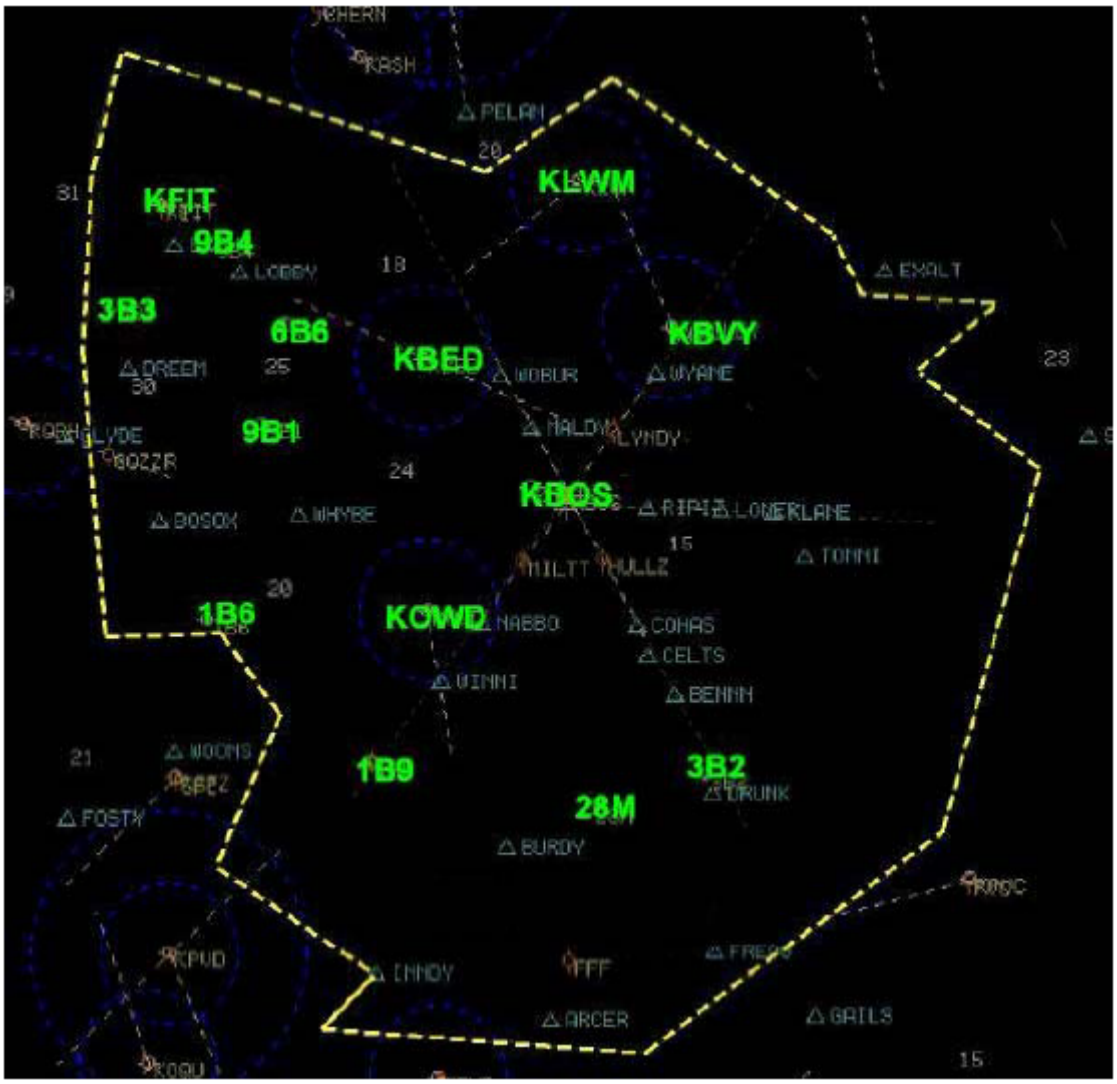
A90 / BOSTON TRACON SOP This document contains our Standard Operating Procedures (SOP) for conducting operations within the A90 Boston TRACON. Several positions operate within A90, including Departure and Approach.

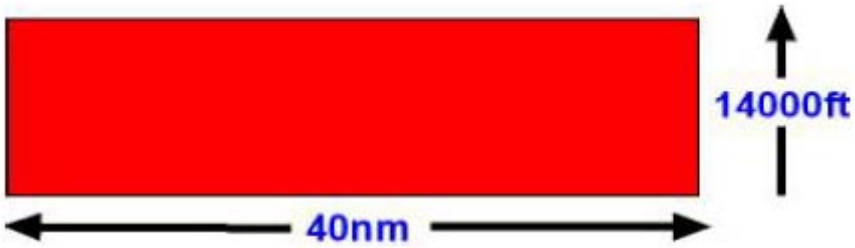
In light traffic conditions you may serve as both Departure and Approach. In moderate traffic Departure and Approach may be staffed independently. Heavier traffic conditions suggest an alternative split into North and South Approach divisions with one of those optionally handling Departure, as explained below.

