

Initial En Route Qualification Training

Instructor Lesson 03 Aero Center Airspace

Course 50148001

LESSON PLAN DATA SHEET

COURSE NAME: INITIAL EN ROUTE QUALIFICATION TRAINING

COURSE NUMBER: 50148001

LESSON TITLE: AERO CENTER AIRSPACE

DURATION: 3+45 HOURS

DATE REVISED: 2022-02 **VERSION:** V.2022-02

REFERENCE(S): FAA ORDER JO 7110.65, AIR TRAFFIC CONTROL, FAA NOTICE

N JO 7110.592

HANDOUT(S): AERO CENTER MAP

EXERCISE(S)/ ACTIVITY 1: MAP COMPONENTS

ACTIVITY(S): ACTIVITY 2: MAP COMPONENTS KNOWLEDGE CHECK

ACTIVITY 3: MAP COMPONENTS QUIZ

END-OF-LESSON

TEST:

NONE

PERFORMANCE

TEST:

NONE

MATERIALS: NONE

OTHER PERTINENT

INSTRUCTOR KEY FOR THE ELEARNING(S) IS INCLUDED AS AN

INFORMATION: APPENDIX IN THIS DOCUMENT

NOTE: As you prepare for this lesson, recall and be prepared to talk about examples and personal experiences that illustrate or explain the teaching points in the lesson.

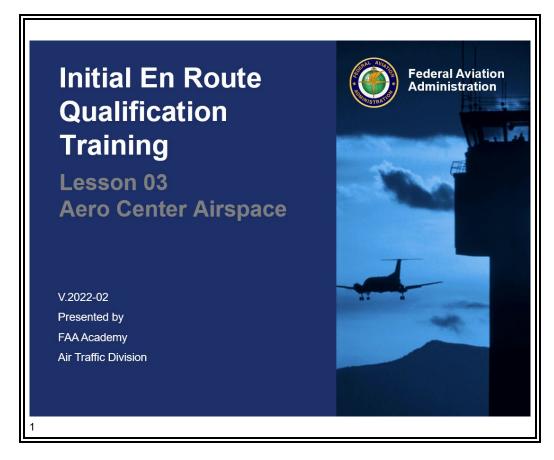
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INTRODUCTION

Gain Attention





Mastery of your airspace is **not only** essential here at the Academy, it is imperative to have complete mastery of your assigned airspace when you get to your respective facilities. Whether you just finished Air Traffic Basics here at the Academy; or you were hired from the CTI program; or you have previous military controller experience, you have basic knowledge of the National Airspace System. There are many steps required to become proficient in the Air Traffic Control business, and having a complete knowledge of the airspace in which you have responsibility is crucial. Using your previous knowledge/experience, and the information contained in this lesson, you need to be able to recall any information concerning Aero Center Airspace that is required to safely and efficiently complete your job as a radar associate controller.

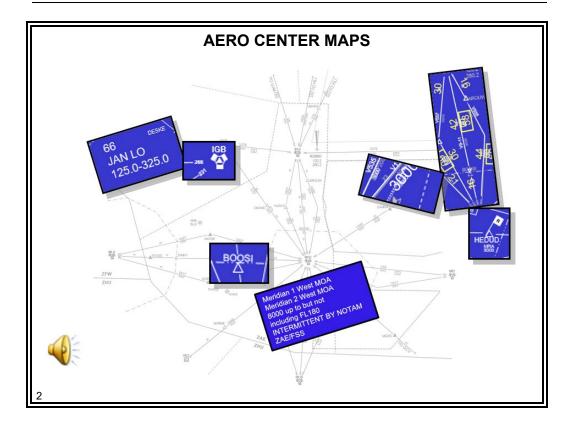
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INTRODUCTION (Continued)

Opening Scenario







- **NOTE:** Play the audio file included in the presentation by clicking on the <u>SPEAKER ICON</u> on the slide. Ask the students the following questions regarding this audio file.
- **QUESTION:** How many of the items mentioned in this recording do you think were from the map?

ANSWER: Items from the map include: MHZ VORTAC, 26 miles SE Greenville VOR DME, 17 NW MHZ VORTAC, Jackson Approach, 119.2, 20 miles NW MHZ VORTAC

- **QUESTION:** Do you think that the controller had time to read these from the map when he issued these instructions?
- **NOTE:** Emphasize that knowing the map components and airspace is critical to success as an air traffic controller.

Purpose

In this lesson, you will identify the components of Aero Center airspace and where they are located on the map.

INTRODUCTION (Continued)

Lesson Objectives



LESSON OBJECTIVES

- Given an Aero Center Airspace test, you will identify and label the following features of the Aero Center Airspace:
 - Boundaries and frequencies
 - NAVAIDs
 - Airways and radials
 - Intersections/DME Fixes
 - Mileages
 - Minimum altitudes
 - Special Use Airspace
 - Airports and approach controls

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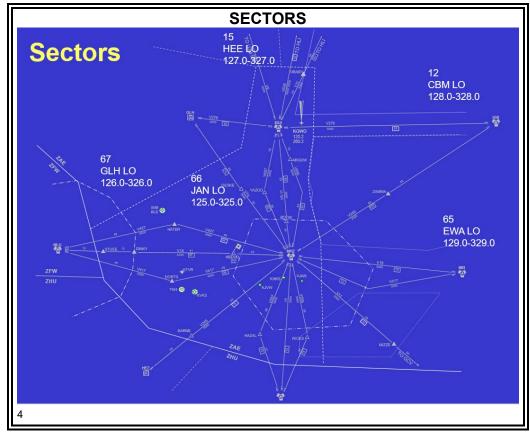
SOLUTION NOTE: Teach from the graphic.

