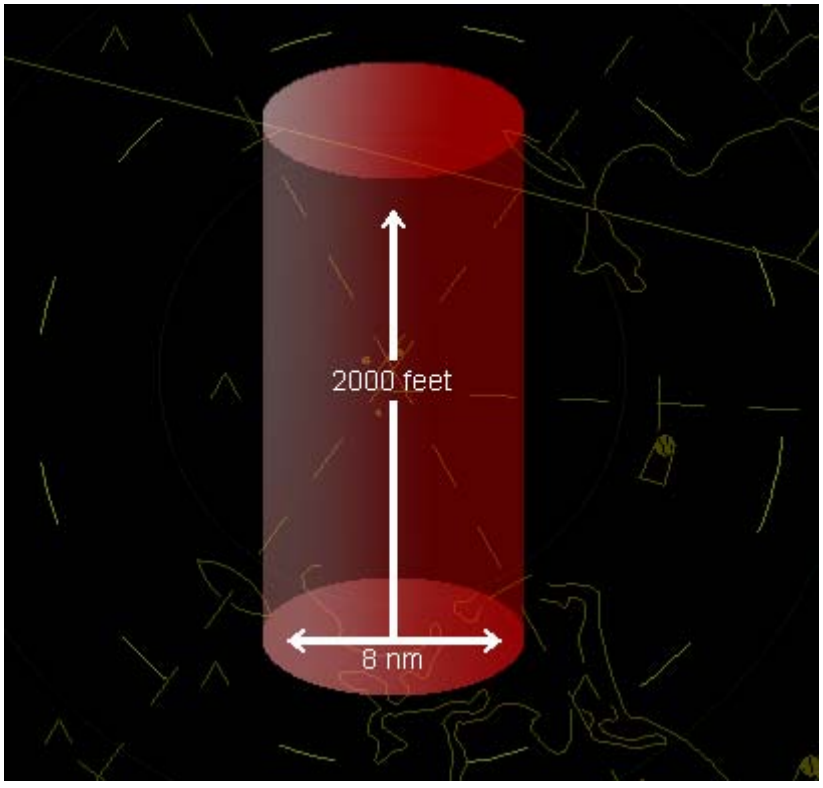
CHAPTER 3. LOCAL (TOWER) CONTROL

Section 1: Introduction

Local Control's duty is to provide separation between arriving and departing aircraft and is responsible for the constant surveillance of the airport traffic and movement areas. When Ground Control is not online, Tower is responsible for **all** movement areas. Local control also issues clearances and control instructions to maintain proper sequencing and separation of airborne aircraft. Tower is also responsible for selecting the active runway(s) and maintaining a current ATIS (Automated Terminal Information Service). Boston Tower will always use the radio communication frequency of 128.80.

Section 2: Airspace

a. Boston Tower is authorized to provide service within the area: **2,000' MSL and below from the BOS VORTAC to BOS 8 DME**. This area is contiguous with the Boston Class Bravo airspace. The video map below depicts the lateral boundary of the Boston Tower airspace, while the red cylinder depicts the boundary in all three dimensions.



Section 3: Responsibilities

a. The first priority of the Local Controller is the separation of airborne traffic. The Local Controller must ensure proper separation between arriving and departing aircraft while maintaining an expeditious traffic flow.

b. The Local Controller is directly responsible for coordinating with Ground, Departure, and Approach Control. If Ground Control and/or Clearance Delivery are not staffed, the Local Controller also performs the duties of those positions.

c. The Local Controller is also expected to have a thorough understanding of the instrument approach procedures at Boston Logan Airport.

Section 4: Runway Configurations & Selection

a. Below are the three most common runway configurations:

(1) Land: **4R / 4L**, Depart: **9**

I. If a takeoff clearance may not be issued to a departing aircraft on runway 9 due to traffic landing/rolling through the intersection of runway 4R/9, a TIPH (taxi into position and hold) instruction may be issued. Only after the local controller ensures the intersection is clear may the local controller issue takeoff clearance on runway 9.

II. Runway 9 is **never** used for arrivals.

(2) Land: **22L / 27**(LAHSO), Depart: **22R**

I. See section 10: LAHSO.

NOTE: Landing on Runway 22R is prohibited between 11pm and 6am local.

