



# **BOSTON ARTCC (vZBW) TRAINING SYLLABUS**

**LEVEL: Approach Controller (S3)**

*“Radar Position: Ensure separation”*

*(FAA Order 7110.65, Air Traffic Control, 2-10-2(c)1).*

<b>RELEASE RECORD</b>			
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1.1	01 Feb 2009	DO	General/Maintenance update, added VFR Coded Arrivals, added exam request links
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2.1	01 Mar 2010	DO	Updated links, added references/links to new KBOS and A90 SOPs, updated document to reference new KBOS RNAV Departure Procedures, updates VATUSA reference information.
2.2	01 Aug 2010	DO	Implements Minor/Major training tracks

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# Introduction

*“While a controller cannot see immediately the development of every situation where a safety alert must be issued, the controller must remain vigilant for such situations and issue a safety alert when the situation is recognized.” (FAA Order 7110.65, Air Traffic Control).*

Welcome to Radar! As you've undoubtedly discovered, virtual Air Traffic Control can place you into stressful and incredibly exciting situations. Situations which are dynamic and force you to think on your feet quickly become the norm here in ZBW. You've learned the basics of the Delivery, Ground, and Local Control positions, and have learned the even more valuable skill of knowing where to go in order to find information and work problems out on your own.

With the fundamentals behind you, it's time to add another element to the Air Traffic Control puzzle, altitude. As an Approach Controller, you will be working TRACON (Terminal Radar Approach CONTROL) facilities, where you will be responsible for numerous airborne aircraft. As quoted on the front page of this syllabus, above all else, your number one priority at all times is ensuring separation of aircraft under your control.

Just as with the prior syllabi (and associated certifications), the training staff will expect you to complete most of the “book work” on your own. We will provide you with the fundamentals of radar control positions, so that you can gain the experience to remain vigilant and recognize potential safety and separation issues early on, and successfully earn your certification.

Radar Control positions resemble putting together a jigsaw puzzle, while all the pieces of the puzzle remain moving. It's a very dynamic 4-dimensional puzzle which can be frustrating at times, but in the end, will be one of the most rewarding positions you can work on the VATSIM network.

As always, if you have any questions, please feel free to ask the training staff. We're here to assist you. Welcome to the “real” (simulated) scopes, and prepare for an exciting journey.

Regards,

Don Desfosse (DO)  
Air Traffic Manager  
Boston ARTCC (vZBW)

# **1 Approach Control Fundamentals**

## *1.1 Responsibilities*

1.1.1 [FAAO 7110.65 2-10-2: Terminal Radar/Nonradar Team Position Responsibilities](#)

## *1.2 Review of Airspace / Class C TRACON SOPs*

1.2.1 [K90 TRACON SOP](#)

1.2.2 [G90 TRACON SOP](#)

1.2.3 [Y90 TRACON SOP](#)

## *1.3 ATC Phraseology*

1.3.1 [FAA Pilot / Controller Glossary](#)

## *1.4 Radar Identification / Verification*

1.4.1 [FAAO 7110.65 5-3-2: Primary Radar Identification Methods](#)

1.4.2 [FAAO 7110.65 5-3-3: Beacon Identification Methods](#)

1.4.3 [FAAO 7110.65 5-2-17: Validation of Mode C Readout](#)

1.4.4 [FAAO 7110.65 5-2-18: Altitude Confirmation - Mode C](#)

1.4.5 [FAAO 7110.65 5-2-9: VFR Code Assignments](#)

# **2 Radar Fundamentals**

## *2.1 Radar Separation*

2.1.1 [FAAO 7110.65 5-5-1: Application](#)

2.1.2 [FAAO 7110.65 5-5-4: Minima](#)

2.1.3 [FAAO 7110.65 4-5-1: Vertical Separation Minima](#)

## *2.2 Transfer of Control*

2.2.1 [FAAO 7110.65 5-4-2: Terms](#)

2.2.2 [FAAO 7110.65 5-4-3: Methods](#)

2.2.3 [VRC Documentation](#) or [ASRC Documentation](#)

2.2.4 [FAAO 7110.65 2-1-17: Radio Communication Transfer](#)

2.2.5 [FAAO 7110.65 5-4-7: Point Out](#)

## *2.3 Speed Adjustments*

2.3.1 [FAAO 7110.65 5-7: Speed Adjustment](#)

## *2.4 Safety Alerts and Advisories*

2.4.1 [FAAO 7110.65 2-1-6: Safety Alert](#)

## *2.5 Phraseology / Vectors*

2.5.1 [FAAO 7110.65 5-6: Vectoring](#)

### **3 Departure Procedures**

#### *3.1 Departure Clearances*

- 3.1.1 [FAAO 7110.65 4-3-2: Departure Clearances](#)

#### *3.2 Types of Departure Procedures*

- 3.2.1 [Introduction to IAP Symbols](#)

- 3.2.2 [Terminal Procedures Publication Symbols](#)

- 3.2.3 [FAA-H-8261-1A Chapter 2: Takeoffs and Departures](#)