NOTE: This lesson plan contains screen shots of the maps used in the slides to orient you to the sector under discussion. You will **not** necessarily be able to read all of the text on these screen shots. Refer to your map handout for specifics.

BOUNDARIES

Sectors and Frequencies



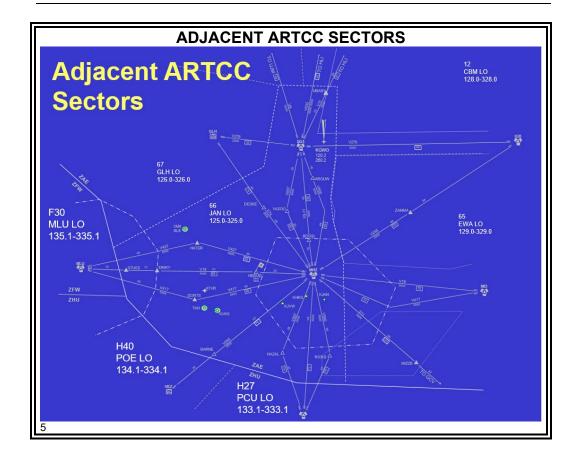


- **NOTE:** Have students draw and label maps as information is presented in each section. Click 6 times to display the sectors.
- ⊙ ZAE sectors FL230 and below
 - Sector 66 JAN Low
 - 125.0 325.0
 - Sector 67 GLH Low
 - 126.0 326.0
 - Sector 15 HEE Low
 - 127.0 327.0
 - Sector 12 CBM Low
 - 128.0 328.0
 - Sector 65 EWA Low
 - 129.0 329.0

Adjacent ARTCC Sectors





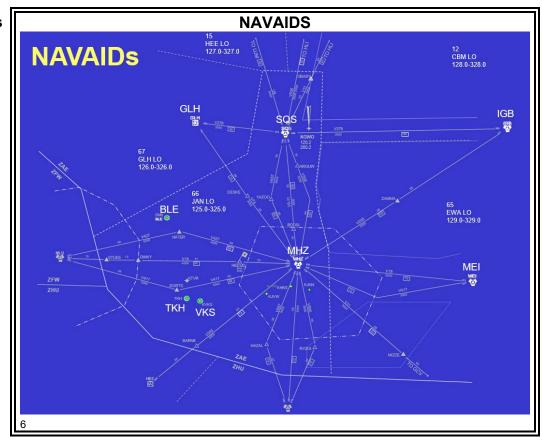


- **NOTE:** Click 4 times to display adjacent sectors.
- Adjacent ARTCC sectors
 - Houston (ZHU)
 - Sector 27 PCU Low
 - \rightarrow 133.1 333.1
 - Sector 40 POE Low
 - \rightarrow 134.1 334.1
 - Fort Worth (ZFW)
 - Sector 30 MLU Low
 - \rightarrow 135.1 335.1

ZAE NAVAIDsJO 7110.65,
Pilot/Controller
Glossary







NOTE: Click 4 times to display NAVAIDs.

Compulsory Reporting Points are reporting points, which must be reported to ATC. They are designated on aeronautical charts by solid triangles or filed in a flight plan as fixes selected to define direct routes. These points are geographical locations, which are defined by navigation aids/fixes. Pilots should discontinue position reporting over compulsory reporting points when informed by ATC that their aircraft is in "radar contact."

NOTE: For training purposes and ease of understanding, the VORTAC symbol for compulsory and non-compulsory reporting points at Aero Center (ZAE) will resemble the following:

- Non-Compulsory Reporting

ZAE NAVAIDs (Cont'd)

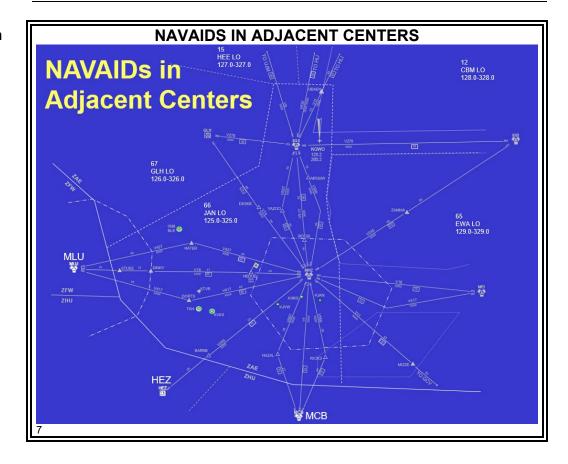
JO 7110.65, Pilot/Controller Glossary

- VORTACs in ZAE
- Magnolia (MHZ) − 66
- ⊙ Sidon (SQS) 66
- ⊙ Bigbee (IGB) 12
- Meridian (MEI) − 65
- ⊙ VOR/DMEs in ZAE
 - Greenville (GLH) 67
- Nondirectional Radio Beacons (NDBs) in JAN Low/66
 - Lake Providence (BLE)
 - Tallulah (TKH)
 - Vicksburg (VKS)

NAVAIDs in Adjacent Centers







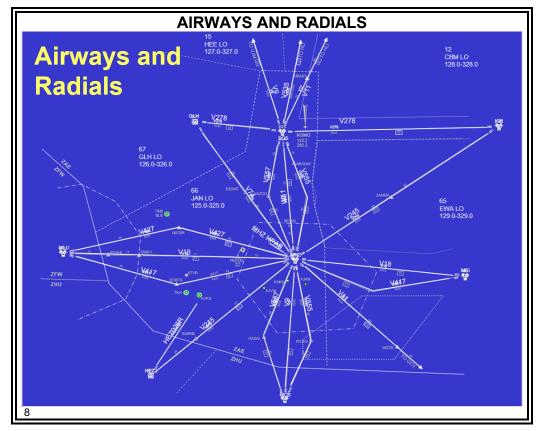
- **NOTE:** Click 4 times to display NAVAIDS in adjacent centers.
- ZFW
 - Monroe (MLU) VORTAC
- ⊙ ZHU
 - McComb (MCB) VORTAC
 - Natchez (HEZ) VOR/DME

JAN LOW AIRWAYS

Airways and Radials







PNOTE: Click 12 times to display airways and radials.

