



BOSTON ARTCC (vZBW)

STANDARD OPERATING PROCEDURE

BOSTON LOGAN INTERNATIONAL (KBOS)

<i>RELEASE RECORD</i>			
Version	Date	Author	Notes
1.0	10 Dec 2006		Initial Release
1.1	30 Nov 2007	PB	General/Maintenance update
2.0	01 Feb 2010	DO	Major update, consolidated individual position SOPs into consolidated KBOS SOP, converted to new vZBW SOP format, added new KBOS Departure Procedures, aligned to RW procedures.
2.01	15 Mar 2010	DO	Minor clerical update
2.1	01 Dec 2010	DO	Updated for Line Up and Wait (vice TIPH), updated LOGAN4 to LOGAN5, clarifies ATIS publication rules
2.2	01 Jun 2010	SP/DO	Updated A90 Plymouth sector frequency, Updated LOGAN5 to LOGAN6, updated RNAV departure procedures, updated departure gates, changed standard departure procedure to RNAV
2.3	19 Jun 2014	KZ	General upkeep and maintenance, updated departure gates, added section on Cape Air (KAP) coded bravo departure routes

TABLE OF CONTENTS

1.0	Overview	3
1.1	Welcome	3
1.2	Callsign Usage and Frequency Delegation	3
1.3	Runway Configurations	4
1.4	ATIS	5
2.0	Clearance Delivery	6
2.1	Clearing IFR Aircraft	6
2.2	Instrument Departure Procedures	6
2.3	Clearing VFR Aircraft	9
2.4	Cape Air (KAP) Coded Bravo Departure Routes	10
2.5	After the Clearance	11
3.0	Ground Control	12
3.1	Introduction	12
3.2	Overview	12
3.3	Taxiing Aircraft	12
3.4	Coordinating with Local	13
3.5	Intersection Departures	13
3.6	Ground Movements	13
4.0	Tower (Local) Control	14
4.1	Airspace	14
4.2	Responsibilities	14
4.3	Releases	15
4.4	Departure Headings	15
4.5	Line Up and Wait (LUAW)	15
4.6	Required Separation and Wake Turbulence	16
4.7	Intersection Departures	16
4.8	Missed Approach Procedures	16
4.9	Land and Hold Short Operations (LAHSOs)	17
4.10	CAT II / III Operations	17
4.11	VFR Aircraft Operations	18
4.12	Helicopter Operations and Designated Routes	20
	APPENDIX 1: LANDING AND TAKEOFF DISTANCES	21

1.0 Overview

1.1 Welcome

- 1.1.1 Welcome to the big leagues! Boston is home to ZBW's largest and most complex airport – Boston Logan International Airport (KBOS). It is the only ZBW airport that is designated as a Major Facility and classified as a Class B airport.

1.2 Callsign Usage and Frequency Delegation

Position Callsign	Sector/Position Name	Frequency	Vox Channel	Note(s)
BOS_DEL		121.650	BOS_121.650	
BOS_GND		121.900	BOS_121.900	
BOS_R_GND	Ramp/Gate Control	134.050	BOS_134.050	4
BOS_TWR		128.800	BOS_128.800	1
BOS_W_TWR	Local West	128.800	BOS_128.800	4
BOS_E_TWR	Local East	132.220	BOS_132.220	4
BOS_SK_TWR	Skyways	124.720	BOS_124.720	4
BOS_APP		118.250	A90_118.250	1
BOS_DEP	Initial Departure	133.000	A90_133.000	4
BOS_N_APP	Rockport	118.250	A90_118.250	
BOS_S_APP	Plymouth	120.600	A90_120.600	2, 4
BOS_B_APP	Bedford	124.400	A90_124.400	4, 5, 6
BOS_L_APP	Lincoln	127.200	A90_127.200	4, 5
BOS_ST_APP	South Satellite (Lynch)	124.100	A90_124.100	4, 5, 6
BOS_F_APP		126.500	A90_126.500	1, 3, 4
BOS_F1_APP	Final One	126.500	A90_126.500	3, 4
BOS_F2_APP	Final Two	119.650	A90_119.650	3, 4
MHT_APP	Fitzy	124.900	A90_124.900	1
MHT_E_APP	East	125.050	A90_125.050	4

Notes:

1. To be used when positions are combined
2. The _S_ callsign designator is typically used for a student. If there is a split and a student is working South, use BOS_SS_APP
3. Final Approach Sector
4. Rarely used except for (major) events
5. Not to be used unless both Rockport and Plymouth are being used, and additional sectorization is still required
6. Often used for satellite airports

1.3 Runway Configurations

1.3.1 Runway configurations are selected at the discretion of the Local controller, and the selection is based primarily on weather conditions. There are no limits on what configuration is to be used; however, safety and operational efficiency must be considered when deciding which runways are to be used.

