

At its August 13, 2009 meeting, the CAC reviewed each measure passed by the FAA and/or Massport to Level 2 Screening in terms of the CAC's adopted goal and objectives for noise abatement.

Votes were taken on the measures as groups..

CAC took actions on measures passed to Level 2 screening by the FAA and Massport.

1. **Measures 17, 21, 26 and F-O are rejected by the CAC because they contradict the objectives adopted by the CAC for defining departure procedures. They are not passed to Level 2 review by the CAC.**
Reasoning: Each measure would result in multiple departure courses within seven miles of the fly over end of the runway, with turns from initial courses made below 4,000 feet MSL.

2. **Measures G-D, F-A, F-G, F-N and F-S are found to meet the goals and objectives adopted by the CAC. Measure F-R, amended to read “Shift Runway 4R Phase 1 Alternative 1 RNAV initial fix to east to move the course away from Revere Beach, while avoiding noise increases to Nahant” is found to meet the goals and objectives of the CAC. They are passed by the CAC to Level 2 for further review.** *Reasoning: Each measure would meet the adopted criteria of the CAC. The modification of Measure F-R is intended to assure that any modification of the course of the Phase 1 RNAV departure course from Runway 4R does not result in increased noise impacts in the Nahant area. It is understood that the final definition of the RNAV course may already accomplish the desired objective for the Runway 4R departure course.*

- ✦ **Measures G-F, G-G, G-I, G-J, G-M, F-H, F-I, F-K, and F-M are found to be in accordance with the defining objectives as adopted by the CAC. They are passed to Level 2 for further review.** *Reasoning: Although each of these measures is considered to be compatible with the objectives for defining alternatives, the CAC cannot judge the noise effects of each without advancing them to Level 2 screening. Further, it is understood that measures G-G, G-I, and G-J may face engineering or non-acoustic environmental obstacles that may cause them to be eliminated from further consideration early in the Level 2 screening process.*

4. **Measure F-DD was found to be compliant with the CAC's objectives for defining departure procedures and was approved for Level 2 screening. Measure F-EE was found to be highly likely to contradict the noise level objectives adopted by the CAC and is rejected from further consideration.** *Reasoning: Measure F-DD calls for the assurance that all departures in the Marshfield area would fly courses over water. FAA assumed this to apply to southbound traffic, but the proposed action does not*

make that stipulation. The development of three RNAV procedures that pass east of the Minot's Light area may achieve the desired action for southbound departures, but the CAC believes this measure would derogate the gains made by the implementation of Phase 1 measures for westbound traffic. Further, Measure F-EE was found likely to introduce noise levels onto south shore communities that have been abated through the implementation of Phase 1 Alternatives 1, 2, 3, and 5 by requiring departing aircraft to be held below arriving aircraft and reintroducing overflights into areas from which they had been removed by previous action.

5. **Modified language of Measure F-II was found to meet the objectives of the CAC and passed to Level 2 screening.** Measure F-II consolidates previous Measures F-P and F-FF to describe a proposed departure procedure for jet aircraft using Runway 33L. The proposed modification of language reads “**Measure F-II – Jet aircraft departing Runway 33L shall be assigned a course that will route the aircraft over the Wellington Station until reaching a point seven (7) miles beyond the fly over end of the runway or to an altitude of 5,000 MSL before turning to in-route or intermediate courses**”. *Reasoning: The FAA suggested that Measures F-P and F-FF be combined to provide for a single proposal for Runway 33L departures. The proposed modification combines the benefits of maintaining flight over compatibly used lands along the north side of the Mystic River before reaching the Wellington Station, and over a much-used transportation corridor beyond Wellington Station. The measure would eliminate or substantially reduce turns from the departure course over downtown communities to the south and over heavily residential communities to the north while resulting in likely reductions of noise effects in both areas. The measure is intended to provide a working model for refined definition during Level 2 screening evaluations.*

6. **Modified language of Measure F-HH was found to meet the objectives of the CAC and passed to Level 2 screening.** The FAA requested that the CAC consider a consolidation of several measures that addressed approach courses and altitudes over the Marshfield-Duxbury-Plymouth area, commonly referred to as the DRUNK intersection. Phase 1 resulted in three adopted approach measures that used the DRUNK intersection as a reference for approaches to Runways 22R/L, 27 and 33L (Alternatives 6, 7 and 11). The CAC has adopted the consolidation of the actions proposed as Measures F-B, F-C, F-D, F-E, F-Y, F-Z, F-AA, F-BB, and F-CC, reading “**Establish a new approach crossing point at a location that is approximately two miles to the east and several miles south of the current DRUNK intersection for arrivals to Runways 22R/L, 27, 33L and 32 from the PVD fix, and establish a minimum crossing altitude of not less than 8,000 feet MSL**”. *Reasoning: The nine separate measures addressing approaches over the southeast shoreline attempted to parse out the various elements of the approach (altitude, latitude, longitude) to individually evaluate each measure. The CAC*

reasons that a more reasonable method of consideration is to evaluate the various elements in concert with each other. Therefore the modified language is proposed in a way that will allow a working definition to be developed in Level 2 screening evaluations.