⊙ V9

- MCB001/MHZ179
- MHZ350/SQS171
- SQS341 to UJM (Marvell VOR/DME in Sector 15)

V11

- GCV to MHZ129 (Greene County VORTAC in ZHU)
- MHZ350/SQS171
- SQS023 to HLI (Holly Springs VORTAC in Sector 12)

⊙ V18

- MLU087/MHZ266
- MHZ091 to MEI

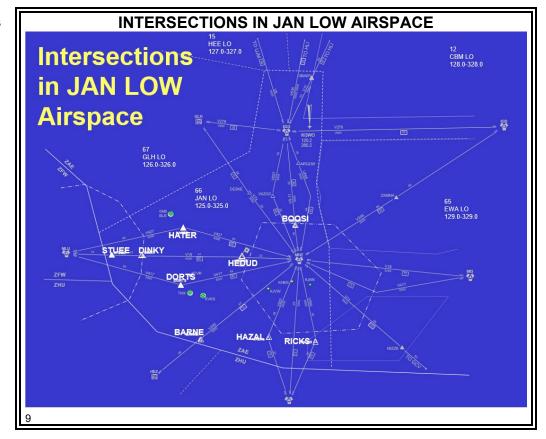
Airways and ⊙ V74 Radials (Cont'd)

- GLH143/MHZ320
- ⊙ V245
 - HEZ044/MHZ223
 - MHZ049 to IGB
- ⊙ V278
 - GLH092/SQS273
 - SQS086 to IGB
- ⊙ V417
 - MLU102/MHZ251
 - MHZ106 to MEI
- ⊙ V427
 - MLU072/MHZ281
- ⊙ V535
 - SQS007 to HLI
- ⊙ V555
 - MCB016/MHZ164
 - MHZ005/SQS156
- ⊙ V557
 - MCB345/MHZ194
 - MHZ335/SQS186
- ⊙ HEZ026
 - HEZ026 to VKS
- MHZ HOLDING PATTERN
 - MHZ300R

Intersections in JAN Low Airspace







- **NOTE:** Click 10 times to display intersections.
- Intersections
 - V9
 - BOOSI (MHZ350/MEI284)
 - V11
 - MIZZE (MHZ129/MEI216)
 - BOOSI (MHZ350/MEI284)
 - V18
 - HEDUD (MHZ266/SQS194)
 - DINKY (MLU087/HEZ353)
 - → Used in nonradar only
 - STUEE (MLU087/HEZ338)

Intersections in JAN Low Airspace (Cont'd)

- V245
 - BARNE (HEZ044/TKH135)
 - ZAMMA (MHZ049/OSX322)
- V417
 - DORTS (MLU102/MHZ251/HEZ011)
- V427
 - HATER (MLU072/MHZ281)
- V555
 - RICKS (MHZ164/MCB016/LBY308)
- V557
 - HAZAL (MHZ194/MCB345/VKS126)

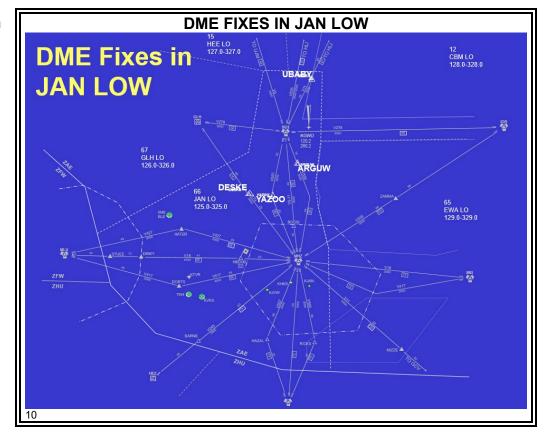
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DME Fixes in JAN Low Airspace







- **NOTE:** Click 10 times to display DME fixes.
- DME Fixes
 - V9
 - BOOSI (MHZ350016)
 - V11
 - UBABY (SQS023023) (**Not** an intersection)
 - BOOSI (MHZ350016)
 - MIZZE (MHZ129058)

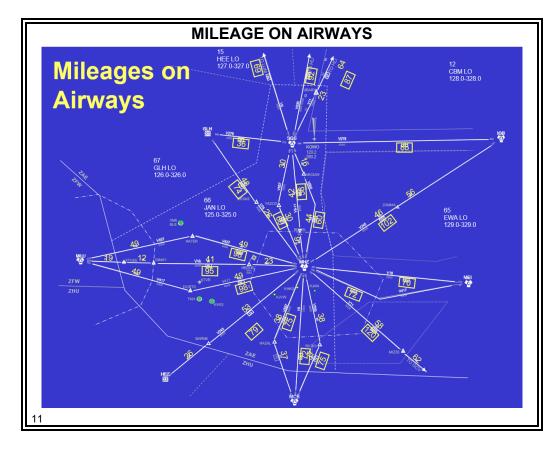
DME Fixes in JAN Low Airspace (Cont'd)

- V18
 - HEDUD (MHZ266023)
 - DINKY (MLU087031)
 - → Used in nonradar only
 - STUEE (MLU087019)
- V74
 - DESKE (GLH143048) (Not an intersection)
- V245
 - BARNE (HEZ044025)
 - ZAMMA (MHZ049046)
- V417
 - DORTS (MLU102049/MHZ251049)
- V427
 - HATER (MLU072049/MHZ281049)
- V555
 - ARGUW (SQS156016) (**Not** an intersection)
 - RICKS (MHZ164038)
- V557
 - YAZOO (MHZ335030) (**Not** an intersection)
 - HAZAL (MHZ194038)

Mileages on Airways







NOTE: Click 12 times to display mileages.