1.3.2 Surface winds and instrument approach minima shall be the primary considerations for runway selection.

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

1.3.3 The following are the most common runway configurations at KBOS:

1.3.3.1 **Land: 4R (/4L), Depart: 9 / 4L (KBOS Calm Wind Configuration)**

1.3.3.1.1 Taxi jet aircraft to Runway 9. Taxi props to Runway 4L.

1.3.3.1.2 Runway 4R may be used for departures for operational necessity. If an aircraft requests 4R, Ground shall coordinate with the Local controller. If approved, Ground shall taxi such aircraft to Runway 4R to hold at the 4L Approach Hold Point.

1.3.3.1.3 Landing on Runway 4L is prohibited between 2300 and 0600 Local.

1.3.3.1.4 Runway 9 is never used for arrivals.

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

1.3.3.2.1 Taxi all aircraft to Runway 22R for departure.

1.3.3.2.2 Runway 22L may be used for departures for operational necessity. If an aircraft requests 22L, Ground shall coordinate with the Local controller. If approved, Ground control shall taxi such aircraft to Runway 22L to hold short of 22R.

1.3.3.2.3 Landing on Runway 22R is prohibited between 2300 and 0600 Local.

1.3.3.3 **Land: 27, Depart: 33L (/27)**

1.3.3.3.1 To maximize capacity and efficiency, the normal configuration will be Land 27 / Depart 33L

1.3.3.3.2 When load is lower, Local may choose to depart both 27 and 33L.

1.3.3.3.2.1 Aircraft with a departure gate of PATSS, BLZZR, SSOXS, BRUWN, CELTK, or any fix/navaid **south** of KBOS will use Runway 27 for departure.

1.3.3.3.2.2 Aircraft with a departure gate of HYLND, LBSTA, REVSS, or any fix/navaid **north** of KBOS will use Runway 33L for departure.

1.3.3.3.2.3 Exceptions shall be coordinated with Departure.

1.3.3.4 **Land: 33L, Depart: 15R (KBOS Nocturnal Procedure Configuration)**

1.3.3.4.1 In effect between 2300 and 0630L for noise abatement

1.3.3.4.2 Only used when the tailwind component is less than 10 Knots

1.3.4 Aircraft may request a runway that is not active; such operations must be properly

coordinated between Ground, Local and Approach.

1.3.5 For Noise Abatement:

1.3.5.1 Runway 4L shall not be used for jet departures

1.3.5.2 Runway 22R shall not be used for jet arrivals

1.3.5.3 Landing on Runway 4L is prohibited between 2300 and 0600 Local.

1.3.5.4 Landing on Runway 22R is prohibited between 2300 and 0600L local

1.3.5.5 Arrivals on Runway 33L and departures on runway 15R is the priority between 2330 and 0630L whenever light traffic conditions exist, and tailwind components will not exceed 10 knots. Land: 4R, Depart: 9 and Land: 22L, Depart: 22R are valid nocturnal configurations if the winds favor it.

1.3.6 Runways 4L/R and 9 are the calm wind runways. Calm winds are defined as less than 5 knots at KBOS.

1.3.7 Runway 14-32 shall be used by props and small jets only. Runway 14-32 is also unidirectional. Runway 14 shall be used for departures only, and Runway 32 shall be used for arrivals only.

1.3.8 There are no departures on runways 15L-33R. However, VFR closed pattern operations are authorized at the discretion of the Local controller.

1.3.9 Runways 4R and 33L are SA CAT I, CAT II, and CAT III authorized runways. See 7110.65 3-5-1 for more information on runway selection.

1.4 ATIS

1.4.1 The Local controller will publish an ATIS (Automated Terminal Information System) for the tower cab positions. Clearance Delivery and/or Ground controllers shall either set their Controller Info to match the Local controller's ATIS, or simply refer to the ATIS. Referring to the ATIS provides the benefit that controllers do not need to keep their ATIS code updated.

1.4.1.1 Use ATISMaker in conjunction with one of the following templates to set the Controller Info:

%icao% information %id% available on 135.000

Or

%icao% ATIS is available on 135.000

1.4.2 The Local controller may, at his/her discretion, delegate the recording of the ATIS to Ground or Clearance Delivery. However, neither Ground nor Clearance Delivery is authorized to record/publish an ATIS without the presence of and delegation from a Local controller.

2.0 Clearance Delivery

2.1 Clearing IFR Aircraft

- 2.1.1 IFR aircraft shall be cleared out of Boston Airspace via routes and altitudes as prescribed in this Standard Operating Procedure (SOP), Letters of Agreement (LOAs) with adjacent facilities, and published Departure Procedures.