(3) Land: **33L,** Depart: **27 (primary) / 33L (secondary)**

b. Runway 4L/R (and 9) are the **calm wind** runways. Runway 4L **may not** be used for turbo-jet departures.

c. Runway 4R is the designated CAT II/III runway. See 7110.65 §3-5-1 for more information on runway selection.

d. Surface winds and instrument approach minima shall be the primary criteria used for runway selection.

(1) When strong surface winds from the southwest are present, aircraft shall land **runway 15R/L and depart runway 15R/L and 9**. Due to the traffic flow and low arrival acceptance rate, this runway configuration is rarely used.

(2) The BOS Runway Selection Chart may be used to help determine runway selection.

NOTE: *Before using the above chart, 16 degrees must be added to the surface wind observations due to magnetic variation.*

Section 5: Normal Operations

a. Takeoff Clearances

(1) Workload permitting, the local controller should include wind direction and velocity in takeoff clearances.

(2) The proper phraseology for such an instruction:

I. *"Departure instructions, wind, runway (number), cleared for takeoff."*

II. Example: *"US Air four forty two, after departure fly runway heading, wind zero four zero at one three, runway niner, cleared for takeoff."*

(3) The local controller shall hand-off departing aircraft to departure control once airborne.

b. Landing Clearances

(1) Workload permitting, the local controller should include wind direction and velocity in landing clearances.

I. *"Wind, runway (number), cleared to land."*

(2) Inform inbound aircraft of preceding traffic for the same, parallel, or intersecting runway(s).

(3) If an aircraft will depart the same, parallel, or crossing runway(s) prior to an aircraft's arrival, inform the inbound aircraft of the departing aircraft.

II. Example: *"US Air four forty two, number two following a Boeing seven thirty seven on short final, wind zero three zero at seven, runway two two left, cleared to land. Traffic will depart runway two two right prior to your arrival."*

c. Clearing the Runway

(1) Issue runway exiting or taxi instructions once an aircraft has touched down and is slowed to a reasonable taxi speed.

(2) Aircraft should not be instructed to contact ground control until clear of any active runways and on the terminal side, unless:

I. The clearance specifically states to cross the runway and **then** contact ground control:

II. Example: *"Jet Blue four forty seven, next left when able, cross runway two two right, **then** contact ground point niner on the other side."*

Section 6: Taxi Into Position and Hold Instructions

a. Taxi into Position and Hold is used by ATC to inform a pilot to taxi onto the departure runway in takeoff position and hold. It is not authorization for takeoff. It is used when takeoff clearance cannot immediately be issued because of traffic or other reasons.

(1) When an aircraft is authorized to taxi into takeoff position to hold, **inform it of the closest traffic** that is cleared to land, touch-and-go, stop-and-go, or unrestricted low approach on the same, intersecting, or parallel runway(s).

(2) The TIPH instruction **may not** be issued between sunset and sunrise to aircraft at an intersection except as noted in Section 6-(a)(3).

(3) Do not clear an aircraft to TIPH if an aircraft has been cleared to land, touch-and-go, stop-and-go, option or unrestricted low approach on the same runway. Additionally, landing clearances shall be withheld until any TIPH aircraft begins their takeoff roll (7110.65 §3-9-4(c)).

(4) Boston Tower has been granted a waiver to the guideline that prohibits the control tower from taxiing an aircraft into "position and hold" at an intersection between sunset and sunrise.

I. This waiver will allow the tower to taxi aircraft into "position and hold" during periods of darkness, at **Runway 04R / 22L at Charlie.**

NOTE: When the provisions of this waiver are being exercised, the affected runways shall be used for departures only.

(5) The proper phraseology for such an instruction:

I. *"Runway (number), position and hold. Traffic (position)."*

II. *"United five sixty two, runway niner, position and hold. Traffic is a Boeing Seven Thirty Seven, short final for the crossing runway."*

Section 7: Required Separation and Wake Turbulence

a. Provide separation between aircraft as described in 7110.65 §3-9-6, 3-9-7, 3-9-8, 3-10-3, 3-10-4.

(1) Runway 4L/22R and 4R/22L are separated by less than 2,500 feet; therefore, same runway separations (7110.65 § 3-9-6) apply.

b. Wake turbulence procedures shall be followed in accordance with 7110.65 §2-1-19.