It is **required** that you learn both Departure and Approach well before attempting to run a split Approach scenario, as the work load and vectoring constraints increase dramatically. Further, it is **required** that KBOS have a tower in operation before we allow A90 to operate with a split Approach scenario.



DEPARTURE [DEP] [133.00 at KBOS]

Ensures separation between departures. **Coordinates with TWR** to release IFR departures and receive departing aircraft into the NAS. **Coordinates with APP** to ensure no conflicts between arrivals and departures. **Coordinates with CTR** to handoff departures. Ensures that departing aircraft have proper clearance and reroutes as necessary if deficient. Departure airspace is roughly 40nm around BOS VOR to a height of 14,000ft. The actual boundary of A90 is depicted by the dotted line in the graphic above.



DEP is the position that vectors the aircraft to the appropriate Departure Gate for the filed flight plan route. On DEP, knowledge of the initial departure fixes out of Logan (both high altitude and low altitude) is a MUST. Aircraft with proper flight plans should be vectored to the particular departure fixes quickly and safely.

The handoff points where DEP will handoff a/c to CTR for are diagramed in the flow chart documents here:

4R-L / 15R / 22s / 27 / 33L

Boston Departure also has responsibility for conducting departures from the Class-D airports within its delegated airspace. Information on A90 airports may be found HERE

There are specific guidelines for which direction aircraft are to be vectored to the fixes after flying the LOGAN4 initially. The information in the following table should be memorized, and with practice, turning the a/c in the correct direction to the departure fixes will become an easy task. Please note: The headings listed in the following table are merely suggested headings. All a/c, and all pilots perform differently, and we want to encourage our controllers to develop their own style, so the actual headings issued may vary. However, the direction of turn after completing the LOGAN4 departure is non-negotiable!

Active Runway	Departure Fix	Turn to Fix
Runway 4L/R	LUCOS	Rt. 180-190 direct
Runway 4L/R	MHT	Left 330-350 direct
Runway 4L/R	GLYDE	Right direct BOS then direct
Runway 4L/R	NELIE	Right direct BOS then direct
Runway 9	LUCOS	Right to 180-220 direct
Runway 9	MHT	Left to 310-340 direct
Runway 9	GLYDE	Left to 360 initially, Then Left to 240-280 direct
Runway 9	NELIE	Right to 180 initially, Then Right to 250-290 direct
Runway 15R	LUCOS	Rt. 180-190 direct
Runway 15R	MHT	Left 330-350 direct
Runway 15R	GLYDE	Left 360 initially, Left 240-270 direct
Runway 15R	NELIE	Left 360 initially, Left 230-260 direct
Runway 22L/R	LUCOS	Rt. 180-190 direct
Runway 22L/R	MHT	Left 320-350 direct
Runway 22L/R	GLYDE	Left 360 initially, direct BOS then direct
Runway 22L/R	NELIE	Left 360 initially, direct BOS then direct
Runway 27	LUCOS	Left 140-180 direct
Runway 27	MHT	Rt. 340-360 direct
Runway 27	GLYDE	Rt. 250-280 direct
Runway 27	NELIE	Rt. 240-270 direct
Runway 33L	LUCOS	Left 170-130 direct
Runway 33L	MHT	Rt. 360-020 direct
Runway 33L	GLYDE	Left 250-270 direct
Runway 33L	NELIE	Left 240-270 direct

Radar Contact. As you learned in Basic Training, this is the term used to inform the a/c that he has been identified on the controller's scope. In Training, you learned how a particular a/c is identified, and how to go about radar identifying a/c departing an airport. In Boston, the DEP controller will inform the pilot he is "radar contact" and if the pilot neglects to report his altitude at check-in, will ask the pilot to confirm his altitude upon initial contact with the a/c. Hopefully, this takes place within 1 mile of the departure runway. The DEP controller will then issue an altitude for the departure to climb and maintain, and a heading to fly. An example of the correct phraseology for this command is as follows:

"Delta 211, Boston Departure, radar contact. Turn right heading 090, climb and maintain 14000."

Altitudes to assign to a/c climbing out of Logan should be issued immediately provided it is safe to do so. If there is no other a/c in the departure's vicinity, then the standard altitude issued to a/c is to climb and maintain 14000ft, or the filed altitude (whichever is lower). If it is unsafe to climb a departure directly to 14000ft because of potential conflicts with other a/c, the DEP controller must first coordinate with APP on altitudes in vicinity of the airport. Second, he must issue a climb instruction that safely separates the aircraft from all others in its vicinity until lateral separation is achieved.

