well above the activities proposed and are not considered as part of the region of influence. The maximum height of each individual FTI antenna will be 100 feet or the FAA-approved height, whichever is lower. Before the design is finalized, the Army will coordinate with the FAA to ensure that each antenna does not obstruct air navigation, including approach and departure clearance near any runway or airfield.

Controlled and Uncontrolled Airspace

The airspace in the SBMR ROI is composed of Class D airspace above WAAF, extending from the surface to a ceiling of 3,300 feet (1,006 meters), surrounded on its southern, southeastern, and eastern edges by a Class E airspace extension area, with a floor 700 feet (213.4 meters) above the surface. Elsewhere, the airspace not designated as Class D is Class G (uncontrolled) airspace from the surface to a ceiling of either 700 or 1,200 feet (213.4 or 385.8 meters). Class E, or special use, airspace is discussed separately below. (Appendix F provides a full definition of the different classes of airspace and an explanatory diagram.)

Special Use Airspace

The R-3109 A & B and R-3109 B & C restricted areas lie to the west of the Class D airspace above WAAF. To the east, over the East Range, is the A-311 alert area. (The effective altitudes, time of use, and controlling agencies for the airspaces are given in Table 5-15.) During the published hours of use, the agency using the airspace is responsible for controlling all military activity within a restricted area and for determining that its perimeters are not violated. When the airspace is scheduled to be inactive, the agency releases it back to the controlling agency or center, and, in effect, the airspace is no longer restricted.

Table 5-15
Special Use Airspace in the SBMR Airspace ROI

Number/Name	Effective Altitude (in feet)	Time of Use	Controlling Agency
A-311	To 500 AGL (To 152 meters)	0700-2200	No A/G
R-3109A	To 9,000 ¹ (To 2,743 meters)	Intermittent ²	Honolulu ATCT
R-3109B	9,000 to 19,000 ¹ (2,732 to 5,791 meters)	Intermittent ²	Honolulu ATCT
R-3109C	To 9,000 ¹ (to 2,732 meters)	Intermittent ²	Honolulu ATCT

Source: NACO 2002

Notes:

A = Alert area; AGL = Aboveground level; ATCT = Air traffic control tower; No A/G = No air to ground communications R = Restricted

¹To but not including the indicated altitude

²By Notice to Airmen

Military Training Routes

Although there are no formal, published military training routes in the SBMR airspace ROI, the A-311 Alert Area is used for helicopter training exercises, with an average of 3,500 helicopter movements per month. Movements are defined as arrivals, departures, or overflights. WAAF experiences an average of 6,500 movements per month, 90 percent of which involve helicopters. The movement statistics cover all DOD branches, including the Hawai'i Air National Guard (Ahching 2002a, 2002b).

En Route Airways

No low altitude en route airways enter or transect the SBMR ROI, but general aviation aircraft use the airspace in the ROI. This includes all civil aviation operations, other than scheduled air services and unscheduled air transport for hire.

Airports and Airfields

WAAF is the only airport in the airspace ROI. WAAF's runway is oriented west-southwest to east-northeast. The preferred arrival and departure tracks to and from the north skirt the eastern edge of the R-3109 restricted area or the western edge of the A-311 alert area to the east. Arrival and departure tracks from and to the south lie to the west of Miulani and Kunia towns (NACO 2003). These tracks are subject to change.

Air Traffic Control

Air traffic in the SBMR ROI is managed by the Honolulu Control Facility and the WAAF tower.

5.4.2 Environmental Consequences***Summary of Impacts***

Table 5-16 summarizes impacts on airspace in SBMR ROI. Neither the Proposed Action nor No Action would have impacts on airspace at SBMR.

No Impacts

Reduction in Navigable Airspace. Other than the proposed establishment of a controlled firing area (CFA) above QTR2, there would be no requirement for new or modified special use airspace associated with the Proposed Action. CFAs pose no problem for either VFR or IFR flights because activities within a CFA, even though potentially hazardous, must be suspended immediately when radar, spotter aircraft, or ground lookout positions detect an approaching aircraft. Because of this feature there is no requirement for imposing any flight restrictions, thus no reduction in the ROI's navigable airspace.

Proposed Action (Preferred Alternative)

New or Modified Special Use Airspace. Other than the proposed CFA above QTR2, no new or modified special use airspace would be required. CFAs, although established to contain activities that, if not conducted in a controlled environment, would be hazardous to nonparticipating aircraft, pose no problem for either VFR or IFR flight, as mentioned above.

Table 5-16
Summary of Potential Airspace Impacts at SBMR/WAAF

Impact Issues	Proposed Action	Reduced Land Acquisition	No Action
Reduction in navigable airspace	○	○	○
New/modified special use airspace	○	○	○
Change to a military training route	○	○	○
Change in en route airways or IFR procedure	○	○	○
Restriction of access to airport/airfield	○	○	○
Obstruction to air navigation	○	○	○
Aviation safety	○	○	○

In cases when there would be both beneficial and adverse impacts, both are shown on this table. Mitigation measures would only apply to adverse impacts.

