



**Federal Aviation  
Administration**

**UNITED STATES GOVERNMENT SPECIFICATIONS**

# **IFR ENROUTE LOW ALTITUDE CHARTS - U.S. AND ALASKA**

**IAC 1  
28 November 2023**

**Prepared by the Interagency Air Committee (IAC)**



**UNITED STATES GOVERNMENT SPECIFICATIONS  
FOR THE  
IFR ENROUTE LOW ALTITUDE CHARTS - U.S. AND ALASKA**

**28 November 2023**

These specifications have been developed by the Interagency Air Committee (IAC), composed of representatives of the Department of Defense and the Federal Aviation Administration, for use in the preparation of the United States Government IFR Enroute Low Altitude Charts - U.S. and Alaska. These specifications shall be complied with, without deviation, until such time as they are amended by formal IAC action.

Changes to these specifications will be provided when necessitated by new requirements or through development action of the IAC.

Questions of interpretation that arise in the use of these specifications shall be referred to the Chair, Interagency Air Committee.

Page Intentionally Left Blank



**CHANGES APPLIED TO MOST RECENT EDITION**

**REQUIREMENT DOCUMENTS**

- a. RD 871 – Exception to Foreign Data Depiction

**EDITORIAL CHANGES**

- a. None applied in this edition

**CHANGES APPLIED 1 AUGUST 2023**

**REQUIREMENT DOCUMENTS**

- a. None applied in this edition

**EDITORIAL CHANGES**

- a. EC 23-06 – Removal of Alaska FSS Frequency

**CHANGES APPLIED 19 DECEMBER 2022**

**REQUIREMENT DOCUMENTS**

- a. RD 816 – Modification to the Depiction of Foreign Data on Enroute Charts
- b. RD 850 – Preferred Direction Airways/Routes

**EDITORIAL CHANGES**

- a. None applied in this edition

**CHANGES APPLIED 1 MARCH 2022**

**REQUIREMENT DOCUMENTS**

- a. RD 843 – Expanded VOR VORTAC VORDME TACAN DME SSVs on Enroute Charts

**EDITORIAL CHANGES**

- a. None applied in this edition

**CHANGES APPLIED 2 AUGUST 2021**

**REQUIREMENT DOCUMENTS**

- a. RD 828 – New NAVAID SSVs Enroute Charts
- b. RD 835 – Removal of International Flight Service Stations (IFSS)

**EDITORIAL CHANGES**

- a. None applied in this edition

**CHANGES APPLIED 26 APRIL 2021**

**REQUIREMENT DOCUMENTS**

- a. RD 830 – Update to Mode C Airspace Label
- b. RD 833 – Revision to OROCA Definition on Enroute Low Legend

**EDITORIAL CHANGES**

- a. None applied in this edition

**CHANGES APPLIED 27 JANUARY 2021**

**REQUIREMENT DOCUMENTS**

- a. RD 827 – Airport Name Standardization

**EDITORIAL CHANGES**

- a. None applied in this edition

**CHANGES APPLIED 10 DECEMBER 2020**

**REQUIREMENT DOCUMENTS**

- a. RD 824 – Closed Indefinitely Private Airports

**EDITORIAL CHANGES**

- a. None applied in this edition

## AMENDMENT OF SPECIFICATIONS

### 1. PROCEDURE

- a. Recommendations for amendments to specifications from the Department of Defense shall be directed to:

National Geospatial-Intelligence Agency  
7500 GEOINT Drive  
Springfield, VA 22150-7500

- b. Recommendations for amendments to specifications from the Federal Aviation Administration shall be directed to:

Federal Aviation Administration /  
Aeronautical Information Services  
SSMC-4 Sta # 4445  
1305 East-West Highway  
Silver Spring, MD 20910

### 2. AMENDMENT SYSTEM

- a. Change to the specifications will be issued at the effective date of the latest Requirement Document (RD) and / or Editorial Change (EC).
- b. The Specification will be dated, indicated along the upper margin of each page, to reflect the most current change.

Page Intentionally Left Blank

**CHAPTER 1 – GENERAL**

1.1	Purpose and Scope .....	1-1
1.1.1	Purpose .....	1-1
1.1.2	Scope .....	1-1
1.2	Requirements .....	1-1
1.2.1	General .....	1-1
1.2.2	Safety, Accuracy and Currency .....	1-1
1.2.3	Titles .....	1-2
1.2.3.1	Enroute Low Altitude Chart Series .....	1-2
	Figure 1.1 Enroute Low Title Labels.....	1-2
1.2.3.2	Area Chart .....	1-2
	Figure 1.2 Area Chart Title Label.....	1-2
1.2.4	Areas of Coverage .....	1-2
1.2.4.1	Enroute Charts - U.S. ....	1-2
	Table 1.1 U.S. - Corner Coordinates - IFR Low Enroute .....	1-2
1.2.4.2	(AK) Enroute Charts - Alaska.....	1-5
	Table 1.2 (AK) - Corner Coordinates - IFR Low Enroute .....	1-5
1.2.4.3	Inset Charts - U.S. ....	1-6
	Table 1.3 U.S. - Inset Charts - IFR Low Enroute .....	1-6
1.2.4.4	U.S. Area Chart (A-1 & A-2).....	1-7
1.2.4.5	U.S. & Alaska Area Charts .....	1-7
	Table 1.4 U.S. - Area Charts - IFR Low Enroute .....	1-7
	Table 1.5 U.S. - Area Chart A-1 Corner Coordinates - IFR Low Enroute .....	1-7
	Table 1.7 (AK) Area Charts - IFR Low Enroute .....	1-8
	Table 1.6 U.S. - Area Chart A-2 Corner Coordinates - IFR Low Enroute .....	1-8
1.2.4.6	(AK) Route Selection Chart (on Chart L-2).....	1-9
	Table 1.8 (AK) - Route Selection Chart .....	1-9
1.2.5	Scales .....	1-9
1.2.5.1	U.S. Enroute Charts .....	1-9
	Table 1.9 U.S. - Enroute Chart Scales .....	1-9
	Table 1.10 (AK) - Enroute Chart Scales.....	1-9
1.2.5.2	Inset Charts .....	1-10
	Table 1.11 U.S. - Inset Chart Scales .....	1-10
1.2.5.3	Area Charts .....	1-10
	Table 1.12 U.S. - Area Chart Scales .....	1-10
	Table 1.13 (AK) - Area Chart Scales.....	1-10
1.2.5.4	(AK) Route Selection Chart.....	1-10
1.2.6	Central Meridians .....	1-10
1.2.6.1	Enroute Charts.....	1-10

1.2.6.2	Area Charts - U.S. ....	1-11
	Table 1.14 U.S. - Area Chart Central Meridians.....	1-11
1.2.6.3	(AK) Area Charts - Alaska.....	1-11
	Table 1.15 (AK) Area Chart Central Meridians.....	1-11
1.2.6.4	(AK) Alaska and Route Selection Chart .....	1-11
1.2.7	Projections .....	1-11
1.2.8	Colors .....	1-11
1.2.9	Symbolization.....	1-12
1.2.10	Type Styles .....	1-12

## CHAPTER 2 – LAYOUT AND FORMAT

2.1	U.S. & Alaska Enroute and U.S. Area (A-1 & A-2) Charts .....	2-1
2.1.1	Format.....	2-1
2.1.2	Layout.....	2-1
2.1.2.1	U.S. & Alaska Enroute Charts .....	2-1
2.1.2.1.1	U.S. Enroute Chart Layouts.....	2-1
2.1.2.1.2	(AK) Alaska Enroute Chart Layouts .....	2-1
2.1.2.1.3	Size and Dimension .....	2-1
2.1.2.1.4	Dimensions .....	2-2
2.1.2.1.5	Panel Folds.....	2-2
2.1.2.2	INSET CHARTS.....	2-2
	Table 2.1 Inset Chart Location.....	2-2
2.1.2.3	AREA CHARTS .....	2-2
2.1.2.3.1	Arrangement and Location .....	2-2
	Table 2.2 Area Chart Arrangement and Location - U.S.....	2-3
	Table 2.3 (AK) - Area Chart Arrangement and Location .....	2-3
2.1.2.4	(AK) Route Selection Chart.....	2-4

## CHAPTER 3 – CONTENT

3.1	General.....	3-1
3.1.1	Mileages .....	3-1
3.1.2	Bearings and Radials .....	3-1
3.1.3	Boxes .....	3-1
3.1.4	Time Zones .....	3-2
	Figure 3.1 Application of Double Dagger -Examples .....	3-2
3.1.5	Chart Notes .....	3-2
3.1.6	Geographical Coordinates .....	3-2
3.1.7	Elevations/Altitudes .....	3-2

3.2	Placement of Data.....	3-2
3.2.1	Text.....	3-2
3.2.2	Symbols .....	3-2
3.3	Title Panel Information.....	3-3
3.3.1	Foreign Airspace Warning Note.....	3-3
	Figure 3.2 Foreign Airspace Warning Note .....	3-3
3.3.2	Chart Identification Area .....	3-3
3.3.2.1	Chart Idents .....	3-4
	Figure 3.3 Chart Idents Examples - U.S. and Alaska Charts.....	3-4
3.3.2.2	Arrowheads .....	3-4
3.3.2.3	Panel Identification .....	3-4
3.3.2.4	Chart Scales.....	3-4
3.3.3	Title Area.....	3-5
3.3.3.1	Chart Title .....	3-5
	Figure 3.4 Chart Title Format.....	3-5
3.3.3.2	Altitude Note .....	3-5
	Figure 3.5 Altitude Note .....	3-5
3.3.3.3	Effective Dates and Times Note .....	3-5
	Figure 3.6 Effective Dates and Times Note.....	3-5
3.3.3.4	NOTAM Note .....	3-5
	Figure 3.7 NOTAM Note .....	3-5
3.3.3.5	Safety Alerts and Charting Notices Note.....	3-5
3.3.3.6	Corrections, Comments and/or Procurement Note .....	3-6
3.3.3.7	OROCA Notice .....	3-6
3.3.3.8	(AK) Chart Notice - GPS/WAAS Navigation Operations in Alaska.....	3-6
	Figure 3.8 (AK) GPS/WAAS Chart Notice.....	3-6
3.3.4	Chart Identification Labels .....	3-6
	Figure 3.9 Chart Identification Labels - U.S. and Alaska Charts.....	3-6
3.3.4.1	Chart Idents .....	3-7
3.3.4.2	Chart Effective Date.....	3-7
3.3.4.3	Area of Coverage .....	3-7
3.3.5	FAA Logo/Banner .....	3-7
	Figure 3.10 FAA Branding.....	3-7
3.3.6	Chart Index .....	3-7
	Figure 3.11 Chart Index - U.S. ....	3-8
	Figure 3.12 Chart Index - Alaska .....	3-8
3.3.6.1	Land and Water Areas.....	3-8
3.3.6.2	International Boundaries .....	3-8

3.3.6.3	Low Altitude Chart Coverage .....	3-9
3.3.6.3.1	Offshore Navigation Only L-21 .....	3-9
3.3.6.4	Area Chart Cities .....	3-9
3.3.6.4.1	U.S. Area Chart Coverage .....	3-9
	Figure 3.13 Area Chart Listing .....	3-9
	Figure 3.14 Area Chart Coverage Note .....	3-9
3.3.6.4.2	(AK) Alaska Area Chart Coverage .....	3-10
	Figure 3.15 (AK) Alaska Area Chart Depiction on Active Chart .....	3-10
	Figure 3.16 (AK) Alaska Area Chart Depiction on Inactive Chart .....	3-10
3.3.6.5	Prominent Cities .....	3-10
3.3.6.6	Time Zone Boundaries and International Dateline .....	3-10
3.3.6.7	(AK) Wall Planning Chart Instructions (Airplane Silhouettes) .....	3-11
	Figure 3.17 Registration Marks (Airplane Silhouettes)/Wall Planning Instructions .....	3-11
3.3.7	Interagency Air Committee (IAC) Credit Note .....	3-11
	Figure 3.18 IAC Credit Note .....	3-11
3.3.8	QR Codes .....	3-11
3.3.9	Bar Codes .....	3-11
	Figure 3.19 Bar Codes .....	3-11
3.4	Legend Panel Information .....	3-12
3.4.1	Chart Identification Area .....	3-12
3.4.1.1	Chart Idents .....	3-12
3.4.1.1.1	U.S. Charts .....	3-12
3.4.1.1.2	(AK) Alaska Charts .....	3-12
3.4.1.2	Arrowheads .....	3-12
3.4.1.2.1	U.S. Charts .....	3-13
3.4.1.2.2	(AK) Alaska Charts .....	3-13
3.4.1.3	Panel Identification .....	3-13
3.4.1.3.1	U.S. Charts .....	3-13
3.4.1.3.2	Alaska Charts .....	3-13
3.4.1.4	Chart Scales .....	3-13
3.4.1.4.1	U.S. Charts .....	3-14
3.4.1.4.2	Alaska Charts .....	3-14
3.4.2	Title Area .....	3-14
3.4.2.1	Chart Title .....	3-14
3.4.2.2	Altitude Note .....	3-14
3.4.2.3	Horizontal Datum Note .....	3-14
	Figure 3.20 Horizontal Datum Note .....	3-14



3.4.3	Chart Legend .....	3-14
	Table 3.1 Chart Legend Title Headings .....	3-14
3.5	Tabulated Data Area .....	3-15
3.5.1	Military Training Routes (MTR) Tabulation - U.S. & Alaska .....	3-15
3.5.1.1	General .....	3-15
	Figure 3.21 Military Training Routes Tabulation.....	3-16
3.5.1.2	Title .....	3-16
3.5.1.3	Columns and Sub-columns .....	3-16
3.5.1.3.1	Number Column .....	3-16
3.5.1.3.2	Altitude Range Column .....	3-16
3.5.2	Special Use Airspace (SUA) and Military Operations Areas (MOA) Tabulation	
	Legend.....	3-16
	Figure 3.22 SUA and MOA Tabulation Legend - U.S. Charts .....	3-16
	Figure 3.23 SUA and MOA Tabulation Legend - AK Charts.....	3-16
3.5.3	Special Use Airspace (SUA) Tabulation .....	3-17
	Figure 3.24 Special Use Airspace (SUA) Tabulation .....	3-17
3.5.3.1	Number Column.....	3-17
3.5.3.2	Effective Altitude Column .....	3-17
3.5.3.3	Times Used Column, UTC.....	3-17
3.5.3.4	Controlling Agency/Air Ground (A/G) Column.....	3-17
3.5.3.5	Panel Column.....	3-18
3.5.4	Military Operations Areas (MOA) Tabulation.....	3-18
	Figure 3.25 Military Operations Areas.....	3-18
3.5.4.1	Number Column.....	3-18
3.5.4.2	Effective Altitude Column .....	3-18
3.5.4.3	Time of Use Column.....	3-18
3.5.4.4	Controlling Agency/Air Ground (A/G) Column.....	3-18
3.5.4.5	Panel Column.....	3-19
3.5.5	Airport Locations Tabulation .....	3-19
	Figure 3.26 Airport Locations .....	3-19
3.5.5.1	Name Column .....	3-19
3.5.5.2	ID Column.....	3-19
3.5.5.3	Panel Column.....	3-19
3.6	Margin Information .....	3-19
3.6.1	Bar Scales .....	3-20
3.6.1.1	Placement .....	3-20
3.6.1.2	Increments and Labels .....	3-20

3.6.1.2.1	U.S. Charts .....	3-20
	Figure 3.27 Chart Scale Increments - 10NM Increment Example .....	3-20
3.6.1.2.2	Offshore Navigation Chart L-21 .....	3-20
	Figure 3.28 Chart Scale Increments - 2NM Increment Example .....	3-20
3.6.1.2.3	Alaska Charts .....	3-20
	Figure 3.29 Chart Scale Increments - 5NM Increment Example .....	3-20
3.6.1.3	Chart Scale .....	3-21
3.6.1.4	Nautical Mile Text .....	3-21
3.6.2	Panel/Fold Identification .....	3-21
	Figure 3.30 Top of Panel Fold Indication .....	3-21
	Figure 3.31 Bottom of Panel Fold Indication .....	3-21
3.6.3	Chart Idents .....	3-21
	Figure 3.32 Chart Number Identification.....	3-22
3.6.4	Airways/Routes Extending Past the Chart Neatline .....	3-22
3.6.4.1	External CNFs & Unnamed Mileage Breaks .....	3-22
	Figure 3.33 Airways/Routes Past Chart Boundary - External - CNF & Unnamed Mileage Break .....	3-22
3.6.4.2	Internal Chart Boundaries .....	3-23
	Table 3.2 Internal Boundary Next Point Information .....	3-23
3.6.4.2.1	VHF/UHF or LF/MF Routes .....	3-23
	Figure 3.34 Routes Past Chart Boundary - Internal - VHF/UHF and LF/MF Routes .....	3-23
3.6.4.2.2	RNAV Routes .....	3-24
	Figure 3.35 Routes Past Chart Boundary - Internal - RNAV Routes.....	3-24
3.6.4.2.3	Joint Routes.....	3-25
	Figure 3.36 Routes Past Chart Boundary - Internal - RNAV Joint Routes.....	3-25
3.6.4.3	External Chart Boundaries .....	3-25
	Table 3.3 External Boundary Next Point Information .....	3-25
3.6.4.3.1	VHF/UHF or LF/MF Routes .....	3-26
	Figure 3.37 Airways/Routes Past Chart Boundary - External - VHF/UHF and LF/MF Routes .....	3-26
3.6.4.3.2	RNAV Routes .....	3-26
	Figure 3.38 Airways/Routes Past Chart Boundary - External - RNAV Route .....	3-26
3.6.4.3.3	Joint Routes.....	3-27
	Figure 3.39 Airways/Routes Past Chart Boundary - External - Joint .....	3-27
3.6.4.4	Placement of Next Point Information .....	3-27
3.6.4.4.1	Internal Boundary Next Point Information .....	3-27
	Figure 3.40 Next Point Information - Internal - NAVAID & Fix .....	3-27
	Figure 3.41 Next Point Information - Internal - RNAV.....	3-28
	Figure 3.42 Next Point Information - Internal - Airways/Routes with Different Next Points .....	3-28

3.6.4.4.2	External Boundary Next Point Information.....	3-28
	Figure 3.43 Next Point Information - External - NAVAID & Fix .....	3-28
3.6.5	Margin Notes for Adjoining/Overlapping Charts.....	3-29
	Figure 3.44 Margin Notes for Adjoining/Overlapping Charts .....	3-29
	Figure 3.45 Margin Notes for Adjoining Charts - Along the Top.....	3-29
	Figure 3.46 Margin Notes for Adjoining Charts - Along the Sides .....	3-29
	Figure 3.47 Margin Notes for Adjoining Charts - Along the Bottom .....	3-30
	Figure 3.48 Margin Notes for Adjoining Charts - Canadian and DoD Charts .....	3-30
3.7	Chart Detail.....	3-30
3.7.1	Projection Lines.....	3-30
3.7.1.1	General .....	3-31
	Figure 3.49 Projection Lines.....	3-31
3.7.1.2	Latitude .....	3-31
	Figure 3.50 Latitude.....	3-31
3.7.1.3	Longitude .....	3-31
	Figure 3.51 Longitude .....	3-31
3.7.2	Base Detail.....	3-31
3.7.2.1	Shoreline .....	3-32
	Figure 3.52 Shoreline.....	3-32
3.7.2.2	International Boundary .....	3-32
	Figure 3.53 International Boundary Lines.....	3-32
	Figure 3.54 Omission of International Boundary Lines .....	3-32
3.7.2.3	(AK) United States/Russia Maritime Boundary .....	3-32
	Figure 3.55 United States/Russian Maritime Boundary .....	3-32
3.7.2.4	Time Zones .....	3-33
	Figure 3.56 Time Zones.....	3-33
3.7.2.5	International Date Line .....	3-33
	Figure 3.57 International Date Line.....	3-33
3.7.2.6	Lines of Equal Magnetic Variation (Isogonic Lines).....	3-33
	Figure 3.58 Lines of Equal Magnetic Variation (Isogonic Lines).....	3-33
3.7.2.7	Off-route Obstruction Clearance Altitude (OROCA).....	3-34
	Figure 3.59 OROCA Value Example - 12,500 Feet .....	3-34
	Figure 3.60 OROCA Figure Placement.....	3-34
3.7.2.7.1	OROCA Notice.....	3-35
	Figure 3.61 OROCA Notice .....	3-35
3.7.3	Airports.....	3-35
3.7.3.1	Charting Criteria .....	3-35
3.7.3.2	Airport Symbolology .....	3-35
	Figure 3.62 Airport Classification/Symbolology.....	3-36

3.7.3.2.1	Heliports.....	3-36
	Figure 3.63 Heliports Symbolology and Data .....	3-36
3.7.3.2.2	Seaplane Bases.....	3-36
	Figure 3.64 Seaplane Bases Symbolology and Data .....	3-36
3.7.3.3	Airport Data Block.....	3-36
	Figure 3.65 Airport Data Block .....	3-36
3.7.3.3.1	Minimum Operational Network (MON) Airport Designator .....	3-37
	Figure 3.66 MON Airport Designator .....	3-37
3.7.3.3.2	Associated City Names .....	3-37
	Figure 3.67 Associated City Names .....	3-37
3.7.3.3.3	Airport Names.....	3-37
	Figure 3.68 Airports Identified Under Part 93 .....	3-37
3.7.3.3.4	Airport Identifiers .....	3-38
	Figure 3.69 Airport Identifiers .....	3-38
3.7.3.3.5	Airport Airspace .....	3-38
3.7.3.3.6	Airport Elevation .....	3-38
3.7.3.3.7	Runway Lighting .....	3-38
	Figure 3.70 Example of Lighting Symbolology at an Airport .....	3-38
	Figure 3.71 Example of Availability of Runway Lights at Private Airport .....	3-38
3.7.3.3.8	Runway Length.....	3-39
3.7.3.3.9	Runway Surface.....	3-39
3.7.3.3.10	Automated Surface Observing System (ASOS)/Automated Weather Observing System (AWOS).....	3-39
3.7.3.3.11	Automatic Terminal Information Service (ATIS) .....	3-39
	Figure 3.72 ATIS Arrival and Departure Frequencies .....	3-39
3.7.3.3.12	(AK) Automatic Flight Information Service (AFIS) .....	3-39
3.7.3.4	FAR Part 91 - Fixed Wing/Special Visual Flight Rules/SFAR 50-2.....	3-40
	Figure 3.73 NO SVFR Example .....	3-40
3.7.3.5	(AK) Alaska - Part-Time Controlled Airspace .....	3-40
3.7.4	Radio Aids to Navigation (NAVAIDs) .....	3-40
3.7.4.1	Charting Criteria .....	3-40
3.7.4.2	NAVAID Symbolology .....	3-41
	Figure 3.74 NAVAID Symbols.....	3-41
3.7.4.3	Compulsory/Non-Compulsory Reporting Points.....	3-41
	Figure 3.75 NAVAID Symbols with Compulsory and Non-Compulsory Reporting .....	3-41
3.7.4.4	NAVAID North Arrow .....	3-41
	Figure 3.76 NAVAID North Arrow Orientation.....	3-41
3.7.4.5	Compass Roses .....	3-41
	Figure 3.77 Compass Roses .....	3-42
3.7.4.6	NAVAID Identification Boxes .....	3-42

3.7.4.6.1	General.....	3-42
	Figure 3.78 NAVAID Identification Boxes.....	3-43
	Figure 3.79 Extremely Long NAVAID Name.....	3-43
3.7.4.6.2	Y Mode Channel.....	3-44
	Figure 3.80 Examples of Y Mode Channel.....	3-44
3.7.4.6.3	No Voice, Part-Time and On Request Frequencies.....	3-44
	Figure 3.81 NAVAID Operating Less than Continuous & No Voice.....	3-44
3.7.4.6.4	Geographic Coordinates.....	3-44
	Figure 3.82 NAVAIDs - Coordinates.....	3-44
3.7.4.6.5	Standard Service Volume (SSV) Classifications (Frequency Protection).....	3-44
	Figure 3.83 NAVAID Standard Service Volume (SSV).....	3-44
3.7.4.6.6	Abnormal Status.....	3-45
	Figure 3.84 NAVAIDs - Abnormal Status.....	3-45
3.7.4.6.7	Private-Use NAVAIDs.....	3-45
	Figure 3.85 Private-Use NAVAID.....	3-45
3.7.4.7	NAVAID Types.....	3-45
3.7.4.7.1	VHF Omnidirectional Range Station (VOR).....	3-45
	Figure 3.86 VOR.....	3-45
3.7.4.7.2	VHF Omnidirectional Range Station and Distance Measuring Equipment (VOR/DME).....	3-46
	Figure 3.87 VOR/DME.....	3-46
3.7.4.7.3	Tactical Air Navigation (TACAN).....	3-46
	Figure 3.88 TACAN.....	3-46
3.7.4.7.4	VHF Omnidirectional Range – Tactical Air Navigation (VORTAC).....	3-46
	Figure 3.89 VORTAC.....	3-46
3.7.4.7.5	Distance Measuring Equipment (DME).....	3-47
	Figure 3.90 DME.....	3-47
3.7.4.7.6	Non-Directional Radio Beacons (NDB).....	3-47
	Figure 3.91 LF/MF NDBs.....	3-47
3.7.4.7.7	Non-Directional Radio Beacons and Distance Measuring Equipment (NDB/DME).....	3-47
	Figure 3.92 NDB/DME.....	3-47
3.7.4.7.8	Marine Radio Beacons.....	3-47
3.7.4.7.9	ILS Components.....	3-48
	Figure 3.93 Compass Locator Beacon.....	3-48
	Figure 3.94 ILS Localizer Course with Frequency & Identifier.....	3-48
	Figure 3.95 ILS Back Course.....	3-49
3.7.4.7.10	Non-collocated VOR and TACAN Facilities.....	3-49
3.7.5	Flight Service Stations (FSS) & Remote Communications Outlets (RCOs).....	3-49
3.7.5.1	General.....	3-49
	Figure 3.96 FSSs with the Same Name as NAVAID and Not Designated RCO.....	3-50

3.7.5.2	FSS Frequencies.....	3-50
	Figure 3.97 FSS Frequencies .....	3-50
3.7.5.3	FSS Associated with a NAVAID.....	3-50
	Figure 3.98 FSS Associated with a NAVAID .....	3-50
3.7.5.4	FSS Not Associated with a NAVAID.....	3-51
	Figure 3.99 FSS Not Associated with a NAVAID .....	3-51
3.7.5.5	Part-time FSS .....	3-51
	Figure 3.100 Part-time FSS.....	3-51
3.7.5.6	RCOs Associated with NAVAIDs.....	3-51
	Figure 3.101 RCOs Associated with a NAVAID .....	3-51
3.7.5.7	RCOs Not Associated with a NAVAID.....	3-51
	Figure 3.102 RCOs Not Associated with a NAVAID .....	3-52
3.7.6	Automated Weather Broadcast System (AWBS).....	3-52
3.7.6.1	Automated Weather Broadcast Service Associated with a NAVAID .....	3-52
	Figure 3.103 Automated Weather Broadcast Systems.....	3-52
	Figure 3.104 Automated Weather Broadcast System Associated with a NAVAID .....	3-52
3.7.6.2	Stand Alone AWOS & ASOS.....	3-52
	Figure 3.105 Stand Alone AWOS and ASOS.....	3-52
3.7.7	Airspace Information.....	3-53
3.7.7.1	General Air Traffic Service (ATS) Area Information .....	3-53
	Figure 3.106 General Air Traffic Service (ATS) Area Information .....	3-53
3.7.7.1.1	Type of Service .....	3-53
3.7.7.1.2	Identification Name and ICAO Ident.....	3-53
3.7.7.1.3	Vertical Limits .....	3-53
3.7.7.1.4	Call Sign and Frequencies .....	3-54
3.7.7.1.5	Explanatory Notes.....	3-54
3.7.7.2	Airspace Notes .....	3-54
3.7.7.2.1	United States Airspace Note .....	3-54
	Figure 3.107 U.S. Airspace Notes.....	3-54
3.7.7.2.2	Other Miscellaneous Airspace Notes.....	3-54
3.7.7.3	Airspace Types and Boundaries.....	3-54
3.7.7.3.1	General.....	3-54
3.7.7.3.2	Class B Airspace.....	3-55
	Figure 3.108 Class B Airspace .....	3-55
3.7.7.3.3	Class C Airspace .....	3-55
	Figure 3.109 Class C Airspace .....	3-56
3.7.7.3.4	Class D Airspace.....	3-56
	Figure 3.110 Part-Time Airspace - Class D .....	3-56
3.7.7.3.5	Class E Airspace .....	3-56
	Figure 3.111 Offshore Airspace Area .....	3-57