An example of potential conflicts amongst arriving and departing a/c occurs when the 22's are active at Logan. Arrivals inbound from PVD fly a left downwind to land on runway 22L. Departures off 22R make an immediate left turn to 140 after departure. Unless separated vertically, these a/c could be in conflict. A simple rule of thumb is to have inbound a/c cross the extended centerline on 33L at or above 6000ft on the downwind, and have departing a/c remain at or below 5000ft, until lateral separation can be achieved, and a climb to 14000ft can be issued. When the other runways are in use, separation of inbound and outbound aircraft is much easier. Proper separation must be adhered to at all times, and teamwork between DEP and APP is essential for making this work.

- **Handoffs**

Handoffs to CTR are initiated by the DEP controller once the a/c has been issued a climb to 14000ft (or the filed cruise altitude, whichever is lower), the aircraft has been cleared direct the departure gate and the a/c is passing through 5000ft(Although you would only tell the pilot to contact CTR passing 10000ft). This assures that the handoff will be completed before busting the 14000ft limit on Departure's airspace and before the a/c would have to stop his climb at 14000ft. DEP controllers are encouraged to get the a/c turned to the relevant departure fix, and issue a climb as efficiently and safely as possible. A prompt handoff by DEP to CTR will allow the aircraft to continue a safe climb and start the enroute phase of its flight.

The LOGAN4 departure is the preferred SID out of Logan as you have learned earlier in your training. This special SID is a vector departure out over the water designed for noise abatement purposes. All jet aircraft departing Logan are required to fly the LOGAN4, and CANNOT cross back over the coastline until the a/c is at or above 6000ft. The purpose of this rule is to reduce the noise of departing jets in surrounding communities, and we at the virtual Logan will have the same consideration for our virtual neighbors.

- **Audio reference**

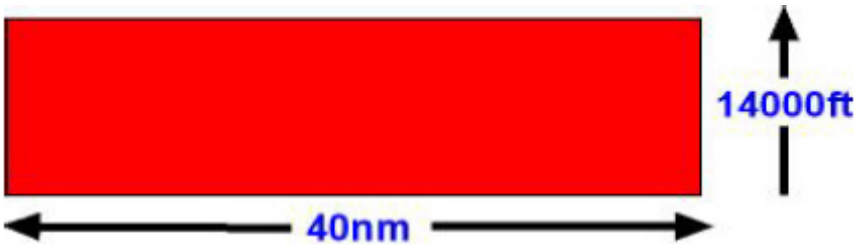
Listen to the real Boston Departure handle US6527 here

Listen to the real Boston Departure handle AFA337 here

Listen to the real Boston Departure handle EGF918 here

APPROACH [APP] [120.60] at KBOS

Vectors arrivals to airports inside delegated airspace. Maintains proper sequencing and separation between arriving flights. **Coordinates with DEP** (or TWR if no DEP). If A90 is running two approaches, the two coordinate arrival and departure assignments. **Coordinates with CTR** to receive handoffs at specified STAR waypoints. Approach airspace is 40nm around the BOS VOR to a height of 14,000ft.



The handoff points where APP will receive a/c from CTR for KBOS are diagramed in the flow chart documents here:

4R-L / 15R / 22s / 27 / 33L

Boston Approach also has responsibility for conducting approaches to the Class-D airports within its delegated airspace. Information on these A90 airports may be found HERE

The a/c should be handed off to APP just prior to the A90 sector boundary (dotted line in the graphic above) and at altitudes and/or with descent instructions as depicted on the STARs, unless prior coordination between CTR and APP controllers waives such restrictions. Aircraft not flying a STAR will be handed off at the A90 sector boundary and entering A90 airspace. Basically, if traffic is light, and there is no immediate concern for safety or separation, speed restrictions can be waived.

Once an a/c is handed off, the APP controller should already have a game plan in mind for that a/c, and begin executing it as soon as initial contact is made by the pilot. The APP controller needs to inform the pilot of the following information on first contact when vectoring a/c to land in the Boston ARTCC airspace:

1. A specific **Heading** to fly.
2. An **Altitude** to maintain.
3. The type of **Approach** the aircraft is to expect (ILS / Visual / VOR etc.).
4. The Boston, or local **Altimiter** setting.

For example:

“Delta 211, Boston Approach, altimeter 3001. Expect vectors to the ILS (or visual, etc.) approach to runway 22L. Turn left heading 050 descend and maintain 9000.”

