CHAPTER 1. CLEARANCE DELIVERY

Section 1: Introduction

Clearance Delivery's job is to provide IFR and VFR clearances to pilots at all airports. Clearance delivery coordinates with **DEP** and **CTR** concerning preferred departure routes. The Boston ARTCC has established departure routes from KBOS, and for some of the other Class C airports in our airspace. See the Boston Preferred Routes system here . Clearance Delivery DOES NOT issue any instructions to an aircraft involving the movement of the aircraft. Once the clearance is issued and read back by the pilot, Clearance Delivery hands off the aircraft to the next controller.

Section 2: Overview

Elements of a Proper Clearance

a. All clearances must include "**CRAFT**" –

Clearance limit / Route / Altitude / Departure Frequency / Transponder.

Clearance Limit - This is almost always the destination airport, though it could also be an IFR fix, if the aircraft is on a composite IFR / VFR flight plan.

Route of Flight - This is usually the route of flight filed in the flight plan and could be simply "direct". If the route has been revised, the new route of flight must be issued.

Altitude - An initial altitude specified by local procedure such as a Letter of Agreement.

Frequency - At larger airports, the departure controller's frequency is issued in advance to reduce communications after takeoff.

Transponder - In the real world, transponder codes are computer generated, for our purposes, it should be a code other than the default FS code of 1200 that is designated for VFR operations. Each digit ranges from 0 to 7. There are no 8's or 9's in the transponder code.

Section 3: Clearing IFR Aircraft

a. IFR aircraft shall be cleared out of Boston Airspace via routes and altitudes as described in this Standard Operating Procedure, Letters of Agreement with adjacent facilities, and published Departure Procedures.

(1) Boston Logan International Airport has two Departure Procedures (DP)

I. LOGAN FOUR DP – Most commonly used Departure Procedure issued to aircraft departing KBOS. Jet aircraft shall be cleared to maintain an initial altitude of 5,000 feet and expect their cruise altitude ten (10) minutes after departure when cleared via the LOGAN FOUR DP. Non-jet aircraft shall be cleared to maintain an initial altitude of 3,000 feet and expect their cruise altitude ten (10) minutes after departure.

"[Callsign], Cleared to [Destination Airport] via the Logan Four Departure, radar vectors LUCOS as filed…."

II. WYLYY SIX (RNAV) DP – Issued to RNAV-capable, turbojet aircraft departing runway 27, filed with either the LUCOS (HI) or BOSOX (LO) transition. Jet aircraft shall be cleared to maintain an initial altitude of 5,000 feet and expect their cruise altitude ten (10) minutes after departure when cleared via the WYLYY SIX DP.

"[Callsign], Cleared to [Destination Airport] via the WYLYY Six Departure, LUCOS transition as filed…."

(2) IFR aircraft requesting a clearance to an airport within the Boston TRACON airspace will be cleared to the destination via RADAR vectors to maintain 4,000 feet.

b. 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 (*in the case that the pilot cannot accept the preferred routing, please see below*). See the Boston Preferred Routes system.

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 on this web site, and it is highly recommended that they be printed out, for easy referrals.

(1) When amending a flight plan, never include "LOGAN4" in the beginning of the flight plan. The departure procedure is assigned by the clearance delivery controller or the controller handling clearances and does not need to be entered into the flight plan.

(2) If a pilot is unable to accept a preferred routing, ensure that the aircraft will at least leave the TRACON via the proper departure exit gate (see sub-para d).

Example: A pilot files a flight plan, departing KBOS for KORD and has filed the following route: ***YUL.EWD.QRX.LAX.SEA.FMTT***

I. Kindly offer the preferred route to KORD and if the aircraft is able to accept it, amend his/her flight plan to reflect the change. If he/she is unable to accept the new routing, route the aircraft out of the proper departure exit gate and then "as filed." In this case, MHT is the proper departure exit gate.

II. If the aircraft 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 DEP is offline) or center controller (if the navigational issue takes place outside of Boston TRACON airspace) to accommodate the aircraft.

c. Aircraft that intend on landing and file a flight plan to a New York Metro airport (KEWR, KLGA, KJFK) **must** fly a preferred routing during busy periods of the day and/or evening hours when vZNY controllers are online per our Letter of Agreement with vZNY (NY ARTCC) . This restriction ensures aircraft leaving the Boston TRACON (A90) are properly separated from inbound traffic and all NY-bound departures are properly sequenced. Consult an instructor, mentor or higher controller regarding variants to these preferred routes if/when one is presented.