2.2 Instrument Departure Procedures

2.2.1 RNAV Departure Procedures

- 2.2.2 RNAV Departure Procedures are the standard departure procedures in use at KBOS. Controllers shall place emphasis on the fact that the departure procedure being issued is an RNAV departure procedure

*The “x” denotes the current revision number of the procedure

- BLZZRx (RNAV) – Issued to RNAV-capable, turbojet aircraft proceeding westbound.
- BRUWNx (RNAV) – Issued to RNAV-capable, turbojet aircraft proceeding southbound or south-eastbound.
- CELTKx (RNAV) – Issued to RNAV-capable, turbojet aircraft proceeding eastbound or south-eastbound.
- HYLNDx (RNAV) – Issued to RNAV-capable, turbojet aircraft proceeding north-westbound.
- LBSTAx (RNAV) – Issued to RNAV-capable, turbojet aircraft proceeding north-eastbound.
- REVSSx (RNAV) – Issued to RNAV-capable, turbojet aircraft proceeding westbound or north-westbound.
- PATSSx (RNAV) – Issued to RNAV-capable, turbojet aircraft proceeding westbound or south-westbound.
- SSOXSx (RNAV) – Issued to RNAV-capable, turbojet aircraft proceeding southbound or south-westbound.
- WYLYYx (RNAV) – Issued to RNAV-capable, turbojet aircraft departing Runway 27. **This DP is rarely used.**

PHRASEOLOGY: “[Callsign], Cleared to [Destination Airport], [RNAV] RNAV Departure, as filed...., Expect [Cleared/Filed Altitude] One Zero minutes after departure, Departure Frequency [Departure or Unicom Frequency], Squawk [Assigned Transponder Code].”

EXAMPLE: “United Six Seventy-Six, Cleared to the Houston-George Bush Intercontinental Airport, REVSS TWO RNAV Departure, as filed. Expect Flight Level Three Two Zero One Zero minutes after departure, Departure Frequency One Three Three Point Zero, Squawk One Three Zero Two.”

2.2.3 Radar-Vectored Departure Procedures

- LOGANx (Radar Vector): Since this is a radar-vectored departure procedure, there are no transitions. All aircraft shall be vectored to a valid departure gate, usually the initial fix of

their flight plans. Jet aircraft shall be cleared to maintain an initial altitude of 5,000 feet and expect their cruise altitude ten (10) minutes after departure. Prop aircraft shall be cleared to maintain an initial altitude of 3,000 feet and expect their cruise altitude ten (10) minutes after departure.

PHRASEOLOGY: “[Callsign], Cleared to [Destination Airport], LOGANx Departure, radar vectors [Initial Fix], as filed. Maintain [Initial Altitude], Expect [Cleared/Filed Altitude] One Zero minutes after departure, Departure Frequency [Departure or Unicom Frequency], Squawk [Assigned Transponder Code].”

EXAMPLE: “Redwood Three Sixty-Five, Cleared to the Los Angeles International Airport, Logan Seven Departure, Radar Vectors HYLND, as filed. Maintain Five Thousand, expect Flight Level Three Two Zero One Zero minutes after departure, Departure Frequency One Three Three Point Zero, Squawk One Three Zero Two.”

2.2.4 Amending Flight Plans / Flight Strips

- 2.2.4.1 Controllers need not add the numeric designator for RNAV departure procedures where the first fix/gate is the same as the departure procedure being used/assigned (Example: A pilot files HYLND MHT SYR.... The controller does not need to alter the flight plan or strip to read HYLNDx HYLND; it is understood).
- 2.2.4.2 Controllers shall add the LOGANx (where x is the current LOGAN DP numeric designator) departure procedure to the flight plan or flight strip if the LOGAN DP is being assigned.

2.2.5 Non-Preferred Routings and Departure Gates

- 2.2.5.1 If an IFR aircraft has filed a routing that differs from the preferred routing, politely offer the pilot the preferred routing and amend the aircraft's flight plan accordingly. Always ask the pilot prior to amending his/her flight plan to ensure the pilot is able to fly that particular route. *It is of vital importance that an aircraft file a valid flight plan to its destination so as to expedite that aircraft's trip through the Boston ARTCC. Preferred routes can be found by searching a route on FlightAware's [IFR Route Analyzer](#) or in the [Information Display System \(IDS\)](#). If a pilot is unable to accept a preferred routing, ensure that the aircraft will at least leave the TRACON via the proper departure gate.*
 - 2.2.5.2 If a pilot is unable to navigate to a certain navigational aid or fix, or if the aircraft is unable to navigate to the initial departure exit gate, coordinate with the departure controller (or Approach if Departure is offline) to accommodate the pilot.
- 2.2.6 All aircraft requesting a clearance to an airport within the Boston TRACON airspace will be cleared to the destination via radar vectors to maintain 3,000 feet.

2.2.7 Departure Gates

2.2.7.1 To standardize departure flows and ensure proper and expeditious routing of traffic, Boston TRACON uses departure exit gates for IFR departures to destinations outside of Boston TRACON (A90) airspace. Every IFR aircraft leaving KBOS must leave A90 airspace bound for one of these gates. (One exception to this rule is if a preferred routing specifies an alternate route.)