-or-

"Speedbird 214 (BAW214), Boston Approach, altimeter 3001 vectors ILS 22L final approach course, descend and maintain 9000.”

It is recommended that APP controllers utilize a “step down” descent method. **DO NOT immediately drop the a/c to 3000 ft.** A competent APP controller should realize that from most handoff points, the a/c still has 30-40 miles of flying remaining before intercepting a localizer. Most a/c descend at a rate of 1800 ft per minute, and it is wise to step down the aircraft gradually. This will accomplish two things. First, the a/c will be at a higher altitude while beginning its transition into the Boston Class B airspace, thus avoiding potential conflicts from departing a/c, or local traffic at any of the Class D airports underlying the Class B airspace. Second, a pilot wants and needs a gradual descent to begin to slow the airplane, and get it ready for the approach to land. Be aware, that although it seems easier to just drop an a/c to 3000 ft when handed off, this action could cause more harm and headaches than anticipated.

Remember, separation of a/c, both arriving and departing, is the primary responsibility of the APP controllers.

The mastering of a gradual step down descent to final cannot be stressed enough. Practice gradual descents with a/c and you will find that it is much easier for an a/c to capture the glideslope when he is established on the localizer at an altitude below the glideslope.

We are striving for a “team” concept, and if a departure is struggling to gain an assigned altitude to get on top of an arriving a/c, then by all means instruct the inbound to maintain a lower altitude to accommodate the departure.
Sometimes the step down method is necessary to keep aircraft from flying through mountains. If you fly from BOS to BTV and get dropped to the appropriate approach altitude too early, you'll bore a hole in Camel’s Hump!

Use common sense when descending a/c for an approach. Flight simulator pilots come in various skill levels and various a/c sizes. An unskilled pilot in a 747 might need a 20 degree intercept and all of a 25 nm final to get stabilized while a skilled ATR-42 pilot can grease it with a 30 degree angle right to the OM.

In **general**, aim for a **30-degree localizer intercept** at an altitude, which is safe (above minimum glideslope intercept) yet **below** the glideslope. This ensures that the pilot obtains a valid GS signal and gives him time to configure and prepare for a stabilized approach. Remember, until the a/c is established on the localizer (needle centered) the pilot cannot descend. Once established, you must also clear him for the **approach** before he can descend on the GS.

Alternatively, you may issue clearance before intercept **with an altitude to maintain** until established. This can be done two ways:

1. The APP controller can issue a 30-degree turn to "intercept the localizer." This means the pilot will turn to the specified heading until the vertical needle on his localizer comes to center. Then a command to clear the a/c from the approach is given, which gives the a/c the clearance it needs to start descending to capture the glideslope. The correct phraseology in issuing these two commands is as follows:

"Delta 211, turn left heading 250, join the runway 22L localizer."

Once the pilot has started his turn, and is centering on the localizer, the second command can be issued. This second command MUST include the position of the a/c in relation to an initial fix on the approach path, the outer marker, or a final fix on the approach:

"Delta 211 is 8 miles from the outer marker, maintain 3000 until established, cleared the ILS runway 22L approach."

Or, to use a fix as a position point of reference:

"Delta 211, is 6 miles from VOCUS, maintain 1700 until established, cleared the ILS runway 22L approach."

2. When issuing these commands, the two can also be combined:

"Delta 211 is 4 miles from the WYANE; turn left heading 250, cross WYANE at or above 3000, cleared the ILS runway 22L approach."

The approach section of the aliases you have been provided allow for two ways to make these clearances:

a. from a point outside of WYANE for 22L, above 3000:

you would click on the aircraft, then type **.caa22 250** (.caa22 .cax WYANE $1 3000 22L) and out would come:

"Delta 211, you are 4 miles from the WYANE, fly heading 250, cross WYANE at or above 3000, clrd ILS rwy 22L app."

b. from a point where you are vectoring just outside of or to the approach gate for 22L [the approach gate on 22L is 1nm outsidethe FAF, or 1nm outside LYNDY]

you would click on the aircraft, then type: **.ca22 230** (.ca22 .ca VOCUS $1 1700 22L) and out would come:

"Delta 211, you are 4 miles from the VOCUS, fly heading 230, maintain 1700 til established on the loc, clrd ILS runway 22L app."

Whichever way you turn and clear an a/c onto a localizer, and for an approach, depends on the style you have developed as a controller.

Try the different methods of turning and clearing a/c until you find one that suits your tastes. A word to the wise in making this choice. The latter of the two examples above [#2], is faster and more economical. It's easier to issue one command and then move on to the next aircraft than it is to issue one command…then come back and issue a second command…as in example #1 above.