(1) Traffic originating from KBOS with a destination of KJFK and filed for the lowest useable flight level (FL) or above are to be cleared via the appropriate departure procedure, then routed via radar vectors to **LUCOS** then: **SEY067.SEY.PARCH.CCC.ROBER**

(2) Traffic originating from KBOS with a destination of KJFK and filed for a final cruise altitude of 16,000 feet or less are to be are to be cleared via the appropriate departure procedure, then routed via radar vectors to **BOSOX**, then: **V418.V14.ORW.V16.DPK**

(3) If a clearance delivery controller is confused whether or not a preferred routing is mandatory, that controller shall consult an instructor, mentor or higher controller.

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

(1) The following are the **High Altitude departure exit gates** used for aircraft filed for FL180 (or the lowest useable flight level) and above:

I. MHT [Manchester VOR] – Aircraft with flight plans to the Northwest, North
II. GLYDE [Intersection] – Aircraft with flight plans to the West, Southwest
III. NELIE [Intersection] – Aircraft with flight plans to the West, Southwest
IV. LUCOS [Intersection] – Aircraft with flight plans to the South, Southeast
V. ENE [Kennebunk VORTAC] – Aircraft with flight plans for the transatlantic east, northeast
VI. EXALT [Intersection] – Aircraft with flight plans for the transatlantic east, northeast
VII. CANAL [Intersection] – Aircraft with flight plans for the transatlantic east, southeast
VIII. FRILL [Intersection] – Aircraft with flight plans for the transatlantic east, southeast

(2) The following are the **Low Altitude departure exit gates** used for aircraft filed below FL180:

I. BOSOX [Intersection] – Aircraft with flight plans to the West Southwest (many joining V419)

II. DRUNK [Intersection] – Aircraft with flight plans to the South, Southeast (many joining V141)

(3) ACK (Nantucket VOR) and BURDY intersection may also be used as a departure exit gate if it is the initial fix/VOR of a preferred routing

There are instances where traffic filed for a final cruise altitude below FL180 (low altitude) ***may be vectored to a high altitude departure exit gate*** *and routed through a high altitude routing if the pilot accepts such a clearance. However, an aircraft filed for a final cruise altitude of FL180 (or lowest useable FL) and above* ***may not be vectored to a low altitude departure exit gate*** *and/or routed via a low altitude routing.*

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

(1) Boston Departure (BOS_DEP) is the primary “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) If Boston Departure (BOS_DEP) is not online, but Boston Approach (BOS_APP) is online, aircraft shall be issued a departure frequency of 120.600 unless otherwise stated.

(3) If two 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 tower controller, a mentor, or instructor regarding which frequency should be issued to which aircraft.

f. All IFR aircraft shall be cleared to expect a proper final cruise altitude ten (10) minutes after departure. This proper cruise altitude shall be issued based on the direction of flight and all flight plans shall reflect this proper final cruise altitude considering the direction of flight.

An acronym to remember this altitude rule is: ***NEODD*** *&* ***SWEVEN****. See 7110.65R 4-5-1.*

(1) Aircraft with magnetic course of zero degrees through 179 degrees shall be issued any odd thousand foot MSL altitude (such as 25,000, 27,000, or 29,000) up to and including FL410 appropriate for the distance of flight.