7. **Modified language of Measure G-N was found acceptable to the CAC.** No contradictions to the adopted objectives are anticipated if the measure is implemented. The modified language for this measure is **“Massport should encourage air carriers and based or frequent general aviation users at BOS, subject to pilot discretion and the absence of conflicting traffic in Visual Meteorological Conditions (VMC) with clear and dry pavements, to 1) voluntarily use single-engine taxi operations for ground operations, and 2) voluntarily give preference to the use of an engine on the aircraft side away from the nearest communities”**. Reasoning: The FAA and Massport originally objected to the mandatory use of single-engine taxi on safety grounds. The modification specifically states the voluntary nature of the proposed action and the pilot’s discretion in its application. It is clear that the measure would be unacceptable to the FAA for application during poor weather, when the runways are not clear and dry, and when there is conflicting traffic during runway crossings. The table below is included as a suggestion as to the active power engine for noise abatement on the nearest noise sensitive use, related to the direction of aircraft movement.

Preferred Side for Active Engine During Single-Engine Taxi to/from Runway												
Taxi	04R	04L	09	14	15R	15L	22R	22L	27	32	33R	33L
Out	left	right	right	left	left	*	right	left	right	*	*	right
In	left	left	*	*	right	*	right	right	left	right	left	left

* = never or rarely used at BOS

8. **Adopt in their entirety three measures proposed to address noise impacts on inner-city communities.** None of the measures conflicted with the adopted objectives for procedure definition or noise mitigation. The measures:

Decrease Noise From Small Planes Over the Inner Cities, including, but not limited to:

1. **Altitudes:** Review and revise as reasonably possible all Minimum Altitudes for compliance with the FAA Flight Rules, Minimum Safe Altitudes (an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet), considering safe operations at Logan, and to reasonably maximize minimum altitudes over residential and commercial areas. 600ft towers + min 1,000ft = min 1,600ft Downtown Boston. 900ft towers + min 1,000ft = min 1,900ft Back Bay Boston. (All planes, including banner-towing, photographing, and sightseeing; general aviation and commercial; VFR and IFR.) Recognize that the security NOTAM prohibiting aircraft from within 3 miles and 3,000ft of a stadium having a seating capacity of 30,000 from before until after Major Sports events should also apply to music

events in the same stadium and to any open-air assembly of the same size (and larger, particularly the Esplanade 4th of July Independence concert and fireworks).

2. Routes: Review and revise as reasonably possible all Routes, considering (local) altitudes and safe operations at Logan, to minimize noise to the population below. Generally prioritize the routing over No Population: Water bodies. Undeveloped open spaces, Transportation ways/corridors, and Agricultural and Green spaces; and Low Population: Industrial areas (warehousing and manufacturing) and Business areas (offices and laboratories, research and engineering); and avoiding Populated: Commercial (stores) and Residential areas.
3. Compliance: Consider Compliance in the development of the above Minimum Altitudes and Routing—both decreasing Non-Compliant operations and easing Enforcement. Develop materials and programs to monitor and improve Compliance. These might include Educational printed materials; training of controllers, inspectors and pilots; meetings and specific agreement by key participants. And, should include measuring, reporting, and citing of worst non-compliance—by degree and frequency creating excess noise—to achieve great compliance.

Decrease Noise From Helicopters Over The Inner Cities, including, but not limited to:

1. Altitudes: Review and revise as reasonably possible all Minimum Altitudes for compliance with the FAA Flight Rules, Minimum Safe Altitudes (an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet), considering safe operations at Logan, and to reasonably maximize minimum altitudes over residential and commercial areas. 600ft towers + min 1,000ft = min 1,600ft Downtown Boston. 900ft towers + min 1,000ft = min 1,900ft Back Bay Boston. Recognize that the exemption for helicopters to fly lower than normal minimums is only available: “if the operation is conducted without hazard to persons or property on the surface.” This is more stringent than the normal: “An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.” It cannot be satisfied and the exemption is not valid over populated residential and commercial areas. It should only be possible over non-populated areas (The Recommended Routes should maximize non-populated areas, to allow the helicopters exemption for lower minimum altitudes). Establish absolute minimum altitudes for helicopters in all areas (when not landing or taking off). (Generally at least 500ft to 1,000ft, with very limited exceptions required for Logan operations?) (Media and Security hovering and circling are the greatest problems; traffic and medical follow.) Recognize that the security NOTAM prohibiting aircraft from within 3 miles and 3,000ft of a stadium having a seating capacity of 30,000 from before until after Major Sports events should also apply to music events in the same stadium and to any open-air assembly of the same size (and larger, particularly the Esplanade 4th of July Independence concert and fireworks)