Some things to keep in mind: you must assign headings that will permit final approach course interception on a track that does not exceed the interception angles specified in the table below. Your best results will come from aiming for a 30 degree intercept that is 3-5 miles from the Approach Gate, which is 1 mile outside the FAF, **or** 5 miles from the landing threshold, whichever is further.

If you vector an aircraft so that it will intercept the Localizer within 2 miles of the approach gate, the ceiling must be at least 500 feet above MVA and the visibility must be at least 3 miles AND you must use a maximum 20 degree intercept angle.

Approach Course Interception Angle

Distance from interception point to approach gate	Maximum interception angle
Less than 2 miles	20 degrees
2 miles or more	30 degrees (45 degrees for helicopters)

Note above: Helicopters can take a 45 degree intercept of the localizer.

Try to give the "standard" jet pilot **10 - 15 nm for final**. "Heavy" a/c may need longer - ask the pilot if he has a preference if you are unfamiliar with his skill level. Light a/c should only need 6- 10 nm. As you work more and more a/c, you will develop a specific routing to each localizer from each hand off point. The flow charts on the web site will give you a guideline as to how a/c should be vectored from the hand off points, BUT the final turns to the localizer should be an individually tailored skill. No two controllers turn a/c onto the localizer exactly the same way, and we encourage controllers to try different methods.

Shorter approaches with descents to intercept at 2000 can be very helpful if there is a lot of traffic under your control. Conversely, longer approaches can be very helpful if you need some space to “squeeze” in another a/c. Basically, what we are recommending is to try new and different things until you have a game plan that is both efficient and safe.

The visual approach is a great tool for taking a lot of pressure off an APP controller. Essentially, it relieves the controller of the burden of separating and turning the a/c onto a localizer. Most APP controllers using visual approaches will still vector the a/c onto the localizer, and ask the pilot if the airport is in sight. This can be done in a few different ways:

1. If there are multiple a/c on an approach, the controller can ask an a/c if he has a preceding a/c in sight. If the pilot has the preceding a/c in sight, the controller can issue a command like the following example:

"Delta 211, traffic to follow is a B737 on a 5 mile final at your 2 o'clock descending through 2300. Maintain visual separation from that traffic, cleared visual approach runway 4R."

By doing this, the pilot accepts the responsibility to not only maintain separation from preceding traffic, but also turn and descend to the runway.

2. Another example is if the pilot has the field in sight. The a/c you are controlling, for example, is on a left downwind to runway 22L. If, after being asked by the controller, the pilot reports the field in sight, the a/c can be cleared for a visual approach. The pilot again, accepts the responsibility of turning and descending the aircraft to the correct runway.

   This type of visual approach should only be used if the traffic is light, and no potential conflicts would result. Don't forget that many pilots can fly a **visual approach**.

The approach section of the aliases you have been provided also contains an alias for the latter of these two clearances:

.cva $aircraft, cleared for visual approach rwy $1, maintain $2 base to final

Once the pilot has called the field in sight, you would click on the aircraft, type **.cva 22L 1500** and out would come:

"Delta 211, cleared for the visual approach rwy 22L, maintain 1500 base to final."

The inclusion of an altitude restriction base to final is to ensure the pilot does not bust altitude restrictions and descend too low in making the approach to the runway.

If the airport is **VFR** and separation allows it, don't hesitate to offer the pilot the visual approach. It's a good practice to initially line these pilots up with the localizer if it is busy or if weather is marginal VFR.

Speed restrictions are a great tool the APP controller has at his disposal. If traffic is heavy, on APP you will no doubt have various types of a/c under your control with different performance levels. By issuing speed restrictions, or reducing the speed of aircraft, an APP controller can maintain proper separation much easier. Speed restrictions should be issued in anticipation and to prevent any potential conflicts. An APP controller must have a working knowledge of various a/c performance specifications. For example, a H/B747 would not be able to maintain 150kts for a long period of time while being vectored for an approach. Conversely, a commuter prop, like a B1900, would not be able to maintain 230kts down the localizer before landing. Use Indicated airspeed (IAS) when referring to the speed of aircraft below FL240.

On APP, during busy times, it is wise to start speed restrictions early, to plan ahead. As with step down descents, **gradual speed reductions** should be employed. A good rule of thumb, during busy periods, is to slow an a/c on first contact to 220kts if there are numerous a/c in the approach pattern. This allows large a/c (i.e. B737) to remain clean until nearing a turn to the localizer. As the a/c continues the approach, and is being vectored to the localizer, further speed restrictions can be issued. Some things to remember about speed restrictions:

· **Without pilot consent**:

- You cannot restrict a pilot to less than 250kts when he is above 10000ft.
- You cannot restrict jet aircraft to less than 210kts if they are more than 20 flying miles from the airport.
- You cannot restrict propeller aircraft to less than 200kts if they are more than 20 flying miles from the airport.
- You cannot restrict jet aircraft to less than 170kts.
- You cannot restrict propeller aircraft to less than 150kts.