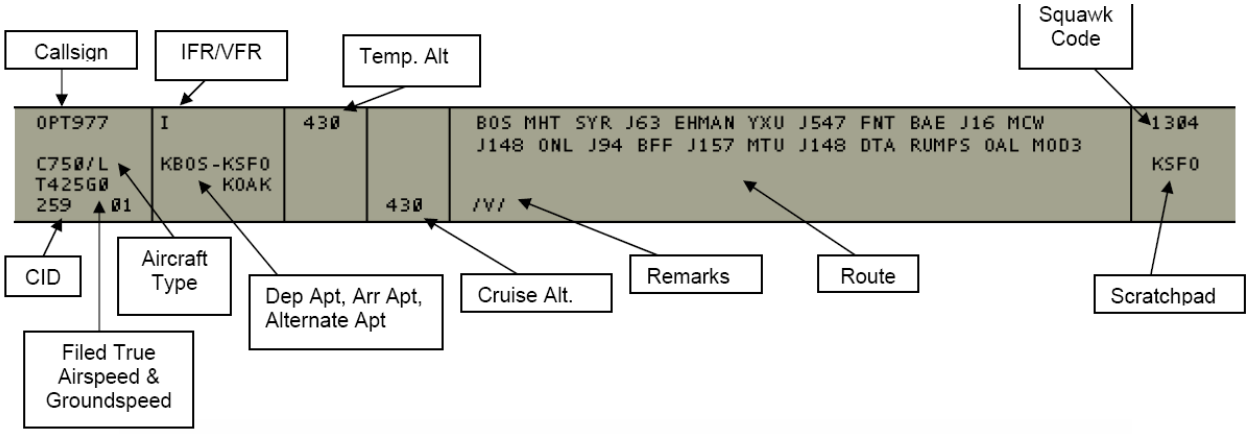
(2) Aircraft with a magnetic course of 180 degrees through 359 degrees shall be issued any even thousand foot MSL altitude (such as 24,000, 26,000, or 28,000) up to and including FL410 appropriate for the distance of flight.

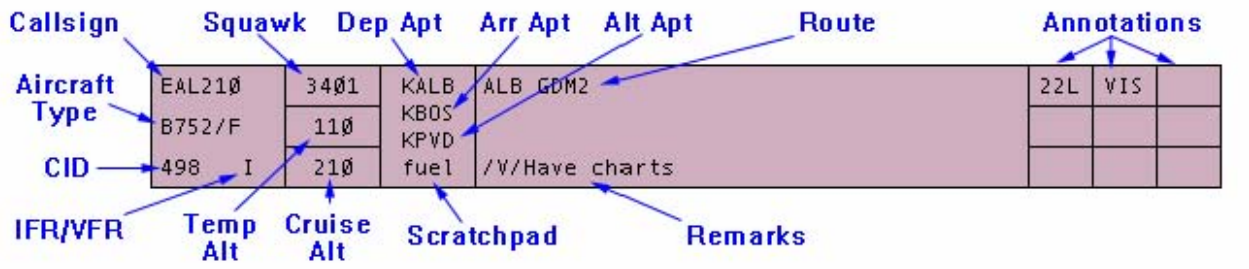
(3) Due to DRVSM (Domestic Reduced Vertical Separation Minimum) which is in effect from FL290 up to and including FL410, aircraft above FL410 shall be issued altitudes in 4000 foot intervals:

I. Aircraft with magnetic course of zero degrees through 179 degrees shall be issued any odd thousand foot MSL altitude in 4000 foot intervals (such as 45,000, 49,000, or 53,000) appropriate for the distance of flight.

II. Aircraft with magnetic course of 180 degrees through 359 degrees shall be issued any even thousand foot MSL altitude in 4000 foot intervals (such as 43,000, 47,000, or 51,000) appropriate for the distance of flight.

g. Decoding a flight progress strip is very important as the Clearance Delivery Controller. Below are two flight strips, first, a strip displayed in ASRC, and the second, displayed in VRC.





h. The Tower (local) Controller establishes the ATIS (Automated Terminal Information System) for the tower cab positions. A clearance delivery and/or ground controller shall set his/her ATIS to match the tower controller's ATIS.

(1) Effective October 12, 2006, the following items may **not** be included in a controller's ATIS per the VATSIM Global ATIS Policy:

I. Controller Name and/or Rating
II. Controller Frequency ($com1 variable)
III. Raw METAR data

(2) Use ATISMaker in conjunction with the following template to set the ATIS:

Information %id%: Winds $wind(%icao%) Vis %vis% Sky %clouds% Alt $altim(%icao%) %runways%

Section 4: IFR Clearance Examples:

a. The following is an example for clearing an IFR aircraft (remember the acronym CRAFT):

NWA319	13Ø3	KBOS KCLE	KBOS MHT CAM SYR J29 JHW CXR KCLE			
B757/J	3ØØ					
988 I	3ØØ		+VFPS+/V/			

(1) "Northwest 319, cleared to the **Cleveland Hopkins Airport** via the **Logan Four Departure**, radar vectors **Manchester** as filed. Maintain **5,000**, expect **FL300** 10 minutes after departure. Departure frequency **133.0**, squawk **1303**."