2.2.7.2 High altitude departure gates (Used 10,000 and above):

- BLZZR [Intersection] – Aircraft with flight plans to the west or southwest. For aircraft unable to comply, GLYDE is acceptable.
- BRUWN [Intersection] – Aircraft with flight plans to the south, Bermuda, or the Caribbean. For aircraft unable to comply, ACK or MVY are acceptable.
- CELTK [Intersection] – Aircraft with flight plans to Southern Europe. For aircraft unable to comply, substitute FRILL.
- HYLND [Intersection] – Aircraft with flight plans to the north or northwest. For aircraft unable to comply, MHT is acceptable.
- LBSTA [Intersection] – Aircraft with flight plans to the northeast, Atlantic Canada, or Europe. For aircraft unable to comply, PSM or ENE are acceptable.
- PATSS [Intersection] – Aircraft bound for La Guardia (KLGA) and Newark (KEWR) or with flight plans to the west and the southwest. For aircraft unable to comply, GLYDE, NELIE, or ONEPS are acceptable.
- REVSS [Intersection] – Aircraft with flight plans to the west or northwest. For aircraft unable to comply, SPENO is acceptable.
- SSOXS [Intersection] – Aircraft bound for Kennedy (KJFK) or with flight plans to the south. For aircraft unable to comply, LUCOS is acceptable.

2.2.7.3 Low altitude/TEC departure gates (Used 10,000 and below):

- BOSOX [Intersection] – Aircraft with flight plans to the west and southwest.
- BURDY [Intersection] – Aircraft bound for Islip (KISP) or with flight plans to the southwest.
- DUNKK [Intersection] – Aircraft bound for Hyannis (KHYA) or with flight plans to the southeast.
- FREDO [Intersection] – Aircraft bound for Martha's Vineyard (KMVY).
- GLYDE [Intersection] – Aircraft with flight plans to the west and southwest
- MHT [Manchester VOR] – Aircraft with flight plans to the north and northwest.
- LFV [Marconi VOR] – Aircraft bound for Nantucket (KACK).
- PSM [Pease VOR] – Aircraft with flight plans to the northeast.

2.2.7.4 Aircraft that do not file an appropriate departure gate, but file a fix depicted on a departure procedure, should be offered the preferred departure gate for their route of flight. If the aircraft is unable to accept the amended route, controllers shall coordinate with the controller providing departure service and attempt to accommodate the requested route.

2.2.8 The departure frequency issued to departing aircraft is dependent on which positions are currently staffed and, of those positions, who is handling departures.

2.2.8.1 Boston Departure (BOS_DEP) is the “Initial Departure” position. This position handles all departing aircraft unless otherwise stated by the departure controller. If BOS_DEP is online, aircraft shall be issued a departure frequency of 133.000.

2.2.8.2 If Boston Departure (BOS_DEP) is not online, but Boston Approach (BOS_APP) is online, the departure frequency shall be BOS_APP’s frequency, 118.250.

2.2.8.3 If two or more Boston Approach sectors are online, but Boston Departure (BOS_DEP) is not online, the departure frequency will depend on the runway the aircraft will depart, and/or the direction of flight. Consult the controller providing Tower services to determine which frequency should be issued to which aircraft.

2.2.9 A pilot must read back **at least** the assigned squawk code for a standard IFR clearance. If an amended clearance is issued (including full route change), a pilot must read back the **entire** clearance.

2.2.10 Controllers do not have to say “Callsign, I have your clearance, advise ready to copy” unless the aircraft was previously instructed: “Clearance on request, standby,” and the aircraft has been waiting for clearance for more than one minute.

2.3 *Clearing VFR Aircraft*

2.3.1 VFR aircraft shall be cleared out of the Boston Class Bravo Airspace via runway heading at (or below) 3,000 feet, or via an established VFR route.

2.3.2 VFR aircraft may or may not have an associated flight plan filed. If a VFR aircraft requests clearance and does not have an associated flight strip, the clearance delivery controller shall create a VFR flight plan/strip containing the following information, at a minimum: aircraft type, departure airport, destination airport (if applicable), direction of flight, and requested cruise altitude.

2.3.3 VFR aircraft may request a specific cruise altitude. If a delivery controller encounters such a request, ensure that the altitude conforms to the proper cruising altitude for Visual Flight Rules (VFR) and ensure the requested altitude is entered into the “Cruising Altitude” field of their flight strip

2.3.4 The departure frequency for VFR departures is almost always the same as the departure frequency for IFR departures.

2.3.5 If a VFR departure requests to remain below 2,000 feet MSL, the departure frequency will be the tower frequency (if online).

2.3.6 If Departure Control is very busy, the controller shall consider clearing a VFR aircraft to

remain below 2,000 feet MSL to reduce further frequency congestion.

- 2.3.7 VFR aircraft shall be assigned squawk codes in a similar fashion to IFR aircraft. No VFR squawk code banks are used.

2.4 Cape Air (KAP) Coded Bravo Departure Routes

- 2.4.1 The Boston ATCT and Cape Air have signed a Letter of Agreement (LOA) to provide coded departure clearances. There are clearances for IFR and for VFR operations. Cape Air (KAP) aircraft wishing to use one of these routes shall file the route request in the Route Section of their flight plan (e.g. "Route M").