3.7.7.3.6	Class G Airspace (Uncontrolled) Airspace.....	3-57
	Figure 3.112 Class G (Uncontrolled) Airspace.....	3-58
3.7.7.3.7	Mode C Required Areas .....	3-58
	Figure 3.113 Mode C Required Area.....	3-58
3.7.7.3.8	Oceanic Control Areas.....	3-58
3.7.7.3.9	Special Use Airspace (SUA) and Military Operation Areas (MOA) .....	3-58
	Figure 3.114 SUA & MOA Boundaries .....	3-59
	Figure 3.115 SUA Boundaries - Small Areas .....	3-59
	Figure 3.116 SUA & MOA Exclusion Area with Notes .....	3-60
3.7.7.3.10	Special Flight Rules Area (SFRA).....	3-60
	Figure 3.117 Special Flight Rules Area Boundary (SFRA) .....	3-60
	Figure 3.118 Grand Canyon National Park SFRA Note.....	3-60
3.7.7.3.11	Air Defense Identification Zones (ADIZ, CADIZ) and Defense Areas .....	3-61
	Figure 3.119 ADIZ and Defense Area Boundaries.....	3-61
	Figure 3.120 Adjoining ADIZ Boundaries .....	3-61
	Figure 3.121 FIR Boundary Coincides with the Boundary of an ADIZ.....	3-61
3.7.7.3.12	Flight Information Regions (FIR).....	3-61
	Figure 3.122 FIR Boundary .....	3-61
	Figure 3.123 Adjoining FIRs .....	3-62
	Figure 3.124 Adjoining CTA/FIRs .....	3-62
	Figure 3.125 CTA/FIR collocated with a FIR & with Class G/Unclassified Airspace .....	3-62
3.7.7.3.13	Air Route Traffic Control Center (ARTCC), Area Control Center (ACC), Remote Center Air/Ground (RCAG) .....	3-62
	Figure 3.126 ARTCC or ACC Boundary .....	3-62
	Figure 3.127 ARTCC Boundary with CPDLC Identification .....	3-63
	Figure 3.128 ARTCC Remote Communications A/G (RCAG) .....	3-63
	Figure 3.129 ARTCC Boundaries Collocated with Other Linear Symbols.....	3-64
3.7.7.3.14	Continental Control Boundary (U.S.) .....	3-64
	Figure 3.130 Example of Continental Control Boundary (U.S.) .....	3-64
3.7.7.3.15	Altimeter Setting.....	3-65
	Figure 3.131 Example of Altimeter Settings .....	3-65
3.7.7.3.16	Additional Control Areas.....	3-66
	Figure 3.132 Additional Control Areas .....	3-66
	Figure 3.133 Offshore Airspace Areas - Vertical Limits.....	3-66
3.7.8	Airways/Routes .....	3-66
3.7.8.1	General .....	3-67
	Figure 3.134 Supplementary Explanatory Notes.....	3-67
3.7.8.2	Airway/Route Types .....	3-67
3.7.8.2.1	Victor Airways.....	3-67
	Figure 3.135 Victor Airways .....	3-67

3.7.8.2.2	LF/MF Airway .....	3-67
	Figure 3.136 LF/MF Airway .....	3-67
3.7.8.2.3	Oceanic, Atlantic, Gulf, Puerto Rico and Bahamas Routes.....	3-68
	Figure 3.137 Oceanic, Atlantic and Bahamas Routes .....	3-68
3.7.8.2.4	Air Traffic Service (ATS) Routes.....	3-68
	Figure 3.138 Air Traffic Service Routes .....	3-68
3.7.8.2.5	Area Navigation (RNAV) T-Routes and TK-Routes .....	3-69
	Figure 3.139 RNAV T and TK Routes.....	3-69
	Figure 3.140 RNAV T and TK Routes - Coincident.....	3-69
	Figure 3.141 (AK) GPS/WAAS Chart Note .....	3-69
3.7.8.2.6	Gulf of Mexico “Q” (RNAV) Routes .....	3-70
	Figure 3.142 Q Routes.....	3-70
3.7.8.2.7	Unusable Airway/Route Segments .....	3-70
	Figure 3.143 Unusable Airway/Route Segment.....	3-70
	Figure 3.144 Coincident Airways/Routes with Unusable Segment .....	3-70
3.7.8.2.8	Substitute Airway/Route.....	3-70
	Figure 3.145 Substitute Airway/Route Symbol .....	3-70
	Figure 3.146 Substitute Airway/Route Non Coincident .....	3-71
	Figure 3.147 Substitute Airway/Route Coincident .....	3-72
	Figure 3.148 Substitute Routes - NOTAM and Special Notice Notes .....	3-72
3.7.8.2.9	Military Training Routes (MTR) .....	3-72
	Figure 3.149 Military Training Routes (MTRs).....	3-72
	Figure 3.150 IR and VR MTRs on Same Route Segment.....	3-73
	Figure 3.151 MTRs Directional Arrowheads.....	3-73
3.7.8.3	Airway/Route Data .....	3-73
3.7.8.3.1	General.....	3-73
	Figure 3.152 Airway/Route Data Grouping .....	3-73
3.7.8.3.2	Identification.....	3-73
	Figure 3.153 Route Identifications .....	3-74
	Figure 3.154 Coincidental Routes of the Same Classification.....	3-74
	Figure 3.155 Airway/Route Identifications in Congested Areas .....	3-74
3.7.8.3.3	Preferred Direction Airways/Routes.....	3-75
	Figure 3.156 Preferred Direction Airways/Routes.....	3-75
3.7.8.3.4	Radials and Bearings .....	3-75
	Figure 3.157 Radials and Bearings.....	3-75
	Figure 3.158 RNAV T Route Magnetic Reference Bearings.....	3-75
	Figure 3.159 Gulf of Mexico Q Routes.....	3-76
	Figure 3.160 Unusable Radial .....	3-76



3.7.8.3.5	Minimum Enroute Altitudes (MEA), Minimum Obstruction Clearance Altitude (MOCA) and Maximum Authorized Altitudes (MAA).....	3-77
	Figure 3.161 MEAs.....	3-77
	Figure 3.162 Different MEAs .....	3-77
	Figure 3.163 MOCAs.....	3-77
	Figure 3.164 MAAs .....	3-78
	Figure 3.165 MEAs and MAAs .....	3-78
	Figure 3.166 “T” Symbol.....	3-78
	Figure 3.167 Altitude Changes Along a Route.....	3-78
3.7.8.3.6	MEA Gap .....	3-79
	Figure 3.168 MEA Gap.....	3-79
3.7.8.3.7	Minimum Crossing Altitudes (MCA) and Minimum Turning Altitudes (MTA) .....	3-79
	Figure 3.169 MCA/MTA Flag Symbol .....	3-79
	Figure 3.170 MCA and MTA Data at a Fix.....	3-79
	Figure 3.171 MCA & MTA Data Complex Example.....	3-80
	Figure 3.172 Minimum Crossing Altitudes (MCA) at a NAVAID .....	3-80
	Figure 3.173 MCA in a Congested Area with Leader Line .....	3-80
	Figure 3.174 Multiple Minimum Crossing Altitude (MCAs).....	3-81
3.7.8.3.8	Minimum Reception Altitudes (MRA).....	3-81
	Figure 3.175 Minimum Reception Altitudes (MRA) .....	3-81
3.7.8.3.9	Mileage Distances.....	3-81
	Figure 3.176 Segment Mileages .....	3-81
	Figure 3.177 Box Mileages.....	3-82
	Figure 3.178 Box Mileages Offset by Segment Mileage.....	3-82
	Figure 3.179 Box Mileages - Coincidental Routes.....	3-82
	Figure 3.180 Box Mileages - “TO” Notes .....	3-82
	Figure 3.181 Mileage Breaks.....	3-83
3.7.8.3.10	VOR Changeover Points (COP) .....	3-83
	Figure 3.182 Changeover Points (COP) .....	3-83
	Figure 3.183 Changeover Points (COP) - LF/MF Establishing COP.....	3-83
	Figure 3.184 Changeover Points (COP) - LF/MF with DME .....	3-83
3.7.9	Navigational and Procedural Information .....	3-84
3.7.9.1	Fixes .....	3-84
3.7.9.1.1	Operational Notes .....	3-84
	Figure 3.185 Operational Notes.....	3-84
3.7.9.1.2	Flyover Symbolology.....	3-84
	Figure 3.186 Flyover Symbolology .....	3-84
3.7.9.1.3	Radio Intersections & DME Fixes.....	3-84
	Figure 3.187 Radio Fixes.....	3-84
	Figure 3.188 Offshore Fixes without Makeups .....	3-84
	Figure 3.189 Radio Fix Geographic Coordinates .....	3-85

Figure 3.190 NAVAIDS without DME Capability.....	3-85
Figure 3.191 NAVAIDS with DME Capability.....	3-85
Figure 3.192 DME Boats.....	3-86
Figure 3.193 NAVAIDS Used for Fix Makeups .....	3-86
Figure 3.194 Radio Fix Makeup for Offshore Fixes .....	3-86
Figure 3.195 Magnetic Radial/Bearing Values .....	3-87
3.7.9.1.4 Facility Locator Boats.....	3-87
Figure 3.196 VOR and VOR/DME Capability Facility Locator Boats .....	3-87
Figure 3.197 NDB and NDB/DME Facility Locator Boats .....	3-87
Figure 3.198 Facility Locator Boats.....	3-88
Figure 3.199 Facility Locator Boats.....	3-88
Figure 3.200 Facility Locator Boats in Congested Areas .....	3-88
Figure 3.201 Facility Locator Boats - Unusable NAVAID.....	3-89
3.7.9.1.5 RNAV Waypoints.....	3-89
Figure 3.202 RNAV Waypoints Reporting & Flyover Function .....	3-89
Figure 3.203 Waypoints - Not Part of a Route Description .....	3-89
3.7.9.2 Computer Navigation Fixes (CNF).....	3-89
Figure 3.204 Computer Navigation Fixes.....	3-89
Figure 3.205 Computer Navigation Fixes - Victor Airway Examples.....	3-90
3.7.9.3 Holding Patterns.....	3-90
3.7.9.3.1 NAVAID-based Holding Patterns .....	3-90
Figure 3.206 Conventional Holding Patterns .....	3-90
Figure 3.207 Holding Patterns with Speed Restriction .....	3-90
Figure 3.208 Off Route NDB Holding Pattern.....	3-91
Figure 3.209 Off Route Holding Pattern within Compass Rose .....	3-91
Figure 3.210 Off Route Holding Pattern Off a TACAN.....	3-91
Figure 3.211 Offroute VHF Defined Fix Holding Pattern with Extended Radial Line .....	3-91
Figure 3.212 Off Route VHF Defined Fix Holding Pattern.....	3-92
3.7.9.3.2 RNAV-based Holding Patterns.....	3-92
Figure 3.213 RNAV Holding Patterns .....	3-92
Figure 3.214 RNAV Holding Pattern Beyond U.S. Continental Control .....	3-92
3.7.10 Area Chart Coverage Areas on Enroute Charts.....	3-92
3.7.10.1 General .....	3-92
Figure 3.215 Area Chart Coverage Area Boundary within Enroute Charts .....	3-92
3.7.10.2 Data Depicted Within the Outlined Areas .....	3-93
3.7.10.2.1 Data Depicted within the Outlined Area for Washington.....	3-93
3.7.10.2.2 (AK) Data Depicted within the Outlined Area for Vancouver .....	3-93
Figure 3.216 (AK) NAVAIDS Depicted within Vancouver Area Chart Boundary Area.....	3-93
3.7.10.2.3 Chart Detail within the Outline Areas .....	3-93
3.7.11 (AK) Registration Guide Marks for Wall Chart Assembly.....	3-95
Figure 3.217 (AK) Registration Marks .....	3-95

3.8	Inset Charts .....	3-96
3.8.1	General .....	3-96
3.8.2	Border Information .....	3-96
3.8.2.1	Inset Chart Title .....	3-96
	Figure 3.218 Inset Chart Title.....	3-96
3.8.2.2	Bar Scale .....	3-96
	Figure 3.219 Inset Chart Bar Scale.....	3-96
3.8.2.3	Overlap Notes .....	3-96
	Figure 3.220 Inset Chart Overlap Note.....	3-96
3.8.2.4	Airways .....	3-97
3.8.3	Chart Detail .....	3-97
3.8.3.1	Airspace Information .....	3-97
3.8.3.2	Airway Data .....	3-97
3.8.3.3	Navigation and Procedural Information.....	3-97
3.9	Chart Detail in Foreign Areas.....	3-97
3.9.1	Projection Lines.....	3-97
3.9.2	Base Detail.....	3-98
3.9.2.1	Off-route Obstruction Clearance Altitude (OROCA).....	3-98
3.9.3	Foreign Airports .....	3-98
3.9.3.1	Charting Criteria .....	3-98
3.9.3.2	Airport Symbolology .....	3-98
	Figure 3.221 Foreign Airports .....	3-98
3.9.4	Foreign NAVAIDs .....	3-98
3.9.4.1	Charting Criteria .....	3-98
3.9.4.2	NAVAID Symbolology .....	3-98
3.9.4.3	NAVAID North Arrow .....	3-98
3.9.4.4	Compass Roses .....	3-98
3.9.4.5	NAVAID Identification Boxes .....	3-99
3.9.4.6	NAVAID Types .....	3-99
3.9.5	Foreign Airspace Information .....	3-99
3.9.5.1	Airspace Notes .....	3-99
3.9.5.1.1	Foreign Airspace Note .....	3-99
	Figure 3.222 Foreign Airspace Note.....	3-99
3.9.5.1.2	Foreign Airspace Notes – HAVANA FIR.....	3-99
	Figure 3.223 Havana FIR Note.....	3-99
3.9.5.1.3	Foreign General Air Traffic Service (ATS) Area Information.....	3-99
	Figure 3.224 Foreign General Air Traffic Service (ATS) Area Information .....	3-99
3.9.5.2	CTA/FIR Boundaries .....	3-99

3.9.5.3	ARTCC and ACC Boundaries .....	3-100
3.9.6	Foreign Airways/Routes .....	3-100
	Figure 3.225 Foreign Airways/Routes .....	3-100
3.9.7	Foreign Navigational and Procedural Information .....	3-100
3.9.7.1	Foreign Fixes/Waypoints .....	3-100
3.10	Area Charts - U.S. (A-1 & A-2) AND Alaska (AK) .....	3-100
3.10.1	Chart Detail .....	3-101
3.10.1.1	Projection Lines .....	3-101
3.10.2	Terrain Contours on Area Charts.....	3-101
	Figure 3.226 Example No. 1 - Contour Lines every 2,000 feet.....	3-101
	Figure 3.227 Example No. 2 - Contour Lines every 3,000 feet.....	3-102
3.10.2.1	Terrain Contour Note .....	3-102
	Figure 3.228 Terrain Contour Note.....	3-102
3.10.3	Airspace Notes.....	3-102
	Figure 3.229 Uncontrolled Airspace Note .....	3-102
3.11	Area Chart (A-1 & A-2) .....	3-103
3.11.1	Title Panel.....	3-103
3.11.1.1	Area Chart Distinctive Header.....	3-103
	Figure 3.230 Area Chart Distinctive Header.....	3-103
3.11.1.2	Foreign Airspace Warning Note .....	3-103
3.11.1.3	Chart Identification Area .....	3-104
3.11.1.3.1	Chart Numbers .....	3-104
	Figure 3.231 Chart Number Style .....	3-104
3.11.1.3.2	Arrowheads.....	3-104
3.11.1.3.3	Area Chart Names.....	3-104
3.11.1.4	Title Area .....	3-104
3.11.1.4.1	Chart Title .....	3-104
	Figure 3.232 IFR Area Chart Title Format.....	3-104
3.11.1.4.2	Altitude Note.....	3-104
3.11.1.4.3	Effective Dates and Times Note .....	3-104
3.11.1.4.4	NOTAM Note .....	3-105
3.11.1.4.5	Legend Reference Note .....	3-105
	Figure 3.233 Legend Information .....	3-105
3.11.1.4.6	Publishers Credit Note .....	3-105
3.11.1.4.7	Corrections, Comments, and/or Procurement.....	3-105
3.11.1.4.8	OROCA Note.....	3-105
3.11.1.5	Chart Identification Labels.....	3-105
	Figure 3.234 Chart Identification Labels .....	3-105

3.11.1.5.1	Chart Numbers .....	3-105
3.11.1.5.2	Chart Effective Date .....	3-105
3.11.1.5.3	Area of Coverage .....	3-106
3.11.1.6	FAA Logo/Banner.....	3-106
3.11.1.7	Chart Index.....	3-106
	Figure 3.235 Area Chart Indexing.....	3-106
3.11.1.7.1	Land and Water Areas .....	3-106
3.11.1.7.2	International Boundaries.....	3-106
3.11.1.7.3	Low Altitude Chart Coverage.....	3-106
3.11.1.7.4	Depiction of Area Chart Coverage & Cities.....	3-107
	Figure 3.236 Area Chart Listing .....	3-107
3.11.1.7.5	Time Zone Boundaries and International Dateline.....	3-107
3.11.1.8	Interagency Air Committee (IAC) Credit Note .....	3-107
3.11.1.9	Bar Code .....	3-107
3.11.2	Tabulated Data Area .....	3-107
3.11.2.1	Military Training Routes (MTR) Tabulation .....	3-107
	Figure 3.237 Military Training Routes Tabulation.....	3-108
3.11.2.1.1	Number Column .....	3-108
3.11.2.1.2	Altitude Range Column .....	3-108
3.11.2.1.3	Area Column.....	3-108
3.11.2.2	Special Use Airspace (SUA) and Military Operations Area (MOA) Tabulation Legend.....	3-108
	Figure 3.238 SUA and MOA Tabulation Legend .....	3-108
3.11.2.3	Special Use Airspace (SUA) Tabulation .....	3-109
	Figure 3.239 SUA Table - Area Chart.....	3-109
3.11.2.4	Military Operations Areas (MOA) Tabulation .....	3-110
	Figure 3.240 MOA Table - Area Chart .....	3-110
3.11.3	Margin Information .....	3-110
3.11.3.1	Bar Scales.....	3-110
3.11.3.2	Area Chart Title .....	3-110
	Figure 3.241 Area Chart Title.....	3-110
3.11.3.3	Panel Fold Information .....	3-111
3.11.3.4	Reverse Side - Even Numbered Charts.....	3-111
3.11.3.5	Airway/Route Leads .....	3-111
3.12	Chart L-21 - Offshore Navigational Chart.....	3-111
3.12.1	Title Panel Information.....	3-112
3.12.1.1	L-21 Offshore Navigation Only Note .....	3-112
	Figure 3.242 Offshore Navigation Note .....	3-112

3.12.2	Margin Information .....	3-112
3.12.2.1	Bar Scales.....	3-112
3.12.3	Chart Detail .....	3-112
3.12.3.1	Airports .....	3-112
3.12.3.1.1	Charting Criteria .....	3-112
3.12.3.1.2	Airport Names.....	3-112
	Figure 3.243 Airports Naming .....	3-112
	Figure 3.244 Airports Under SFAR .....	3-112
3.12.3.2	NAVAIDs .....	3-113
3.12.3.2.1	Charting Criteria .....	3-113
3.12.3.2.2	NAVAID Identification Boxes Criteria .....	3-113
	Figure 3.245 NAVAID Identification Boxes .....	3-113
3.12.3.3	Airspace Information .....	3-113
3.12.3.4	Airways/Routes.....	3-113
3.13	(AK) L-2 - Low Altitude Route Selection Chart .....	3-113
3.13.1	General.....	3-113
3.13.2	Chart Detail .....	3-114
3.13.2.1	Base Detail .....	3-114
3.13.2.1.1	Land and Water Areas .....	3-114
3.13.2.1.2	International Boundaries.....	3-114
3.13.2.1.3	U.S. - Russia Maritime Boundary.....	3-114
3.13.2.2	Radio Aids to Navigation (NAVAIDs).....	3-114
3.13.2.3	Airways/Routes.....	3-114
3.13.2.4	Navigational and Procedural Information.....	3-114
3.13.2.4.1	Compulsory and Non-compulsory Reporting Points.....	3-114
3.13.2.5	Operational and/or Information Notes .....	3-114
<b>Appendix 1</b>	Low Enroute Chart Area of Coverage – U.S.....	A-1
<b>Appendix 2</b>	Alaska Low Enroute Chart Area of Coverage.....	A-2
<b>Appendix 3</b>	Chart Layout - U.S. L-1 and L-7 .....	A-3
<b>Appendix 4</b>	Chart Layout - U.S. L-2 and L-8 .....	A-4
<b>Appendix 5</b>	Chart Layout - U.S. L-3, L-9, L-11, L-13, L-15, L-19, L-27 and L-29 .....	A-5
<b>Appendix 6</b>	Chart Layout - U.S. L-4, L-10, L-12, L-14, L-16 and L-24.....	A-6
<b>Appendix 7</b>	Chart Layout - U.S. L-5.....	A-7
<b>Appendix 8</b>	Chart Layout - U.S. L-6.....	A-8
<b>Appendix 9</b>	Chart Layout - U.S. L-17 and L-31 .....	A-9
<b>Appendix 10</b>	Chart Layout - U.S. L-18 and L-32 .....	A-10

<b>Appendix 11</b>	Chart Layout - U.S. L-20 and L-28 .....	A-11
<b>Appendix 12</b>	Chart Layout - U.S. L-21, L-33 and L-35 .....	A-12
<b>Appendix 13</b>	Chart Layout - U.S. L-22 and L-36 .....	A-13
<b>Appendix 14</b>	Chart Layout - U.S. L-23.....	A-14
<b>Appendix 15</b>	Chart Layout - U.S. L-25.....	A-15
<b>Appendix 16</b>	Chart Layout - U.S. L-26.....	A-16
<b>Appendix 17</b>	Chart Layout - U.S. L-30.....	A-17
<b>Appendix 18</b>	Chart Layout - U.S. L-34.....	A-18
<b>Appendix 19</b>	Chart Layout - Alaska L-1 .....	A-19
<b>Appendix 20</b>	Chart Layout - Alaska L-2.....	A-20
<b>Appendix 21</b>	Chart Layout - Alaska L-3.....	A-21
<b>Appendix 22</b>	Chart Layout - Alaska L-4.....	A-22
<b>Appendix 23</b>	Sample Title Panels - U.S. & Alaska .....	A-23
<b>Appendix 24</b>	Chart Identification & Title Panel Area Layout - U.S. & Alaska .....	A-24
<b>Appendix 25</b>	Corrections, Comments and/or Procurement Area Layout - U.S. & Alaska.....	A-26
<b>Appendix 26</b>	OROCA Notice .....	A-27
<b>Appendix 27</b>	SFAR No. 97 Chart Notice - Alaska .....	A-28
<b>Appendix 28</b>	Chart Identification Labels - U.S., Alaska & Area Charts .....	A-29
<b>Appendix 29</b>	Chart Index - U.S.....	A-31
<b>Appendix 30</b>	Chart Index - Alaska.....	A-32
<b>Appendix 31</b>	Chart Indexes - U.S. and Alaska .....	A-33
<b>Appendix 32</b>	Bar Codes .....	A-35
<b>Appendix 33</b>	Legend Panel - U.S. and Alaska.....	A-36
<b>Appendix 34</b>	Legend Panel - Chart Identification Labels U.S. & Alaska .....	A-37
<b>Appendix 35</b>	Military Training Routes Tabulation - U.S. & Alaska .....	A-38
<b>Appendix 36</b>	SUA & MOA Tabulation - U.S. & Alaska.....	A-39
<b>Appendix 37</b>	Airport Locations Tabulation - U.S. & Alaska.....	A-41
<b>Appendix 38</b>	Margin Information - U.S. & Alaska.....	A-42
<b>Appendix 39</b>	Chart Detail - Projection Lines - U.S. & Alaska .....	A-46
<b>Appendix 40</b>	Base Detail - U.S. & Alaska.....	A-47
<b>Appendix 41</b>	Airports - U.S. & Alaska .....	A-48
<b>Appendix 42</b>	NAVAID North Arrows & Compass Roses.....	A-49
<b>Appendix 43</b>	NAVAID Identification Boxes.....	A-50
<b>Appendix 44</b>	Flight Service Stations & Remote Communications Outlets .....	A-51
<b>Appendix 45</b>	Automated Weather Broadcasting Systems .....	A-52
<b>Appendix 46</b>	Airspace Information.....	A-53
<b>Appendix 47</b>	Airspace.....	A-54
<b>Appendix 48</b>	Airway/Route Types.....	A-57
<b>Appendix 49</b>	Airway/Route Data.....	A-58
<b>Appendix 50</b>	Navigational & Procedural Information.....	A-60
<b>Appendix 51</b>	Chart Area of Coverage - Area Charts .....	A-62
<b>Appendix 52</b>	Chart Layout - Area Chart A-1 .....	A-63

**Appendix 53** Chart Layout - Area Chart A-2..... A-64

**Appendix 54** Title Panel Information - Area Charts ..... A-65

**Appendix 55** Chart Identification & Title Area - Area Charts..... A-66

**Appendix 56** Chart Index - Area Charts..... A-68

**Appendix 57** Margin Information - Bar Scales - Area Charts ..... A-69

**Appendix 58** Military Training Routes Tabulation - Area Charts ..... A-72

**Appendix 59** SUA & MOA Tabulation - Area Charts..... A-73

**Appendix 60** Terrain Contours - Area Charts ..... A-75

**Appendix 61** Title Panel Layout - U.S. L-21 ..... A-76



## CHAPTER 1 GENERAL

### 1.1 PURPOSE AND SCOPE

#### 1.1.1 Purpose

These specifications serve as a guide in the preparation of the IFR Enroute Low Altitude chart series for the conterminous United States, Alaska and portions of the Caribbean, providing users with satisfactory charts for operational use. Foreign areas are included for transitional purposes only.

These specifications provide appropriate guidelines to effect uniformity and standardization of content and portrayal techniques in the preparation and production of IFR Enroute Low Altitude charts.

Although the digital chart files are compiled in accordance with these specifications, the final product may vary slightly in appearance due to differences in printing techniques/processes and/or digital display technique.

#### 1.1.2 Scope

The Low Altitude Airspace System is effective up to, but not including 18,000' MSL.

The charts in this series shall serve as the enroute navigational reference for flights in the Low Altitude Airspace System and are meant for use by both civil and military pilots. Only such information specifically required for low altitude instrument operations will come within the scope of these specifications. The primary objective is to provide optimum presentation and portrayal of the Enroute Low Altitude Flight Rules (IFR) Airspace System based on the users' requirements.

Items applicable only to the Alaska Enroute Low Altitude Charts are so noted within these specifications by the designation **(AK)** positioned immediately to the right of the paragraph, table or figure number or immediately preceding unnumbered paragraphs.

### 1.2 REQUIREMENTS

#### 1.2.1 General

The Enroute Low Altitude Chart series shall consist of 36 charts for the conterminous U.S. and four charts for Alaska. All charts shall be printed front and back.

In addition, the Enroute Low Altitude Chart series shall be supplemented with:

- Area charts of high density area traffic areas.
- **(AK)** Route Selection Chart.
- **(AK)** Supplement Alaska
- Special Notices, as required

#### 1.2.2 Safety, Accuracy and Currency

Safe navigation is dependent upon the ability of the pilot to rapidly identify and associate data on the chart with aircraft instruments and navigational equipment. The charts in this series should contain built in safety factors that preclude ambiguity and misinterpretation, avoid duplication of data, and provide rapid identification of correct information. Accuracy of the data is critical.

Consistent with the accuracy of the data contained on the charts, such charts shall be maintained current and published on the revision schedule coinciding with the effective date and schedule of airspace changes.

### 1.2.3 Titles

#### 1.2.3.1 Enroute Low Altitude Chart Series

The title for the conterminous U.S. and Alaska enroute low altitude charts shall be:

**Figure 1.1 Enroute Low Title Labels**  
UNITED STATES GOVERNMENT  
FLIGHT INFORMATION PUBLICATION  
**IFR ENROUTE LOW ALTITUDE - U.S.**  
  
**OR**

UNITED STATES GOVERNMENT  
FLIGHT INFORMATION PUBLICATION  
**IFR ENROUTE LOW ALTITUDE - ALASKA**

#### 1.2.3.2 Area Chart

The title for the Area Enroute Low Altitude charts shall be:

**Figure 1.2 Area Chart Title Label**  
UNITED STATES GOVERNMENT  
FLIGHT INFORMATION PUBLICATION  
**IFR AREA CHARTS - U.S.**

### 1.2.4 Areas of Coverage

#### 1.2.4.1 Enroute Charts - U.S.

References:

[Appendix 1](#) - Low Enroute Chart Area of Coverage – U.S.

Area of coverage shall be comprised of 36 overlapping areas or charts covering the conterminous United States including portions of Canada, the Caribbean and Mexico. (See Appendices).