2. Routes: Review and revise as reasonably possible all Routes, considering (local) altitudes and safe operations at Logan, to minimize noise to the population below. Generally prioritize the routing over No Population: Water bodies. Undeveloped open spaces, Transportation ways/corridors, and Agricultural and Green spaces; and Low Population: Industrial areas (warehousing and manufacturing) and Business areas (offices and laboratories, research and engineering); and avoiding Populated: Commercial (stores) and Residential areas. (Hampshire Route has been shifted from I93 to Monsignor O'Brien Highway, from (what was) industrial to residential and commercial. Shifting over the Mystic River to the Inner Harbor seems preferable and would also decrease traffic from the Charles River cutting across the densely populated West End and North End. Traffic over Cambridge and Somerville seems to be off Fresh Pond and Spy Pond routes, continuing across very dense residential, rather than turning northeast to I93 or southeast to Harvard Stadium fields? Perhaps the Turnpike Route should be continued over the Turnpike to the Harbor (over the Prudential and Hancock Towers, away from the Charles River and cutting across densely populated Back Bay and Beacon Hill?) Determine possibilities for mandatory routing—why, why not, and how.
3. Compliance: Consider Compliance in the development of the above Minimum Altitudes and Routing—both decreasing Non-Compliant operations and easing Enforcement. Develop materials and programs to monitor and improve Compliance. These might include Educational printed materials; training of controllers, inspectors and pilots; meetings and specific agreement with key participants. And, should include measuring, reporting, and citing of worst non-compliance—by degree and frequency creating excess noise—to achieve great Compliance.

Decrease Noise From Short Takeoff Planes Over Downtown Boston,

including, but not limited to:

1. Altitudes: Review and revise as reasonably possible for compliance with FAA Flight Rules, Minimum Safe Altitudes (an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet), “except when necessary for takeoff or landing.” Considering safe operations at Logan. To reasonably maximize minimum altitudes over residential, commercial, and Government areas. 600ft towers + min 1,000ft = min 1,600ft Downtown Boston. (Avoid the current short takeoffs with hard turns climbing from low over Downtown Boston. Sometimes it seems even right over, through and around the buildings.) (Turboprops and propeller.)
2. Routes: Review, revise and/or determine new departure courses variations to maintain initial departure course headings for propeller aircraft to higher altitudes, while avoiding departure delays. Periods of peak demand and limited runway availability may require multiple initial headings with minimal shift to avoid decreased efficiency causing departure delays. (Hopefully to 2,000ft, but perhaps, at least, the 1,000ft minimum used at London Heathrow can be followed.)

3. Compliance: Late night (midnight to 6AM seems an agreed period for implementation. Other periods of decreased operations (by hour, day or season) and multiple runway combinations may allow higher altitudes for all.

Supporting material associated with these three measures appears below.

9. Having reviewed all proposed actions and all measures against the CAC's objectives for procedure definition and noise abatement (where practical), **all CAC decisions are hereby forwarded to the FAA as a set to complete Level 1 and proceed to Level 2 review and evaluation.**

Supporting material for Items 8A, 8B and 8C:

TITLE 14--AERONAUTICS AND SPACE
CHAPTER I--FEDERAL AVIATION ADMINISTRATION, DEPARTMENT OF
TRANSPORTATION
PART 91--GENERAL OPERATING AND FLIGHT RULES--Table of Contents
Subpart B--Flight Rules

CFR Title 14 - FAR Part 91, Section 91.119

91.119 Minimum safe altitudes: General.

Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:

(a) Anywhere. An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.