⊙ V9

- MCB to MHZ 72
- MHZ to SQS 58
 - MHZ to BOOSI 16
 - BOOSI to SQS 42
- SQS to UJM 69

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Mileages on Airways (Cont'd)

- ⊙ V11
 - SQS to HLI 87
 - SQS to UBABY 23
 - UBABY to HLI 64
 - SQS to MHZ 58
 - SQS to BOOSI 42
 - BOOSI to MHZ 16
 - MHZ to GCV 120
 - MHZ to MIZZE 58
 - MIZZE to GCV 62
- ⊙ V18
 - MLU to MHZ 95
 - MLU to STUEE 19
 - STUEE to DINKY 12
 - DINKY to HEDUD 41
 - HEDUD to MHZ 23
 - MHZ to MEI 70
- ⊙ V74
 - GLH to MHZ 74
 - GLH to DESKE 48
 - DESKE to MHZ 26

Mileages on Airways (Cont'd)

- ⊙ V245
 - HEZ to MHZ 79
 - HEZ to BARNE 26
 - BARNE to MHZ 53
 - MHZ to IGB 102
 - MHZ to ZAMMA 46
 - ZAMMA to IGB 56
- ⊙ V278
 - GLH to SQS 36
 - SQS to IGB 88
- ⊙ V417
 - MLU to MHZ 98
 - MLU to DORTS 49
 - DORTS to MHZ 49
 - MHZ to MEI 72
- ⊙ V427
 - MLU to MHZ 98
 - MLU to HATER 49
 - HATER to MHZ 49
- ⊙ V535
 - SQS to HLI 92

Mileages on Airways (Cont'd)

⊙ V555

- MCB to MHZ 75
 - MCB to RICKS 37
 - RICKS to MHZ 38
- MHZ to SQS 60
 - MHZ to ARGUW 44
 - ARGUW to SQS 16

⊙ V557

- MCB to MHZ 75
 - MCB to HAZAL 37
 - HAZAL to MHZ 38
- MHZ to SQS 60
 - MHZ to YAZOO 30
 - YAZOO to SQS 30

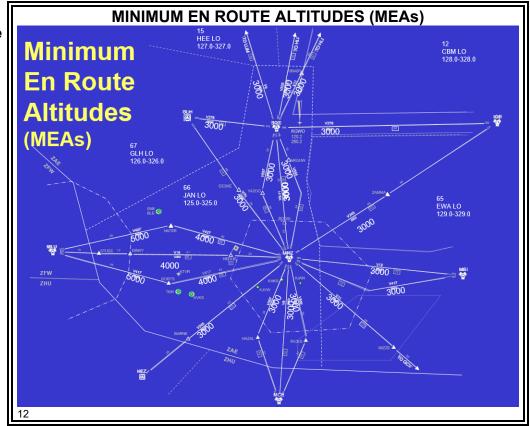
MINIMUM ALTITUDES

Minimum En Route Altitude (MEA)

JO 7110.65, Pilot/Controller Glossary







NOTE: Click 12 times to display MEAs.

A **Minimum En Route Altitude (MEA)** is the lowest published altitude between radio fixes, which assures acceptable navigational signal coverage and meets obstacle clearance requirements between those fixes. The MEA prescribed for a Federal airway or segment thereof, area navigation low or high route, or other direct route applies to the entire width of the airway, segment, or route between the radio fixes defining the airway, segment, or route.

Global Navigation Satellite System (GNSS) [ICAO] - GNSS refers collectively to the worldwide positioning, navigation, and timing determination capability available from one or more satellite constellations in conjunction with a network of ground stations.

Global Navigation Satellite System Minimum En Route IFR Altitude (GNSS MEA) - The minimum en route IFR altitude on a published ATS route or route segment which assures acceptable GNSS reception and meets obstacle clearance requirements.

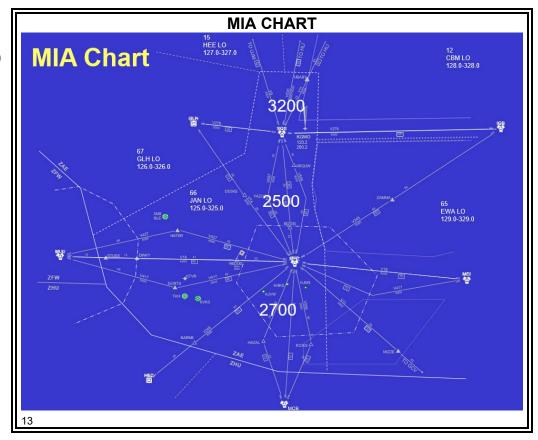
MEAs (Cont'd)

- ⊙ V9
 - 3,000 feet
- ⊙ V11
 - 3,000 feet
- ⊙ V18
 - MLU to MHZ 4,000 feet
 - MHZ to MEI 3,000 feet
- ⊙ V74
 - 3,000 feet
- ⊙ V245
 - 3,000 feet
- ⊙ V278
 - 3,000 feet
- ⊙ V417
 - MLU to DORTS 5,000 feet
 - DORTS to MHZ 4,000 feet
 - MHZ to MEI 3,000 feet
- ⊙ V427
 - MLU to HATER 5,000 feet
 - HATER to MHZ 4,000 feet
- ⊙ V535
 - 3,000 feet
- ⊙ V555
 - 3,000 feet
- ⊙ V557
 - 3,000 feet