- 3.2.4 Vectored

- Example: [ALBANY THREE DEPARTURE](#)

- 3.2.5 Pilot NAV

- Example: [WHITE RIVER ONE DEPARTURE](#)

- 3.2.6 RNAV

- Example: [STEWY ONE DEPARTURE \(RNAV\)](#)

- 3.2.7 Obstacle

- Example: [TAKE-OFF MINIMUMS AND \(OBSTACLE\) DEPARTURE PROCEDURES](#)

#### *3.3 VFR Operations*

- 3.3.1 [ZBW VFR Tutorial](#)

- 3.3.2 [FAAO 7110.65 7-6: Basic Radar Service to VFR Aircraft - Terminal](#)

- 3.3.3 [FAAO 7110.65 7-8: Class C Service - Terminal](#)

- 3.3.4 [AIM Chapter 3-2-4: Class C Airspace](#)

- 3.3.5 [FAAO 7110.65 7-5: Special VFR \(SVFR\)](#)

- 3.3.6 [FAAO 7110.65 7-6: Basic Radar Service to VFR Aircraft- Terminal](#)

- 3.3.7 [SkyVector](#)

#### *3.4 Nontowered Airports*

- 3.4.1 [FAAO 7110.65 4-3-4: Departure Restrictions, Clearance Void Times, Hold for Release, and Release Times](#)

- 3.4.2 [AIM Chapter 5-2-6: Departure Restrictions, Clearance Void Times, Hold for Release, and Release Times](#)

- 3.4.3 [ZBW IFR Operations at Nontowered Airports Tutorial](#)

#### *3.5 Handoffs*

- 3.5.1 [FAAO 7110.65 2-1-17: Radio Communication Transfer](#)

## **4 Arrival Procedures**

### *4.1 Approach Information*

4.1.1 [FAAO 7110.65 4-7-10: Approach Information](#)

### *4.2 Standard Terminal Arrival Route (STAR)*

4.2.1 [AIM Chapter 5-4-1: Standard Terminal Arrival \(STAR\), Area Navigation \(RNAV\) STAR, and Flight Management System Procedures \(FMSP\) for Arrivals](#)

4.2.2 [FAA-H-8261-1A Chapter 4: Arrivals](#)

### *4.3 Review of STAR Charts*

#### 4.3.1 STAR

- Example: [SWEDE ONE ARRIVAL](#)

#### 4.3.2 RNAV STAR

- Example: [DEEPO ONE ARRIVAL \(RNAV\)](#)

### *4.4 Instrument Approach Procedures (IAP)*

4.4.1 [AIM Chapter 5-4-5: Instrument Approach Procedure Charts](#)

4.4.2 [FAA-H-8261-1A Chapter 5: Approach](#)

### *4.5 Review of Approaches*

#### 4.5.1 Precision Approaches

- Example: [ILS RWY 15 \(BGR\)](#)

#### 4.5.2 Non-Precision Approach

- Example: [LOC RWY 26 \(PSF\)](#)

#### 4.5.3 Charted Visual Approach

4.5.3.1 [FAAO 7110.65 7-4-5: Charted Visual Flight procedures \(CVFP\)](#)

- Example: [HARBOR VISUAL RWY 29 \(PWM\)](#)

#### 4.5.4 RNAV Approach

- Example: [RNAV \(GPS\) RWY 28 \(PQI\)](#)

#### 4.5.5 Visual Approach

4.5.5.1 [FAAO 7110.65 7-4-1: Visual Approach](#)

## 4.6 Approach Vectoring

- 4.6.1 [FAAO 7110.65 5-9-1: Vectors to Final Approach Course](#)
- 4.6.2 [FAAO 7110.65 5-9-2: Final Approach Course Interception](#)
- 4.6.3 [FAAO 7110.65 5-9-3: Vectors Across Final Approach Course](#)
- 4.6.4 [FAAO 7110.65 5-9-4: Arrival Instructions](#)
- 4.6.5 [FAAO 7110.65 4-8-1: Approach Clearance](#)
- 4.6.6 [FAAO 7110.65 4-7-2: Vectors for Visual Approach](#)
- 4.6.7 [FAAO 7110.65 7-4-3: Clearance For Visual Approach](#)

## 4.7 Holding

- 4.7.1 [FAAO 7110.65 4-6: Holding Aircraft](#)
- 4.7.2 [AIM Chapter 5-3-7: Holding](#)
- 4.7.3 [FAA-H-8261-1A Chapter 3: En Route Operations](#)

## 4.8 Handoffs

- 4.8.1 [FAAO 7110.65 2-1-17: Radio Communication Transfer](#)

## 4.9 Missed Approach Procedures

- 4.9.1 [FAAO 7110.65 4-8-9: Missed Approach](#)
- 4.9.2 [AIM Chapter 5-4-21: Missed Approach](#)

When you have reviewed the previous sections and are comfortable with the information you have been provided, you may: [\*\*Request the ZBW Approach \(APP\) exam here\*\*](#)

Upon passing, including successful completion of exam corrections, you will begin training with a mentor until basic competency is demonstrated during an Over The Shoulder (OTS) exam.