The limits of each chart are defined by the following corner coordinates (corner coordinates are organized starting from the NW corner and go in a clockwise manner there after):

**Table 1.1 U.S. - Corner Coordinates - IFR Low Enroute**

CHART NUMBER	A	B	C	D
L-1	49°18'27.6"N	49°19'10.0"N	42°48'25.7"N	42°47'46.9"N
	124°59'08.9"W	121°13'06.1"W	121°21'37.5"W	124°45'31.4"W
L-2	42°47'32.9"N	43°07'53.6"N	37°16'09.9"N	36°57'24.0"N
	124°54'20.9"W	121°31'51.1"W	120°39'55.7"W	123°46'25.8"W
L-3	38°38'40.7"N	39°44'36.8"N	33°44'29.3"N	32°43'55.4"N
	123°34'58.1"W	120°41'00.9"W	117°21'38.5"W	120°04'52.3"W

Table 1.1 U.S. - Corner Coordinates - IFR Low Enroute (Continued)

L-4	34°58'48.2"N	34°24'27.8"N	32°14'35.5"N	32°47'51.6"N
	120°41'44.2"W	114°29'28.9"W	114°51'47.9"W	120°53'41.1"W
L-5	34°34'44.3"N	34°14'00.8"N	31°07'37.6"N	31°27'07.7"N
	115°24'12.8"W	107°32'25.8"W	107°52'53.5"W	115°26'11.4"W
L-6N	34°22'41.8"N	34°59'35.9"N	31°52'34.6"N	31°17'19.0"N
	108°15'31.9"W	101°24'29.3"W	101°09'03.0"W	107°43'54.8"W
L-6S	31°24'01.7"N	31°44'44.8"N	28°39'10.1"N	28°19'23.6"N
	106°46'15.3"W	103°05'47.0"W	102°47'04.0"W	106°19'11.7"W
L-7	35°40'05.1"N	36°36'24.1"N	34°25'36.3"N	33°31'01.1"N
	121°10'54.5"W	114°10'58.3"W	113°51'07.0"W	120°39'21.9"W
L-8	36°33'34.4"N	37°45'40.2"N	34°38'47.8"N	33°29'49.5"N
	114°23'47.3"W	105°17'45.6"W	104°52'04.8"W	113°36'22.8"W
L-9	40°12'47.9"N	41°32'04.7"N	37°08'47.9"N	35°54'11.9"N
	120°45'33.0"W	105°41'40.3"W	105°31'10.4"W	119°42'00.4"W
L-10	40°52'06.4"N	41°22'21.2"N	37°36'34.7"N	37°07'52.3"N
	106°00'52.8"W	94°19'31.5"W	94°21'37.7"W	105°26'46.7"W
L-11	43°54'59.5"N	44°12'54.5"N	39°50'26.9"N	39°33'34.2"N
	121°52'37.6"W	105°58'43.9"W	106°19'44.2"W	121°14'06.0"W
L-12	45°11'24.4"N	45°07'08.6"N	40°45'25.9"N	40°49'27.9"N
	106°45'06.9"W	92°13'58.8"W	92°43'59.0"W	106°19'50.1"W
L-13	48°53'42.9"N	49°00'16.1"N	44°03'38.5"N	43°57'29.6"N
	122°09'46.7"W	102°30'07.0"W	103°11'30.9"W	121°21'30.2"W
L-14	48°35'44.7"N	49°04'14.1"N	44°43'53.7"N	44°17'00.4"N
	87°56'49.2"W	103°20'13.1"W	103°06'14.4"W	88°44'35.8"W
L-15	37°51'03.3"N	38°18'50.2"N	35°10'44.1"N	34°44'09.8"N
	105°18'32.7"W	94°55'17.1"W	94°55'28.4"W	104°52'47.5"W
L-16	38°18'50.2"N	37°55'41.2"N	34°48'35.5"N	35°10'44.1"N
	94°55'17.1"W	85°35'14.8"W	85°58'47.5"W	94°55'28.4"W
L-17	34°59'35.9"N	35°08'58.8"N	32°01'32.3"N	31°52'34.6"N
	101°24'30.2"W	92°26'43.1"W	92°32'53.2"W	101°09'02.9"W
L-18	35°08'58.8"N	34°28'15.9"N	31°22'38.2"N	32°01'32.3"N
	92°26'43.1"W	82°31'44.5"W	83°01'31.6"W	92°32'53.2"W

**Table 1.1 U.S. - Corner Coordinates - IFR Low Enroute (Continued)**

L-19	31°44'44.8"N	32°02'36.5"N	28°56'12.9"N	28°39'10.1"N
	103°05'47.0"W	93°31'33.9"W	93°34'59.2"W	102°47'03.1"W
L-20	28°43'08.9"N	28°56'12.9"N	25°51'24.1"N	25°38'57.3"N
	101°50'58.4"W	93°34'59.2"W	93°38'09.8"W	101°35'43.0"W
L-21 Gulf of Mexico	31°30'18.6"N	30°34'46.5"N	23°35'04.8"N	24°24'52.8"N
	98°02'55.3"W	80°43'23.4"W	81°54'33.4"W	97°47'31.0"W
L-22	32°02'36.5"N	31°22'38.2"N	28°18'03.7"N	28°56'12.9"N
	93°31'33.9"W	83°01'31.6"W	83°29'01.9"W	93°34'59.2"W
L-23	27°49'57.2"N	26°41'15.4"N	23°41'42.5"N	24°47'12.5"N
	83°30'49.5"W	75°57'40.1"W	76°38'50.8"W	83°56'06.8"W
L-24	35°05'42.8"N	34°35'58.0"N	27°23'30.1"N	27°50'12.1"N
	82°25'26.5"W	78°40'27.5"W	80°07'32.0"W	83°33'02.1"W
L-25	36°59'31.8"N	36°17'08.1"N	34°07'29.8"N	34°48'35.5"N
	85°42'30.9"W	79°21'36.0"W	79°48'39.0"W	85°58'47.5"W
L-26	39°11'03.2"N	38°21'21.5"N	36°11'48.9"N	37°00'00.7"N
	85°31'16.4"W	78°14'46.4"W	78°44'32.7"W	85°45'22.0"W
L-27	41°26'52.0"N	40°53'45.2"N	37°47'01.8"N	38°18'44.2"N
	94°19'28.7"W	83°28'35.2"W	83°58'34.4"W	94°21'15.1"W
L-28	44°33'21.7"N	43°57'33.4"N	40°51'29.8"N	41°25'48.5"N
	92°42'57.3"W	82°31'36.1"W	83°05'30.1"W	92°49'13.9"W
L-29	41°12'24.3"N	40°21'43.2"N	38°12'33.6"N	39°01'45.3"N
	83°25'25.9"W	76°43'18.8"W	77°16'40.5"W	83°46'54.1"W
L-30	43°20'23.7"N	42°19'19.7"N	40°10'49.8"N	41°10'07.2"N
	82°38'38.8"W	74°58'13.3"W	75°35'45.5"W	83°02'15.2"W
L-31	48°03'26.3"N	45°39'49.1"N	42°07'27.7"N	44°24'18.0"N
	88°03'32.6"W	75°45'42.4"W	77°27'46.3"W	89°08'24.2"W
L-32	46°02'46.4"N	47°56'09.6"N	43°35'36.2"N	41°48'34.9"N
	79°29'47.0"W	63°04'30.3"W	62°37'08.3"W	78°00'33.5"W
L-33	42°26'24.7"N	43°21'37.0"N	41°11'59.7"N	40°18'22.7"N
	76°11'04.2"W	70°06'00.7"W	69°36'38.1"W	75°30'48.2"W

**Table 1.1 U.S. - Corner Coordinates - IFR Low Enroute (Continued)**

L-34	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	43°12'27.0"N 73°28'55.6"W	42°40'50.6"N 72°35'33.3"W	42°35'22.8"N 72°05'58.9"W	42°49'37.0"N 71°35'48.1"W
	<b>E</b>	<b>F</b>	<b>G</b>	
	42°12'31.9"N 70°41'54.5"W	37°27'35.7"N 76°08'48.8"W	38°50'41.3"N 78°18'18.4"W	
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
L-35	37°39'03.8"N	35°53'34.5"N	33°06'10.3"N	34°47'27.7"N
	75°49'07.0"W	74°11'07.8"W	78°33'20.7"W	80°13'40.1"W
L-36	39°53'18.3"N	38°27'52.7"N	33°34'42.5"N	34°54'20.9"N
	76°38'23.8"W	74°29'32.2"W	79°27'23.1"W	81°33'13.4"W

**1.2.4.2 (AK) Enroute Charts - Alaska**

The area of coverage shall be comprised of four overlapping areas or charts covering Alaska and portions of Canada and Russia.

The basic chart coverage shall be supplemented with Area Charts, covering Vancouver, Anchorage, Fairbanks, Juneau, Nome, and a Route Selection Chart appearing on the appropriate Enroute Chart.

The limits of each chart are defined by the following coordinates, beginning in the upper left corner (NW Corner) of the chart and reading clockwise:

References:

[Appendix 2](#) - Alaska Low Enroute Chart Area of Coverage

**Table 1.2 (AK) - Corner Coordinates - IFR Low Enroute**

CHART NUMBER	CORNER			
L-1	A	B	C	D
	65°13'04.4"N	47°39'51.5"N	45°42'45.3"N	51°43'35.9"N
	142°26'40.2"W	121°28'22.0"W	126°56'06.1"W	132°33'58.9"W
	E	F	G	H
	49°30'46.9"N	51°57'59.6"N	54°25'45.9"N	58°12'26.6"N
	137°22'30.6"W	140°30'20.5"W	135°17'33.7"W	140°38'56.7"W
	I	J		
	55°31'50.6"N	59°31'02.5"N		
145°59'31.4"W	154°08'31.0"W			
L-2 West Portion	A	B	C	D
	52°58'20.3"N	54°47'03.3"N	53°31'21.0"N	55°07'53.1"N
	172°43'08.8"E	178°25'35.8"E	179°27'21.6"E	173°55'53.7"W
	E	F		
	51°55'12.7"N	48°46'14.4"N		
	172°02'57.8"W	176°24'14.4"E		

**Table 1.2 (AK) - Corner Coordinates - IFR Low Enroute (Continued)**

CHART NUMBER	CORNER			
L-2 Central Portion	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	56°17'24.6"N	58°58'32.6"N	54°20'38.2"N	51°55'12.7"N
	175°19'57.3"W	161°18'43.2"W	159°19'17.5"W	172°02'57.8"W
L-2 East Portion	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	58°58'32.6"N	60°05'14.2"N	55°20'24.9"N	54°20'38.2"N
	161°18'43.2"W	145°48'58.9"W	145°32'08.0"W	159°19'17.5"W
L-3	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	64°21'27.0"N	64°19'03.5"N	56°35'49.8"N	56°19'21.1"N
	171°10'23.5"W	136°26'51.7"W	139°53'53.8"W	170°26'12.3"W
	<b>E</b>	<b>F</b>		
	60°06'27.8"N	60°26'39.6"N		
	172°10'16.1"W	169°15'56.5"W		
L-4	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	71°24'49.7"N	71°01'42.6"N	63°36'25.6"N	63°05'38.2"N
	169°55'04.2"W	133°24'15.1"W	138°18'01.6"W	174°14'32.7"W
	<b>E</b>	<b>F</b>	<b>G</b>	
	63°36'01.4"N	67°40'29.4"N	67°55'13.8"N	
	174°33'58.5"W	170°52'40.1"W	167°50'19.4"W	

**1.2.4.3 Inset Charts - U.S.**

The area of coverage of each Inset Chart is such as to coordinate and chart overwater routes between coverage of the basic Enroute chart series, providing concurrently, transition points to and from the Inset Chart.

The limits of each Inset Chart are defined by the following corner coordinates:

**Table 1.3 U.S. - Inset Charts - IFR Low Enroute**

CHART NUMBER	CORNER			
Boston-Yarmouth 1:30	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	42°49'42.4"N	44°03'29.1"N	42°45'41.8"N	41°59'36.7"N
	71°13'11.1"W	65°59'36.0"W	65°57'08.5"W	67°00'00.5"W
	<b>E</b>			
	41°01'43.9"N			
	70°22'31.6"W			
Wilmington-Bimini 1:31	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	35°17'27.6"N	34°46'24.2"N	25°16'51.7"N	25°43'45.5"N
	81°16'09.0"W	76°56'04.7"W	78°40'42.1"W	82°31'36.9"W

#### 1.2.4.4 U.S. Area Chart (A-1 & A-2)

The U.S. Area Chart consists of A-1 and A-2 which is made up of individual area charts. The term Area Charts refers to U.S. Area Charts (A-1 & A-2).

References:

[Appendix 51](#) - Chart Area of Coverage - Area Charts

#### 1.2.4.5 U.S. & Alaska Area Charts

The term Area Charts refers to the chart contained within the U.S. Area Charts (A-1 & A-2) and **(AK)** Alaska Enroute Charts.

The basic enroute chart coverage will be supplemented by area charts for any area on the IFR Enroute Low Altitude Charts where the depiction of information is such as to preclude safe operation of aircraft within that area. This situation may exist when either of the following occurs:

- The amount of detail required or portrayal techniques used result in congestion of information.
- The depiction of an important terminal area at the edge of an Enroute Chart makes entry into this area difficult.

The following Area Charts are an integral part of the basic Enroute Chart series for the conterminous United States:

**Table 1.4 U.S. - Area Charts - IFR Low Enroute**

CHART IDENTIFICATION	
FRONT SIDE (A-1)	REVERSE SIDE (A-2)
Atlanta	Chicago / Milwaukee
Detroit	Dallas / Ft. Worth
Jacksonville	Denver
Miami	Kansas City
Minneapolis / St. Paul	Los Angeles
St. Louis	Phoenix
Washington	San Francisco

**Table 1.5 U.S. - Area Chart A-1 Corner Coordinates - IFR Low Enroute**

CITY	A	B	C	D
Atlanta	34°05'55.2"N	34°05'51.4"N	33°10'29.8"N	33°10'33.5"N
	84°57'58.0"W	83°49'55.9"W	83°50'24.9"W	84°57'37.8"W
Detroit	42°44'15.3"N	42°44'16.4"N	41°58'04.8"N	41°59'03.7"N
	83°49'09.4"W	82°45'09.6"W	82°45'29.9"W	83°48'46.1"W
Jacksonville	30°54'11.943"N	30°54'15.904"N	29°59'14.160"N	29°59'10.254"N
	82°09'01.830"W	81°03'45.572"W	81°04'03.805"W	82°08'34.711"W
Miami	26°18'33.061"N	26°18'35.738"N	25°24'18.772"N	25°24'16.132"N
	80°50'11.859"W	79°48'33.735"W	79°48'51.093"W	80°49'48.751"W
Minneapolis/ St. Paul	45°26'00.211"N	45°26'08.872"N	44°12'31.938"N	44°12'23.419"N
	94°03'49.524"W	92°17'07.623"W	92°17'55.965"W	94°02'37.561"W

**Table 1.5 U.S. - Area Chart A-1 Corner Coordinates - IFR Low Enroute (Continued)**

CITY	A	B	C	D
St. Louis	39°11'10.806"N	39°11'15.927"N	38°15'43.255"N	38°15'38.199"N
	90°59'39.655"W	89°46'44.476"W	89°47'06.382"W	90°59'05.035"W
Washington	38°13'08.3"N	38°10'01.3"N	40°23'45.8"N	40°26'58.6"N
	078°23'11.4"W	074°43'36.4"W	074°36'56.4"W	078°23'34.1"W

**Table 1.6 U.S. - Area Chart A-2 Corner Coordinates - IFR Low Enroute**

CITY	A	B	C	D
Chicago/ Milwaukee	43°16'36.2"N	43°16'34.7"N	41°22'06.1"N	41°22'07.6"N
	88°36'13.3"W	87°18'48.2"W	87°19'57.2"W	88°35'12.7"W
Dallas/Ft. Worth	33°43'10.0"N	33°42'49.2"N	31°30'01.0"N	31°29'40.8"N
	98°06'43.5"W	96°05'46.2"W	98°05'34.6"W	96°07'59.2"W
Denver	40°22'30.0"N	40°22'30.0"N	39°17'50.0"N	39°17'50.0"N
	105°23'00.0"W	103°56'40.0"W	105°22'20.0"W	103°57'15.0"W
Kansas	39°32'57.4"N	39°32'59.3"N	38°46'41.6"N	38°46'39.8"N
	95°04'10.0"W	94°03'04.4"W	94°03'21.9"W	95°03'47.8"W
Los Angeles	34°34'09.666"N	34°19'30.630"N	33°33'57.045"N	33°48'26.418"N
	118°59'33.666"W	117°03'20.489"W	117°12'12.613"W	119°07'17.595"W
Phoenix	34°05'40.8"N	34°05'43.3"N	32°47'19.2"N	32°47'16.8"N
	112°50'56.2"W	111°14'33.2"W	111°15'19.6"W	112°50'04.2"W
San Francisco	38°16'17.44"N	38°16'19.153"N	37°20'46.0"N	37°20'44.309"N
	122°53'44.663"W	121°41'44.428"W	121°42'09.891"W	122°53'14.972"W

**(AK)** The following Area Charts are an integral part of the basic Enroute Chart series for Alaska:

**Table 1.7 (AK) Area Charts - IFR Low Enroute**

CHART NAME	A	B	C	D
Vancouver Area Chart	49°40'40.1"N	47°41'27.4"N	47°11'18.0"N	49°09'12.5"N
	122°56'33.3"W	121°29'15.6"W	123°00'49.3"W	124°30'57.8"W
Juneau Area Chart	60°00'54.0"N	58°09'32.7"N	56°44'57.6"N	58°32'36.2"N
	135°51'58.9"W	132°38'59.1"W	135°35'32.6"W	138°49'44.0"W
Anchorage Area Chart	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	62°43'06.6"N	61°36'52.5"N	60°08'29.9"N	60°18'32.7"N
	151°17'19.2"W	144°00'24.1"W	145°07'42.9"W	146°04'33.2"W
	<b>E</b>	<b>F</b>	<b>G</b>	
	59°05'39.1"N	58°50'47.3"N	59°21'12.9"N	
	149°16'41.8"W	149°25'18.7"W	153°04'08.4"W	
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>



**Table 1.7 (AK) Area Charts - IFR Low Enroute (Continued)**

CHART NAME	A	B	C	D
Fairbanks Area Chart	65°15'07.6"N	65°17'07.9"N	63°45'44.0"N	63°43'49.9"N
	150°10'25.4"W	145°06'14.6"W	145°10'14.7"W	149°59'58.6"W
Nome Area Chart	63°23'12.1"N	65°23'24.5"N	63°51'53.0"N	63°52'03.5"N
	166°59'50.6"W	163°17'57.7"W	166°54'10.2"W	163°22'49.1"W

**1.2.4.6 (AK) Route Selection Chart (on Chart L-2)****Table 1.8 (AK) - Route Selection Chart**

A	B	C	D
69°13'55.5"N	71°55'33.3"N	56°24'31.7"N	54°36'14.4"N
174°47'33.6"W	141°00'10.8"W	141°00'49.3"W	162°24'57.9"W

**1.2.5 Scales**

Fractional equivalents based on 6,076.11549' = 1NM

**1.2.5.1 U.S. Enroute Charts**

Charts for the conterminous U.S. shall be compiled and drawn at the following scales:

**Table 1.9 U.S. - Enroute Chart Scales**

CHART NUMBER	SCALE	CHART NUMBER	SCALE
L-1	1"=8NM (1:583,307)	L-19	1"=10NM (1:729,133)
L-2	1"=8NM (1:583,307)	L-20	1"=10NM (1:729,133)
L-3	1"=8NM (1:583,307)	L-21	1"=23NM (1:1,677,005)
L-4	1"= 7NM (1:510,393)	L-22	1"=10NM (1:729,133)
L-5	1"=10NM (1:729,133)	L-23	1"=10NM (1:729,133)
L-6	1"=10NM (1:729,133)	L-24	1"=10NM (1:729,133)
L-7	1"= 7NM (1:510,393)	L-25	1"= 7NM (1:510,393)
L-8	1"=10NM (1:729,133)	L-26	1"= 7NM (1:510,393)
L-9	1"=14NM (1:1,020,786)	L-27	1"=10NM (1:729,133)
L-10	1"=12NM (1:874,960)	L-28	1"=10NM (1:729,133)
L-11	1"=14NM (1:1,020,786)	L-29	1"= 7NM (1:510,393)
L-12	1"=14NM (1:1,020,786)	L-30	1"= 7NM (1:510,393)
L-13	1"=16NM (1:1,166,614)	L-31	1"=12NM (1:874,960)
L-14	1"=14NM (1:1,020,786)	L-32	1"=14NM (1:1,020,786)
L-15	1"=10NM (1:729,133)	L-33	1"= 7NM (1:510,393)
L-16	1"=10NM (1:729,133)	L-34	1"= 7NM (1:510,393)
L-17	1"=10NM (1:729,133)	L-35	1"= 7NM (1:510,393)
L-18	1"=10NM (1:729,133)	L-36	1"= 7NM (1:510,393)

**(AK)** The Enroute Charts for Alaska shall be compiled and drawn at the following scales:

**Table 1.10 (AK) - Enroute Chart Scales**

CHART NUMBER	SCALE
L-1	1"=25NM (1:1,822,834)

**Table 1.10 (AK) - Enroute Chart Scales (Continued)**

CHART NUMBER	SCALE
L-2 West	1"=25NM (1:1,822,834)
L-2 Central	1"=25NM (1:1,822,834)
L-2 East	1"=25NM (1:1,822,834)
L-3	1"=25NM (1:1,822,834)
L-4	1"=25NM (1:1,822,834)

**1.2.5.2 Inset Charts**

The insets shall be compiled and drawn at the following scales:

**Table 1.11 U.S. - Inset Chart Scales**

CHART NAME (Location)	SCALE
Wilmington-Bimini (L-23)	1"=31NM (1:2,260,315)
Boston-Yarmouth (L-34)	1"=23NM (1:1,677,008)

**1.2.5.3 Area Charts**

Area charts for the conterminous U.S. shall be compiled and drawn at the following scales:

**Table 1.12 U.S. - Area Chart Scales**

CHART NAME	SCALE	CHART NAME	SCALE
Atlanta	1"= 6NM (1:437,480)	Chicago / Milwaukee	1"= 6NM (1:437,480)
Detroit	1"= 5NM (1:364,566)	Dallas / Ft. Worth	1"= 7NM (1:510,393)
Jacksonville	1"= 6NM (1:437,480)	Denver	1"= 7NM (1:510,393)
Miami	1"= 6NM (1:437,480)	Kansas City	1"= 5NM (1:364,566)
Minneapolis / St.Paul	1"= 8NM (1:583,307)	Los Angeles	1"= 5NM (1:364,566)
St. Louis	1"= 6NM (1:437,480)	Phoenix	1"= 8.5NM (1:619,762)
Washington	1"= 7NM (1:510,393)	San Francisco	1"= 6NM (1:437,480)

(AK) Area charts for Alaska shall be compiled and drawn at the following scales:

**Table 1.13 (AK) - Area Chart Scales**

CHART NAME (Location)	SCALE
Juneau (AK L-1)	1"= 14NM (1:1,020,787)
Vancouver (AK L-1)	1"= 8NM (1:583,307)
Nome (AK L-3)	1"= 10NM (1:729,133)
Fairbanks (AK L-3)	1" = 10NM (1:729,133)
Anchorage (AK L-4)	1" = 11NM (1:802,046)

**1.2.5.4 (AK) Route Selection Chart**

Route Selection Chart 1" = 50NM (1:3,645,669)

**1.2.6 Central Meridians****1.2.6.1 Enroute Charts**

The Central Meridian of the IFR Enroute Low Altitude - U.S. charts shall be 95°W.

**(AK)** The Central Meridian of the IFR Enroute Low Altitude - Alaska and Route Selection Chart charts shall be 154°W.

#### 1.2.6.2 Area Charts - U.S.

The Central Meridian of the IFR Enroute Low Altitude - U.S. Area charts shall be as specified in the table below.

**Table 1.14 U.S. - Area Chart Central Meridians**

CHART NAME	CENTRAL MERIDIANS	CHART NAME	CENTRAL MERIDIANS
Atlanta	84°30'00.0"W	Chicago / Milwaukee	88°00'00.0"W
Detroit	83°15'00.0"W	Dallas / Ft. Worth	97°25'00.0"W
Jacksonville	81°30'00.0"W	Denver	104°45'00.0"W
Miami	80°15'00.0"W	Kansas City	94°30'00.0"W
Minneapolis / St.Paul	90°00'00.0"W	Los Angeles	131°44'45.0"W
St. Louis	90°15'00.0"W	Phoenix	112°00'00.0"W
Washington	95°00'00.0"W	San Francisco	122°15'00.0"W

#### 1.2.6.3 (AK) Area Charts - Alaska

The Central Meridian of the IFR Enroute Low Altitude - Alaska Area charts shall be as specified in the table below.

**Table 1.15 (AK) Area Chart Central Meridians**

CHART NAME (Location)	CENTRAL MERIDIANS
Juneau (AK L-1)	136°W
Vancouver (AK L-1)	122°W
Nome (AK L-3)	166°W
Fairbanks (AK L-3)	148°W
Anchorage (AK L-4)	150°W

#### 1.2.6.4 (AK) Alaska and Route Selection Chart

The Central Meridian of the IFR Enroute Low Altitude - Alaska and Route Selection Chart charts shall be 154°W.

#### 1.2.7 Projections

The Lambert Conformal Conic Projection with standard parallels of 33°N and 45°N shall be used for the conterminous U.S. Low Enroute Charts and Area Charts.

**(AK)** The Lambert Conformal Conic Projection with standard parallels of 37°N and 65°N shall be used for the charts in the Alaska series.

#### 1.2.8 Colors

Colors for printing shall be adapted for use under red and white lighting conditions, both day and night. Colors used shall be blue, brown, black, and green.

**1.2.9    Symbolization**

Symbolization shall be in accordance with the symbols included in the Appendices. These symbols have been developed by the United States Government Interagency Air Committee (IAC) for the purpose of standardization.

The configuration of the symbols contained herein shall be adhered to. The size and line weight, specified and/or indicated therein, should also be adhered to, but may be varied when absolutely necessary

**1.2.10    Type Styles**

All type styles, unless otherwise specified, shall be Futura Medium.

Type styles and sizes shall be as stated, or their equivalent. Equivalent shall be such as to equal the height, width and line weight of the specified style of type. Type size may be reduced in areas of extreme congestion.

The use of capital letters is intended unless otherwise stated as caps and lowercase (C/L).

## CHAPTER 2 LAYOUT AND FORMAT

### 2.1 U.S. & ALASKA ENROUTE AND U.S. AREA (A-1 & A-2) CHARTS

#### 2.1.1 Format

The charts in this series shall be rectangular in shape (normally West-East) with the layout and format of the charts conforming to the Appendices.

#### 2.1.2 Layout

All odd numbered charts shall be printed on what shall be referred to as the “front side” (with the title panel). All even numbered charts shall be printed on what will be referred to as the “reverse side.”

Charts shall be numbered and printed, backed-up, head-to-head, as indicated in the Appendices.

##### 2.1.2.1 **U.S. & Alaska Enroute Charts**

##### 2.1.2.1.1 **U.S. Enroute Chart Layouts**

References:

[Appendix 3](#) - Chart Layout - U.S. L-1 and L-7

[Appendix 4](#) - Chart Layout - U.S. L-2 and L-8

[Appendix 5](#) - Chart Layout - U.S. L-3, L-9, L-11, L-13, L-15, L-19, L-27 and L-29

[Appendix 6](#) - Chart Layout - U.S. L-4, L-10, L-12, L-14, L-16 and L-24

[Appendix 7](#) - Chart Layout - U.S. L-5

[Appendix 8](#) - Chart Layout - U.S. L-6

[Appendix 9](#) - Chart Layout - U.S. L-17 and L-31

[Appendix 10](#) - Chart Layout - U.S. L-18 and L-32

[Appendix 11](#) - Chart Layout - U.S. L-20 and L-28

[Appendix 12](#) - Chart Layout - U.S. L-21, L-33 and L-35

[Appendix 13](#) - Chart Layout - U.S. L-22 and L-36

[Appendix 14](#) - Chart Layout - U.S. L-23

[Appendix 15](#) - Chart Layout - U.S. L-25

[Appendix 16](#) - Chart Layout - U.S. L-26

[Appendix 17](#) - Chart Layout - U.S. L-30

[Appendix 18](#) - Chart Layout - U.S. L-34

##### 2.1.2.1.2 **(AK) Alaska Enroute Chart Layouts**

References:

[Appendix 19](#) - Chart Layout - Alaska L-1

[Appendix 20](#) - Chart Layout - Alaska L-2

[Appendix 21](#) - Chart Layout - Alaska L-3

[Appendix 22](#) - Chart Layout - Alaska L-4

##### 2.1.2.1.3 **Size and Dimension**

Each chart shall have a neatline .020" in weight, printed in black.

Chart features shall extend to this neckline. If the origin of a chart feature is outside the neckline, the symbology will not be charted.