MIAs Minimum IFR Altitude (MIA) JO 7110.65, Pilot/Controller Glossary





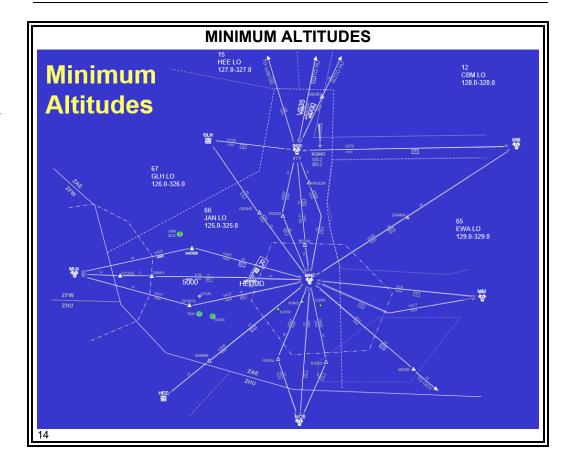


- ** NOTE: Click 3 times to display MIAs.
- A **Minimum IFR Altitude (MIA)** is the lowest altitude an aircraft may descend to for off-airway operations where **no** MEAs are published. They provide for standard obstruction clearance and are depicted on maps at each sector.
- MIAs are used for off-airway vectors and direct routes.
- MIA north of V278
 - 3200 feet
- MIA north of V18 radial to the V278 radials
 - 2500 feet
- MIA V18 radial and south
 - 2700 feet

Minimum Reception Altitudes (MRAs) JO 7110.65, Pilot/Controller Glossary







- ** NOTE: Click 3 times to display the MRA and MOCA.
- Minimum Reception Altitudes (MRAs) are the lowest altitudes at which an intersection can be determined.
- MRA at HEDUD is 5,000 feet.

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Minimum Crossing Altitudes (MCAs) JO 7110.65, Pilot/Controller Glossary

Minimum Crossing Altitudes (MCAs) are the lowest altitudes at certain fixes at which an aircraft must cross when proceeding in the direction of a higher Minimum En Route IFR Altitude (MEA).

Minimum Obstruction Clearance Altitudes (MOCAs) JO 7110.65, Pilot/Controller Glossary

Minimum Obstruction Clearance Altitudes (MOCAs) are the lowest published altitudes in effect between radio fixes on VOR airways, off-airway routes, or route segments which meet obstacle clearance requirements for the entire route segment and which assure acceptable navigational signal coverage only within 22 miles of a VOR.

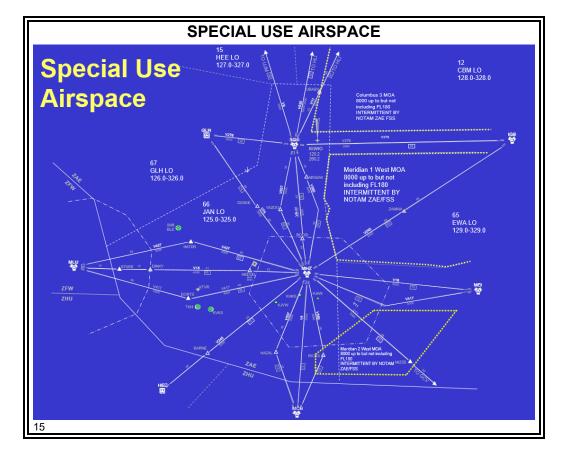
• The MOCA is 2,000 feet on V535 NE of SQS.

SPECIAL USE AIRSPACE

Special Use Airspace







- **NOTE:** Click 3 times to display special use airspace.
- Meridian 1 West MOA
 - Vertical limits
 - 8000 feet MSL up to but not including FL180
 - Time operational
 - Intermittent by NOTAM
- Meridian 2 West MOA
 - Vertical limits
 - 8000 feet MSL up to but **not** including FL180
 - Time operational
 - Intermittent by NOTAM

SPECIAL USE AIRSPACE (Continued)

Special Use Airspace (Cont'd)

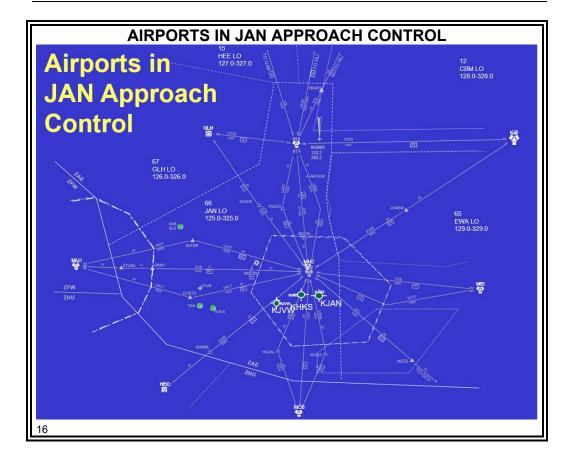
- Columbus 3 MOA
 - Vertical limits
 - 8,000 feet MSL up to but **not** including FL180
 - Time operational
 - Intermittent by NOTAM