Once basic competency is demonstrated you will be assigned the **VATUSA Approach Control (S3) exam**.

***Upon passing, including successful completion of exam corrections, you may be promoted to the rating of Approach Controller (S3).***

- VATUSA References
  - [VATUSA Training Resource Center](#)
  - [VATUSA S3 Training Page](#)
  - [VATUSA S3 Advanced Topics](#)

Note: In the event of a discrepancy between the above VATUSA training material, and that material taught at ZBW, the material taught locally (ZBW) will take precedence.

***Students enrolled in the Major Track may now proceed to the next section.***

## **5 Advanced Approach Control**

### *5.1 Review of A90 TRACON SOP*

#### [5.1.1 A90 TRACON SOP](#)

### *5.2 Class B Radar Services to VFR Traffic*

#### [5.2.1 ZBW VFR Tutorial](#)

#### [5.2.2 FAAO 7110.65 7-6: Basic Radar Service to VFR Aircraft - Terminal](#)

#### [5.2.3 FAAO 7110.65 7-9: Class B Service Area - Terminal](#)

#### [5.2.4 AIM Chapter 3-2-3: Class B Airspace](#)

#### [5.2.5 SkyVector](#)

### *5.3 Coded VFR Arrival Routes*

#### [5.3.1 Boston Class B VFR Coded Arrival Routes](#)

### *5.4 A90 Traffic Flows*

#### [5.4.1 A90 TRACON SOP](#)

### *5.5 No Gyro Procedures*

#### [5.5.1 FAAO 7110.65 5-10-3: No-Gyro Approach](#)

#### [5.5.2 AIM Chapter 5-4-11.3: A No-Gyro Approach](#)

### *5.6 Circling Approach*

#### [5.6.1 FAAO 7110.65 4-8-6: Circling Approach](#)

### *5.7 Sidestep Approach*

#### [5.7.1 FAAO 7110.65 4-8-7: Side-Step Maneuver](#)

- Example: [ILS or LOC RWY 17C \(DFW\)](#)

### *5.8 Contact Approach*

#### [5.8.1 FAAO 7110.65 7-4-6: Contact Approach](#)

### *5.9 Nontowered Airport Procedures*

#### [5.9.1 FAAO 7110.65 4-8-8: Communications Release](#)

#### [5.9.2 ZBW IFR Operations at Uncontrolled Airports Tutorial](#)

### *5.10 Pilots Unfamiliar with Procedure*

#### [5.10.1 FAAO 7110.65 4-8-10: Approach Information](#)

### *5.11 Practice Approach*

#### [5.11.1 FAAO 7110.65 4-8-11: Practice Approaches](#)

## 5.12 *Full Instrument Approach (Nonradar Approach)*

5.12.1 [AIM Chapter 5-4-9: Procedure Turn](#)

5.12.2 [FAAO 7110.65 4-8-1: Approach Clearance](#)

5.12.3 Procedure Turn

- Example: [LOC RWY 26 \(PSF\)](#)

5.12.4 Hold In-Lieu-Of a Procedure Turn

- Example: [ILS RWY 24 \(ACK\)](#)

5.12.5 NoPT (Procedure Turn Not Authorized)

- Example: [LOC/DME BC RWY 4 \(BHB\) - From BST](#)

5.12.6 DME Arc

- Example: [VOR/DME RWY 17 \(AUG\)](#)

## 5.13 *Alternate Missed Approach Procedures*

5.13.1 Issued when published directions would cause a hazard to safety

## 5.14 *A90 Traffic Flows*

5.14.1 [A90 TRACON SOP](#)

## 5.15 *VFR On Top*

5.15.1 [FAAO 7110.65 7-3: VFR-on-top](#)

5.15.2 [AIM Chapter 5-5-13: VFR-on-top](#)

## 5.16 *Emergencies*

5.16.1 [VATUSA General Division Policy](#)

5.16.2 [FAAO 7110.65 10-2: Emergency Assistance](#)

5.16.3 [VATSIM Code of Conduct - Paragraph \(b\)8: Pilot's Conduct](#)

## 5.17 *Review of Letters of Agreement (LOA)*

5.17.1 Cleveland: [ZBW / ZOB Letter of Agreement](#)

5.17.2 Montreal: [ZBW / YUL Letter of Agreement](#)

5.17.3 New York: [ZBW / ZNY Letter of Agreement](#)

5.17.4 Washington: [ZBW / ZDC Letter of Agreement](#)

When you have reviewed the previous sections and are comfortable with the information you have been provided, you may: [\*\*Request the ZBW Advanced Approach exam here\*\*](#)

Upon passing, including successful completion of exam corrections, you will begin training with a mentor and/or instructor until basic competency is demonstrated during an Over The Shoulder (OTS) exam.

***Upon passing, you may be awarded your Class B Approach certification.***