#### 2.1.2.1.4 Dimensions

Paper dimensions for the quality control prints shall be 20" x 55.5", including plate idents for U.S. L-1, L-2, L-7, L-8, L-25 and L-26. Paper for all other U.S. and Alaska Charts shall be 20" x 60.5".

Tabulated data panels or fly leaf shall be 5" wide.

Refer to [Appendix 3](#) through [Appendix 18](#) for chart area dimensions (border-to-border) for U.S. Charts and [Appendix 19](#) through [Appendix 22](#) for Alaska Charts.

#### 2.1.2.1.5 Panel Folds

Each chart shall have 10 folds and 11 panels for U.S. L-1, L-2, L-7, L-8, L-25 and L-26. All other charts shall have 11 folds and 12 panels (5" wide evenly spaced).

A panel is defined as the area between two folds, or between a fold and a trim edge, and shall be 5" x 20". The final folded product size shall be 5" x 10".

#### 2.1.2.2 INSET CHARTS

The Inset Charts shall be contained within a .020" neckline, with the neckline aligned with the borderline of the enroute chart. A double neckline with a .40" space between will be provided to separate the Inset Chart from the detail of the enroute chart upon which the area is positioned. Chart detail shall extend to these borderlines.

Inset Charts shall be provided at the scale specified, and positioned on the enroute chart as indicated, for the following areas:

**Table 2.1 Inset Chart Location**

CHART NAME	LOCATION
Wilmington-Bimini	L-34
Boston-Yarmouth	L-23

References:

[Appendix 14](#) - Chart Layout - U.S. L-23

[Appendix 18](#) - Chart Layout - U.S. L-34

#### 2.1.2.3 AREA CHARTS

##### 2.1.2.3.1 Arrangement and Location

##### 2.1.2.3.1.1 Conterminous U.S.

The U.S. Area Charts layout shall conform with the format illustrated in [Appendix 52](#) and [Appendix 53](#).

Arrangement of individual areas shall conform to the format illustrated in the Appendices:

**Table 2.2 Area Chart Arrangement and Location - U.S.**

CHART IDENTIFICATION	
FRONT SIDE (A-1)	REVERSE SIDE (A-2)
Atlanta	Chicago / Milwaukee
Detroit	Dallas / Ft. Worth
Jacksonville	Denver
Miami	Kansas City
Minneapolis / St.Paul	Los Angeles
St. Louis	Phoenix
Washington	San Francisco

References:

[Appendix 52](#) - Chart Layout - Area Chart A-1

[Appendix 53](#) - Chart Layout - Area Chart A-2

Size and dimensions of the U.S. Area Charts shall generally conform to those specified for the Enroute Charts and illustrated for the individual areas.

#### 2.1.2.3.1.2 (AK) Alaska Area Charts

Area Charts within Alaska shall conform to the format illustrated in the Appendices.

Each chart shall normally be aligned with true north.

Alaska Area Charts shall be provided and positioned on the appropriate enroute chart as indicated and illustrated in the Appendices for the following areas:

**Table 2.3 (AK) - Area Chart Arrangement and Location**

CHART NAME	LOCATION
Juneau	L-1
Vancouver	L-1
Anchorage	L-4
Fairbanks	L-3
Nome	L-3

References:

[Appendix 19](#) - Chart Layout - Alaska L-1

[Appendix 20](#) - Chart Layout - Alaska L-2

[Appendix 21](#) - Chart Layout - Alaska L-3

[Appendix 22](#) - Chart Layout - Alaska L-4

Each Alaska Area Chart shall be contained within a .018" borderline, with the borderline aligned with the borderline of the enroute chart. A double borderline with a .4" space between will be provided to separate the Area Chart from the detail of the enroute chart upon which the area is positioned. Chart detail shall extend to these borderlines.

A nautical mile bar scale, similar to that contained on the enroute chart, shall be shown, positioned within the chart area, parallel to and adjoining the bottom (lower neatline). Bar scales shall, as near as possible, extend the full length of the charted area.

Exception to the Enroute Chart Bar Scales shall be that the mile division breakdown of the scale shall be shown and labeled on both ends of the scales, and the subdivision shall be for each 10 miles.

The name of each Area Chart, e.g., ANCHORAGE AREA, shall be shown, centered above or below the chart, within the .4" marginal area.

#### **2.1.2.4 (AK) Route Selection Chart**

The Route Selection Chart shall conform with the format illustrated in [Appendix 20](#).

References:

[3.13](#) - (AK) L-2 - Low Altitude Route Selection Chart



## CHAPTER 3 CONTENT

### 3.1 GENERAL

The content and portrayal techniques contained and described herein apply to the Low Enroute Chart Series which includes Enroute, Area and Inset Charts. For more specific information see the following sections:

- **3.8** - Inset Charts
- **3.10** - Area Charts - U.S. (A-1 & A-2) AND Alaska (AK)
- **3.11** - Area Chart (A-1 & A-2)
- **3.12** - Chart L-21 - Offshore Navigational Chart
- **3.13** - (AK) L-2 - Low Altitude Route Selection Chart

#### 3.1.1 Mileages

Mileages shall be shown in nautical miles to the nearest whole mile, using .5 as the division point for the next highest number.

#### 3.1.2 Bearings and Radials

Bearings and radials shall be shown as magnetic, unless otherwise indicated as True, and shall be depicted by a three digit figure, e.g., 001, 012, 123. Bearings and radials shall be shown to the nearest whole degree, using .5 as the division point for the next higher number. True bearings and radials shall be indicated by a “T” after the value.

VHF/UHF radials shall be charted with magnetic outbound values and LF/MF bearings shall be charted with magnetic inbound values, using the magnetic slave variation of the NAVAID. RNAV waypoint radials shall be identified with magnetic outbound values, based on the dynamic variation at the NAVAID or waypoint geographic coordinates.

When RNAV and ATS routes are collocated, the ATS route bearing or radial values shall have charting priority.

Care shall be exercised in the charting of radial and bearing values to eliminate any possibility of misreading these values. This is critical with values which may at a glance be read upside down, e.g., 161 for 191 or 090 for 060, etc. Where the possibility for misinterpretation exists, a degree sign (°) shall be shown with the bearing or radial value.

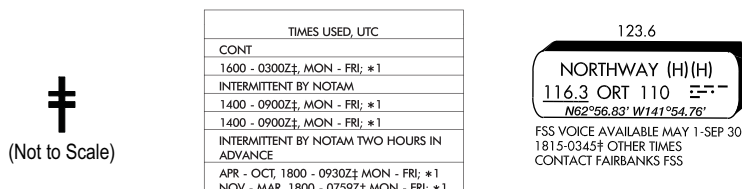
#### 3.1.3 Boxes

Boxes required to be shown around or encompassing specific data shall be of a size consistent with the amount of data contained therein.

### 3.1.4 Time Zones

Time shall be shown as Coordinated Universal Time (UTC), also known as Zulu time (Z), e.g., 0600-1800Z. Times affected by Daylight Savings shall be indicated by the double dagger symbol, positioned adjacent to and preceding the hours of operation.

**Figure 3.1 Application of Double Dagger -Examples**



### 3.1.5 Chart Notes

Chart notes shall make use of location identifiers and approved FAA contractions for abbreviations, e.g., EFF (effective), TWR (tower), CNTR (Center), when possible.

### 3.1.6 Geographical Coordinates

Geographic coordinates shall be shown to the hundredth of a minute.

### 3.1.7 Elevations/Altitudes

Elevations/Altitudes shall be shown as Mean Sea Level (MSL), unless otherwise indicated.

## 3.2 PLACEMENT OF DATA

### 3.2.1 Text

Text should be positioned to be readable relative to True North.

Text associated with nonlinear symbols (e.g., airports, RCOs, etc.) should be placed within the same two-panel area between external folds. Placement of text on external chart folds should be avoided whenever possible. The preferred location of text associated with nonlinear symbols will be to the Northeast of the symbol, thence progressing counter clockwise around the symbol.

Text associated with linear symbols shall be aligned with and adjacent to the linear symbol, except when such placement would result in the obstruction of other chart detail. Text for Time Zones and SUAs, even though associated with linear symbols, shall be positioned relative to True North

When the location of text associated with a non-linear feature overlies linear symbols (e.g., ARTCCs, ADIZs, FIRs), then these symbols may be partially deleted to accommodate the text, as long as the original graphic intent of the symbols are maintained.

Leader lines with arrows may be used when necessary for clarity of detail, or to effect or maintain the correct relationship between text and symbol.

### 3.2.2 Symbols

NAVAIDs and fixes that are part of a route description will be plotted at their true geographical position. Other symbology, i.e., airports, will be plotted at their true geographical position.

### 3.3 TITLE PANEL INFORMATION

All Title Panel type and symbols shall be shown charted in compliance with the criteria established within these specifications and appendices.

All Title Panel information shall be shown in solid black unless otherwise indicated within these specifications. Type and symbols shall be positioned so as to be perpendicular to the chart trim edge.

The extreme left panel of all odd numbered charts shall be the Title Panel and shall be visible when the chart is completely unfolded.

References:

[Appendix 23](#) - Sample Title Panels - U.S. & Alaska

[Appendix 24](#) - Chart Identification & Title Panel Area Layout - U.S. & Alaska

[Appendix 25](#) - Corrections, Comments and/or Procurement Area Layout - U.S. & Alaska

[Appendix 26](#) - OROCA Notice

[Appendix 27](#) - SFAR No. 97 Chart Notice - Alaska

[Appendix 28](#) - Chart Identification Labels - U.S., Alaska & Area Charts

[Appendix 29](#) - Chart Index - U.S.

[Appendix 32](#) - Bar Codes

#### 3.3.1 Foreign Airspace Warning Note

The following boxed note shall be shown centered at the top of the title panel:

**Figure 3.2 Foreign Airspace Warning Note**

Warning: Refer to current foreign charts and flight information publications for information within foreign airspace
--

#### 3.3.2 Chart Identification Area

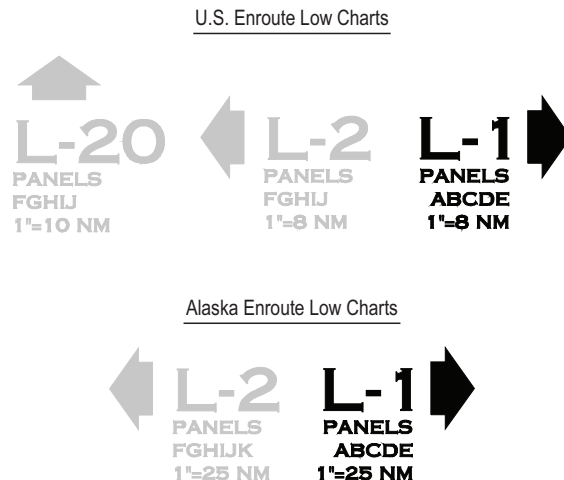
References:

[Appendix 24](#) - Chart Identification & Title Panel Area Layout - U.S. & Alaska

### 3.3.2.1 Chart Idents

Charts shall be identified by the letter “L” and a number, e.g., L-1, L-2, L-3, etc. Together they shall be referred to as the chart ident. Chart idents shall be positioned in the upper left and upper right corners of the panel. Chart idents for the odd-numbered charts (L-1 through L-35 and Alaska L-1 and L-3) shall be positioned in the upper right corner. Chart idents for the even-numbered charts (L-2 through L-36 and Alaska L-2 and L-4) shall be positioned in the upper left corner.

**Figure 3.3 Chart Idents Examples - U.S. and Alaska Charts**



### 3.3.2.2 Arrowheads

Arrowheads shall be shown to indicate in which direction (left, right or up) the particular chart should be opened or turned to be read correctly. Arrowheads for the odd-numbered charts shall be centered and to the right of the chart idents and point to the right. Arrowheads for even numbered charts idents L-20, L-22, L-26, L-28, L-30 and L-36 shall be above and flush left with the chart ident and point up. All other even numbered charts shall be centered and to the left of the chart ident and point to the left.

### 3.3.2.3 Panel Identification

The text “PANELS” shall be positioned below all chart idents. The text shall be flush right with the chart ident in the upper right corner and flush left with the chart ident in the upper left corner.

Panel identifications are an alphabetical listing of all the panel letters found on a particular chart. For odd numbered charts the Panel Identifications shall be positioned below and flush right with the text “PANELS” and for even numbered charts shall be positioned below and flush left with the text “PANELS”.

### 3.3.2.4 Chart Scales

The scale of each chart shall be expressed in terms of inches to nautical miles. Scale for odd-numbered charts shall be positioned below and flush right with the panel identification. Scale for even-numbered charts shall be positioned below and flush left with the panel identification.

Refer to Section [1.2.5](#) for actual scale of individual charts.

### 3.3.3 Title Area

References:

[Appendix 24](#) - Chart Identification & Title Panel Area Layout - U.S. & Alaska

#### 3.3.3.1 Chart Title

The chart title, as shown below, shall be centered within the panel.

**Figure 3.4 Chart Title Format**  
UNITED STATES GOVERNMENT  
FLIGHT INFORMATION PUBLICATION  
**IFR ENROUTE LOW ALTITUDE - U.S.**  
- OR -  
UNITED STATES GOVERNMENT  
FLIGHT INFORMATION PUBLICATION  
**IFR ENROUTE LOW ALTITUDE - ALASKA**

#### 3.3.3.2 Altitude Note

An altitude note, as shown below, shall be centered below the chart title.

**Figure 3.5 Altitude Note**  
For use up to but not including 18,000' MSL

#### 3.3.3.3 Effective Dates and Times Note

The effective dates and times note, as shown below, shall be centered below the altitude note. The note shall reflect the effective date and Zulu (Z) time and the expiration date and Zulu (Z) time of the aeronautical information. Dates shall consist of the day, month and year with the names of the month abbreviated to the first three letters.

**Figure 3.6 Effective Dates and Times Note**  
EFFECTIVE 0901Z 23 SEP 2010  
TO 0901Z 18 NOV 2010

#### 3.3.3.4 NOTAM Note

A NOTAM note, as shown below, shall be centered below the effective dates and times note.

**Figure 3.7 NOTAM Note**  
Consult NOTAMs for latest information

#### 3.3.3.5 Safety Alerts and Charting Notices Note

A safety alerts and charting notices note shall be shown centered on the top half of the title panel below the Consult NOTAM note.

References:

[Appendix 24](#) - Chart Identification & Title Panel Area Layout - U.S. & Alaska

### 3.3.3.6 Corrections, Comments and/or Procurement Note

A Corrections, Comments and/or Procurement note shall be shown centered below the Publishers Credit Note.

References:

[Appendix 25](#) - Corrections, Comments and/or Procurement Area Layout - U.S. & Alaska

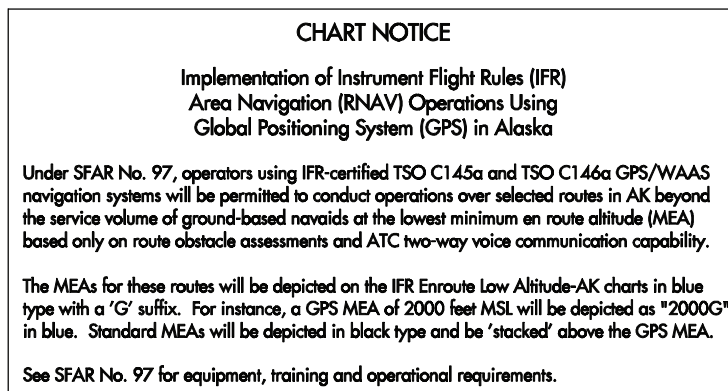
### 3.3.3.7 OROCA Notice

An explanatory boxed note shall be shown centered above the center fold line and shall be depicted as shown in [Appendix 26](#) - OROCA Notice.

### 3.3.3.8 (AK) Chart Notice - GPS/WAAS Navigation Operations in Alaska

A Chart Notice titled “Implementation of Instrument Flight Rules (IFR) Area Navigation (RNAV) Operations Using Global Positioning System (GPS) in Alaska” shall be shown centered below the “Corrections, Comments and/or Procurement Note” and above the OROCA Notice.

**Figure 3.8 (AK) GPS/WAAS Chart Notice**



### 3.3.4 Chart Identification Labels

Chart Identification Labels shall be shown to identify a complete set of conterminous U.S. Enroute Low Charts or Alaska Enroute Low Charts, and identify individual charts within a set.

References:

[Appendix 28](#) - Chart Identification Labels - U.S., Alaska & Area Charts

**Figure 3.9 Chart Identification Labels - U.S. and Alaska Charts**



### 3.3.4.1 Chart Idents

In the conterminous U.S. each odd-numbered chart shall be identified by a unique ident tab staggered across the panel and overlapping the chart center fold line. Each ident tab shall be stacked within the portion below the center fold line. The first chart tab on the left side shall be for L-1 and increase to L-35 on the right side.

(AK) In Alaska each ident tab shall be identified by the chart number of both the odd and even number charts, e.g., L-1/L-2, and L-3/L-4. In Alaska the ident tab for L-1 shall be positioned on the left half of the panel and the ident tab for L-3/L-4 shall be positioned on the right half of the panel.

### 3.3.4.2 Chart Effective Date

The effective date of the chart shall be shown below the center fold and consist of the day, month (abbreviated using the first three letters of the month) and year, shown centered above the area of coverage.

### 3.3.4.3 Area of Coverage

The area of coverage shall be either “UNITED STATES” or “ALASKA” as appropriate. The area chart identifier in all cases shall be shown centered below the chart effective date.

### 3.3.5 FAA Logo/Banner

The FAA logo/banner shall be shown directly below the chart identification label.

**Figure 3.10 FAA Branding**



### 3.3.6 Chart Index

A chart index showing IFR Enroute Low Altitude chart coverage of either the conterminous United States or Alaska shall be shown. The chart index shall be centered below the FAA logo/banner.

Area Chart Index specifications can be found in Section [3.11](#).

References:

[Appendix 29](#) - Chart Index - U.S.

Figure 3.11 Chart Index - U.S.

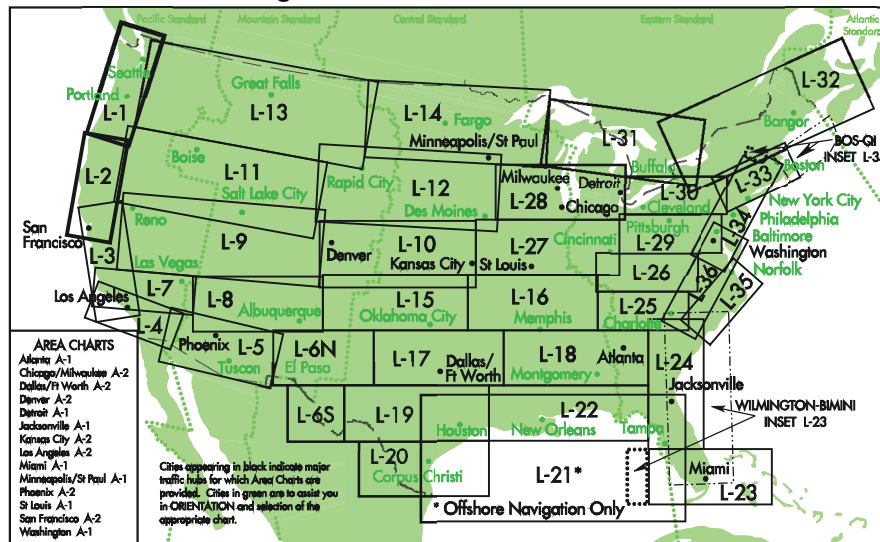
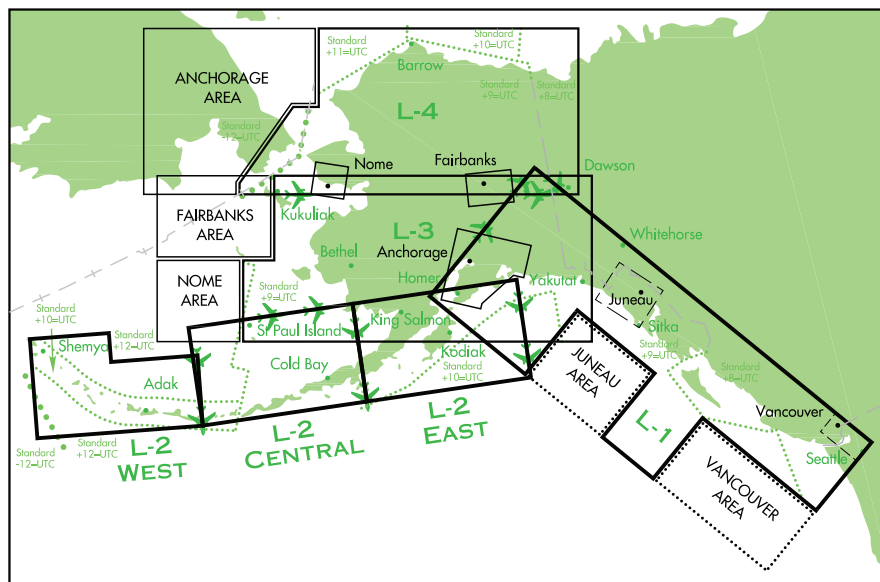


Figure 3.12 Chart Index - Alaska



### 3.3.6.1 Land and Water Areas

The conterminous U.S., Mexico and Canada land areas shall be shown. Only the Great Lakes shall be shown. The land areas and bodies of water shall not be identified by name.

**(AK)** The U.S., Russia and Canada land areas shall be shown. The land areas shall not be identified by name.

### 3.3.6.2 International Boundaries

International boundaries shall be shown and symbolized by a repeating dashed lined. International boundaries shall not be identified by name.

**(AK)** The U.S./Russia Maritime Boundary shall be shown and symbolized by a repeating dash line with alternate dashes cross-hatched.



### 3.3.6.3 Low Altitude Chart Coverage

The limits of each low altitude chart shall be depicted. Each chart shall be identified by a chart number. Chart numbers shall be centrally positioned within the limits of each chart. The chart index shall be tailored for each individual sheet by indicating the particular limits of both the front and the back charts.

The limits of the inset chart coverage shall be defined using a dashed line. Inset charts shall be identified by name. In addition, inset chart placement on the appropriate Enroute Charts shall be depicted by dotted outlines, supported by lead lines and small arrowheads.

#### 3.3.6.3.1 Offshore Navigation Only L-21

Within the Contiguous U.S. Chart Index, a note shall be identified with an asterisk to the L-21 chart designator (L-21\*) and placed along and inside of the lower L-21 chart parameter which reads: “\*Offshore Navigation Only”. See [Figure 3.11](#).

### 3.3.6.4 Area Chart Cities

Area chart names and geographic locations for all conterminous U.S. and Alaska Charts shall be shown. The geographic locations associated with these area charts shall be symbolized by a solid dot and identified.

#### 3.3.6.4.1 U.S. Area Chart Coverage

An alphabetical listing of the conterminous U.S. Area Charts and associated Area Chart number shall be positioned in the lower left corner of the U.S. chart index. The list shall be flushed left and contained within a box with the title “AREA CHARTS” centered above and preceding the listing.

**Figure 3.13 Area Chart Listing**

AREA CHARTS	
Atlanta	A-1
Chicago/Milwaukee	A-2
Dallas/Ft Worth	A-2
Denver	A-2
Detroit	A-1
Jacksonville	A-1
Kansas City	A-2
Los Angeles	A-2
Miami	A-1
Minneapolis/St Paul	A-1
Phoenix	A-2
St Louis	A-1
San Francisco	A-2
Washington	A-1

The following note shall be shown positioned in the lower portion of the conterminous U.S. Enroute Low Chart index.

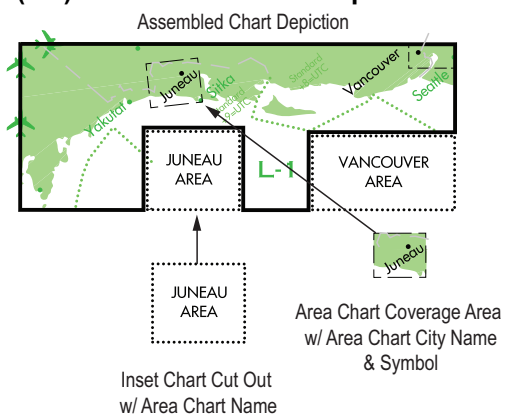
**Figure 3.14 Area Chart Coverage Note**

Cities appearing in black indicate major traffic hubs for which Area Charts are provided. Cities in green are to assist you in ORIENTATION and selection of the appropriate chart.

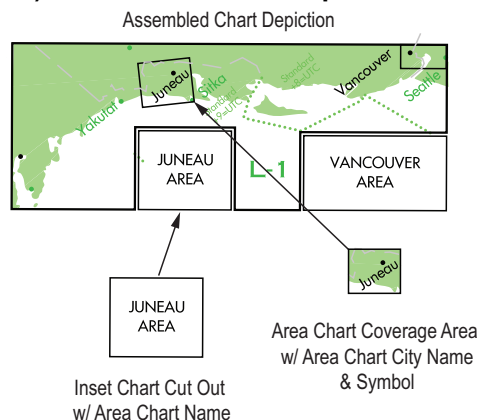
### 3.3.6.4.2 (AK) Alaska Area Chart Coverage

(AK) The Area Chart actual coverage, delineated by a line boundary shall be shown, in addition to area chart names and geographical locations.

**Figure 3.15 (AK) Alaska Area Chart Depiction on Active Chart**



**Figure 3.16 (AK) Alaska Area Chart Depiction on Inactive Chart**



### 3.3.6.5 Prominent Cities

To assist in geographical orientation and general coverage of the individual Enroute Low charts, a selection of names and their geographical location shall be shown. These shall consist of the Low Altitude Area Chart city names and a selection of significant panel identification names. These names should be evenly distributed throughout the index with at least one geographical name and location within each of the Enroute Low Charts.

### 3.3.6.6 Time Zone Boundaries and International Dateline

Time zone boundaries and the International Dateline shall be shown and symbolized by a continuous series of dots. Time zones shall be identified by the official local standard time zone name, centered within the zone along the top of the index.

(AK) Time zones shall be labeled within the body of the index.

### 3.3.6.7 (AK) Wall Planning Chart Instructions (Airplane Silhouettes)

The chart index shall indicate the location of registration guide marks used for assembling a planning chart. These registration guide marks shall be in the form of miniature airplane silhouettes. Two airplane silhouette symbols shall be positioned along the individual Alaska Enroute Low Altitude Chart limits of adjoining charts. These symbols shall be positioned in the same general location as their larger counterparts on the chart proper.

An explanatory note, preceded by a sample miniature airplane symbol, shall be positioned outside, and immediately below the chart index, providing instructions for assembly of an Alaskan Wall Planning Chart.

**Figure 3.17 Registration Marks (Airplane Silhouettes)/Wall Planning Instructions**



### 3.3.7 Interagency Air Committee (IAC) Credit Note

An IAC credit note shall be shown left justified below the Chart Index.

**(AK)** An IAC credit note shall be shown left justified, below the Registration Marks/Wall Planning Instructions.

**Figure 3.18 IAC Credit Note**

Published from digital files compiled in accordance with Interagency Air Committee specifications and agreements approved by Department of Defense - Federal Aviation Administration

References:

[Appendix 29](#) - Chart Index - U.S.

### 3.3.8 QR Codes

The QR Code shall be positioned on the title panel.

### 3.3.9 Bar Codes

Bar code information and associated text, as indicated below, shall be positioned at the bottom of the title panel. The first line will show the FAA Product ID, depicted above the National Stock Number bar code. The second line will consist of bar codes for the National Stock Number (NSN) and the Effective Date (Julian date). The NSN and the Effective Date will be shown textually below the respective Bar Code on the third line. The NGA Reference Number will be shown textually on the fourth line.

**Figure 3.19 Bar Codes**

FAA Product ID: ELUS1



NSN 7641014109653

NGA REF NO. ENRXXUSLCHT01



EFF DATE 17061

References:

[Appendix 32](#) - Bar Codes

### **3.4 LEGEND PANEL INFORMATION**

Legend panel (U.S. and Alaska Charts) information shall be positioned to read perpendicular to the side trim of the charts. Refer to appendices referenced below for placement of legend panel information.

References:

[Appendix 4](#) - Chart Layout - U.S. L-2 and L-8

[Appendix 5](#) - Chart Layout - U.S. L-3, L-9, L-11, L-13, L-15, L-19, L-27 and L-29

[Appendix 7](#) - Chart Layout - U.S. L-5

[Appendix 9](#) - Chart Layout - U.S. L-17 and L-31

[Appendix 12](#) - Chart Layout - U.S. L-21, L-33 and L-35

[Appendix 14](#) - Chart Layout - U.S. L-23

[Appendix 16](#) - Chart Layout - U.S. L-26

[Appendix 20](#) - Chart Layout - Alaska L-2

[Appendix 22](#) - Chart Layout - Alaska L-4

References:

[Appendix 33](#) - Legend Panel - U.S. and Alaska

[Appendix 34](#) - Legend Panel - Chart Identification Labels U.S. & Alaska

#### **3.4.1 Chart Identification Area**

References:

[Appendix 33](#) - Legend Panel - U.S. and Alaska

[Appendix 34](#) - Legend Panel - Chart Identification Labels U.S. & Alaska

##### **3.4.1.1 Chart Idents**

Charts shall be identified by the letter “L” and a number; together they shall be referred to as the chart ident. Chart idents shall be positioned in the upper left and upper right corners of the panel.