AIRPORTS AND APPROACH CONTROLS

Airports in JAN Approach Control





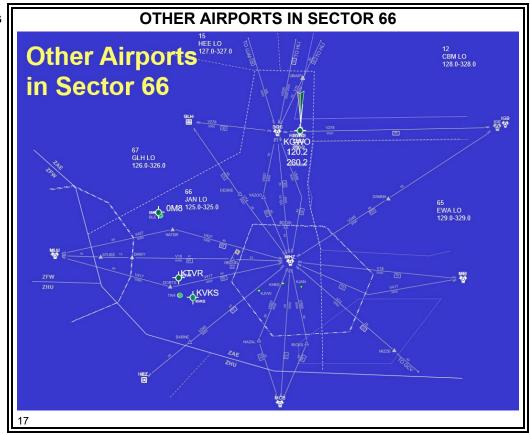


- **NOTE:** Click 4 times to display airports in JAN Approach Control.
- Jackson International (KJAN)
 - Located at MHZ153010, in JAN Approach airspace
 - Runway configuration 16/34
- Hawkins Field (KHKS)
 - Located at MHZ190010, in JAN Approach airspace
 - Runway configuration 16/34
- ⊙ John Bell Williams (KJVW)
 - Located at MHZ220017, in JAN Approach airspace
 - Runway configuration 12/30

AIRPORTS AND APPROACH CONTROLS (Continued)

Other Airports in Sector 66





- ** NOTE: Click 5 times to display other airports in Sector 66.
- Airports in Class E Airspace
 - Vicksburg (KVKS)
 - · Collocated at VKS NDB
 - Runway configuration 1/19
 - Approach, NDB Rwy 1
 - Departure Procedure Runway 1
 - → Take-off minimums: 600 ft. ceiling, 1 mile visibility, minimum climb of 250 feet per nautical mile to 700 ft
 - Tallulah (KTVR)
 - Located at MHZ257044
 - Runway configuration 18/36

AIRPORTS AND APPROACH CONTROLS (Continued)

Other Airports in Sector 66 (Cont'd)

- Other Airports

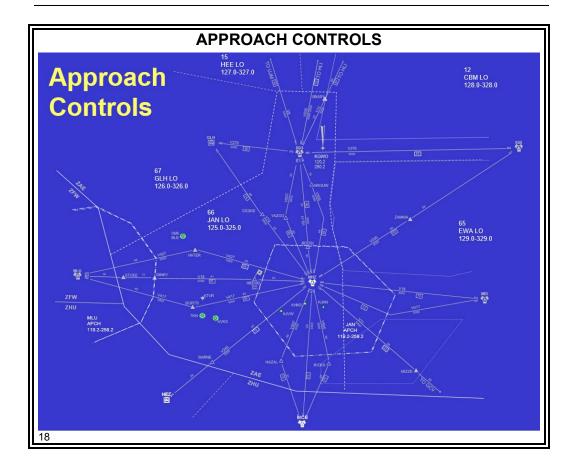
 Airport in Class D Airspace
 - Greenwood (KGWO)
 - Located at SQS076010 (10 Miles from SQS VORTAC)
 - VFR Tower
 - → Tower frequency 120.2 260.2
 - Runway configuration 5/23, 18/36
 - Approaches
 - → VOR Rwy 5
 - → ILS Rwy 18
 - Airport in Class G Airspace (also known as uncontrolled airspace)
 - Byerley (0M8)
 - Collocated at BLE NDB
 - Runway configuration 17/35
 - Approach
 - → NDB Rwy 17

AIRPORTS AND APPROACH CONTROLS (Continued)

Approach Control







NOTE: Click 3 times to display approach controls.

JAN Approach

- Frequency 119.2 259.2
- Radar vertical limits at and below 10,000 feet
- Nonradar vertical limits at and below 5,000 feet
- Published holding pattern MHZ VORTAC, NW on the 300 radial

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MLU Approach

- Frequency 118.2 258.2
- Radar vertical at and below 12,000 feet
- Nonradar vertical limits at and below 6,000 feet

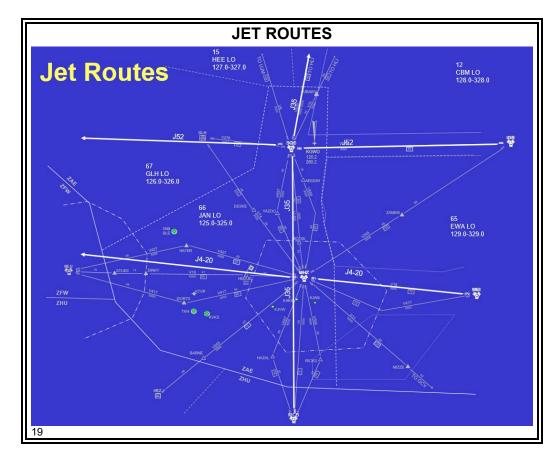
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HIGH ALTITUDE AIRSPACE

Mileages on Jet Routes







NOTE: Click 3 times to display jet routes.

- ⊙ J4-20
 - EIC to MHZ 185
 - MHZ to MEI 70
- ⊙ J35
 - MEM to SQS 94
 - SQS to MCB 129
- ⊙ J52
 - TXK to SQS 191
 - SQS to IGB 88

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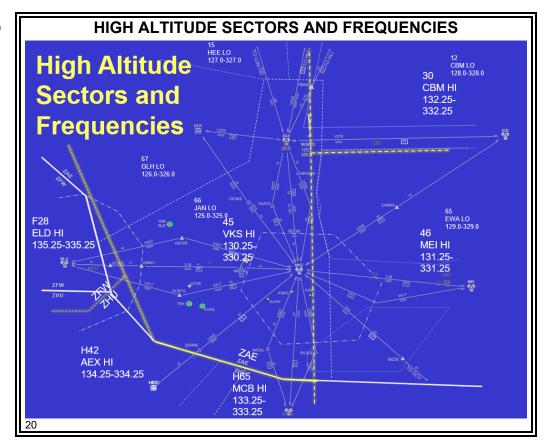
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HIGH ALTITUDE AIRSPACE (Continued)