2.4.1.1 IFR Departure Routes

Dest.	Route ID	Route
ACK	A	LOGANx RADAR VECTORS LFV DIRECT
HYA	H	LOGANx RADAR VECTORS DUNKK V141 GAILS DIRECT
MVY	M	LOGANx RADAR VECTORS FREDO MVY017 DIRECT
MVY	Y	LOGANx RADAR VECTORS FREDO MVY359/035 DIRECT
PVC	P	LOGANx RADAR VECTORS DIRECT
RUT	C	LOGANx RADAR VECTORS MHT KOPVE DIRECT
SLK	G	LOGANx RADAR VECTORS MHT DIRECT

...All aircraft maintain 3000, expect clearance to filed altitude 10 minutes after departure.

EXAMPLE: "KAP921, cleared to the Adirondack Regional Airport via Route Golf, Departure Frequency 133.0, Squawk 1314."

2.4.1.2 VFR Departure Routes (to all airports):

If the aircraft's requested VFR altitude is above 2000 and/or if VFR advisories are requested, assign Route V.

Route V: Fly runway heading, maintain VFR at 3000 or requested altitude (whichever is lower), expect requested altitude 10 minutes after departure, departure frequency 133.00 unless otherwise advised.

EXAMPLE: "KAP426, cleared out of the Boston Class Bravo via Route Victor, Departure frequency 118.25, squawk 1306."

If the aircraft's requested VFR altitude is below 2000 and no VFR advisories are requested, assign Route B.

Route B: Fly runway heading, maintain VFR at requested altitude, departure frequency 128.80 (Boston Tower) unless otherwise advised.

EXAMPLE: "KAP99, cleared out of the Boston Class Bravo via Route Bravo, maintain VFR at one thousand five hundred, squawk 1320."

2.5 After the Clearance

2.5.1 The controller shall determine if the aircraft, when pushing back from the gate, will be entering a movement area.

2.5.1.1 For aircraft that will be entering a movement area, after the aircraft has been given clearance, the pilot shall be instructed to contact Ground for pushback and startup.

EXAMPLE: "Delta two eleven, contact Boston Ground when ready for pushback and startup with information Sierra."

2.5.1.2 For aircraft that will not be entering a movement area, after the aircraft has been given clearance, the pilot shall be instructed to contact Ground for taxi. Note: Clearing the aircraft for pushback and start is superfluous in this case; it is assumed. The controller does not need to issue a pushback and start clearance.

EXAMPLE: "Delta two eleven, contact Boston Ground when ready to taxi with information Sierra."

2.5.2 In rare instances, such as during major events, there may be Ramp Control online that will handle pushback and start coordination. In such cases, transfer-of-control points between Delivery, Ramp, and Ground will be provided as part of the event briefing.

3.0 Ground Control

3.1 Introduction

- 3.1.1 Ground Control's job is to monitor and maintain a general surveillance of the airport movement area while also aiding the Local controller in scanning the active runways. If the Clearance Delivery position is not staffed, GND issues IFR and VFR clearances. Ground Control also coordinates with TOWER to receive aircraft exiting active runways and to handoff departures for takeoff clearance.

3.2 Overview

- 3.2.1 A ground controller must become familiar with all available documents to ensure safe and efficient ground operations of aircraft in the movement area(s). These documents include:
 - 3.2.1.1 KBOS Airport Diagram Chart
 - 3.2.1.2 [Preferred Taxi Routes](#)
 - 3.2.1.3 Standard Operating Procedures
 - 3.2.1.4 Sector file
- 3.2.2 A ground controller must be aware of which runways are active, and quickly determine the most efficient way to taxi various aircraft to and from the active runway(s). Each ground controller shall refer to and use the [Preferred Taxi Routes](#) as long as practicable to ensure aircraft taxi safely and efficiently to and from the active runway. The ground controller must also coordinate with the tower controller to determine where departing aircraft shall be handed off.

3.3 Taxiing Aircraft

- 3.3.1 After an IFR or VFR departure has been given clearance, the pilot will be instructed to contact the ground controller for pushback and startup clearance if the aircraft will push back into a movement area. The following is the proper phraseology for such a clearance:

EXAMPLE: "Delta two eleven, Pushback and startup approved. Advise this frequency ready to taxi with information Sierra."
- 3.3.2 Pilots requesting taxi clearance should have picked up the ATIS information put up by the tower controller. If a pilot does not advise on his initial contact that he has the specific ATIS, advise the pilot which ATIS code is current (if applicable). If the pilot still does not obtain this information, include the winds and/or altimeter setting in the taxi clearance. Aircraft shall be advised of the ceiling and visibility if the weather is below VFR minimums.
- 3.3.3 Turbojet aircraft shall not be taxied to Runway 4L for departure, due to noise abatement.