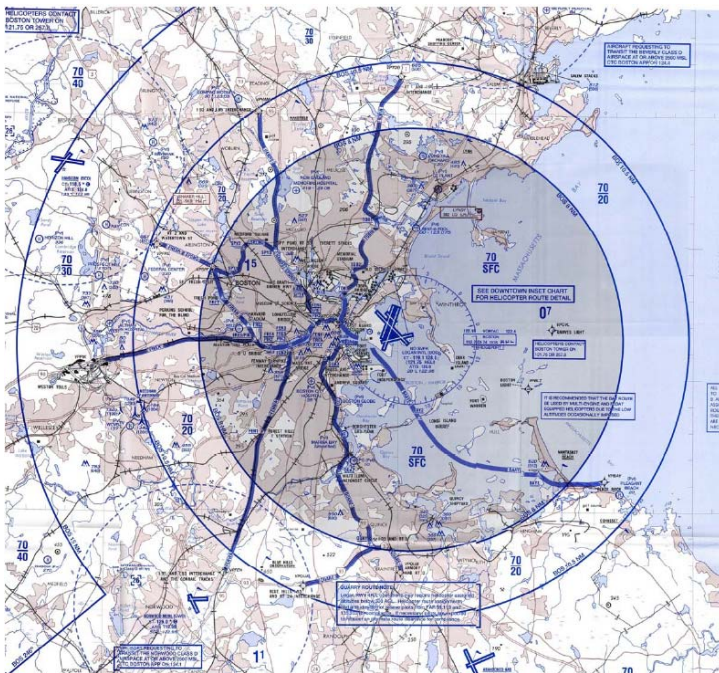
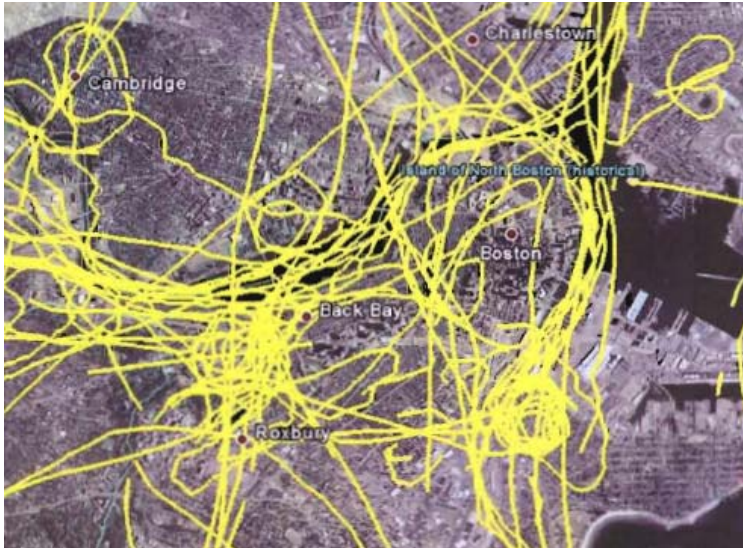
(b) Over congested areas. Over any congested area of a city, town, or settlement, or over any open air assembly of persons, an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

(c) Over other than congested areas. An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

(d) Helicopters. Helicopters may be operated at less than the minimums prescribed in paragraph (b) or (c) of this section if the operation is conducted without hazard to persons or property on the surface. In addition, each person operating a helicopter shall comply with any routes or altitudes specifically prescribed for helicopters by the Administrator.

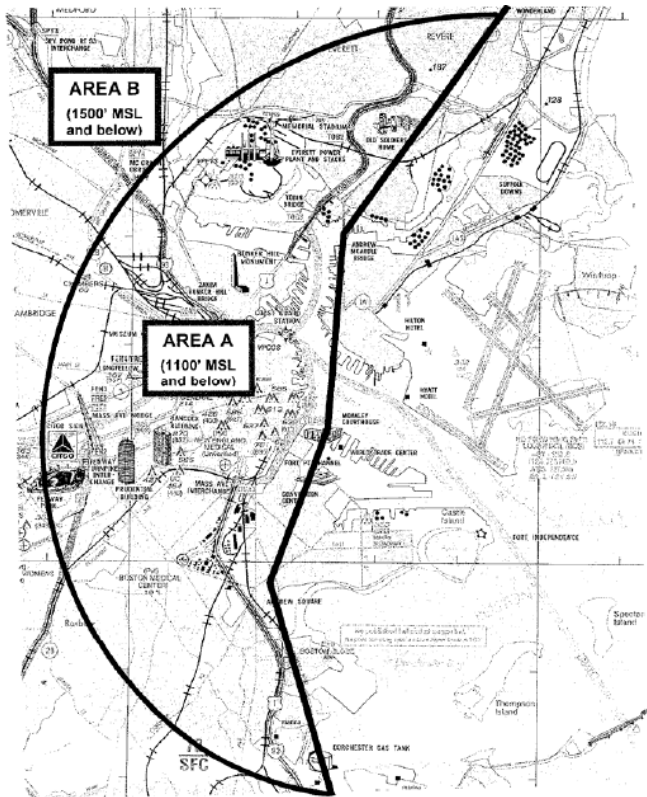
Boston FAA Flight Standards District Office “determined” “generally in compliance” 1,100ft Minimum substantially less than national FAA Flight Rules, Minimum Safe Altitudes—1,900ft-1,600ft—1,100ft:

Aircraft 500-100ft, May 21, 2009



Boston District Maximums substantially lower than national FAA Flight Rules, Minimum Safe Altitudes...

BOS ATCT 7110.11K, Change 7, 8/15/08



Since 2002, the NTSB has made 16 recommendations related to safety of the on-demand flight industry. The FAA has not implemented any of them.

An FAA advisory committee spent two years examining on-demand flight industry safety, issuing 124 recommendations in September 2005. Nearly four years later, none of those recommendations - many of which paralleled the NTSB recommendations - has been implemented.