###### **3.4.1.1.1 U.S. Charts**

All odd-numbered chart idents for the conterminous U.S. Charts, except for L-25, shall be positioned in the upper left hand corner. The odd-numbered chart ident for L-25 shall be positioned in the upper right hand corner.

All even-numbered chart idents for the conterminous U.S. Charts, except for L-26, shall be positioned in the upper right hand corner. The even-number chart ident for L-26 shall be positioned in the upper left hand corner.

###### **3.4.1.1.2 (AK) Alaska Charts**

All odd-numbered chart idents for Alaska shall be positioned in the upper right corner. All even-numbered chart idents for Alaska shall be positioned in the upper left corner.

##### **3.4.1.2 Arrowheads**

Arrowheads shall be shown to indicate in which direction (left, right or up) the particular chart should be opened or turned to be read correctly.

#### **3.4.1.2.1 U.S. Charts**

Arrowheads for all even-numbered charts, except for L-20, L-22, L-26, L-28, L-30 and L-36, shall be centered and to the right of the chart number and point to the right.

Arrowheads for all odd-numbered charts, except for L-25, shall be centered and to the left of the chart number and point to the left.

Arrowheads for L-20, L-22, L-25, L-28, L-30 and L-36 shall be above and flush right with the chart number and point up.

Arrowhead for L-26 shall be centered and to the left of the chart number and point to the left.

#### **3.4.1.2.2 (AK) Alaska Charts**

Arrowheads for all even numbered Alaskan charts shall be centered and to the left of the chart number and point to the left.

Arrowheads for all odd numbered Alaskan charts shall be centered and to the right of the chart number and point to the right.

#### **3.4.1.3 Panel Identification**

The text “PANELS” shall be positioned below all chart numbers. The text shall be flush right with the chart number in the upper right corner and flush left with the chart number in the upper left corner. Panel identification shall be placed below the text “PANELS”.

##### **3.4.1.3.1 U.S. Charts**

Panel identification for charts covering the contiguous U.S. shall be placed as specified below:

- Charts with panels “ABCDE” and “ABCD”, panel identification shall be positioned below and flush left with the text “PANELS” except for chart L-25. Chart L-25 panel identification shall be positioned below and flush right with the text “PANELS”.
- Charts with panels “FGHIJ”, “FGHIJK” and “EFGHIJ”, panel identification shall be positioned below and flush right with the text “PANELS” except for Chart L-26. Chart L-26 panel identification shall be positioned below and flush left with the text “PANELS”.

##### **3.4.1.3.2 Alaska Charts**

Panel identification for charts covering Alaska (**AK**) shall be placed as specified below:

- Panel identification for Alaska L-1 and L-3 shall be “ABCDE”, positioned below and flush right with the text “PANELS”.
- Panel identification for Alaska L-2 and L-4 shall be “FGHIJK”, positioned below and flush left with the text “PANELS”.

#### **3.4.1.4 Chart Scales**

The scale of each chart, expressed in terms of inches of nautical miles, shall be shown, positioned directly below the panel identification numbers. See Section [1.2.5](#) for scale values.

#### 3.4.1.4.1 U.S. Charts

Chart scales for charts covering the contiguous U.S. shall be placed as specified below:

- Charts with panels “ABCDE” and “ABCD”, chart scale shall be positioned below and flush left except for chart L-25. Chart L-25 chart scale shall be position below and flush right.
- Charts with panels “FGHIJ”, “FGHIJK” and “EFGHIJ”, chart scale shall be positioned flush right except for Chart L-26. Chart L-26 chart scale shall be positioned flush left.

#### 3.4.1.4.2 Alaska Charts

Chart scales for charts covering the Alaska (**AK**) shall be placed as specified below:

- Chart scale for Alaska L-1 and L-3 shall be positioned flush right.
- Chart scale for Alaska L-2 and L-4 shall be positioned flush left.

### 3.4.2 Title Area

References:

[Appendix 34](#) - Legend Panel - Chart Identification Labels U.S. & Alaska

#### 3.4.2.1 Chart Title

The Chart Title shall be shown as described in Section [3.3.3.1](#).

#### 3.4.2.2 Altitude Note

The Altitude note shall be shown as described in Section [3.3.3.2](#).

#### 3.4.2.3 Horizontal Datum Note

A Horizontal Datum note shall be shown centered below the altitude note, as indicated below.

**Figure 3.20 Horizontal Datum Note**

HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983

### 3.4.3 Chart Legend

A Chart Legend shall be shown centered below the Horizontal Datum note. The legend shall be complete in all respects, reflecting items detailed within these specifications, and shall be as compact as possible. Data contained within the legend shall be grouped in specific categories of information.

The title of these categories and appear as headings shall be:

**Table 3.1 Chart Legend Title Headings**

AIRPORTS
NAVAIDS
COMMUNICATION BOXES
AIR TRAFFIC SERVICES AND AIRSPACE INFORMATION
EXAMPLE OF GROUPING

References:

[Appendix 33](#) - Legend Panel - U.S. and Alaska

### **3.5 TABULATED DATA AREA**

Tabulated Data Area type and symbol specifications shall be shown as indicated in the appendices except as other indicated within these specifications.

References:

**Appendix 35** - Military Training Routes Tabulation - U.S. & Alaska

**Appendix 36** - SUA & MOA Tabulation - U.S. & Alaska

**Appendix 37** - Airport Locations Tabulation - U.S. & Alaska

Tabulated Data shall consist of five areas:

1. Military Training Routes (MTRs). See Section **3.5.1**.
2. SUA and MOA Tabulation Legend. See Section **3.5.2**.
3. Special Use Airspace (SUAs). See Section **3.5.3**.
4. Military Operations Areas (MOAs). See Section **3.5.4**.
5. Airport Locations. See Section **3.5.5**.

Tabulations shall incorporate information from both front and back sides of the chart. The location of Tabulated Data is indicated in the Chart Layout.

References:

**Appendix 4** - Chart Layout - U.S. L-2 and L-8

**Appendix 6** - Chart Layout - U.S. L-4, L-10, L-12, L-14, L-16 and L-24

**Appendix 7** - Chart Layout - U.S. L-5

**Appendix 10** - Chart Layout - U.S. L-18 and L-32

**Appendix 11** - Chart Layout - U.S. L-20 and L-28

**Appendix 14** - Chart Layout - U.S. L-23

**Appendix 15** - Chart Layout - U.S. L-25

**Appendix 17** - Chart Layout - U.S. L-30

**Appendix 19** - Chart Layout - Alaska L-1

**Appendix 21** - Chart Layout - Alaska L-3

See Section **3.11.2** for Tabulated Data for Area Charts (A-1 and A-2).

#### **3.5.1 Military Training Routes (MTR) Tabulation - U.S. & Alaska**

References:

**Appendix 35** - Military Training Routes Tabulation - U.S. & Alaska

##### **3.5.1.1 General**

A tabulation of the appropriate and applicable all-inclusive altitudes for each military training route shown on the chart shall be provided. The MTR Tabulation is positioned as indicated in the second set of References under Section **3.5**.

MTRs shall be tabulated numerically by the route designator, e.g., IR-123, followed by the appropriate and applicable all-inclusive (composite) altitude range for each route graphically depicted on the chart, e.g., 3000 to 4000, 500 AGL to 7000.

As necessary due to space considerations on the panel, the MTR tabulation may be continued or carried over to an open area within the confines of the chart.

**Figure 3.21 Military Training Routes Tabulation**

MILITARY TRAINING ROUTES					
NUMBER	ALTITUDE RANGE	NUMBER	ALTITUDE RANGE	NUMBER	ALTITUDE RANGE
IR-203	8000 TO 12000	IR-346	200 AGL TO FL 29000	IR-461	300 AGL TO 9000
IR-207	200 AGL TO 15000	IR-348	500 AGL TO 13000	VR-202	200 AGL TO 8000
IR-344	200 AGL TO 17000	IR-460	300 AGL TO 9000	VR-331	200 AGL TO 6000

MTR Tabulation information for Area Chart (A-1/A-2) can be found in Section [3.11.2.1](#).

### 3.5.1.2 Title

The title “MILITARY TRAINING ROUTES” shall be centered above the tabulation.

### 3.5.1.3 Columns and Sub-columns

Tables will be three columns wide with each column made up of two sub-columns. Sub-column headings shall be “NUMBER” and “ALTITUDE RANGE”.

#### 3.5.1.3.1 Number Column

The first column, titled “NUMBER”, shall be tabulated numerically by the route designator e.g., IR-203, VR-331, etc.

#### 3.5.1.3.2 Altitude Range Column

The second column, titled “ALTITUDE RANGE”, shall list the corresponding and all-inclusive (composite) altitude range for each route geographically depicted on the chart.

### 3.5.2 Special Use Airspace (SUA) and Military Operations Areas (MOA) Tabulation Legend

The following SUA and MOA Tabulation Legend shall be positioned above the Special Use Airspace Tabulation on all U.S. charts.

**Figure 3.22 SUA and MOA Tabulation Legend - U.S. Charts**

ARTCC three letter ident: Albuquerque ZAB, Atlanta ZTL, Boston ZBW, Chicago ZAU, Cleveland ZOB, Denver ZDV, Fort Worth ZFW, Houston ZHU, Indianapolis ZID, Jacksonville ZJX, Kansas City ZKC, Los Angeles ZLA, Memphis ZME, Miami ZMA, Minneapolis ZMP, New York ZNY, Oakland ZOA, Salt Lake City ZLC, Seattle ZSE, Washington ZDC

U.S.: P - PROHIBITED, R - RESTRICTED, W - WARNING, A - ALERT AREAS

All altitudes are MSL unless otherwise indicated	‡	- During periods of Daylight Saving Time (DT) effective hours will be one hour earlier than shown.
FL - Flight Level		
Time - Hours shown are UTC unless otherwise indicated	NOTAM	- Use of this term in Restricted Areas indicates FAA And DoD NOTAM systems. Use of this term in all other Special Use areas indicates the DoD NOTAM system.
Cont - Continuous: 24 hours a day, 7 days a week		

(AK) The following SUA and MOA Tabulation Legend shall be positioned above the Special Use Airspace Tabulation on all Alaska Low Enroute Charts.

**Figure 3.23 SUA and MOA Tabulation Legend - AK Charts**

ARTCC three letter ident: Anchorage ZAN, Oakland ZOA, Seattle ZSE  
U.S.: P - PROHIBITED, R - RESTRICTED, W - WARNING, A - ALERT AREAS

All altitudes are MSL unless otherwise indicated	‡	- During periods of Daylight Saving Time (DT) effective hours will be one hour earlier than shown.
FL - Flight Level		
Time - Hours shown are UTC unless otherwise indicated	NOTAM	- Use of this term in Restricted Areas indicates FAA And DoD NOTAM systems. Use of this term in all other Special Use areas indicates the DoD NOTAM system.
Cont - Continuous: 24 hours a day, 7 days a week		



### 3.5.3 Special Use Airspace (SUA) Tabulation

The tabulation shall be titled “Special Use Airspace”. The tabulation shall include Prohibited, Restricted, Warning and Alert Areas in the U.S. The following note shall be placed at the bottom left corner of the Special Use Airspace (SUA) Tabulation box: “Alert Areas do not extend into Class A, B, C and D airspace, or Class E airport surface areas”. Footnotes shall be added at the bottom left of the tabulation below the Alert Areas note when needed.

Special Use Airspace with a floor of 18,000' MSL or above shall not be shown on this enroute low altitude chart.

**Figure 3.24 Special Use Airspace (SUA) Tabulation**

SPECIAL USE AIRSPACE				
NUMBER	EFFECTIVE ALTITUDE	TIMES USED, UTC	CONTROLLING AGENCY A/G CALL	PANEL
P-51	SFC TO BUT NOT INCL 2500	CONT	NO A/G	E
R-2202A	SFC TO BUT NOT INCL 10000	1600 - 0300Z± MON - FRI; *1	ZAN	A
R-2202C	10000 TO FL 310	INTMT BY NOTAM	ZAN	A
R-2203A,B	SFC TO 11000	1400 - 0900Z± MON - FRI; *1	ANCHORAGE APP CON	A
R-2203C	SFC TO 5000	1400 - 0900Z± MON - FRI; *1	ANCHORAGE APP CON	A
R-6701	SFC TO 5000	INTMT BY NOTAM	WHIDBEY ISLAND NAS APP CON WA	E
W-237A,B LOW	SFC TO BUT NOT INCL FL 230	INTMT BY NOTAM	ZSE	E
W-237C,D,F,G	SFC TO UNLTD	INTMT BY NOTAM	ZSE	E
W-237E	SFC TO FL 270	INTMT BY NOTAM	ZSE	E
W-237H,J	SFC TO FL 270	INTMT BY NOTAM	ZOA	E
W-612	SFC TO FL 290	BY NOTAM	ZAN	AJ
A-680	SFC TO 3000	APR - OCT 1800 - 0930Z± MON - FRI; NOV - MAR 1800 - 0759Z± MON - FRI; *1	NO A/G	E

Alert Areas do not extend into Class A, B, C and D airspace, or Class E airport surface areas.

#### 3.5.3.1 Number Column

The first column, titled “NUMBER”, shall consist of the assigned or designated number of the area preceded by the letter designation for the type of area. SUA areas shall be grouped alphabetically and listed numerically.

#### 3.5.3.2 Effective Altitude Column

The second column, titled “EFFECTIVE ALTITUDE”, shall list the effective altitude of the area in feet or as a Flight Level (FL). When the effective altitude is unlimited, use the abbreviation “UNLTD”.

#### 3.5.3.3 Times Used Column, UTC

The third column, titled “TIMES USED, UTC”, shall list the times of use. Should an area be activated by NOTAM, rather than at a designated time, the text “BY NOTAM” shall be used instead. Using “BY NOTAM” in Restricted areas indicates that the NOTAM is published in both FAA and DoD NOTAM systems. Using “BY NOTAM” in all other Special Use Airspace areas indicates that the NOTAM is published only in the DoD NOTAM system.

Time entries shall indicate the specific days of the week and hours of the day that a SUA area is in effect.

#### 3.5.3.4 Controlling Agency/Air Ground (A/G) Column

The fourth column, titled “CONTROLLING AGENCY A/G CALL”, shall indicate the agency that is authorized to permit enroute clearance through the area. Should a joint agreement exist that permits clearance by air route traffic control, the appropriate center shall be shown together with the Flight Service Station. “NO A/G” indicates there is no air to ground frequency or agency available to call for enroute clearance.

### 3.5.3.5 Panel Column

The fifth column, titled “PANEL”, shall indicate the chart panel identifier where the SUA area is located. Multiple panels shall be listed when the SUA area is depicted on more than one panel.

### 3.5.4 Military Operations Areas (MOA) Tabulation

The tabulation shall be titled “MILITARY OPERATIONS AREAS”. Footnotes shall be added at the bottom left of the tabulation when needed.

**Figure 3.25 Military Operations Areas**

MILITARY OPERATIONS AREAS				
NUMBER	EFFECTIVE ALTITUDE	TIMES USED, UTC	CONTROLLING AGENCY A/G CALL	PANEL
CHINA	3000 AGL *2	1600Z† - SS DAILY	ZOA	G,H
CHINOOK A	300 TO 5000	INTMT BY NOTAM	U S NAVY WHIDBEY ISLAND NAS APP CON	D,E
CHINOOK B	300 TO 5000	INTMT BY NOTAM	U S NAVY WHIDBEY ISLAND NAS APP CON	E
DOLPHIN N	11000 *2	1600 - 2400Z† DAILY; *1	ZSE	A,B,I,J
DOLPHIN S	11000 *2	1600 - 2400Z† DAILY; *1	ZSE	I
GOOSE N	3000 AGL *2	1500 - 0300Z† MON - FRI; *1	ZSE	I
MAXWELL 1,2,3	11000 OR 3000 AGL *4	1300 - 0400Z† MON - FRI; *1	ZOA	G,H
OLYMPIC A	6000 *2	BY NOTAM	ZSE	D
OLYMPIC B	6000 *2	BY NOTAM	ZSE	D,E
RAINIER 1,2,3	2000 TO 9000	INTMT BY NOTAM	SEATTLE TRACON	D
WHITMORE 1,2,3	11000 OR 3000 AGL *4	1530 - 0030Z† MON - FRI; *1	ZOA	H

\*1 Other Times By NOTAM  
 \*2 To But Not Including FL 180  
 \*4 Whichever Is Higher, To But Not Including FL 180

#### 3.5.4.1 Number Column

The first column, titled “NUMBER”, shall consist of the assigned or designated name and/or number of the area preceded by the letter designation for the type of area. MOA areas shall be grouped alphabetically and listed numerically.

#### 3.5.4.2 Effective Altitude Column

The second column, titled “EFFECTIVE ALTITUDE”, shall list the effective altitude of the area in feet or as a Flight Level (FL). When the effective altitude is unlimited, use the abbreviation “UNLTD”.

#### 3.5.4.3 Time of Use Column

The third column, titled “TIMES USED, UTC”, shall list the times of use. Should an area be activated by NOTAM, rather than at a designated time, the text “BY NOTAM” shall be used instead. Using “BY NOTAM” in the MOA indicates that the NOTAM is published only in the DoD NOTAM system.

Time entries shall indicate the specific days of the week and hours of the day that a MOA area is in effect.

#### 3.5.4.4 Controlling Agency/Air Ground (A/G) Column

The fourth column, titled “CONTROLLING AGENCY A/G CALL”, shall indicate the agency that is authorized to permit enroute clearance through the MOA. Should a joint agreement exist which permits clearance by air route traffic control, the appropriate center shall be shown together with the Flight Service Station. “NO A/G” indicates there is no air to ground frequency or agency available to call for enroute clearance.

### 3.5.4.5 Panel Column

The fifth column, titled “PANEL”, shall indicate the chart panel identifier where the MOA is located. Multiple panels shall be listed when the MOA is depicted on more than one panel.

### 3.5.5 Airport Locations Tabulation

An alphanumeric tabulation of civil, military and civil/military airports within the area of coverage for both the front and reverse side of the chart shall be provided. This tabulation shall normally be placed on the Special Use Airspace Tabulation panels and due to space considerations may be continued or carried over to an open area within the confines of the chart.

The title “AIRPORT LOCATIONS” shall be positioned above the tabulation.

Column headings shall be “NAME”, “ID” and “PANEL.”

**Figure 3.26 Airport Locations**

AIRPORT LOCATIONS					
NAME	ID	PANEL	NAME	ID	PANEL
AJ Eisenberg	OKH	E	Harvey Fld	S43	D
Abbotsford	CYXX	E	Hayfork	F62	H
Albany Muni	S12	B	Hayward Exec	HWD	F
Anacortes	74S	E	Hobby Fld	77S	A
Angwin-Parrett Fld	2O3	G	Hogan's Corner	5WA8	D
Arcata	ACV	I	Illinois Valley	3S4	I
Arlington Muni	AWO	E	Independence State	7S5	B
			Red Bluff Muni	RBL	H
			Redding Muni	RDD	H
			Reid-Hillview of Santa	RHV	F
			Renton Muni	RNT	D
			Rio Vista Muni	O88	F
			Roche Harbor	WA09	E
			Rogers Fld	O05	H

#### 3.5.5.1 Name Column

Airports shall be tabulated alphabetically by the airport name. Airport names will be extracted verbatim from the authoritative database, but may be truncated as necessary to fit within the space allotted.

#### 3.5.5.2 ID Column

The FAA Location Identifier will be shown at airports in the conterminous U.S. The ICAO Location Indicator, if available, will be shown outside the conterminous U.S.

#### 3.5.5.3 Panel Column

The third column, titled “PANEL”, shall indicate the chart panel identifier where the airport is located.

### 3.6 MARGIN INFORMATION

Margin information shall be positioned between the neatline of the chart and the trim edge, but excluding title and legend panel information.

Margin information type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within the specifications.

Area Chart Margin Information specifications can be found in Section [3.11](#).

### 3.6.1 Bar Scales

Bar scales shall be shown in nautical miles (NM).

References:

[Appendix 38](#) - Margin Information - U.S. & Alaska

#### 3.6.1.1 Placement

Bar scales shall be positioned on each chart parallel to the top and bottom borderline, centered between every two external folds above and below the chart area.

**(AK)** Bar scales shall be positioned on each chart parallel to and outside the top and bottom neat-lines, centered within every two panel chart fold, i.e., between external folds.

Placement of Bar Scales on Alaskan charts AK L-1, L-3 and L-4:

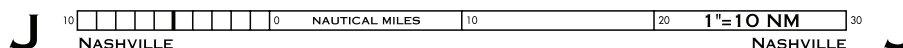
- AK L-1 - On panel B, the top has one scale, the bottom has a different scale. On panels C, D and E the top has one scale, the bottom two different scales.
- AK L-3 - On panel A, scales both associated with the Area Charts for Fairbanks and Nome - 1"= 10NM.
- AK L-4 - On panel G, the top has one scale, the bottom has two different scales. On panel H, the top has two different scales, the bottom has one scale.

#### 3.6.1.2 Increments and Labels

##### 3.6.1.2.1 U.S. Charts

Bar scales shall be subdivided into 10NM increments. The first 10NM increment shall be subdivided into 1NM increments. Bars scales shall be labeled in 10NM increments to the right of the division marks. The first and last labels shall be placed outside of and centered on the beginning and end of the bar scale respectively.

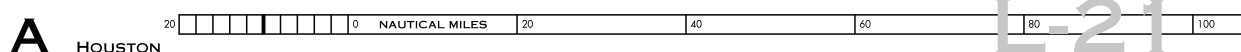
**Figure 3.27 Chart Scale Increments - 10NM Increment Example**



##### 3.6.1.2.2 Offshore Navigation Chart L-21

Bar scales for Chart L-21 shall be subdivided into 20NM increments. The first 20NM increment shall be subdivided into 2NM increments.

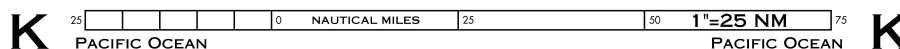
**Figure 3.28 Chart Scale Increments - 2NM Increment Example**



##### 3.6.1.2.3 Alaska Charts

Bar scales shall be subdivided into 25NM increments. The first 25NM increment shall be subdivided into 5NM increments.

**Figure 3.29 Chart Scale Increments - 5NM Increment Example**



Bar scales for the Area Charts for Juneau (L-1), Vancouver (L-1), Fairbanks (L-3), Nome (L-3) and Anchorage (L-4) shall be subdivided into 10NM increments. The first 10NM increment shall be subdivided into 1NM increments. Bar scales shall be labeled in 10NM increments to the right of the division marks as shown in [Figure 3.27](#).

### 3.6.1.3 Chart Scale

The scale factor, e.g., 1"=10NM, shall be shown centered within the last (extreme right) increment of the bar scale.

### 3.6.1.4 Nautical Mile Text

The text "NAUTICAL MILES" shall be centered within the first division of the scales immediately following the zero value.

## 3.6.2 Panel/Fold Identification

Panel/fold identification shall be shown at each end of a bar scale. Identification shall be with both a letter and the name of the most prominent and centrally located city or NAVAID within the panel. Consideration is given to prominent Class B or C airspace or area charts. In instances when no NAVAID or city is found within a panel, i.e., where a panel depicts an area over a body of water, the body of water's name shall be used. Priority is to be given to a NAVAID or City within U.S. Borders.

The letters ABCDE shall be used as the letter identifiers on odd number charts (front side) and the letters FGHIJ shall be used as the letter identifiers on even numbered charts (reverse side).

On charts L-5, L-21, L-33 and L-35, the letters ABCD shall be used as chart identifiers and on charts L-6, L-22, L-34 and L-36, the letters EFGHIJ shall be used as chart identifiers.

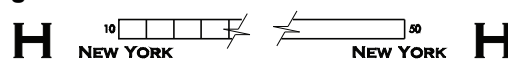
(AK) The letters ABCDE shall be used as the letter identifiers on odd number charts (front side) and the letters FGHIJK shall be used as the letter identifiers on even numbers charts (reverse side).

The city or NAVAID name shall be positioned 3/20" to the left (right) of each letter identifier, within the appropriate panel. The city or NAVAID name shall be aligned at the top, along the top of the chart scale and aligned at the bottom of the chart, along the bottom of the chart scale.

**Figure 3.30 Top of Panel Fold Indication**



**Figure 3.31 Bottom of Panel Fold Indication**



References:

[Appendix 38](#) - Margin Information - U.S. & Alaska

## 3.6.3 Chart Idents

Chart idents (L-1, L-2, etc.) shall be positioned along the top and bottom edge (long side) of all charts so that when opened or partially unfolded, the chart can be readily identified by number.

Chart idents shall be centered on the bar scale. Placement of the chart idents shall be adjusted to avoid overprinting or conflicting with airway lead name data.

**Figure 3.32 Chart Number Identification**



References:

[Appendix 38](#) - Margin Information - U.S. & Alaska

### 3.6.4 Airways/Routes Extending Past the Chart Neatline

Airways/Routes that extend past the chart neatline shall have information pertaining to the next point (NAVAID, NAVAID fix or waypoint) on the route shown in the margin area outside and parallel to the neatline. The content of this next point information will differ for routes that cross internal boundaries and routes that cross external boundaries. Boundaries are described in the paragraphs below.

Text shall be oriented to read “up” along the left side and read “down” along the right side.

Next point information shall be charted the same color as shown on the adjoining or overlapping U.S. chart and in accordance with the specifications herein. Next point information on VHF/UHF routes shall be shown in black. Next point information on LF/MF routes shall be shown in brown. Next point information on RNAV routes shall be shown in blue if a waypoint, black if a VHF/UHF fix or NAVAID, or brown if a LF/MF fix or NAVAID. Next point information on joint routes (either RNAV-VHF/UHF or RNAV-LF/MF) shall be shown in its appropriate color.

References:

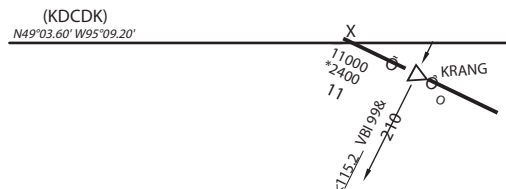
[Appendix 38](#) - Margin Information - U.S. & Alaska

#### 3.6.4.1 External CNFs & Unnamed Mileage Breaks

If the next point information is an unnamed mileage break depicted with an “X”, then the next point information shall be shown as an “X”.

If the next point information is a Computer Navigation Fix (CNF) depicted with an “X”, then the next point information shall be the CNF identifier enclosed in parentheses.

**Figure 3.33 Airways/Routes Past Chart Boundary - External - CNF & Unnamed Mileage Break**



All foreign area next point information will be shown in black.

### 3.6.4.2 Internal Chart Boundaries

Internal chart boundaries are those boundaries where adjoining or overlapping U.S. or Alaska low charts exist. [Table 3.2](#) below contains the information that shall be shown for each route type.