3.4 *Coordinating with Local*

- 3.4.1 A Ground controller must maintain clear communication with the Local controller to ensure safe operation. Ground and Local will communicate with one another to coordinate the following:
 - 3.4.1.1 Handoffs/Transfer of Control Point (TCP): Location where outbound taxiing aircraft shall be handed off to the tower controller (either moving or holding short of a runway or taxiway). The TCP between Boston Tower and Boston Ground is the terminal side of the closest active runway unless otherwise stated by the tower controller.
 - 3.4.1.2 VFR closed traffic requests
 - 3.4.1.3 Other unusual requests

3.5 *Intersection Departures*

- 3.5.1 Intersections departures can be an effective tool for sequencing departing aircraft. Commuter and propeller aircraft frequently use this operation.
 - 3.5.1.1 Intersection departures may be conducted at any time of the day; however, additional caution should be exercised at night.
 - 3.5.1.2 The Local controller shall inform any traffic holding in position full length of any aircraft departing from an intersection of that runway.
 - 3.5.1.3 Intersection departures may be conducted at any runway/taxiway intersection. Appendix 1 of this SOP shows landing and departure distances of each runway at KBOS.

3.6 *Ground Movements*

- 3.6.1 Sequence aircraft to maximize operational capacity and minimize delays. Consider departure gates/fixes, aircraft speed, and wake turbulence.
 - 3.6.1.1 Departure gate/fix example: If multiple aircraft are requesting taxi clearance at the same time, attempt to stagger departure gates/fixes to maximize separation for Local, Departure and/or Center
 - 3.6.1.2 Speed example: If an SF40 (multiengine, turboprop) and a C402 (multiengine, piston prop) both request taxi clearance at the same time, and they are going to the same departure gate, instruct the C402 to taxi behind the SF40, as the SF40 will fly much faster and will build separation for Local, Departure and/or Center.
 - 3.6.1.3 Wake turbulence example: If a B772 (heavy turbojet) and B190 (small, multiengine prop) both request taxi clearance at the same time, instruct the B772 to taxi behind the B190 to the departure runway. Taxiing the B190 to the runway first will greatly minimize the wake turbulence delays that would be brought about by taxiing and departing the B772 first.

4.0 Tower (Local) Control

4.1 Airspace

- 4.1.1 Boston Tower is authorized to provide service from the surface to 2,000' MSL vertically and from the BOS VORTAC radially outward to BOS 8 DME horizontally. This area is contiguous with the Boston Class Bravo airspace.

4.2 Responsibilities

- 4.2.1 The Local controller is expected to have a thorough understanding of the instrument approach procedures at Boston Logan Airport.

4.2.2 Takeoff Clearances

- 4.2.2.1 Workload permitting, the Local controller should include wind direction and speed in takeoff clearances.
- 4.2.2.2 The Local controller shall hand off departing IFR aircraft to Departure control once the aircraft is airborne and a positive rate of climb is noted.

4.2.3 Landing Clearances

- 4.2.3.1 Workload permitting, the Local controller should include wind direction and speed in landing clearances.
- 4.2.3.2 Inform inbound aircraft of preceding arrival traffic for the same, parallel, or intersecting runway(s).
- 4.2.3.3 If an aircraft will depart the same, parallel, or intersecting runway(s) prior to an aircraft's arrival, inform the inbound aircraft of the departing aircraft.

EXAMPLE: "Shamrock one three Tango heavy, number two following a Boeing seven thirty seven on short final, wind two zero zero at seven, runway two two left, cleared to land. Traffic will depart runway two two right prior to your arrival."

4.2.4 Clearing the Runway

- 4.2.4.1 Issue runway exiting or taxi instructions once an aircraft has touched down and has slowed to a reasonable speed.
- 4.2.4.2 Aircraft should not be instructed to contact ground control until it has reached the terminal side of the transfer control point and is clear of all active runways.
 - 4.2.4.2.1 Transfer of communications to the Ground controller prior to the TCP is acceptable, but the Local controller must specifically state to cross the active runway AND THEN contact ground control:

EXAMPLE: "Jet Blue two sixty two, turn left on Foxtrot, cross runway four left, then contact ground one two one point niner on the other side."

4.3 Releases

- 4.3.1 Blanket releases are authorized for all aircraft departing on the currently published configuration. Aircraft departing on the currently published configuration do not require a release from Departure.

EXAMPLE: Currently published configuration is 4s/9. Wind is calm and traffic is light. EIN136 requests 15R for departure. Local must coordinate a release for EIN136; all other aircraft departing in accordance with the 4s/9 configuration do not require a separate release.

- 4.3.2 All releases are immediately suspended in the event of an unanticipated missed approach. Local must coordinate with Departure to resume releases (blanket and individual).

4.4 Departure Headings

- 4.4.1 Departure headings for all non-jet aircraft cleared via the LOGANx departure procedure must be pre-coordinated with Departure unless that departure heading is within (+/-) 20 degrees of runway heading.
- 4.4.2 Departure headings for all jet aircraft cleared via the LOGANx departure procedure that differ from the LOGANx must be pre-coordinated with Departure.