(2) A controller may use aliases to assist when issuing IFR clearances via text. A common alias used is the **.cld** command:

.cld .cldvec LOGAN4 $1 .thenfp .cldia $2 .cldfreq $3

I. Using the above alias, if a controller radioselects the aircraft and types:

.cld MHT 5000 3D <enter>

*(Note: **3D** is the BOS_DEP CID)*

…the following will be transmitted on frequency: *"NWA319, cleared to KCLE via the LOGAN4 DP, radar vectors MHT, then as filed, maintain 5000, expect FL300 10 min after dep, departure freq 133.0, squawk 1303."*

b. A pilot must read back **at least** a 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.

c. If multiple aircraft are requesting clearance, the clearance delivery controller shall prioritize aircraft in the order in which they called and by issuing clearances to aircraft that do not require any amendment (or only slight amendment) first. Handling these aircraft first will allow the delivery controller to correct flight plans that were incorrectly filed and relay the amended clearance to the aircraft.

A controller does not have to say "Callsign, I have your clearance, advise ready to copy" unless the aircraft was previously instructed: "Clearance on request, standby"

Once an aircraft has received their clearance, the clearance delivery controller shall handoff the aircraft to the ground controller (or tower, or the next highest position handling ground operations if any) for pushback and taxi.

Section 5: Clearing VFR Aircraft

a. 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.

b. VFR aircraft may or may not have an associated flight strip (filed flight plan). If a VFR aircraft requests clearance and does not have an associated flight strip, the clearance delivery controller shall create a VFR flight plan containing the following information: Aircraft Type, Departure airport, Destination airport (if applicable), direction of flight, and requested cruise altitude.

c. 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:

> **(1)** VFR aircraft with magnetic course of zero degrees through 179 degrees shall fly any odd thousand foot MSL altitude plus 500 feet above, 3,000 feet MSL (such as 3,500, 5,500, or 7,500) up to, but not including FL180.
>
> **(2)** VFR aircraft with a magnetic course of 180 degrees through 359 degrees shall fly any even thousand foot MSL altitude plus 500 feet, above 3,000 feet MSL (such as 4,500, 6,500, or 8,500) up to, but not including FL180.

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

> **(1)** If a VFR departure requests to remain below 2,000 feet MSL, the departure frequency will be the tower frequency (if online).
>
> > **I.** If the departure frequency is very busy, the controller shall consider clearing a VFR aircraft to remain below 2,000 feet MSL to reduce further congestion.

e. VFR shall be assigned squawk codes in a similar fashion as assigned for IFR aircraft. No VFR squawk code banks are used.

Section 6: VFR Clearance Examples:

a. The following is an example for clearing a VFR aircraft:

N470U	1303	KBOS KPVD	WEST			
C172/G	045					
988 V	045		/V/			

(1) "Cessna 4-7-0-Uniform, cleared out of the **Boston Class Bravo airspace** to the west via **runway heading at or below 3,000**. Departure frequency **133.0**, squawk **1303**.

See the KBOS Class B/VFR section for additional reference.

To listen to real controllers issuing clearances at Boston Logan, click on KTEB for the first, and click KSYR_KEWR for two more.

Section 7: 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 Clearance, Helicopter eight two zero papa tango.”

“Helicopter eight two zero papa tango, Boston Clearance.”

“Clearance, helicopter eight two zero papa tango is at the GA ramp with information Echo, request VFR departure to the northeast via the Tobin route at one thousand five hundred.”

“Helicopter eight two zero papa tango, cleared out of the Boston Class Bravo airspace to the northeast via the Tobin route, maintain VFR at or below one thousand five hundred. Departure frequency one two eight point eight, squawk six two five one.”

“Cleared out of the Boston Class Bravo airspace via the Tobin route, maintain VFR at or below one thousand five hundred. Departure frequency one two eight point eight, squawk six two five one, helicopter eight two zero papa tango.”

“Helicopter eight two zero papa tango, readback correct, contact ground point niner.”