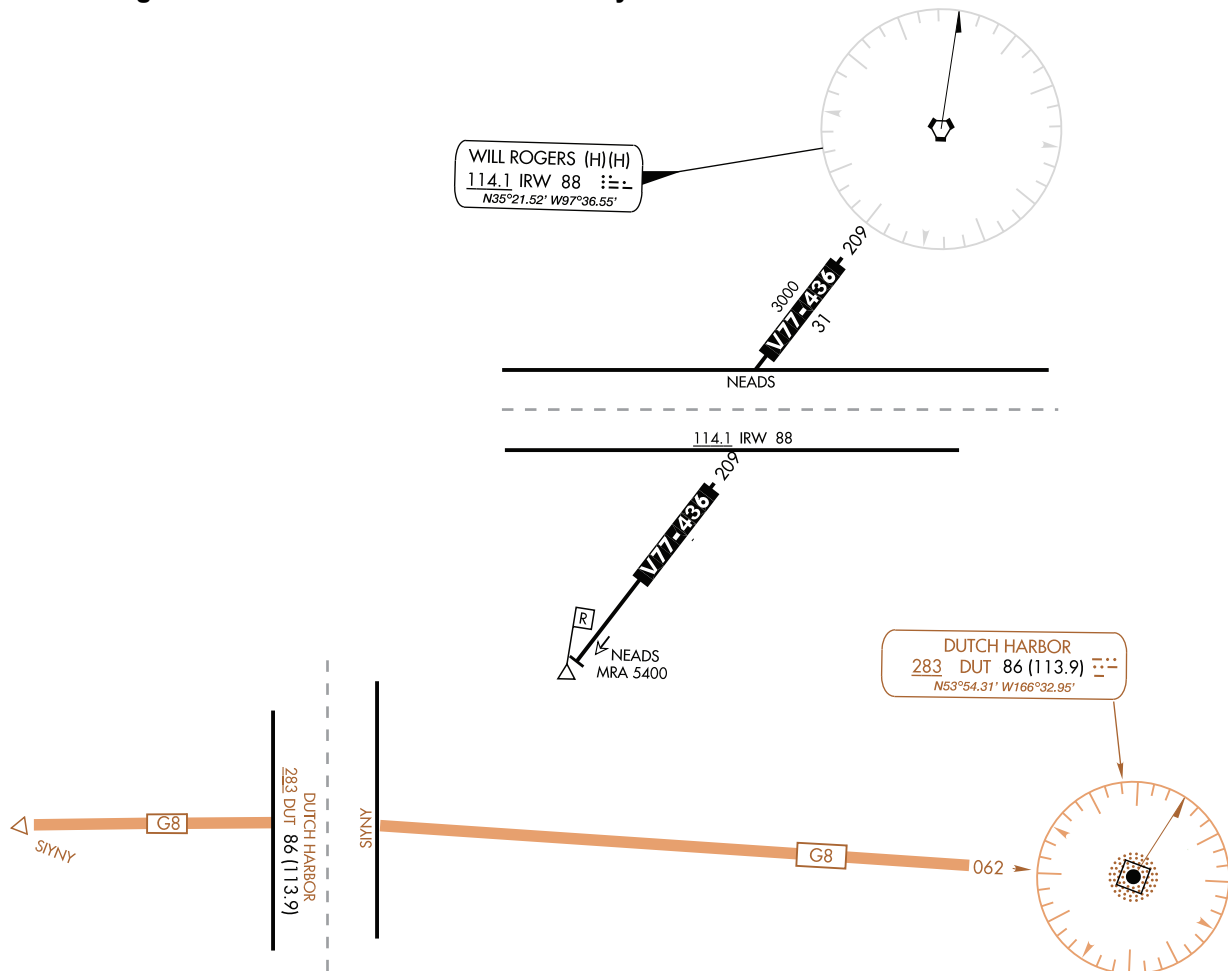
**Table 3.2 Internal Boundary Next Point Information**

Route Type	Fix	Waypoint	NAVAID
VHF/UHF or LF/MF	Name Only	N/A	Freq, Ident, Channel
RNAV	Name Only	Name Only	Ident Only
Joint			
- Share a common point	Name Only	N/A	Freq, Ident, Channel
- Do not share a common point	Name Only	Name Only	Freq, Ident, Channel

#### 3.6.4.2.1 VHF/UHF or LF/MF Routes

For VHF/UHF or LF/MF routes, the next point information will consist of name only if it is a NAVAID fix, or frequency, ident and channel if it is a NAVAID.

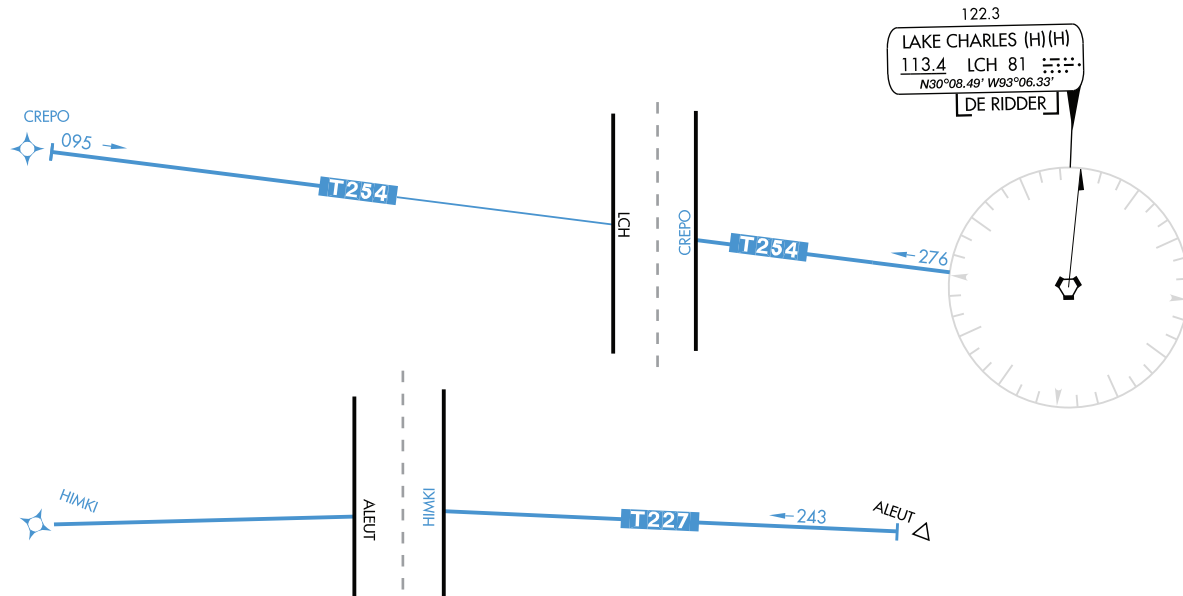
**Figure 3.34 Routes Past Chart Boundary - Internal - VHF/UHF and LF/MF Routes**



### 3.6.4.2.2 RNAV Routes

For RNAV routes, the next point information will consist of name only if it is a fix or way-point or, ident only if it is a NAVAID.

**Figure 3.35 Routes Past Chart Boundary - Internal - RNAV Routes**

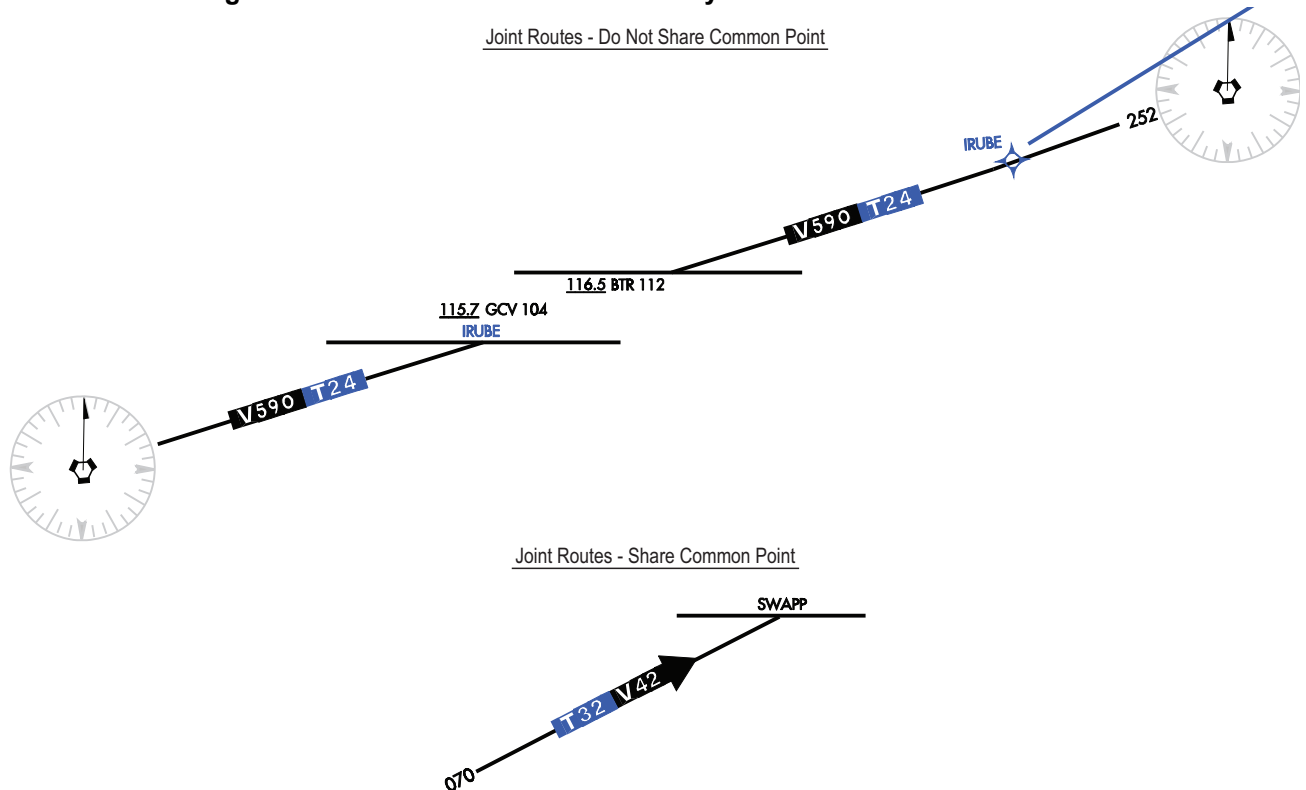




### 3.6.4.2.3 Joint Routes

For joint routes that share a common next point, the next point information will consist of name only if it is a fix, or frequency, ident and channel if it is a NAVAID. For joint routes that do not share common next point, the next point information for each route shall be as described in [Table 3.2](#).

**Figure 3.36 Routes Past Chart Boundary - Internal - RNAV Joint Routes**



### 3.6.4.3 External Chart Boundaries

External chart boundaries are those chart boundaries where no adjoining or overlapping U.S. or Alaska low charts exists. [Table 3.3](#) below contains the information that shall be shown for each route type.

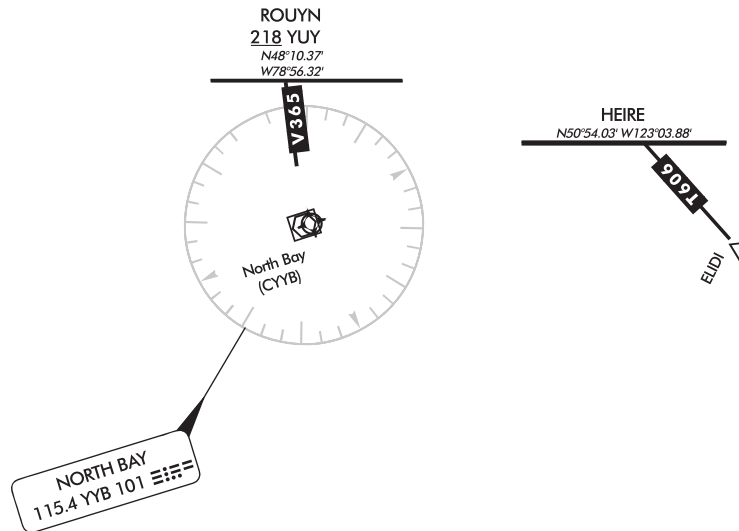
**Table 3.3 External Boundary Next Point Information**

Route Type	Fix	Waypoint	NAVAID
VHF/UHF or LF/MF	Name, Coordinates	N/A	Name, Freq, Ident, Channel, Coordinates
RNAV	Name, Coordinates	Name Only	Ident Only
Joint			
- Share a common point	Name, Coordinates	N/A	Name, Freq, Ident, Channel, Coordinates
- Do not share a common point	Name, Coordinates	Name Only	Name, Freq, Ident, Channel, Coordinates

### 3.6.4.3.1 VHF/UHF or LF/MF Routes

For VHF/UHF or LF/MF routes, the next point information shall consist of the name and coordinates if it is a fix, or name, frequency, ident, channel, and coordinates if the next point is a NAVAID.

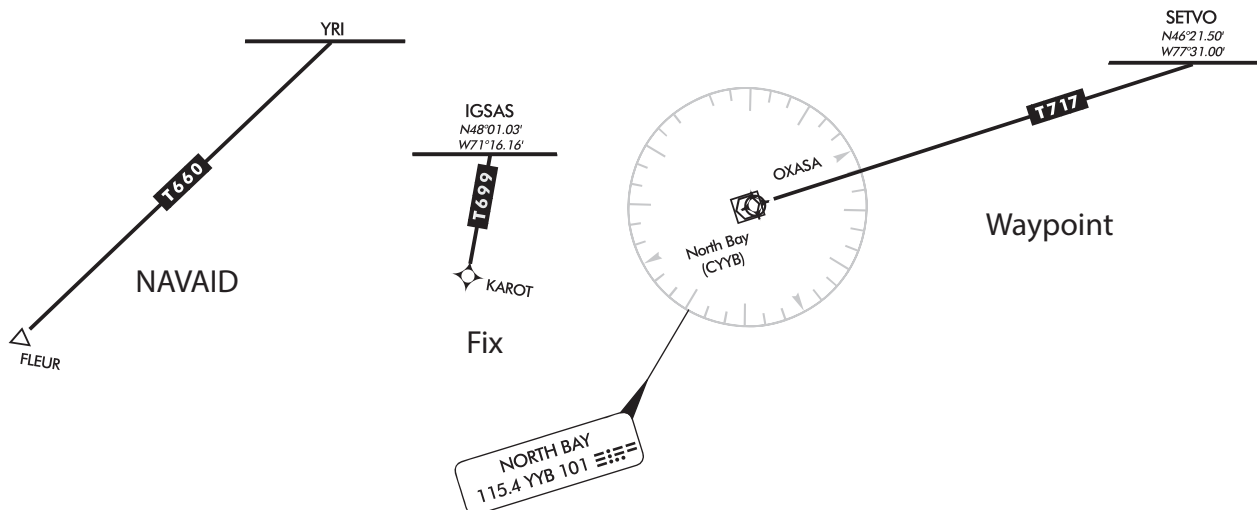
**Figure 3.37 Airways/Routes Past Chart Boundary - External - VHF/UHF and LF/MF Routes**



### 3.6.4.3.2 RNAV Routes

For RNAV routes, the next point information will consist of name and coordinates if it is a fix, name only if it is a waypoint or, ident only if it is a NAVAID.

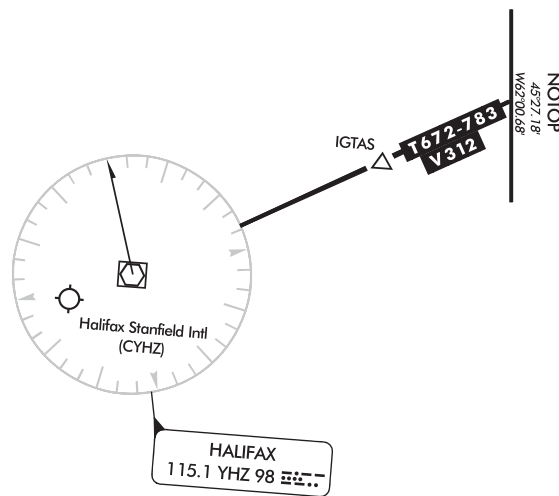
**Figure 3.38 Airways/Routes Past Chart Boundary - External - RNAV Route**



### 3.6.4.3.3 Joint Routes

For joint routes that share a common next point, the next point information will consist of name and coordinates if its a fix, or name, identifier, frequency and coordinates if a NAVAID. For joint routes that do not share a common next point, the next point information for each route shall be as described in [Table 3.3](#).

**Figure 3.39 Airways/Routes Past Chart Boundary - External - Joint**



### 3.6.4.4 Placement of Next Point Information

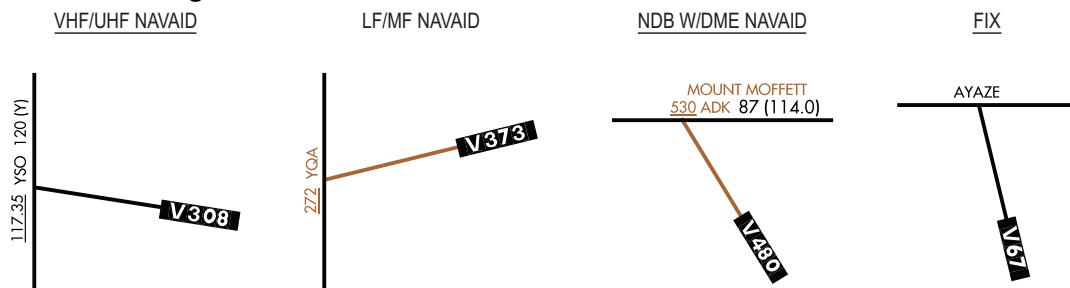
Next point information shall be stacked and centered adjacent to the neatline at the intersection of the routes to which they pertain. In congested areas or where appropriate, next point information may be stacked or offset using a leader line.

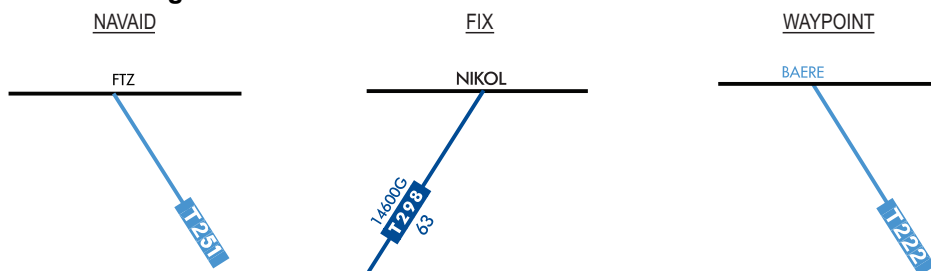
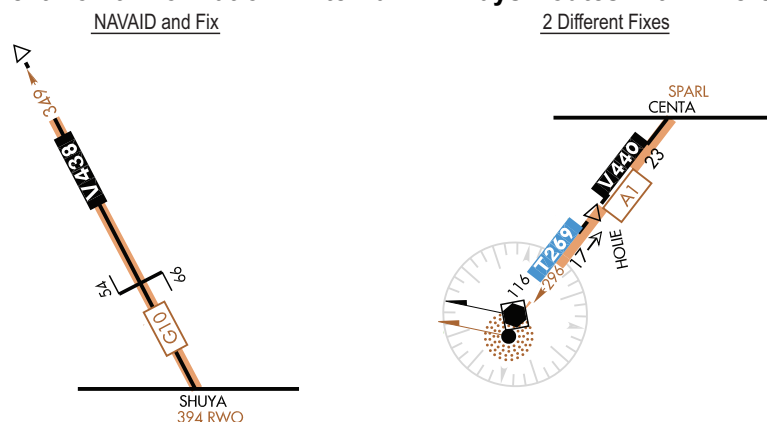
Next point information and chart notes may be shifted to avoid overprinting.

#### 3.6.4.4.1 Internal Boundary Next Point Information

Fix and waypoint names and NAVAID ident and frequency shall be placed adjacent and parallel to the neatline.

**Figure 3.40 Next Point Information - Internal - NAVAID & Fix**



**Figure 3.41 Next Point Information - Internal - RNAV****Figure 3.42 Next Point Information - Internal - Airways/Routes with Different Next Points**

### 3.6.4.4.2 External Boundary Next Point Information

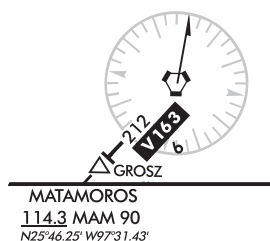
If the next point is a NAVAID, the coordinates shall be placed adjacent and parallel to the neatline, the NAVAID frequency and ident shall be placed on the second line away from the neatline, and the NAVAID name shall be placed on the third line away from the neatline.

If the next point is a fix, the coordinates shall be placed adjacent and parallel to the neatline and the fix name shall be placed on the second line away from the neatline.

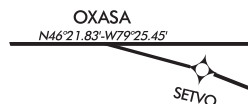
If the next point is a waypoint, the name shall be placed adjacent and parallel to the neatline.

**Figure 3.43 Next Point Information - External - NAVAID & Fix**

Next Point Information - NAVAID



Next Point Information - Fix



### 3.6.5 Margin Notes for Adjoining/Overlapping Charts

Notes to indicate the appropriate adjoining/overlapping charts, e.g., Adjoins Chart L-4, shall be placed in the margin areas at internal boundaries. Notes shall be placed once per panel when located at the top or bottom of the chart and once per fold when located along the side of the chart. Text shall be oriented to read “up” along the left (West) side and read “down” along the right (East) side of the chart. Charts oriented North/South shall have the text on the “South” and “North” ends to read North up.

Notes placed at the bottom of a panel shall be centered between the chart edge and the bar scale. Notes placed at the top of a panel shall be centered between the bar scale and the chart edge. Notes may be shifted to avoid overprinting.

**Figure 3.44 Margin Notes for Adjoining/Overlapping Charts**

U.S. Charts - Adjoin And Overlap Notes

Adjoins Chart L-18

Adjoins Chart L-18 & L-22

Adjoins Chart L-23 & Overlaps Chart L-21

U.S. Charts - Inset Chart Overlap Notes

Overlaps Chart L-34 (Boston Inset)

Overlaps Chart L-23 (Wilmington-Bimini Inset)

DOD USERS: Overlaps DOD C&SA Chart Nr L-3

U.S. Charts - Canada and DoD Charts

Overlaps CANADA & NORTH ATLANTIC Chart LO-2 & Chart AK L-1

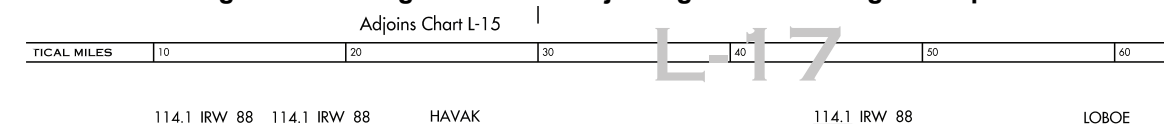
DOD USERS: Overlaps DOD C&SA Chart Nr L-3

Overlaps CANADA & NORTH ATLANTIC Chart LO-10

AK Charts - Overlap Notes

Overlaps Chart AK L-3, AK L-4 and CANADA AND NORTH ATLANTIC Chart Nr LO-5

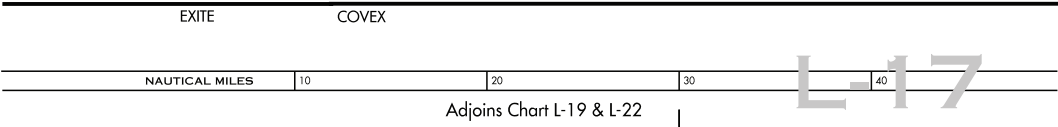
**Figure 3.45 Margin Notes for Adjoining Charts - Along the Top**



**Figure 3.46 Margin Notes for Adjoining Charts - Along the Sides**

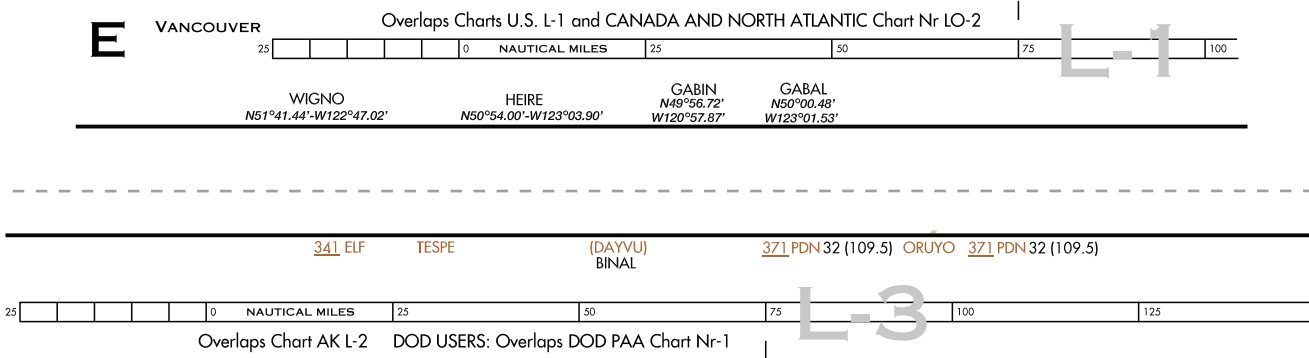


Figure 3.47 Margin Notes for Adjoining Charts - Along the Bottom



Notes for adjoining/overlapping Canadian Low Charts shall be shown. Notes specific for DoD users shall be shown to assist in identifying adjoining/overlapping DoD charts.

Figure 3.48 Margin Notes for Adjoining Charts - Canadian and DoD Charts



3.7 CHART DETAIL

Chart detail in this section pertains only to areas within the U.S. & Alaska. Chart detail for foreign areas will be shown in accordance with Section 3.9. Chart Detail information type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within these specifications.

References:

- Appendix 39 - Chart Detail - Projection Lines - U.S. & Alaska
- Appendix 40 - Base Detail - U.S. & Alaska
- Appendix 41 - Airports - U.S. & Alaska
- Appendix 42 - NAVAID North Arrows & Compass Roses
- Appendix 43 - NAVAID Identification Boxes
- Appendix 44 - Flight Service Stations & Remote Communications Outlets
- Appendix 45 - Automated Weather Broadcasting Systems
- Appendix 46 - Airspace Information
- Appendix 47 - Airspace

The following data is required to be shown:

3.7.1 Projection Lines

Projection type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within these specifications.

References:

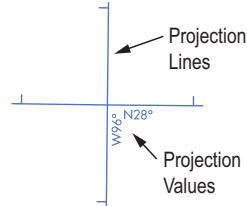
- Appendix 39 - Chart Detail - Projection Lines - U.S. & Alaska

### 3.7.1.1 General

Projection lines and ticks shall not be partially deleted or removed for overprinting text of symbols. Projection values may be shifted to provide clarity and avoid unnecessary clutter. Projection values may be eliminated only when absolutely necessary.

Projection lines shall be shown throughout the coverage of the charts for every degree of latitude/longitude. Each line shall be labeled parallel to and preferably below and to the right of the intersecting lines. Projection type shall be shifted to avoid overprinting. In extremely congested areas, projection type may be deleted if necessary.

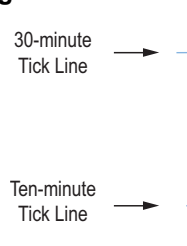
**Figure 3.49 Projection Lines**



### 3.7.1.2 Latitude

Each degree of latitude shall be ticked every ten minutes. Each ten-minute tick shall be ticked to the north along the longitude. Each thirty-minute tick shall be ticked to the north along the longitude.

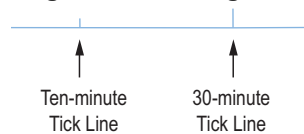
**Figure 3.50 Latitude**



### 3.7.1.3 Longitude

Each degree of longitude shall be ticked every ten-minutes. Each ten-minute tick shall be ticked to the west along the latitude. Each thirty-minute tick shall be ticked to the west along the latitude.

**Figure 3.51 Longitude**



## 3.7.2 Base Detail

Base Detail type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within these specifications.

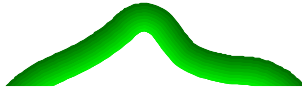
References:

[Appendix 40](#) - Base Detail - U.S. & Alaska

### 3.7.2.1 Shoreline

A generalized shoreline shall be shown for coastal areas, the Great Lakes, Salt Lake and St. Lawrence Seaway, providing a generalized portrayal that is proportional to the chart.

**Figure 3.52 Shoreline**



### 3.7.2.2 International Boundary

International boundaries shall be charted and identified by the name of the bordering countries. The names shall be positioned within their respective country area, adjacent and parallel to the boundary. Identification of the boundary shall be shown at sufficient intervals along the boundary, at least once between external folds.

**Figure 3.53 International Boundary Lines**



When the international boundary and the delimiting lines of an ARTCC, ADIZ or FIR coincide, the international boundary symbol shall not be shown; however the country names shall be retained.

**Figure 3.54 Omission of International Boundary Lines**



### 3.7.2.3 (AK) United States/Russia Maritime Boundary

The United States/Russia Maritime Boundary shall be charted and identified by the name of the countries. The names shall be positioned within their respective country area, adjacent and parallel to the boundary. Identification of the boundary shall be shown at sufficient intervals along the boundary, at least once between external folds.

**Figure 3.55 United States/Russian Maritime Boundary**



When the United States/Russian Maritime Boundary and other linear boundary symbols coincide, the maritime boundary shall be offset.



### 3.7.2.4 Time Zones

Time zone boundaries shall be shown and identified by name and the number of hours needed to equal Coordinated Universal Time (UTC), e.g., Eastern Std + 5 = UTC. Time zones shall be identified adjacent to both sides of the time zone boundary, near the chart neatline and readable in relation to True North. When international boundaries or other linear features coincide with the time zone boundary, the time zone symbol shall be offset from the other linear feature.

**Figure 3.56 Time Zones**



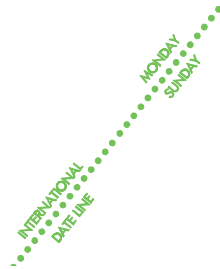
When a chart lies entirely within a single time zone, the appropriate “Local Time + Hours = UTC” note shall be shown, placed in an open area and centered along the neatline on all four sides of the chart.