If you issue **both** an altitude change and a speed reduction, you MUST specify which you want the pilot to accomplish first. For example:

"Delta 211, descend and maintain 4000, then reduce speed to 180kts."

-OR-

"Speedbird 214, reduce speed to 190kts, then descend and maintain 3000."

·An approach clearance cancels all speed restrictions. If you need to continue with a restriction, you must restate it with the approach clearance.

MS Flight Simulator, unfortunately, has the option of displaying both TAS and IAS. ATC is predicated on the assumption of IAS. If you see truly odd behavior when you are assigning good speeds, this may be the cause. If you have time, you can try to educate the pilot that he should configure FS to display IAS

The following is a good example of using speed restrictions on three a/c in close proximity for an approach. Delta 211 (B737), COA731 (H/DC-10), and BAW214 (H/B777) are handed off to APP at PVD in that order for landing runway 22L at Boston.
The following is a "transcript" of how this approach might sound.

"Boston Approach, Delta 211 with you 11000 PVD."
"Delta 211, Boston Approach, Boston altimeter 3001, vectors ILS runway 22L approach. Fly heading 060, maintain 9000 and 250kts."
"060, 9000, 30.01, 22L ILS, Delta 211."
"Boston Approach Continental 731 heavy with you 11000, PVD."
"Continental 731 heavy, Boston Approach, Boston altimeter 3001, vectors ILS runway 22L approach. Fly heading 060, maintain 9000, then reduce speed to 230kts."
"30.01, 22L, 060 and down to 9000, then speed 230kts, Continental 731 heavy."

Boston Approach, Speedbird 214 heavy with you 11000 at PVD."
"Speedbird 214 heavy, Boston Approach, Boston altimeter 3001, vectors ILS runway 22L approach. Fly heading 060, maintain 9000, then slow to 230kts."
"Down to 9000, then slow to 230, heading 060 for 22L, Speedbird 214 heavy."
"Delta 211, descend and maintain 7000."
"9000 for 7000, Delta 211."
"Continental 731 heavy, maintain 7000."
"9 for 7, Continental 731 heavy."
"Delta 211, turn left heading 030, maintain 5000."
"030, and 5000 for Delta 211."
"Speedbird 214 heavy maintain 7000, then reduce speed to 210kts."
"7000, at 7 do 210. Speedbird 214 heavy."
"Continental 731 heavy turn left heading 040, slow to 210kts. At 210kts, descend and maintain 5000."
"040, slow to 210, at 210 down to 5 for Continental 731 heavy."

“Delta 211, turn left heading 330, maintain 4000, maintain 210kts or greater.”

“Left 330, and 4000, 210 or above, for Delta 211.”

“Speedbird 214 heavy, descend and maintain 5000.”

“Down to 5 for 214 heavy.”

“Continental 731 heavy descend and maintain 4000, fly heading 330.”

“Left 330, and down to 4, Continental 731 heavy.”

“Delta 211, descend and maintain 3000, turn left heading 270.”

“Left 270 and 4 for 3, 211.”

“Speedbird 214 heavy, turn left heading 030, maintain 4000.”

“Left 040, and down to 4, Speedbird 214 heavy.”

“Continental 731 heavy, turn left heading 270, maintain 3000. At 3000, slow to 190kts.”

“270 down to 3000, then slow to 190, Continental 731 heavy.”

“Delta 211, turn left heading 250, join the runway 22L localizer.”

“Left 250 to join, Delta 211.”

“Speedbird 214 heavy, turn left heading 320.”

“Left 320, Speedbird 214 heavy.”

“Delta 211, is 6 miles from the outer marker, maintain 3000 until established on the localizer, cleared the ILS runway 22L approach. 190kts to LYNDY”

3000 till established, cleared the approach, 190 to the marker, Delta 211.”

“Speedbird 214 heavy, turn left heading 270, descend and maintain 3000, slow to 180kts.”

“Left 270, down to 3000, and 180kts, Speedbird 214 heavy.”

“Continental 731 heavy, turn left heading 250, join the runway 22L localizer.”

“250 to join, Continental 731 heavy.”

“Delta 211, 190kts to LYNDY, contact the tower on 128.80, we’ll see ya.”

“28.8, Delta 211, good day.”

“Continental 731 heavy is 7 miles from the outer, maintain 3000 until established, cleared the ILS runway 22L approach. 180kts to LYNDY.”

“3 till established, 180 to the marker, cleared the approach, Continental 731 heavy.”