(1) Issue wake turbulence cautionary advisories and the position, altitude, and direction of flight of the heavy jet or B757 to those aircraft defined in 7110.65 §2-1-20.

(2) Issue wake turbulence cautionary advisories to any aircraft if, in your opinion, wake turbulence may have an adverse effect on it. When traffic is known to be a heavy aircraft, include the word "*heavy*" in the description.

Section 8: Intersection Departures

a. Intersections departures can be an effective tool to sequence departing aircraft. Commuter and propeller aircraft commonly use this operation.

(1) Intersection departures may be conducted at any time of the day; however, additional caution should be exercised at night.

(2) The local controller shall inform any traffic holding in position full length of any aircraft departing from an intersection of that runway.

(3) Intersection departures may be conducted at any runway/taxiway intersection; however, the three most common locations are:

I. Runway 33L at Golf

II. Runway 22R at runway 15R

III. Runway 4L at Charlie

(4) Proper phraseology for such operations is as follows:

I. *"Commutair four forty two, runway three three left at Golf, cleared for takeoff."*

II. *"Air France three three seven, runway three three left, position and hold. Traffic will depart from an intersection downfield."*

III. *"Commutair four forty two, runway three three left at Golf, cleared for takeoff. Traffic will be holding in position full length."*

Section 9: Missed Approach Procedures (MAPs)

a. Missed Approach Procedures are published on Instrument Approach Procedures (IAPs), however the local controller may also issue alternate instructions to aircraft executing a missed approach.

(1) The proper phraseology for a missed approach instruction is as follows:

I. *"Delta two twenty one, fly the runway four right missed approach procedure as published."*

(2) If an alternate instruction is used, the proper phraseology for such an instruction is as follows:

I. *"Delta two twenty one, fly runway heading, climb and maintain three thousand. Contact departure on one three three point zero."*

II. If both departure and approach control are online, the aircraft conducting the missed approach shall be handed off to departure control.

(3) No departures may be released after an aircraft executes a missed approach until the departure (or approach) controller advises that departures may be released.

Section 10: Land and Hold Short Operations (LAHSO)

a. Land and Hold Short Operations are used when surface wind and arrival volume dictate the simultaneous use of runway 22L & 27, 4L & 33R, and 15R & 9 for arriving and departing aircraft.

(1) The approach controller may query aircraft to ascertain if they are able to land and hold short of a runway. If an aircraft is able to hold short of a runway, such information will be coordinated with the local controller before an aircraft is handed off to the tower frequency.

Landing Runway	Hold-Short Point	Measured Distance
4L	15L/33R	5,250 feet
15R	9/27	6,800 feet
22L	9/27	6,400 feet
27	4R/22L	5,650 feet

(2) If an aircraft is cleared to land and hold short of an intersecting runway, the pilot **must** read back the hold short instruction.

(3) Proper phraseology for a LAHSO clearance is as follows:

I. *"Speedbird three three seven, wind two five zero at one three,runway two two left, cleared to land.* ***Hold short of runway 27****."*

(4) Inform aircraft landing full length of any aircraft inbound for an intersecting runway that will hold short of the runway intersection.

I. Proper phraseology for such an instruction is as follows: *"Cair ninety nine, wind two five zero at one three, runway two seven, cleared to land.* ***Traffic landing runway two two left will hold short of your intersection****."*

Section 11: CAT II / III Operations

a. When weather conditions are below CAT I minimums, CAT II and/or III approaches may be conducted on **runway 4R** regardless of surface wind.

(1) The local controller shall include any RVR (Runway Visual Range) distance(s) in all landing clearances. Proper phraseology for such a clearance is as follows:

I. *"Continental eight eighty seven, wind zero three zero at one five,* ***runway four right RVR three thousand five-hundred variable five thousand five-hundred****. Runway four right, cleared to land."*

Section 12: VFR Aircraft Operations

a. The [class B] local controller shall separate all VFR aircraft from other VFR and IFR aircraft.

b. VFR departures

(1) If a VFR departure will remain below 2,000 feet MSL:

I. The local controller shall assume track (where appropriate) and responsibility of the aircraft. When the aircraft reaches the tower airspace boundary, the local controller shall drop track and terminate radar service of the aircraft, unless the pilot requests a handoff to approach control for flight following.