LEGEND:

⊗ = Significant	+ = Beneficial impact
⊖ = Significant but mitigable to less than significant	N/A = Not applicable
⊙ = Less than significant	
○ = No impact	

The proposed UAV flights would normally be conducted within the R-3109 and R-3110 restricted area complex northwest of SBMR or within the W-189 warning area off the northern coast of O'ahu; thus, the UAV flights would use existing special use airspace. Although the nature and intensity of use varies over time and by individual special use airspace area, the proposed UAV flights represent precisely the kinds of activities that the special use airspace was created for. Restricted areas contain airspace within which the aircraft flight, while not wholly prohibited, is subject to restrictions. Activities within these areas must be confined because of their nature, or limitations are imposed on aircraft operations that are not part of these activities, or both. Warning areas contain activity that may be hazardous to nonparticipating aircraft, and pilots are warned of the potential danger and must abide by the operating rules of Federal Aviation Regulations, Part 91. As such, the UAV flights would not represent an adverse impact on special use airspace and would not conflict with any airspace plans, policies, or controls.

Change to a Military Training Route. There are no published military training routes in the ROI. Consequently, no changes to military training routes from an increase in C-130 operations would result.

Change in En Route Airways, or IFR Procedures. There are no low altitude en route airways in the SBMR airspace use ROI. All traffic into and out of WAAF would be subject to air traffic control clearances and instructions, and air traffic control separation service is provided to IFR aircraft. Consequently, no changes to existing or planned IFR minimum flight altitudes, published or special instrument procedures, or IFR departure procedures would be required, and VFR operations would not be required to change from a regular flight course or altitude.

Establishing a CFA above QTR2 would pose no problem for either VFR or IFR flights because activities within a CFA, even though potentially hazardous, must be suspended immediately when radar, spotter aircraft, or ground lookout positions detect an approaching aircraft. Because of this feature pilots of nonparticipating aircraft need not alter their flight routes.

Restriction of Access to Airports/Airfields. The proposed increase in C-17 and C-130 operations at WAAF would not affect access to, or the use of, airports/airfields available for public use, nor affect commercial or private airport/airfield arrival and departure traffic flows. IFR traffic into and out of WAAF is limited to one aircraft at a time. Should two of these aircraft require an IFR arrival into WAAF, the second aircraft would have to hold while the first aircraft is on approach. While this may affect sequencing into Honolulu International or Kalaheo Airports, it would not ultimately restrict access to them. Upgrading WAAF for C-17 and C-130 aircraft operations by strengthening the aircraft parking apron would have no impact on airspace because these activities would not restrict a clear view of runways, helipads, taxiways, or traffic patterns from the air traffic control tower, nor would it decrease airport capacity or efficiency. Strengthening the parking apron would have no impacts on the airspace ROI.

Obstructions to Air Navigation. The proposed FTI antennas at SBMR would be mounted on towers with a maximum total height of 102 feet and therefore would be well below the 500-foot aboveground level threshold for an obstruction to air navigation specified by the FAA (FAA 2001). The antennas would also be at sufficient distance from the WAAF runway to be well below the military airport imaginary surface thresholds (FAA 2001). The antennas would be designed so as not to penetrate the approach-departure clearance surface. Thus, this would not constitute an obstruction to air navigation.

Aviation Safety. Increased air traffic at WAAF as a result of C-17 and C-130 aircraft operations in support of SBCT training, given the Army's excellent aviation safety record in Hawai'i, make future adverse impacts on public health and safety extremely unlikely. WAAF lies in Class D airspace, and, consequently, all C-17 and C-130 aircraft operations would be subject to air traffic control clearances and instructions, thus obviating any adverse direct impacts on air traffic. In addition, the strict procedures and rules in place governing flight operations in both controlled/uncontrolled navigable airspace and special use airspace, make future adverse impacts on public health, and safety extremely unlikely.

For those UAV flights that could not be contained wholly within restricted areas or warning areas, operations would be conducted in accordance with well-defined FAA procedures for remotely operated aircraft. At least 60 days prior to the proposed commencement of UAV operations, a certificate of authorization would be sought from the FAA regional office in Honolulu. Approval would be contingent on the demonstration of a method that provides a level of safety, equivalent to see-and-avoid requirements for manned aircraft. Methods include, but are not limited to, radar observation, forward or side-looking cameras, electronic detection systems, visual observation from one of more ground sites, or a combination thereof (FAA 2001). In addition, coordination, communications, route and altitude procedures, and lost link/mission abort procedures would all have to be identified.

Consequently, authorized UAV flights would have no impact to aviation safety and thus public health and safety.

Reduced Land Acquisition Alternative

Impacts associated with the RLA Alternative would be identical to those described for the Proposed Action.

No Action Alternative

No Impacts

The current baseline of existing conditions at SBMR would continue under No Action. Flight support for current training would continue to have the same level of impact on airspace. WAAF lies in Class D airspace, so all aircraft operations are subject to air traffic control clearances and instructions. Air traffic control separation service is provided to instrument flight rules aircraft only, but all aircraft are given traffic advisories and, on request, conflict resolution instructions. Flight support for current training out of WAAF would continue to have no impacts on controlled and uncontrolled navigable airspace, special use airspace, military training routes, en route airways, or airports/airfields, nor would it create obstructions to air navigation in the airspace ROI because none of the factors considered in determining impacts are applicable.