### 3.7.2.5 International Date Line

The International Date Line shall be shown, symbolized by the time zone symbol, enlarged to twice the size.

The International Date Line shall be identified and appropriately positioned along and parallel to the symbol, supported on either side, as appropriate, by the designation of SUNDAY or MONDAY.

**Figure 3.57 International Date Line**



### 3.7.2.6 Lines of Equal Magnetic Variation (Isogonic Lines)

Isogonic lines within the conterminous U.S. shall be shown for each degree of variation and symbolized throughout the face of the chart. Isogonic lines and values appearing on the chart shall be based on the five (5) year epoch.

**Figure 3.58 Lines of Equal Magnetic Variation (Isogonic Lines)**



**(AK)** In Alaska isogonic lines shall be shown approximately 5" apart. However, depending upon the convergence of the lines, portrayal may be modified to every other even degree of variation, or greater, depending upon the scale factor of the specific chart, to provide adequate coverage and satisfy operational requirements.

The value (e.g., 8° E) of each isogonic line shall be centered on and breaking the line 1" in from the border. Value shall read with the line.

### 3.7.2.7 Off-route Obstruction Clearance Altitude (OROCA)

An OROCA will be depicted within each quadrangle bounded by ticked lines of latitude and longitude. The OROCA will be depicted in 100 foot increments. The hundreds value shall be slightly elevated above the thousands value and the OROCA value shall be depicted as near as possible to the center of the quadrangle.

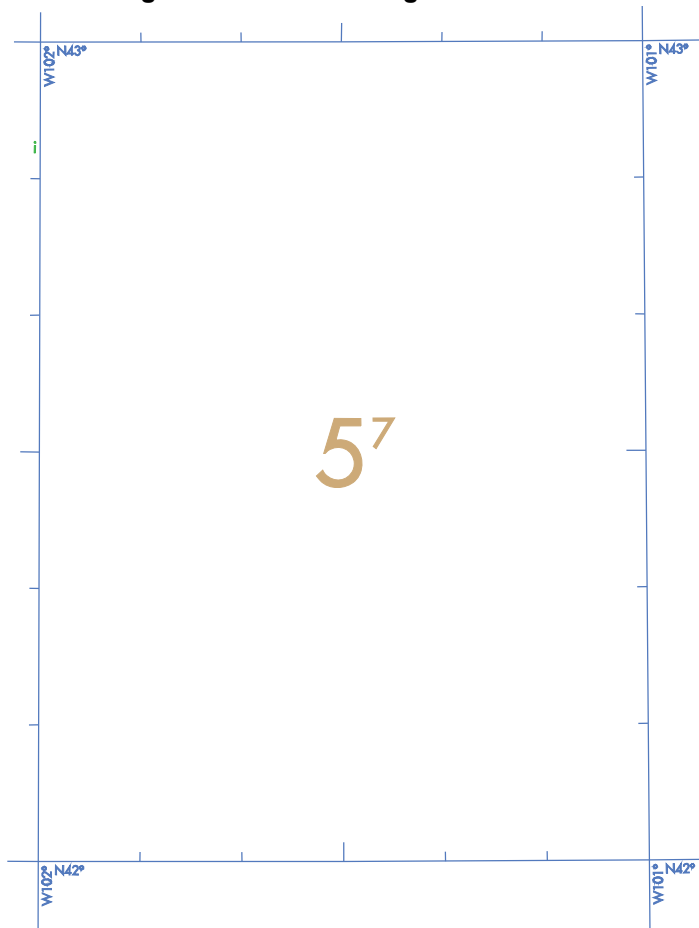
**Figure 3.59 OROCA Value Example - 12,500 Feet**

12<sup>5</sup>

OROCA figure shall be depicted within each grid square on all charted areas within the U.S. Continental ADIZ.

**(AK)** OROCA values shall be shown for each grid square on all chart airspace within the Alaska ADIZ.

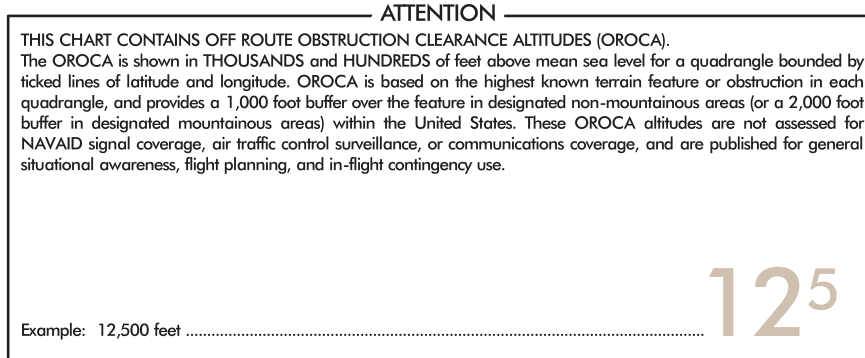
**Figure 3.60 OROCA Figure Placement**



### 3.7.2.7.1 OROCA Notice

An explanatory boxed note shall be shown, centered above the center fold line of the title panel and shall be depicted as illustrated below:

**Figure 3.61 OROCA Notice**



### 3.7.3 Airports

Airport type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within these specifications.

References:

[Appendix 41](#) - Airports - U.S. & Alaska

#### 3.7.3.1 Charting Criteria

All operational airports with hard surface runways (hard and soft surface in Alaska) of 3000' (before rounding) or longer and/or with an Instrument Approach Procedure shall be shown.

Additional selected airports/seaplane bases shall be shown as requested by the using Agency.

Airports that have received an “Objectionable” airspace determination from the FAA Office of Airports shall not be charted.

Private-use airports with an operational status of “Closed Indefinitely” in the authoritative source database will not be charted.

#### 3.7.3.2 Airport Symbolology

Airports shall be symbolized as either military, civil, or civil-military airports. Federal airports, i.e., NASA (National Aeronautics and Space Administration), USFS (United States Forest Service), etc., shall be symbolized as civil airports.

Airports shall be shown in blue if they have an Instrument Approach Procedure (IAP) or RADAR MINIMA published in the DoD Terminal High Altitude Flight Information Publication (FLIP). Airports shall be shown in green if they have an approved IAP or RADAR MINIMA published only in the FAA Terminal Procedures Publications. Airports not having an approved IAP shall be shown in brown.

**Figure 3.62 Airport Classification/Symbology**



Airports shall be plotted to true geographic position.

### 3.7.3.2.1 Heliports

Heliports with a published Instrument Approach Procedure, or as requested by a using agency, shall be charted and identified by name with FAA identification in parentheses on the second line.

**Figure 3.63 Heliports Symbology and Data**



### 3.7.3.2.2 Seaplane Bases

Seaplane bases shall be identified by name with FAA identification in parentheses on the second line.

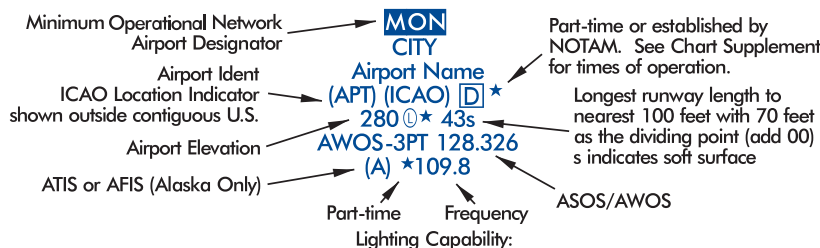
**Figure 3.64 Seaplane Bases Symbology and Data**



### 3.7.3.3 Airport Data Block

The airport data block shall contain, when applicable, MON Airport designator, associated city name(s), airport name, airport identifier, airport airspace, elevation, runway lighting, runway length, runway surface, ASOS/AWOS frequency and ATIS or AFIS frequency(-ies) on Alaskan charts.

**Figure 3.65 Airport Data Block**



### 3.7.3.3.1 Minimum Operational Network (MON) Airport Designator

MON Airports shall be identified with the MON Airport designator at the top of the Airport Data Block as shown in **Figure 3.66** when identified as a MON Airport in the authoritative source database.

**Figure 3.66 MON Airport Designator**

MON

### 3.7.3.3.2 Associated City Names

Public-use and joint-use airports shall be identified by airport name and the associated city name when the associated city name is different from the airport name. The associated city name will be in all caps and may be placed above the airport name or, as needed, on the same line. When on the same line, it will precede the airport name and the two will be separated by a “/”; e.g., Cleveland/Luskin Fld-Orange Co. Associated city names will not be charted for private-use airports or for military-only airports.

If there are multiple airport names and the first name is the same as the associated city name, do not indicate the associated city. However, if the second airport name is the same as the associated city, show the associated city.

**Figure 3.67 Associated City Names**

HOUSTON  
William P Hobby

HOUSTON/William P Hobby

Duplication shall be avoided whenever possible. In congested areas, when the airport name is same name as NAVAID and no misinterpretation will result, the NAVAID name may suffice for the airport name. The airport data shall be appropriately positioned to support the airport symbol and/or the suffix designation.

### 3.7.3.3.3 Airport Names

Airport names shall be extracted verbatim from the authoritative database and may be further abbreviated or truncated only in extremely congested areas. Private use airports shall be additionally identified with the abbreviation “Pvt” immediately following the airport name. For very long airport names or because of congested charting the airport name may be placed on multiple lines.

#### 3.7.3.3.3.1 FAR Part 93 (SFAR) Airports

Those airports cited in FAR Part 93 identified as having special air traffic rules governing operations to and from the airport shall be additionally identified by enclosing the airport name within a box. The color will be the same as the airport name.

**Figure 3.68 Airports Identified Under Part 93**

ANCHORAGE  
Ted Stevens Anchorage Intl  
(ANC) (PANC) C  
152 L 116  
(A) 118.4

### 3.7.3.3.4 Airport Identifiers

For public-use and military airports within the contiguous United States, the FAA airport identifier will be placed in parenthesis immediately after the airport name or on the second line if more appropriate. For private-use airports in the contiguous U.S., the FAA airport identifier will be placed in parenthesis centered on the line immediately following the word “Pvt”. Airports outside the contiguous U.S. shall be charted with both FAA airport identifier, if one exists, and ICAO location identifier, if one exists. When an ICAO location indicator does not exist for an airport, the FAA designated identifier will be used. All zeros used as part of the airport identifier shall have the zero shown with a slash.

**Figure 3.69 Airport Identifiers**

Los Alamitos AAF (SLI)      NASA Shuttle Landing Facility Pvt (TTS)      Big Mountain Pvt (37AK)(PABM)

### 3.7.3.3.5 Airport Airspace

The letter C or D, enclosed within a box, shall be placed immediately after the airport identifier to indicate those airports having Class C or D airspace. Part-time controlled airspace, including times established by NOTAM, shall be indicated by a 5-point star following the box. For additional information and examples. See [Figure 3.65](#).

### 3.7.3.3.6 Airport Elevation

The airport elevation shall be the highest point on an airport’s usable runways. Elevations are expressed in feet above or below mean sea level (MSL). When the elevation is at sea level, the elevation shall be charted as “00”. If the elevation is below sea level a minus (-) shall precede the figure.

### 3.7.3.3.7 Runway Lighting

Runway lighting is a system of lights defining the usable runway surface. Lighting symbolization indicates availability of runway lighting at military and public-use airports, and shall be shown below the airport name following the elevation.

Lighting in operation sunset to sunrise shall be indicated by the letter “L”. The availability of pilot controlled lighting shall be indicated by the symbol “Q”. Lighting available sunset to sunrise only on request or operating part of the night only; shall be indicated by the symbol “L★”.

**Figure 3.70 Example of Lighting Symbology at an Airport**

Washington Dulles Intl (IAD)  
312 L 115  
(A) 134.85

Laurel (N06)  
30 Q 32s

BARROW  
Wiley Post-Will Rogers Meml (BRW) (PABR)  
44 L★ 65

The availability of runway lights at private airports shall not be shown; a short dash in lieu of the lighting symbol will be shown.

The absence of night landing capability shall be indicated by a short dash in lieu of the letter “L”.

**Figure 3.71 Example of Availability of Runway Lights at Private Airport**

Josephs Pvt (DE49)  
42 - 45

### 3.7.3.3.8 Runway Length

Runway length shall be the actual length of the longest runway including displaced thresholds, but excluding those areas designated as overruns.

The runway length shall be shown in hundreds of feet, using 70 feet as the division point for the next highest hundred, e.g., 59 indicates a runway length of at least 5870 feet.

### 3.7.3.3.9 Runway Surface

Hard surface runways are considered to be: (ASP) Asphalt, Bed Rock, Brick, (CON) Concrete. When the longest runway length is not a hard surface, a small letter “s” shall be shown following the runway length to indicate soft surface.

### 3.7.3.3.10 Automated Surface Observing System (ASOS)/Automated Weather Observing System (AWOS)

Automated Surface Observing System (ASOS) /Automated Weather Observing System (AWOS) shall be shown at charted airports by ASOS and frequency or AWOS-system type and frequency. When the ASOS/AWOS is transmitted through a NAVAID associated with the airport, it shall be depicted with the frequency, followed by the abbreviation for kilohertz (kHz) if the NAVAID is an NDB.

### 3.7.3.3.11 Automatic Terminal Information Service (ATIS)

ATIS shall be shown by the letter “(A)” and the specific frequency(ies) centrally positioned immediately below the airport elevation, runway lighting and runway length data, or immediately below the ASOS or AWOS information if present. A five point star shall be shown to the left of the frequency(ies) when operation is less than continuous.

When the service is provided on one frequency for both arrival and departure information, it shall be shown as in [Figure 3.72](#).

When the service is provided on more than one frequency for both arrival and departure information, it shall be shown as in [Figure 3.72](#).

When the service provided is either arrival and/or departure on different frequencies, it shall be shown as in [Figure 3.72](#).

**Figure 3.72 ATIS Arrival and Departure Frequencies**

Arrival & Departure Single Frequency	Arrival & Departure Multiple Frequencies	Arrival & Departure Different Frequencies
CITY Airport Name (APT) (ICAO) [D] ★ 280 0★ 43s AWOS-3PT 128.326 (A) 115.4	CITY Airport Name (APT) (ICAO) [D] ★ 280 0★ 43s AWOS-3PT 128.326 (A) 115.4 117.7	CITY Airport Name (APT) (ICAO) [D] ★ 280 0★ 43s AWOS-3PT 128.326 (A) ARR 115.4 SW 117.7 NE 128.725 DEP 115.1

### 3.7.3.3.12 (AK) Automatic Flight Information Service (AFIS)

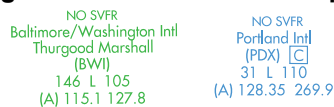
AFIS shall be indicated by the letter “(A)” and the specific frequency(ies) centrally positioned immediately below the airport elevation, lighting and runway length data. A star shall be shown immediately preceding each frequency when operation is less than continuous.

### 3.7.3.4 FAR Part 91 - Fixed Wing/Special Visual Flight Rules/SFAR 50-2

Airports at which fixed-wing Special VFR operations are prohibited shall be charted with the text “NO SVFR” centered above the airport or city name.

These airports are listed in the *Code of Federal Regulations Part 91.157 (Special VFR Weather Minimums, Appendix D, Section 3)*.

**Figure 3.73 NO SVFR Example**



### 3.7.3.5 (AK) Alaska - Part-Time Controlled Airspace

Part-time controlled airspace shall have time of operation depicted on the chart. For example, 0100-2300Z Mon-Fri.

## 3.7.4 Radio Aids to Navigation (NAVAIDs)

NAVAID type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within these specifications.

References:

[Appendix 42](#) - NAVAID North Arrows & Compass Roses

[Appendix 43](#) - NAVAID Identification Boxes

[Appendix 44](#) - Flight Service Stations & Remote Communications Outlets

[Appendix 45](#) - Automated Weather Broadcasting Systems

### 3.7.4.1 Charting Criteria

All public-use commissioned IFR VHF/UHF and IFR LF/MF NAVAIDs shall be shown symbolized and identified in black (VHF/UHF) or brown (LF/MF) except as stated below. NAVAIDs identified as “VFR use only” shall not be shown unless reclassified for an interim period.

All private-use military owned and operated TACANs shall be shown.








Additional NAVAIDs selected to meet special requirements which are consistent with the intent and purpose of the IFR Enroute Low Altitude Chart series may be shown when identified (by name) by the requesting agency.




### 3.7.4.2 NAVAID Symbolology

NAVAIDs shall be symbolized as either a VOR, VOR/DME, TACAN, VORTAC, DME, NDB or NDB/DME. The color of the NAVAID text and the facility identification box shall match the color of the associated NAVAID symbol. NAVAIDs shall be plotted to their true geographic position.

**Figure 3.74 NAVAID Symbols**








VHF/UHF NAVAIDs		LF/MF NAVAIDs	
	VHF Omnidirectional Range Station (VOR)		LF/MF Non-directional Radio Beacon (NDB)
	VHF Omnidirectional Range Station and Distance Measuring Equipment (VOR/DME)		LF/MF Non-directional Radio Beacon and Distance Measuring Equipment (NDB/DME)
	Tactical Air Navigation (TACAN)		
	VHF Omnidirectional Range/Tactical Air Navigation (VORTAC)		
	Distance Measuring Equipment (DME)		

If a NAVAID is designated as a flyover enclose the NAVAID symbol in a circle, e.g., .

### 3.7.4.3 Compulsory/Non-Compulsory Reporting Points

All NAVAIDs upon which airways/routes are predicated shall be depicted as having non-compulsory reporting function, unless otherwise designated.

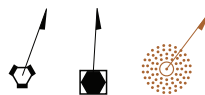
**Figure 3.75 NAVAID Symbols with Compulsory and Non-Compulsory Reporting**

	VOR	VOR / DME	TACAN	VORTAC	DME	NDB	NDB / DME
Non-compulsory Reporting							
Compulsory Reporting							

### 3.7.4.4 NAVAID North Arrow

NAVAIDs, with the exception of DME, shall be shown with a North arrow oriented to slave magnetic North. The North arrow shall be the same color as the NAVAID symbol. The North arrow shall originate from the center of the NAVAID symbol.

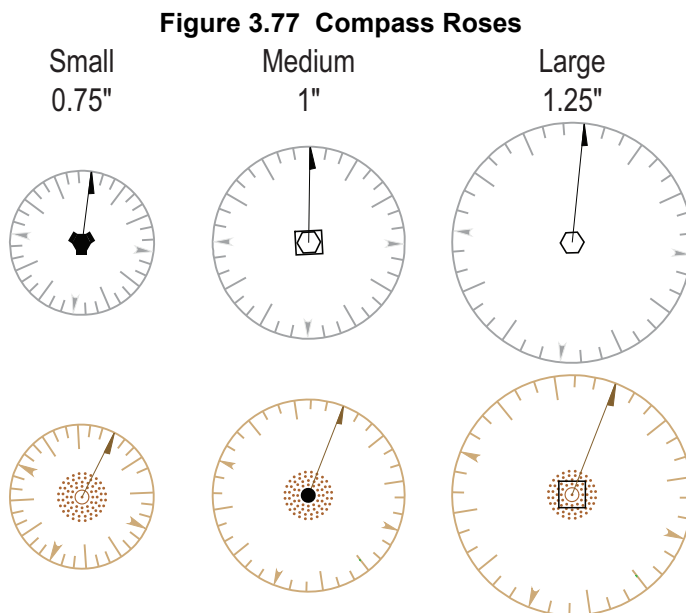
**Figure 3.76 NAVAID North Arrow Orientation**



### 3.7.4.5 Compass Roses

Compass roses shall be charted centered on those NAVAIDs which have routes predicated on them. Compass roses shall be shown around other NAVAIDs where the placement of the compass rose does not create additional unnecessary clutter or congestion. In congested areas, normally one compass rose shall suffice around the NAVAID upon which the airway is predicated. A compass rose shall never be associated with a DME facility.

The size of the compass roses may vary dependent upon local conditions. Compass roses may be 1.25" in diameter, however, in areas of congestion, or due to the close proximity of stations, the size may be reduced in increments of .25", compatible with the local area. In reducing, however, the line weights, type size, etc., shall remain consistent. Extreme care should be exercised when the rose may be in conflict with other symbolization. In extreme circumstances the compass rose shall be no less than .75" in diameter.



NAVAID compass roses shall be properly oriented to slave magnetic north. Every effort shall be made to keep textual data from being positioned within the rose. Cardinal point values shall not be shown.

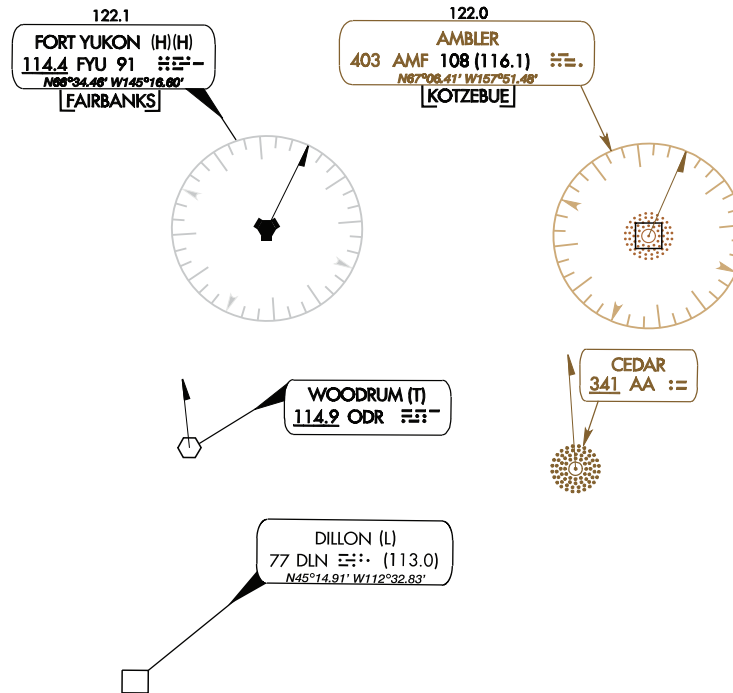
### 3.7.4.6 NAVAID Identification Boxes

#### 3.7.4.6.1 General

NAVAID data shown in the NAVAID identification box shall include the official NAVAID name, standard service volume(s) (SSV) (if applicable), frequency, identification letters, channel number (if applicable) and morse code. Periods shall not be shown in the official NAVAID names.

The NAVAID name shall appear as centered above all NAVAID data within the NAVAID identification box. The NAVAID identification box shall be of a size consistent with the information contained within. NAVAID identification boxes and data shall be the same color as the NAVAID symbol.

**Figure 3.78 NAVAID Identification Boxes**



Extremely long NAVAID names may be shown on two lines.

**Figure 3.79 Extremely Long NAVAID Name**



A pointer with VHF/UHF NAVAID identification boxes, as indicated above, shall be shown from all boxed data extending from the data box (corners of the box preferred) to the appropriate compass rose, or NAVAID symbol.

A leader line with arrowheads shall be used to associate LF/MF only boxed data with the NAVAID symbol.

Duplication of data shall be avoided. When multiple NAVAIDs have the same name and facility identification box with different frequencies or channel numbers and/or identification letters, and no misinterpretation will result, the name of the NAVAID shall be indicated only once within the identification box. VHF/UHF NAVAID names and identification boxes take preference in same name NAVAIDs identifications. The frequency only, or the frequency, identification and morse code, when different, of same name NAVAIDs shall be positioned below the associated VHF/UHF NAVAID identification, incorporated within a common identification box. TACAN channel numbers shall be positioned as described for the frequency, when same name as VHF/UHF NAVAID.

The color differentiations shall be maintained in combined NAVAID identifications.

When necessary for clarity of detail, leader lines or pointers from combined NAVAID identifications shall be individually portrayed, utilizing the appropriate color differentiation.

### 3.7.4.6.2 Y Mode Channel

TACAN, VORTAC, VOR/DME, DME, NDB/DME, and LOC/DME, facilities that operate in the Y-mode for DME reception, shall be shown with a (Y) suffixed to the channel number.

**Figure 3.80 Examples of Y Mode Channel**



### 3.7.4.6.3 No Voice, Part-Time and On Request Frequencies

NAVAID frequencies shall be underlined when voice on the frequency is unavailable. TACAN and DME frequencies shall not be underlined. NAVAIDS, operating less than continuous or on request, shall be indicated by the placement of a small five-pointed star before the frequency, within the identification box.

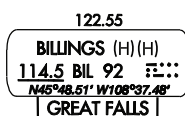
**Figure 3.81 NAVAID Operating Less than Continuous & No Voice**



### 3.7.4.6.4 Geographic Coordinates

NAVAIDS that make up part of a route/airway or a holding pattern, will include geographic coordinates. All TACAN facilities will include geographic coordinates. The geographic coordinates to the hundredth of a minute shall be shown as indicated below.

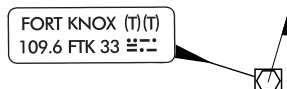
**Figure 3.82 NAVAIDS - Coordinates**



### 3.7.4.6.5 Standard Service Volume (SSV) Classifications (Frequency Protection)

VOR, VOR/DME, VORTAC, DME, and TACAN NAVAIDS shall indicate the SSV(s). SSVs may be Terminal (T), Low (L), VOR Low (VL), High (H), VOR High (VH), DME Low (DL), or DME High (DH). VOR/DMEs and VORTACs will indicate the SSV for both component parts of the NAVAID, e.g. (VL) (DH).

**Figure 3.83 NAVAID Standard Service Volume (SSV)**



### 3.7.4.6.6 Abnormal Status

NAVAIDs published as “Shutdown” shall be charted. The applicable frequency and/or channel shall be overprinted with diagonal lines in a NE to SW direction.

**Figure 3.84 NAVAIDs - Abnormal Status**



The diagonal line symbol shall also overprint the applicable frequency or channel number that are shown within a facility locator boat.

### 3.7.4.6.7 Private-Use NAVAIDs

NAVAIDs identified as private-use and privately operated shall be identified by the word “PRIVATE” positioned above the identification box.

**Figure 3.85 Private-Use NAVAID**



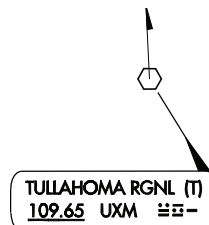
When the NAVAID is used to define a charted route or holding pattern, the geographic coordinate shall be shown.

## 3.7.4.7 NAVAID Types

### 3.7.4.7.1 VHF Omnidirectional Range Station (VOR)

VOR stations shall be identified by the VOR symbol. The NAVAID identification box shall contain the NAVAID name and SSV on the first line. The second line shall contain, in the order listed, frequency, identification letters and morse code.

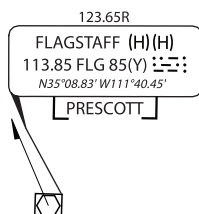
**Figure 3.86 VOR**



### 3.7.4.7.2 VHF Omnidirectional Range Station and Distance Measuring Equipment (VOR/DME)

VORs with DME shall be identified by the VOR/DME symbol. The NAVAID identification box shall contain the NAVAID name and SSVs on the first line. The second line shall contain, in the order listed, the frequency, identification letters, channel number and morse code.

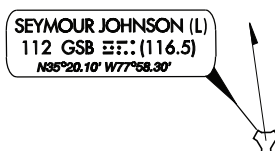
**Figure 3.87 VOR/DME**



### 3.7.4.7.3 Tactical Air Navigation (TACAN)

TACAN facilities shall be indicated by the TACAN symbol. The NAVAID identification box shall contain the NAVAID name and SSV on the first line. The second line shall contain, in the order listed, the TACAN channel, the identification letters, morse code, frequency in parentheses. Geographic coordinates shall be shown on the third line.

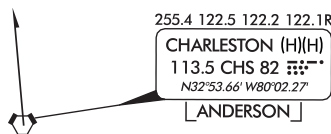
**Figure 3.88 TACAN**



### 3.7.4.7.4 VHF Omnidirectional Range – Tactical Air Navigation (VORTAC)

VORTAC facilities shall be identified by the VORTAC symbol. The NAVAID identification box shall contain the NAVAID name and SSVs on the first line. The second line shall contain, in the order listed, frequency, identification letters, channel number and morse code.

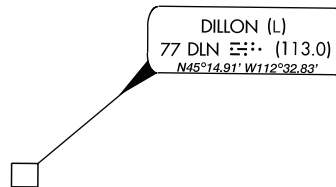
**Figure 3.89 VORTAC**



### 3.7.4.7.5 Distance Measuring Equipment (DME)

DME facilities shall be identified by the DME symbol. The NAVAID identification box shall contain the NAVAID name and SSV on the first line. The second line shall contain, in the order listed, the channel, identification letters, Morse code, and paired frequency in parentheses.

**Figure 3.90 DME**



### 3.7.4.7.6 Non-Directional Radio Beacons (NDB)

NDBs shall be identified by the NDB symbol. The NAVAID identification box shall contain the NAVAID name on the first line. The second line shall contain, in the order listed, the frequency, identification letters and morse code.