(2) If a VFR departure will climb above 2,000 feet MSL:

I. Handoff the aircraft to departure control.

(3) Departure instructions shall always be given to VFR aircraft by issuing a tower assigned heading or an exit in relation to the traffic pattern.

I. *"Piper two two two six zulu, fly runway heading, wind calm, runway four left, cleared for takeoff."*

II. *"Cessna niner five zero five foxtrot, right downwind departure approved, wind two five zero at six, runway two seven, cleared for takeoff."*

c. Aircraft requesting to remain in the pattern

(1) The local controller shall issue either left or right closed traffic in the takeoff clearance.

I. *"Cessna five two eight six charlie, wind two four zero at seven, runway two two right, cleared for takeoff. Make right closed traffic."*

(2) The local controller shall issue traffic advisories to arriving or departing aircraft that may fly in close proximity to pattern aircraft. Pattern aircraft shall also be issued a traffic advisory of arriving and departing traffic.

I. Traffic advisories shall be phrased as defined in 7110.65 §2-1-21 .

(3) The local controller may issue various separation techniques including, but not limited to, the following maneuvers:

I. 360 degree turn

II. 270 degree turn

III. Extended downwind

IV. S-turns on final approach

V. Short approach

d. Aircraft requesting landing clearance outside of Bravo airspace not handed off by approach control

(1) Boston Tower is Limited Radar Approach Control (LRAC) certified which allows limited use of radar identification by radar certified controllers only (Senior Student and above). Boston tower may radar identify **only** VFR aircraft and helicopters requesting to enter the tower's portion of the Bravo airspace and/or to land.

I. If a VFR flight plan has not already been filed, the local control shall create one and enter at least the aircraft type and destination (KBOS).

II. The local controller shall assign the aircraft a squawk code (as defined in Sub-para. b) and visibly observe the datablock "tag up."

III. Once the aircraft has been "tagged up" the local controller shall assume track and radar identify the aircraft on frequency.

(2) Proper phraseology for radar identifying a VFR aircraft requesting landing clearance is as follows:

I. *Radar contact (miles, direction, reference). Altitude indicates (mode C reported altitude), cleared into the Boston class bravo airspace, maintain VFR at or below two-thousand. Enter (pattern instructions), Boston altimeter (BOS altimeter setting).*

II. ***Example:*** *"Cessna four seven zero uniform, radar contact one zero miles north of the Boston VORTAC. Altitude indicates one thousand niner-hundred, cleared into the Boston class bravo airspace, maintain VFR at or below two-thousand. Enter left downwind runway four left, Boston altimeter two niner niner two."*

(3) When not providing a radar service, receive a position report, then issue a Class Bravo clearance and landing information only:

I. ***Example:*** *"Cessna four seven zero uniform, cleared into the Boston class bravo airspace, maintain VFR at or below two-thousand. Enter left downwind runway four left, Boston altimeter two niner niner two*

See the KBOS Class B/VFR page for additional information.

Section 13: Helicopter Operations and Designated Routes

a. Helicopter Operations shall be conducted in accordance with 7110.65 §3-11 .

b. Boston Tower may assign the following Boston area helicopter routes:

Bay Route (BAAYE)
Waypoint – Name
VPBAY - Black Rock
Bay1 - Worlds End
Bay2 - Long Island Bridge

Fenway Route (FENWA)
Waypoint – Name
VPFEN - Conrail/I95 & I93
Fen1 - Forest Hills T Station
Fen2 - Fenway Turnpike Interchange (Join Turnpike Route)
Fen3 - Mass Ave Bridge
Fen4 - Long Fellow Bridge
Fen5 - Museum of Science
VPCGS - Coast Guard Station

Fresh Pond Route (FRESH)
Waypoint – Name
VPFRE - Rte2/Watertown St
VPSPF - Spy Fresh Split
Fre1 - Fresh Pond
Fre2 - Harvard Stadium
Fre3 - Allston Toll Plaza
Fre4 - B U Bridge
Fre5 - Mass Ave Bridge
Fre6 - Long Fellow Bridge
Fre7 - Museum of Science
VPCGS - Coast Guard Station