“Speedbird 214 heavy, turn left heading 250, join the runway 22L localizer, reduce speed to 170kts. You’re following a Heavy DC10 on a 4 mile final, caution wake turbulence.”

“250 to join, 170kts behind the heavy 10, for Speedbird 214 heavy.”

“Continental 731 heavy 180kts to LYNDY, contact the tower on 128.80, we’ll see ya.”

“180kts to the marker, Continental 731 heavy.”

“Speedbird 214 heavy is 10 miles from the marker, maintain 3000 until established, cleared the ILS runway 22L approach. 170kts to LYNDY. Caution wake turbulence, you are 4 in trail of a Heavy DC-10.”

“3 till established 170 to the marker, cleared for the approach, copy the wake. Speedbird 214 heavy.”

“Speedbird 214 heavy 170kts to the marker, contact the tower on 128.80, we’ll see ya.”

“Hold 170 to the marker, switching, Speedbird 214 heavy “

The above is an example of how the use of speed restrictions might work to help the approach controller safely keep a/c separated. There will be many times on approach when a/c will be traveling in close proximity to one another. Group flights and the like can be very intimidating to newer approach controllers. If the controller has a game plan in mind, and uses the tools at his/her disposal, like speed restrictions, then safety will never be compromised. It is also wise to listen to the real world controllers handle this type of scenario.

Airport ATC is available to listen to on the internet from LiveATC.net

Parallel and simultaneous approaches are rarely conducted at Logan, but if the traffic is heavy, and parallel runways are in use, there are certain instances when these approaches can be beneficial. With the 4's active at Logan, sometimes IFR aircraft can be "sidestepped" to runway 4L. Usually the TWR would initiate such a maneuver if a/c are too close together down the 4R final, but the APP controller, after coordinating with TWR, can clear a/c for an approach to 4L provided the following conditions exist:

1. The weather MUST be VFR.
2. The a/c being sidestepped MUST have runway 4L in sight, and MUST maintain visual separation from all traffic landing the parallel runway.

Correct phraseology in issuing this type of command after the a/c has established runway 4L in sight is:

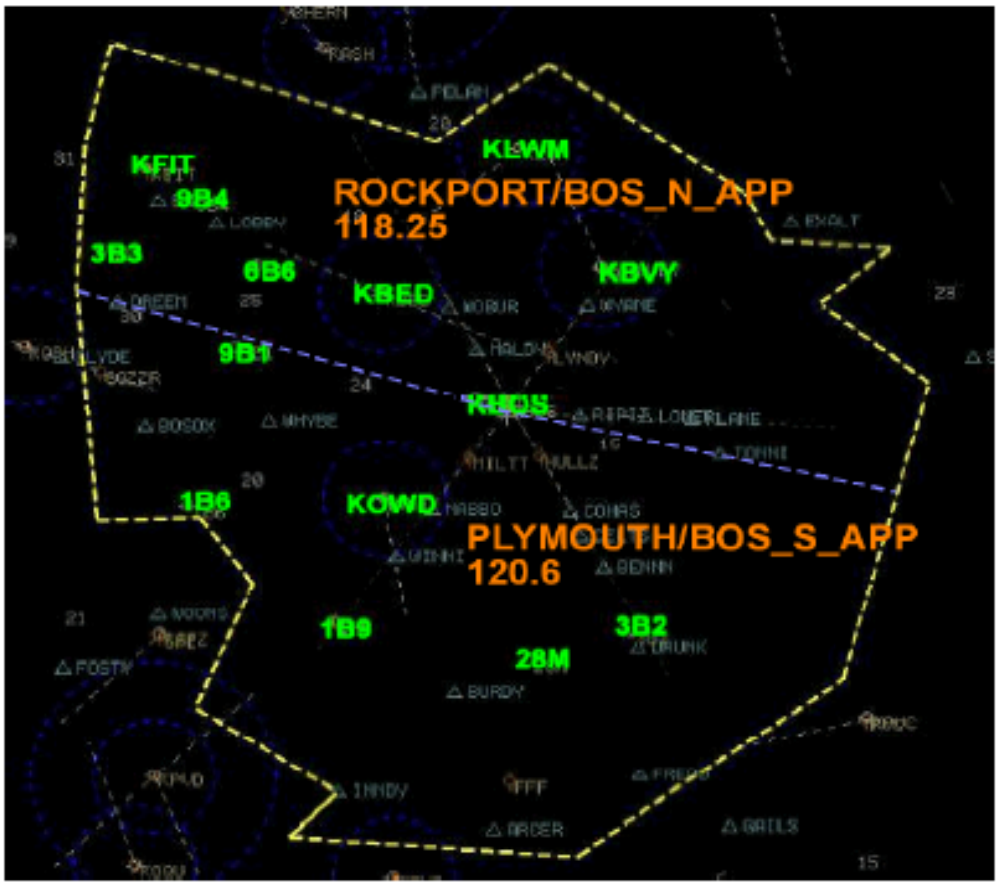
"Delta 211, cleared for the ILS runway 4R approach, sidestep to runway 4L. Maintain visual separation from traffic landing runway 4R."