High Altitude Sectors and Frequencies







- **NOTE:** Click 7 times to display sectors and frequencies.
- ZAE sectors
 - FL240 and above
 - Sector 46 MEI High
 - \rightarrow 131.25 331.25
 - Sector 30 CBM High
 - \rightarrow 132.25 332.25
 - Sector 45 VKS High
 - \rightarrow 130.25 330.25

HIGH ALTITUDE AIRSPACE (Continued)

High Altitude Sectors and Frequencies (Cont'd)

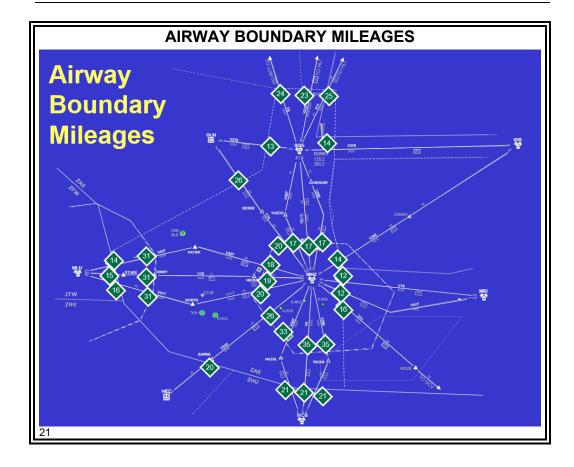
- Adjacent ARTCC sectors
 - Houston (ZHU)
 - Sector 65 "H65" MCB High
 - \rightarrow 133.25 333.25
 - Sector 42 "H42" AEX High
 - \rightarrow 134.25 334.25
 - Fort Worth (ZFW)
 - Sector 28 "F28" ELD High
 - $\rightarrow \ 135.25 \ 335.25$

BOUNDARY MILEAGES

Airway Boundary Mileages







- **NOTE:** Click 10 times to display boundaries.
- Sector 67
 - V74 26 SE GLH
 - V278 13 NW SQS
- Sector 15
 - V9 24 NW SQS
- ⊙ Sector 12
 - V535 23 NE SQS
 - V11 25 NE SQS
 - V278 14 NE SQS

BOUNDARY MILEAGES (Continued)

Airway Boundary Mileages (Cont'd)

Sector 65

- V245 14 NE MHZ
- V18 12 SE MHZ
- V417 12 SE MHZ
- V11 16 SE MHZ

⊙ ZHU 27

- V555 21 NE MCB
- V9 21 NE MCB
- V557 21 NW MCB
- ⊙ ZHU 40
 - V245 20 NE HEZ

⊙ ZFW 30

- V417 16 SE MLU
- V18 15 NE MLU
- V427 14 NE MLU

MLU APCH

- V417 31 SE MLU
- V18 31 NE MLU
- V427 31 NE MLU

BOUNDARY MILEAGES (Continued)

Airway Boundary Mileages (Cont'd)

- JAN APCH (Listed clockwise starting from V74 NW of Magnolia (MHZ))
 - V74 20 NW MHZ
 - V557 17 NW MHZ
 - V9-11 17 NW MHZ
 - V555 17 NE MHZ
 - V555 35 SE MHZ
 - V9 35 SE MHZ
 - V557 33 SW MHZ
 - V245 26 SW MHZ
 - V417 20 SW MHZ
 - V18 19 SW MHZ
 - V427 18 NW MHZ

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AERO CENTER MAP ACTIVITIES

Activities

MAPS ELEARNING ACTIVITIES



Purpose: to practice identifying and labeling the many components of the Aero Center map

NOTE: Have the students access the IET eLearning menu and select Lesson 3 – Maps. Explain that to facilitate learning the map components covered in this lesson, the following eLearning activities have been created. Give students a few minutes to explore.

Description

Map Components - This learning activity allows you to further review the various components of the ZAE Aero Center Airspace. You can select the category and the components to be displayed on the map.

Map Components Knowledge Check - This activity allows you to check your knowledge of map components with a variety of "drag and drop" and "labeling" exercises.

Map Components Quiz - This activity allows you to apply the maps information to scenarios similar to those that you will use in your role as an Air Traffic Controller.

NOTE: All map guizzes are comprehensive.

Directions

Access the IET eLearning menu. Select **Lesson 3 – Maps**. Click on the title to launch the applicable activity.

AERO CENTER MAP ACTIVITIES (Continued)

- **NOTE:** Explain that time will be set aside in the next few days to use these tools to prepare for the map test.
- **NOTE:** Refer to the appendix for the Instructor Key for these eLearning activities.
- **NOTE:** Remember to disable the eLearning after the students complete the eLearning.

IN CONCLUSION

Lesson Review



LESSON REVIEW

The following topics were covered in this lesson:

- Boundaries
- JAN Low airways
- Minimum altitudes
- Special Use Airspace
- Airports and Approach Controls
- High altitude airspace
- Boundary mileages



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NOTE: Teach from graphic. Review and elaborate briefly on the topics covered in this lesson.

NOTE: We will constantly refer to the map as we proceed through subsequent lessons. Map knowledge will be required throughout your entire ATC career.

NOTE: Remind students of the date for the Aero Center map test, how the map test will be delivered, and tips on how to study for the map test.

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APPENDIX A: INSTRUCTOR KEY FOR ELEARNING **ACTIVITIES**

Purpose

This document serves as a guide for facilitating the eLearning activities of the Initial En Route Training course and provides an overview of the objectives and content of the eLearning activities within this lesson.