Hampshire Route (HAMPS)
Waypoint – Name
VPHAM - I93 and Rte 128 (I95) Interchange
Ham1 - Mc Grath O'Brien
VPCGS - Coast Guard Station

Quarry Route (QUARE)
Waypoint – Name
VPQUA - Blue Hills I93 & Rte 24 Interchange
VPQUB - Armory & Rte 3
Qua1 - I93 & Rte 3
Qua2 - MILLT (LOM)
Qua3 - Mass Ave Interchange
Qua4 - Fort Pt Channel

Spy Pond Route (SPOND)
Waypoint – Name
VPFRE - Rte 2/ Watertown St
VPSPF - Spy Fresh Split
Spy1 - Alewife T Station
Spy2 - Alewife Brook
Spy3 - Spy Pond/Rte 93 Interchange
Spy4 - McGrath O'Brien
VPCGS - Coast Guard Station

Tobin Route (TOBIN)
Waypoint – Name
VPTOB - I95 & Rte 1 Interchange
Tob1 - Circle/Theater Complex
Tob2 - Memorial Stadium
Tob3 - Tobin Bridge

Turnpike Route (PIKER)
Waypoint – Name
VPPIK - Weston Tolls
Pik1 - Allston Toll Plaza
Pik2 - B U Bridge
Pik3 - Mass Ave Bridge
Pik4 - Long Fellow Bridge
Pik5 - Museum of Science
VPCGS - Coast Guard Station

c. The following communication transcript is an example of issuing a helicopter routing:

"Boston Tower, Helicopter eight two zero papa tango."

"Helicopter eight two zero papa tango, Boston Tower. Squawk one five two six, say request."

"Squawk one five two six. Eight two zero papa tango is a Robinson R44 helicopter, over the I-93 / I-95 interchange at 1,000, request Hampshire Route, then a bravo clearance back northwesbound."

"Helicopter eight two zero papa tango, radar contact over the interchange, cleared into the Boston Class bravo airspace via the Hampshire route, maintain VFR at or below 1,500. Boston altimeter 30.06."

Section 14. VFR coded routes in Bravo airspace

a. The following VFR coded routes may be used by aircraft entering the Boston Class B airspace to land at Boston Logan. No aircraft shall be assigned these routes unless they are initiated through pilot request.

b. **PROCEDURES**: VFR arrivals landing KBOS shall contact Boston Consolidated TRACON at least 20 miles from Boston. Aircraft shall request the coded arrival route corresponding to the arrival runway(s) in use for clearance to enter Boston Class B airspace. The Coded VFR Arrival Routes are as follows:

KBOS CODED VFR ARRIVAL ROUTES

1. BRAVO 4: Enter via Norwood Airport (KOWD) at 2500 ft. Cleared through OWD Class "D" airspace. Expect Runway 4L.

2. BRAVO 15: Enter via Minot's Light at 1500 ft. Depart Minot's Light heading 360 or as assigned. Expect Runway 15L.

3. BRAVO 22: Enter via Minot's Light at 2500 ft. Depart Minot's Light heading 030 or as assigned. Cleared through Beverly Airport (KBVY) Class "D" airspace. Expect Runway 22L.

4. BRAVO 27: Enter via Minot's Light at 1500 ft. Depart Minot's Light heading 010 or as assigned. Expect Runway 27.

5. BRAVO 32: Enter via overhead the former South Weymouth Naval Air Station (KNZW) at 2500 ft. Expect Runway 32.

6. BRAVO 33: Enter via Minot's Light at 1500 ft. Depart Minot's Light via the shoreline direct BOS. Expect Runway 33R.

Notes:
1. 27 arrivals should expect to turn final North and East of Graves Lighthouse. This is necessary for the separation on runway 22L/R departures.
2. 33R arrivals should never overfly the approach end of runway 27.
3. Landing 4L with MVFR or ceilings below 2500 feet: To help facilitate the use of both runways, traffic for 4L will be vectored for the ILS 15R to visually transition via the river bordering the west side of Logan to runway 4L.
4. Arrivals from the north expect to be cleared into the Bravo with headings and altitudes issued by approach. No coded BRAVO arrivals from the North.