Another unique approach that is used at Logan is the Runway 15R visual transition to 4L, also known as the "**Harbor Visual**". A diagram and explanation of this approach can be found here. The Harbor Visual is an exciting and challenging approach for everyone involved.

Approach is arguably the most difficult position to work in Boston when the traffic is heavy. As an Approach controller, it is recommended that you study the above procedures, and the various diagrams, and charts on the web site. Knowledge of the names of all the fixes and markers to each runway at Logan is essential. There are various types of approaches to the different runways at Logan, and these should be studied also. Approach takes practice, and it is advised that a student work with his mentor to develop the proper game plan to help prioritize tasks, and issue commands that will keep the planes flying safely in the Boston airspace.

As always, it is a must that you visit the VATUSA training page on approach control to help develop a good base for issuing vectors, phraseology, and general knowledge of working the approach position.

Running A90 with BOS_N [118.25] and BOS_S [120.60]



To this point you've learned the basic lessons of running both Departure and Approach in A90. These lessons will serve you well with the next variant of control positions within A90 – dividing approach into North [Rockport] and South [Plymouth]. With this variant the job of each approach controller becomes more complex, as do the jobs of the Delivery, Tower and Center.

The line dividing North [Rockport] from South [Plymouth] runs from the west border of A90 through the DREEM intersection to the BOS VOR through the TONNI intersection and finishing at the east border of A90.
Controllers running the divided A90 need to closely coordinate with each other, as well as with the other members of the team to ensure smooth operations.

This configuration takes teamwork, a lot of it. In particular, make sure your Delivery and Tower controllers are aware of the A90 configuration and how their responsibilities are altered by it. **These instructions ARE NOT in their SOPs.** It is suggested that you inform them of what you need them to do (see below), ask if they have any questions, then ask them to readback to you the modifications of their duties.

Delivery: Depending upon the runway configurations, the departure frequency will be either North or South. Make sure you assign the correct frequency in your clearance. This will depend on the runway configuration and who is handling departures. See the table below.

Tower: Your responsibility for ensuring jet departures perform the SIDs increases in importance, as the A90 division does not allow for aircraft to make many errors or for very long. Executing handoffs to these controllers quickly, and to the correct controller, is also very important.

A90/S_APP/Plymouth: Accepts handoffs from Center, PVD TRACON, Bradley TRACON and Cape TRACON via WOONS, PVD, INNDY, FREDO and LFV. Handles all arrivals and departures for the other airports within its delegated airspace.

A90/N_APP/Rockport: Accepts handoffs from Center, MHT TRACON and PSM TRACON via GDM, MHT, PSM, and SCUPP. Handles all arrivals and departures for the other airports within its delegated airspace

Depending upon the runway configuration at Logan, one of these controllers may also perform **departure duties**, as specified in the chart below:

Runways In Use	Tower Hands off to
4s, 9, 33L/R	BOS_N_APP 118.25
22s, 27, 15L/R	BOS_S_APP 120.60

As outlined in the traffic flow diagrams, upon receiving a handoff from the tower, the app controller issues the climb, turn and handoff to either the other approach controller if entering the other's airspace below 14,000ft or directly to the Center. When handing off to an adjacent APP controller, the handoff should be completed before the aircraft is 1 ½ mile from the adjacent controller's airspace and the pilot may need to be prompted for attention to changing frequency. Use your judgment, but snappy hand-offs and pilot reaction are important.

[4R-L / 15R / 22s / 27 / 33L]

- **Handoffs to Boston Tower**

Arrival handoffs from APP to TWR for aircraft on an approach to Logan should be initiated at the 10-mile point to ensure the handoff is completed before the aircraft enters the Airport Surface Area at the 8-mile point. VFR aircraft arriving or departing Logan and remaining below the 2000' floor of the 10-mile ring would not have to be in contact with APP/DEP since they would not be entering APP/DEP's airspace.

- **Audio Reference**

- Listen to the real BOS_APP issue a clearance to AFA332 to the Rwy 27 app here

- Listen to the real BOS_APP issue a clearance to EJA341 to the Rwy 27 app here

- Listen to the real BOS_APP squeezing a Skylane in behind a Heavy here

- Listen to the real BOS_APP issue a clearance to US1452 to the Rwy 27 app here

- Listen to the real BOS_APP issue a clearance to US343 and Patriot509 to the Rwy 27 app here

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