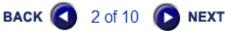
Navigation

MAIN MENU | RESOURCES | EXIT

- To navigate within the eLearning activities, a Navigation Bar is positioned at the top right of the page and contains the following options:
 - MAIN MENU: Allows students to access a main menu listing all of the eLearning activities
 - RESOURCES: Allows students to access additional resources. including:
 - A Glossary link
 - A References link
 - A Help link
 - EXIT: Allows students to exit from the eLearning activity at any time







- To navigate within an activity, a navigation tab is also positioned near the top right of the screen, just below the navigation bar.
- The navigation tab contains the following buttons:
 - BACK: When active, returns students to the previous page
 - NEXT: When active, allows students to advance to the next page

NOTE: Inactive BACK and NEXT buttons indicate students are at the beginning or at the end of a lesson.

Navigation Tips

- To refresh a page or reset an activity, press **F5**.
- You can advance to a specific page in the activity without completing the activity. Click the **NEXT** or **BACK** buttons until the page is displayed.

Lesson Title

Lesson 3 Aero Center Airspace Map Components

eLearning Objective

The objective of the eLearning activities is for students to review and check their knowledge of the features and components of the Aero Center airspace.

eLearning Activities

- Lesson 3 contains the following eLearning activities:
 - Activity 1: Learning Map Components
 - Activity 2: Map Components Knowledge Check
 - Activity 3: Map Components Quiz

Activity 1: Learning Map Components

Activity 1 Description

In this eLearning activity, students review the features and components of the Aero Center airspace map. Using a multi-layered display, students click an item on the menu to highlight and activate the lower arrow buttons. Students can view the components sequentially or select a component to display.

Activity 1 Content

- Page 1 contains an activity introduction.
- Page 2 contains a map and an interactive list of the map features.

Activity 1 Specifics

- Map categories included in this activity:
 - Sectors
 - Adjacent ARTCC Low Sectors
 - ZAE NAVAIDs
 - NAVAIDs in Adjacent Centers
 - Airways and Radials
 - Intersections in JAN Low Airspace
 - DME Fixes in JAN Low Airspace
 - Mileages on Airways
 - Minimum En Route Altitudes
 - MIA Chart
 - Minimum Altitudes
 - Special Use Airspace
 - Airports in JAN Approach Control
 - Other Airports in Sector 66
 - Approach Control Frequency
 - Jet Routes and Mileages
 - Airway Boundary Mileages

Navigation

- To view the map components in the sequence listed, students can click FORWARD or PREVIOUS to proceed to the next or prior components listed.
- To view individual components in any order, students can click on the map category, then click the individual item in the secondary menu to display it on the map.
- The two means of navigating through the components in the activity can be used interchangeably at any time.
- Association to other maps lesson activities
 - This activity is the first of three maps activities. This activity allows the students to look at each component of the map individually to view its location within the Aero Center airspace. This activity should be used in conjunction with Activity 2, which allows students to check their map knowledge by dragging components to the map. If students struggle with the correct placement of the components in Activity 2, they should return to Activity 1 to study the components.

Activity 2: Map Components Knowledge Check

Activity 2 Description

In this eLearning activity, students will check their immediate recall of the map components by identifying and labeling the features and components of the Aero Center airspace map in a Knowledge Check.

Activity 2 Content

- Page 1 contains an activity introduction.
- The remaining pages include the following subjects:
 - Page 2 Sectors
 - Page 3 Adjacent ARTCC Low Sectors
 - Page 4 Approach Control Airport Information
 - Page 5 NAVAIDs
 - Page 6 Types of NAVAIDS
 - Page 7 Radials and Jet Routes
 - Page 8 Airway Radials and Jet Routes
 - Page 9 Intersections and DME Fixes
 - Page 10 Mileage on Airways and Jet Routes
 - Page 11 Special Use Airspace
 - Page 12 MEAs
 - Page 13 Minimum Altitudes and MIA
 - Page 14 Airway Mileages to Different Sectors
 - Page 15 Airway Mileages to Approach Control Boundaries
 - Page 16 Degrees Between Airways

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Activity 2 Specifics

Types of questions

- On drag-and-drop activities (pages 2-5, 7-9, 11, and 13), students
 have two attempts to drag and drop the map components to the map
 before receiving feedback. On the second attempt, the correct
 location on the map components is highlighted in yellow.
- On drop-down menu activity (page 6), students have two attempts to select the appropriate NAVAID.
- On fill-in-the-blank activities (pages 10, 14 and 15), students must click on the mileage diamonds to access popup windows containing blank text boxes. Students must click in the text box, type in their response, and click DONE to receive feedback.
- On multiple choice activity (page 16), students have two attempts to select their answers before receiving feedback.

Activity 3: Map Components Quiz

Activity 3 Description

In this activity, students will check their immediate recall of the map components by responding to fill-in-the-blank and multiple choice questions.

Activity 3 Content

This activity is divided into four rounds for greater variety of content and in small amounts so that the quizzes can be taken quickly. Each round includes a quiz fill-in-the-blank and multiple choice questions on information that students **must** have quick recall. Part 2 of this activity includes 5-6 multiple-fill-in-the-blanks on distance and direction from fixes.

Activity 3 Specifics

- Rounds 1-4, Part 1
 - In part 1 of each of the rounds, students have one attempt to answer questions correctly before receiving feedback.
 - At the end of this activity, students receive a summary of results.
 Students have the option to view a results page to review the questions and see which questions were answered correctly or incorrectly.
- Rounds 1-4, Part 2
 - In Part 2 of each round, students must fill in each of the blanks and click **DONE** for feedback.

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