4.5 Line Up and Wait (LUAW)

- 4.5.1 The LUAW instruction may not be issued between sunset and sunrise to aircraft at an intersection except as noted below.
- 4.5.2 Do not clear an aircraft to LUAW if an aircraft has been cleared to land or cleared for a touch-and-go, stop-and-go, the option or an unrestricted low approach on the same runway. Additionally, landing clearances shall be withheld until any LUAW aircraft begins their takeoff roll (7110.65 3-9-4 c.).
- 4.5.3 Boston Tower has been granted a waiver to the guideline that prohibits a control tower from utilizing LUAW at an intersection between sunset and sunrise. This waiver will allow the tower to utilize LUAW during periods of darkness at Runway 04R / 22L at Charlie ONLY. NOTE: When the provisions of this waiver are being exercised, Runway 04R / 22L shall be used for departures only.

4.6 Required Separation and Wake Turbulence

4.6.1 Provide separation between aircraft according to the procedures and minima prescribed in 7110.65 3-9-6, 3-9-7, 3-9-8, 3-10-3, 3-10-4.

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

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

4.6.2.1 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.

4.6.2.2 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.

4.7 Intersection Departures

4.7.1 Intersections departures can be an effective for sequencing departing aircraft. Commuter and propeller aircraft frequently use this operation.

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

4.7.1.2 The Local controller shall inform any traffic holding in position full length of any aircraft departing from an intersection of that runway.

EXAMPLE:

"Delta two forty-three, runway three three left, line up and wait. Traffic will depart from an intersection downfield."

"Piedmont forty-one ninety-three, runway three three left at Golf, cleared for takeoff. Traffic will be holding in position full length."

4.7.1.3 Intersection departures may be conducted at any runway/taxiway intersection. Appendix 1 of the SOP shows landing and departure distances for each runway/taxiway intersection of each runway.

4.8 Missed Approach Procedures

4.8.1 Instrument Approach Procedures (IAPs) have published Missed Approach Procedures (MAPs). However, the Local controller may also issue alternate instructions to aircraft executing a missed approach.

4.8.2 Instead of instructing aircraft to fly the published MAP, "maintain runway heading, climb and maintain 3000" is the standard missed approach instruction issued at KBOS.

4.8.3 No departures may be released after an aircraft executes an unanticipated missed approach until the Departure controller advises that departures may be released.

4.8.4 If both Departure and Approach control are online, the aircraft conducting the missed approach shall be handed off to Departure control.

4.9 Land and Hold Short Operations (LAHSOs)

- 4.9.1 LAHSOs are used when surface winds and arrival volume dictate the simultaneous use of intersecting runways for arriving aircraft. The most common instance of this at KBOS is when both runway 22L and runway 27 are in use for arrivals.
- 4.9.2 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.

EXAMPLE: "Copa three eleven, are you able to land runway 22L to hold short of runway 27? Six thousand four hundred feet remaining."

Landing Runway	Hold-Short Point	Available Landing 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

- 4.9.3 If an aircraft is cleared to land and hold short of an intersecting runway, the pilot **must** read back the hold short instruction.
- 4.9.4 Proper phraseology must be used for LAHSO clearances to ensure effective and safe execution of the clearance.

EXAMPLE: "Cactus twenty-one ten, wind two five zero at one three, runway two two left, cleared to land. **Hold short of runway 27.**"

- 4.9.5 Inform aircraft landing full length of any aircraft inbound for an intersecting runway that will hold short of the runway intersection.

EXAMPLE: "Iceair 635, wind two five zero at one three, runway two seven, cleared to land. **Traffic landing runway two two left will hold short of the intersection.**"

4.10 CAT II / III Operations

- 4.10.1 When weather conditions are below CAT I minimums, CAT II / III approaches may be conducted on Runway 4R regardless of surface wind. CAT II / III approaches may also be conducted on Runway 33L.
- 4.10.2 If available, the Local controller shall include any RVR (Runway Visual Range) distance(s) in all landing clearances in accordance with 7110.65 2-8.

EXAMPLE: "Alaska twenty-four, 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."

4.11 VFR Aircraft Operations

- 4.11.1 The Local controller shall separate all VFR aircraft from other VFR and IFR aircraft. This shall be done using visual procedures, unless the Local controller is already radar certified.
- 4.11.2 Boston Tower is Limited Radar Approach Control (LRAC) certified. This allows limited use of radar identification by radar certified controllers only (S3 and above). Boston Tower may radar identify **only** VFR aircraft and helicopters requesting to operate within the tower's portion of the Bravo airspace.
 - 4.11.2.1 If a VFR flight plan has not already been filed, the Local controller shall create a VFR flight strip and enter at least the aircraft type and destination.
 - 4.11.2.2 The Local controller shall assign the aircraft a squawk code and visibly observe the datablock "tag up."
 - 4.11.2.3 Once the aircraft has been "tagged up", the Local controller shall verify the aircraft's altitude (except for departing aircraft), assume track, and radar identify the aircraft on frequency.
- 4.11.3 VFR Departures
 - 4.11.3.1 If a VFR departure will remain below 2,000 feet MSL, the Local controller shall assume track (if appropriate) and responsibility of the aircraft. When the aircraft reaches the tower airspace boundary, the Local controller shall drop track (as applicable) and terminate radar service of the aircraft, unless the pilot requests a handoff to Approach control for flight following.
 - 4.11.3.2 If a VFR departure will climb above 2,000 feet MSL, hand off the aircraft to departure control prior to exiting Tower's airspace.
 - 4.11.3.3 Departure instructions shall always be given to VFR aircraft by issuing a tower-assigned heading or an exit in relation to the traffic pattern.

EXAMPLE:

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

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

4.11.4 Aircraft requesting to remain in the pattern

- 4.11.4.1 The Local controller shall issue either left or right closed traffic in the takeoff clearance.

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

- 4.11.4.2 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.

- 4.11.4.3 The Local controller may issue various separation techniques including, but not limited to, the following maneuvers:

- 360-degree turn
- 270-degree turn
- Extended downwind
- S-turns on final approach (Use caution on 04L/R and 22L/R when both runways are active)
- Short approach

4.11.5 Aircraft outside of the Bravo not handed off by approach control

- 4.11.5.1 When providing limited radar service, Boston Tower may radar identify **only** VFR aircraft and helicopters requesting to transit the Tower's portion of the Bravo airspace and/or to land.

- 4.11.5.1.1 If a VFR flight plan has not already been filed, the Local controller shall create a VFR flight strip and enter at least the aircraft type and destination.

- 4.11.5.1.2 The Local controller shall assign the aircraft a squawk code and visibly observe the datablock "tag up."

- 4.11.5.1.3 Once the aircraft has been "tagged up" the Local controller shall verify altitude, assume track, and radar identify the aircraft on frequency.

PHRASEOLOGY: Radar contact (miles, direction, reference, altitude). Cleared into the Boston Class Bravo airspace, maintain VFR at or below two thousand. Enter (pattern instructions), Boston altimeter (BOS altimeter setting).

EXAMPLE: "Cessna four seven zero uniform, radar contact one zero miles north of the Boston VORTAC at one thousand eight 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."

- 4.11.5.2 When not providing radar service, receive a position report, then issue a Class Bravo clearance and landing information only.

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.

4.12 Helicopter Operations and Designated Routes

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

4.12.2 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	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
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	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
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	Tobin Route (TOBIN) Waypoint – Name VPTOB - I95 & Rte 1 Interchange Tob1 - Circle/Theater Complex Tob2 - Memorial Stadium Tob3 - Tobin Bridge
Hampshire Route (HAMPS) Waypoint – Name VPHAM - I93 and Rte 128 (I95) Interchange Ham1 - Mc Grath O'Brien VPCGS - Coast Guard Station	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

4.12.3 For a chart of the various helicopter routes in the Boston area and additional information such as route descriptions and VFR waypoints, please refer to the Boston Heli chart, which can be downloaded [here](#).

EXAMPLE:

“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.”

APPENDIX 1: LANDING AND TAKEOFF DISTANCES

TABLE 1: LANDING DISTANCES

Landing Runway	Distance	LAHSO Point	LAHSO Distance
4L	7861	15L-33R	5250
4R	8851		
9*	7000		
14*	5000		
15L	2557		
15R	9202	9-27	6800
22L	8806	9-27	6400
22R	7046		
27	7000	4R-22L	5650
32	5000		
33L	10083		
33R	2557		

* Landings unauthorized (except for emergencies)

TABLE 2: DEPARTURE DISTANCES FROM TAXIWAY INTERSECTIONS

Departing Runway	Full Length Distance	Int	Distance	Int	Distance	Int	Distance	Int	Distance	Int	Distance
4L	7861	C	6000	F	5050						
4R	10005	B	9750	M1	8950	E	7300	C	6100	F	5100
9	7000	W	6400	E	4700						
14	5000	J1	3900								
15L*	2557										
15R	10083	Z	9100	N	7650	G	3550				
22L	10005	F	4850	C	3900	E	2700				
22R	7861	N2	7500	N1	6900	F	2750	C	1800		
27	7000	D2	6450	D1	6000	C	3850				
32*	5000										
33L	10083	D	7450	G	6500						
33R*	2557										

* Departures unauthorized

TABLE 3: DEPARTURE DISTANCES FROM RUNWAY INTERSECTIONS

Departing Runway	Full Length Distance	Rwy	Distance	Rwy	Distance	Rwy	Distance
4L	7861	15R-33L	4050	15L-33R	2300		
4R	10005	9-27	7900	15R-33L	4650	15L-33R	3000
9	7000	4R-22L	5950	15R-33L	2550		
14	5000						
15L*	2557						
15R	10083	4L-22R	6700	4R-22L	5200	9-27	2100
22L	10005	15L-33R	6950	15R-33L	5350	9-27	2100
22R	7861	15L-33R	5550	15R-33L	3800		
27	7000	15R-33L	4450				
32*	5000						
33L	10083	9-27	8000	4R-22L	4850	4L-22R	3350
33R*	2557						

* Departures unauthorized