**Figure 3.91 LF/MF NDBs**



### 3.7.4.7.7 Non-Directional Radio Beacons and Distance Measuring Equipment (NDB/DME)

NDB/DMEs shall be identified by the NDB/DME symbol. The NAVAID identification box shall contain the NAVAID name on the first line. The second line shall contain, in the order listed, the frequency, the identification letters, the DME channel and its paired frequency enclosed in parentheses. The DME channel and the frequency shall be shown in black.

**Figure 3.92 NDB/DME**



### 3.7.4.7.8 Marine Radio Beacons

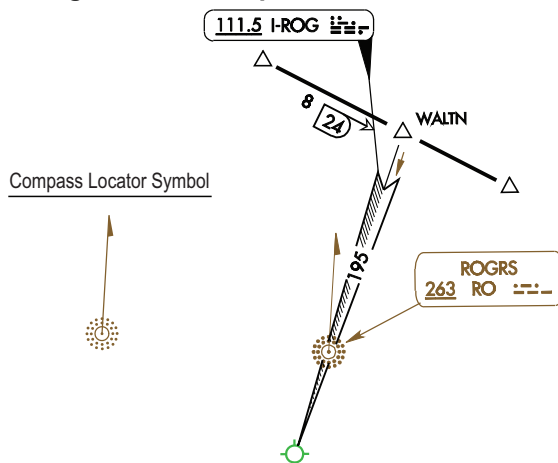
Marine Radio Beacons shall be symbolized and identified in the same manner as described for Non-Directional Radio Beacons. See Section [3.7.4.7.6](#).

### 3.7.4.7.9 ILS Components

#### 3.7.4.7.9.1 Compass Locator Beacons

Compass Locator Beacons shall be identified by the Compass Locator Beacon symbol only when used in the designation of airways, or when designated as serving in the formation of reporting points used by Air Traffic Control in the low altitude airway structure. The NAVAID identification box shall contain the NAVAID name on the first line. The second line shall contain, in the order listed, the frequency, identification letters and morse code.

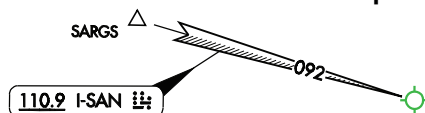
**Figure 3.93 Compass Locator Beacon**



#### 3.7.4.7.9.2 Localizer Course

ILS Localizer Course (either the front, back or both courses) from the airport shall be shown when designated as having an enroute Air Traffic Control function, i.e., when used as a controlling factor in the designation of airways or when designated as serving in the formation of reporting points.

**Figure 3.94 ILS Localizer Course with Frequency & Identifier**



The ILS course shall depict the magnetic inbound bearing to the airport. The inbound bearing value shall be shown centered on and breaking the course symbol.

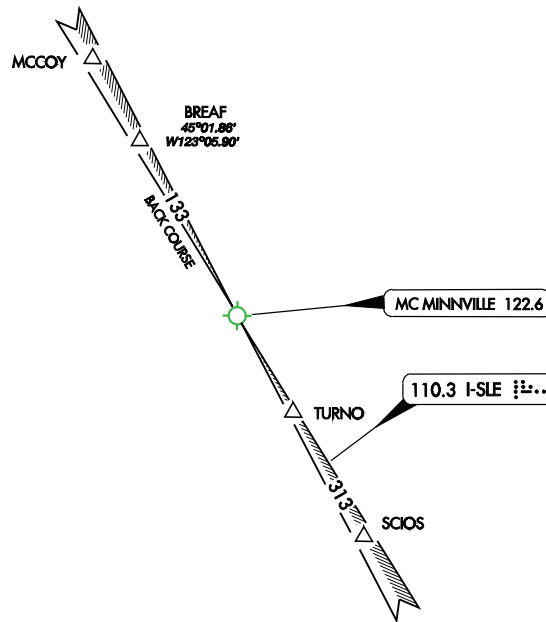
ILS courses shall normally be one inch or more in length with a 5° spread. The ILS course may be shortened or extended to preclude the overlapping or overprinting of airways and other text and symbolic data as deemed necessary for clarity of detail. The ILS course shall be broken for the placement of type and symbolization. The ILS course need not be extended to overprint a reporting point to indicate its formation.

ILS localizer courses shown shall be identified by frequency, identification letters and morse code. The identification or call letters shall be preceded by the letter "I" and a short dash.



The “back course” of the ILS localizer, when designated as having an air traffic control function, shall be identified as “BACK COURSE”.

**Figure 3.95 ILS Back Course**



#### 3.7.4.7.10 Non-collocated VOR and TACAN Facilities

VOR and TACAN facilities, not collocated and separated by more than 200' but frequency paired, and with both identifications provided within a common identification box shall provide a note positioned adjacent to the box to indicate that the TACAN facility provides the DME; e.g., “DME from the MARCH TACAN.”

Identification boxes, such as when the frequency paired facilities do not have the same name and/or identification, or as necessary for clarity of information, may be shown separately. When shown separately, the note shall be provided adjacent to the VOR facility identification box.

### 3.7.5 Flight Service Stations (FSS) & Remote Communications Outlets (RCOs)

FSS & RCO type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within these specifications. All RCO frequencies shall be depicted.

References:

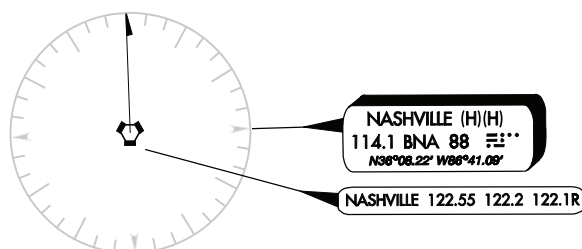
[Appendix 44](#) - Flight Service Stations & Remote Communications Outlets

#### 3.7.5.1 General

All Flight Service Stations (FSS), except those with the same name as a NAVAID or designated RCOs shall be shown, symbolized and identified by name, and identifier letters, enclosed within a shadow box as shown.

NAVAIDS having the same name as the FSS and not designated as a Remote Communications Outlet (RCO), shall be considered as the FSS. This same NAVAID identification box will be augmented with a shadow box.

**Figure 3.96 FSSs with the Same Name as NAVAID and Not Designated RCO**



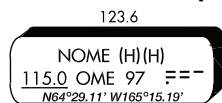
FSSs with the same name as the NAVAID, but with a different identifier, shall be shown independently of the NAVAID; i.e., separate identification box with name and identifier.

The FSS Airport Advisory Frequency shall be indicated in the legend as: “Certain FSSs provide Airport Advisory Service, see Chart Supplement.”

### 3.7.5.2 FSS Frequencies

FSS frequencies shall be shown centered above the FSS box. If more than one low altitude discrete frequency is shown, then the frequencies shall be in descending order, left to right.

**Figure 3.97 FSS Frequencies**



FSS standard frequencies in the conterminous United States (122.2) and Alaska (122.2 and emergency 121.5, 243.0) shall not be shown. FSS frequencies that transmit or receive only shall be indicated by a “T” or “R”, respectively, following the frequency.

### 3.7.5.3 FSS Associated with a NAVAID

An FSS and a NAVAID may be collocated on the charts if the FSS and the NAVAID have the same name, identifier, and are located within 10NM of each other. These collocated FSS and NAVAID identification boxes shall be shown as a shadow box.

Frequencies for an FSS collocated with an LF/MF NAVAID shall be shown in black while the shadow box shall be shown in brown.

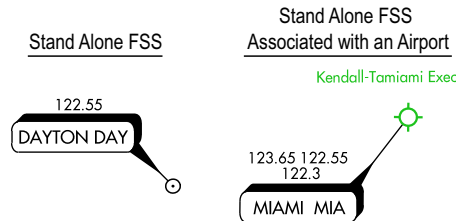
**Figure 3.98 FSS Associated with a NAVAID**



### 3.7.5.4 FSS Not Associated with a NAVAID

FSS not associated with a NAVAID shall be charted as a single line FSS shadow box. FSS name and identifier shall be shown within the box. FSS frequencies other than the standard group of frequencies shall be centered above the shadow box. If more than one frequency is shown, then the frequencies should be shown in the descending numerical order, left to right. FSS shall be charted at its true geographic position indicated by a circle and dot symbol. A pointer shall be used, extending from the FSS shadow box to the location symbol. If an FSS is located at or in close proximity to an airport, then the airport symbol shall suffice for the location symbol.

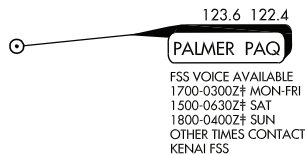
**Figure 3.99 FSS Not Associated with a NAVAID**



### 3.7.5.5 Part-time FSS

Part-time FSSs shall be supplemented with a note describing the operational hours and alternate FSS. Operational hours shall be shown as UTC. The note should be placed immediately below the FSS shadow box.

**Figure 3.100 Part-time FSS**



### 3.7.5.6 RCOs Associated with NAVAIDs

RCOs may be collocated with NAVAIDs if they are associated with the same FSS, have the same name and are located within 10NMs of each other. These collocated RCOs shall show the FSS frequency(s) remotod to the RCO centered above the NAVAID box and the name of the FSS providing the service enclosed within "L" brackets below the NAVAID box. If more than one frequency is shown, the frequencies shall be shown in descending numerical order, left to right.

When the FSS radio name is longer than the box, the bottom of the box shall be extended left/right, depending upon space limitations.

**Figure 3.101 RCOs Associated with a NAVAID**

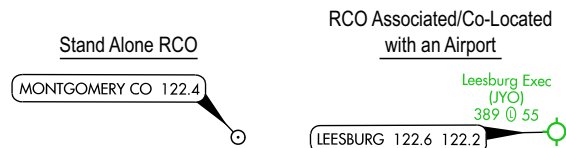


### 3.7.5.7 RCOs Not Associated with a NAVAID

RCOs not associated with a NAVAID shall be charted as a single line box. RCO FSS name and frequency shall be shown within the box. If more than one frequency is charted, then the frequencies shall be shown in descending numerical order, left to right.

RCOs shall be charted at their true geographic position with a circle and dot symbol. A pointer shall be used, extending from the RCO identification box to the location symbol. If the RCO is located at or in close proximity to an airport, then the airport symbol shall suffice for the location symbol.

**Figure 3.102 RCOs Not Associated with a NAVAID**



### 3.7.6 Automated Weather Broadcast System (AWBS)

AWBS type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within these specifications.

References:

[Appendix 45](#) - Automated Weather Broadcasting Systems

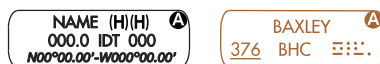
#### 3.7.6.1 Automated Weather Broadcast Service Associated with a NAVAID

An automated weather broadcast system associated with a NAVAID shall be indicated by using the appropriate symbol as shown below. The symbol shall be placed in the upper right corner of the NAVAID box. The circle will be the same color as the associated NAVAID.

**Figure 3.103 Automated Weather Broadcast Systems**

- Ⓐ Automated Surface Observing System (ASOS) or Automated Weather Observing System (AWOS)

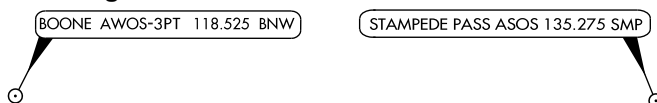
**Figure 3.104 Automated Weather Broadcast System Associated with a NAVAID**



#### 3.7.6.2 Stand Alone AWOS & ASOS

Stand alone AWOS and ASOS, (i.e., not associated with a charted airport or NAVAID) shall be identified by city name, type of facility and frequency, and FAA identifier and charted as a single box. These systems shall be charted to their true geographical position, indicated by a circle and a dot symbol. A pointer shall be used, extending from the AWOS or ASOS box to the location symbol.

**Figure 3.105 Stand Alone AWOS and ASOS**



### 3.7.7 Airspace Information

Airspace type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within these specifications. Chart items related to foreign airspace can be found in Section 3.9.5.

References:

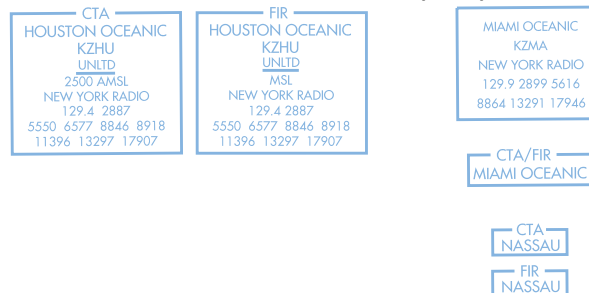
[Appendix 46](#) - Airspace Information

#### 3.7.7.1 General Air Traffic Service (ATS) Area Information

The information described in this section is in addition to the boundary or limits of the areas described under individual subject sections. ATS areas include Flight Information Regions (FIR), Control Areas (CTA), and Oceanic Control Areas (OCA).

Information content for ATS areas applicable to the low enroute altitude structure shall be shown. ATS information shall include: type of service, identification name, ICAO ident, vertical limits of control when designated with the upper and lower limits separated by a line, the call sign and all applicable frequencies paired to the appropriate service. ATS information shall be shown as centered, enclosed within a box. The ATS box shall be positioned as near the center of the area as possible. The ATS box and information may be repeated depending up on the size of the ATS area charted. If the ATS box is placed outside the ATS area, then a point shall be used extending from the box into the area.

**Figure 3.106 General Air Traffic Service (ATS) Area Information**



##### 3.7.7.1.1 Type of Service

The type of air traffic service – e.g., FIR, CTA, or CTA/FIR, etc., shall be centered on and breaking the top line of the identification box.

##### 3.7.7.1.2 Identification Name and ICAO Ident

Identification name and, as applicable, the ICAO four letter identifier of the air traffic service shall be shown.

##### 3.7.7.1.3 Vertical Limits

Vertical limits of control, when designated and implemented, shall be shown. The upper and lower limits shall be separated with the placement of a line between.

Should a variance occur or be designated between the lower vertical limits for flight over land areas versus over water areas, such limits shall be shown. To clarify such variances, a note or phrase “OVERLAND” or “OVERWATER” shall be shown centered immediately beneath the applicable altitude.

### 3.7.7.1.4 Call Sign and Frequencies

The call sign and VHF/UHF and/or HF frequencies, applicable to the appropriate air traffic service, for specific and available A/G voice communications shall be shown, when available. When the call sign is a different name from the air traffic service name, the different name shall be shown as part of the call sign. When specific call signs are not available, or have not been designated for a particular service, only the A/G voice VHF/UHF or HF communications frequencies shall be provided.

The call sign and frequencies provided shall be those which are for use in enroute flight and assigned to the airspace over which the aircraft is operating.

Typical example of content is:

- FIR
- CON (Control)
- METRO (Meteorology)
- INFO (Information)
- RADAR
- CENTER

### 3.7.7.1.5 Explanatory Notes

Special explanatory notes, as required to cite deviations and/or discrepancies when the informational data within the box does not pertain to the entire area, shall be shown immediately outside and adjacent to the identification box.

## 3.7.7.2 Airspace Notes

### 3.7.7.2.1 United States Airspace Note

The following FAA ATS note shall be positioned in an open water area of all charts depicting airspace assignments beyond the territorial limits of the United States.

**Figure 3.107 U.S. Airspace Notes**

FAA AIR TRAFFIC SERVICE OUTSIDE U.S. AIRSPACE IS PROVIDED IN ACCORDANCE WITH ARTICLE 12 AND ANNEX 11 OF ICAO CONVENTION. ICAO CONVENTION NOT APPLICABLE TO STATE AIRCRAFT BUT COMPLIANCE WITH ICAO STANDARDS AND PRACTICES IS ENCOURAGED

### 3.7.7.2.2 Other Miscellaneous Airspace Notes

Other miscellaneous airspace notes approved by the appropriate authority should be placed as near the airspace affected as possible.

## 3.7.7.3 Airspace Types and Boundaries

References:

[Appendix 47](#) - Airspace

### 3.7.7.3.1 General

There are two categories of airspace or airspace areas: Regulatory (Class A, B, C, D and E airspace areas, restricted and prohibited areas) and non-regulatory (military operation areas (MOAs), warning areas, alert areas, and controlled firing areas).

Within these two categories, there are four types:

- Controlled
- Uncontrolled
- Special use
- Other airspace

Chart items related controlled airspace can be found in the following locations:

- [3.7.7.3.2](#) - Class B Airspace
- [3.7.7.3.3](#) - Class C Airspace
- [3.7.7.3.4](#) - Class D Airspace
- [3.7.7.3.5](#) - Class E Airspace

Chart items related uncontrolled airspace can be found in the following locations:

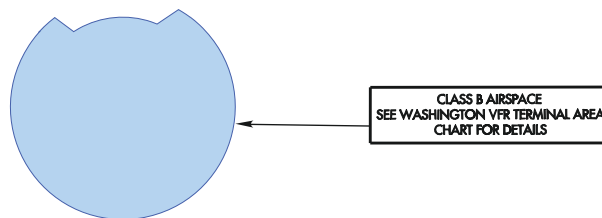
- [3.7.7.3.6](#) - Class G Airspace (Uncontrolled) Airspace

Chart items related to foreign airspace can be found in Section [3.9.5](#) - Foreign Airspace Information.

### 3.7.7.3.2 Class B Airspace

Class B airspace shall be shown as screened blue areas with solid blue boundary lines. The boundary lines define the Class B outer lateral limits. A boxed note shall be shown once within each Class B area. In congested situations the note may be placed outside the Class B area and using a leader and arrow to point into the area. Each note shall uniquely identify the VFR Terminal Area Chart associated with the Class B Airspace.

**Figure 3.108 Class B Airspace**



### 3.7.7.3.3 Class C Airspace

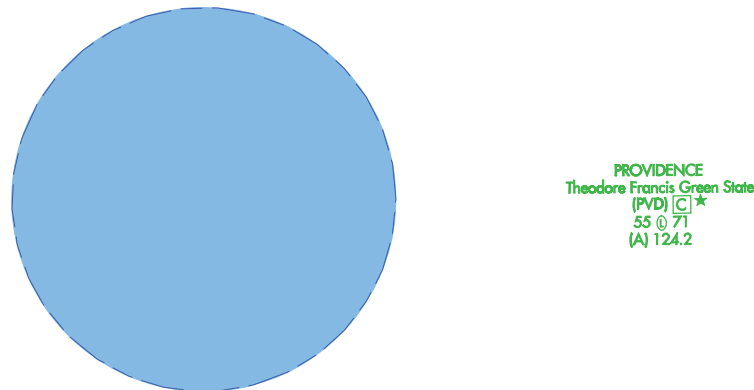
Class C airspace shall be shown as screened blue areas with dashed blue boundary lines. The boundary lines define the Class C outer lateral limits. When Class B and Class C airspace boundaries underlie or coincide, only the Class B and boundary shall be shown. If Class C overlaps Class B only that portion of Class C that doesn't overlap shall be charted.

A letter "C", enclosed by a box, shall be shown following the FAA or ICAO identifier of the primary airport(s) associated with the Class C airspace. Part-time Class C airspace shall be additionally identified by a five-point star "★" following the boxed letter C.

Part-time Class C airspace is indicated in FAA Order JO 7400.9, Airspace Designations and Reporting Points, by the text *"This Class C airspace area is effective during the specific dates and times established in advance by a Notice to Airman. The effective date and time will thereafter be continuously published in the Chart Supplement."*

For additional information on Airport Data Block. See Section [3.7.3.3](#).

**Figure 3.109 Class C Airspace**



#### 3.7.7.3.4 Class D Airspace

Class D airspace shall be depicted as open area (white) with no boundaries being charted.

A letter “D”, enclosed by a box, shall be shown following the FAA or ICAO identifier of the primary airport(s) associated with the Class D airspace. Part-time Class D airspace shall be additionally identified with the five point star “★” following the boxed letter D.

**Figure 3.110 Part-Time Airspace - Class D**

NEW HAVEN  
Tweed-New Haven  
(HVN) [D] ★  
12 0 56  
(A) 133.65

Part-time Class D airspace is indicated in FAA Order JO 7400.9, Airspace Designations and Reporting Points, by the text “*This Class D airspace area is effective during the specific dates and times established in advance by a Notice to Airman. The effective date and time will thereafter be continuously published in the Chart Supplement.*”

For additional information on Airport Data Block. See Section [3.7.3.3](#).

#### 3.7.7.3.5 Class E Airspace

Airspace that is not Class B, C, or D, and is controlled airspace, is Class E airspace. Class E airspace, except for offshore airspace, shall be shown as open (white) areas with no boundaries or associated text charted. Federal Airways are Class E airspace areas and unless otherwise specified, extend upward from 1,200' AGL to, but not including, 18,000' MSL.

Class E airspace includes:

- Federal Airways
- Airspace for transition to/from the terminal or enroute environments
- Enroute domestic and offshore airspace areas designated below 18,000 feet MSL

Class E airspace does not include airspace at 18,000 feet MSL and above.



Airway airspace is associated with centerlines of airways that makes up the Federal Airway system and includes Victor Airways, Colored Airways, RNAV T and RNAV TK Routes (See Section 3.7.8 - Airways/Routes). This includes the airspace within a defined width on either side of an airway centerline. Victor and Colored airways also include airspace between lines, based on a set angle, that emanate from airway NAVAIDs.

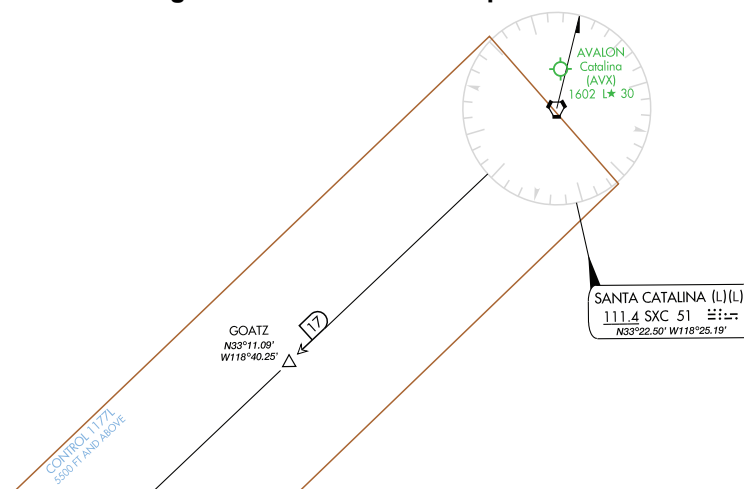
### 3.7.7.3.5.1 Offshore Airspace Areas

Offshore Airspace Areas are classified as Class E Airspace and extend upward from a specified altitude to, but not including 18,000' MSL. See Section 3.7.7.3.16.2.

Offshore Airspace Areas shall be shown as open (white) areas with solid brown boundary lines defining each individual area. If a centerline radial or bearing is published within the airspace description, this should be charted, supplemented by a MEA, when designated, and appropriate mileages between applicable NAVAIDs and fixes.

Offshore Airspace Area identifications shall be positioned within their respective area, adjacent and parallel to the boundary symbol, and should appear at least once between external chart folds or as frequently as necessary in order to readily identify the boundary. The second line of text from the boundary shall be the altitude, centered on the area name. Large areas may require text to be placed within the area readable relative to true north. If space does not permit charting within the airspace area, text may be placed outside, using a leader and arrow to point into the area. Special notes, as required, shall be shown centered within or immediately outside the area.

**Figure 3.111 Offshore Airspace Area**



### 3.7.7.3.6 Class G Airspace (Uncontrolled) Airspace

Class G airspace (uncontrolled) shall be shown as screened brown areas with no boundaries being charted.

Class G airspace (uncontrolled) is the portion of airspace that has not been classified as being Class B, C, D or E Airspace. It includes only uncontrolled airspace from the surface to but not including 14,500' MSL.

**Figure 3.112 Class G (Uncontrolled) Airspace**



### 3.7.7.3.7 Mode C Required Areas

Mode C Required areas shall be shown with a solid blue 30NM circle around the Class B primary airport(s). When Mode C and Class B airspace overlap only the portion of the Mode C boundary that doesn't overlap shall be charted. Additionally, stacked text "MODE C & ADS-B OUT" and "30 NM" shall be shown along the circle on opposite sides of the boundary. Text shall be shown sufficiently to provide ready identification of the boundary.

**Figure 3.113 Mode C Required Area**



### 3.7.7.3.8 Oceanic Control Areas

Oceanic Control Areas shall be shown the same as U.S. Class E airspace, however, the boundaries are symbolized with a screened blue line. Identifications shall be positioned within their respective areas, adjacent and parallel to the boundary symbols and should appear at least once between external chart folds or as frequently as necessary in order to readily identify the boundary. If space does not permit charting within the airspace area, text may be placed outside, using a leader and arrow to point into the area.

Boundaries or limits of Oceanic Control Areas shall be shown, symbolized by a blue line and identified by name, e.g., NEW YORK OCEANIC. Identification shall be positioned within the area, adjacent and parallel to the delimiting line. See Section 3.7.7.3.16.2.

The area encompassed by or within these boundaries or limits shall be considered as controlled airspace.

### 3.7.7.3.9 Special Use Airspace (SUA) and Military Operation Areas (MOA)

All Special Use Areas with an effective altitude range that penetrates into or falls completely within the enroute low altitude structure shall be shown.

All SUA text and boundaries shall be shown as screen blue, except for MOAs and Alert areas which shall be shown as screen brown.

All SUA information shall be tabulated together, except for MOAs which shall be tabulated separately. See 3.5.3 - Special Use Airspace (SUA) Tabulation and 3.5.4 - Military Operations Areas (MOA) Tabulation.

Special Use Airspace with a floor of 18,000' MSL or above shall not be shown on low altitude enroute charts.

SUA shall be identified by the designated name, e.g., R-4801, positioned within and as near the center of the appropriate area as possible. When SUA area identification type is positioned outside the area, then a leader with an arrow shall be used, extending from the identifier into the SUA area.

### 3.7.7.3.9.1 Special Use Airspaces (SUAs) Charted: U.S. and Alaska

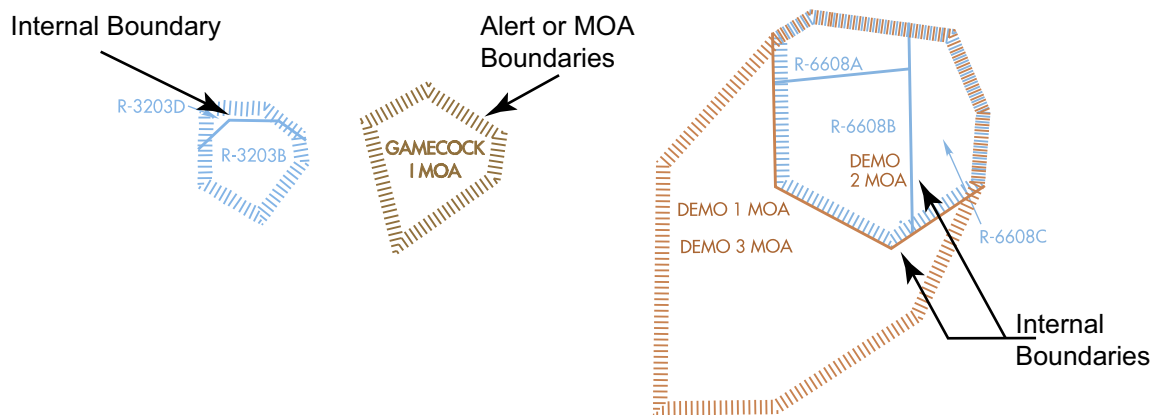
The following is a current list of charted SUAs:

- Prohibited (P)
- Restricted (R)
- Alert (A)
- Warning Areas (W)
- Military Operations Area (MOA)

### 3.7.7.3.9.2 SUA & MOA External Boundaries

SUA and MOA external boundaries shall be symbolized by tick marks, evenly spaced, perpendicular to the external boundaries, and extending into the area. External boundaries shall only encompass SUA areas with similar names, that adjoin or overlap. SUA internal boundaries shall use a line to subdivide the individual SUAs area.

**Figure 3.114 SUA & MOA Boundaries**



### 3.7.7.3.9.3 SUA Boundaries - Small Areas

SUAs be too small for portraying the specified line pattern, shall be proportionately reduced the size of the tick marks as to adequately portray the area shape. Areas too small for portraying the line pattern with reduced size ticks, shall be shown using a standardized circle.

**Figure 3.115 SUA Boundaries - Small Areas**



### 3.7.7.3.9.4 SUA & MOA Exclusion Area and Exclusion Notes

SUA exclusion area and exclusion area notes pertaining to the enroute low altitude structure shall be shown. Exclusions areas are delineated by a line in the same color as the associated SUA. An exclusion note associated with the each exclusion area shall be shown and placed within the exclusion area as space permits. When the exclusion note is placed outside the SUA area due to congestion, a leader with an arrow shall be used to relate the text to the specific area.

**Figure 3.116 SUA & MOA Exclusion Area with Notes**



Special operational notes pertaining to flight through or over SUA shall be shown as an operational note.

Do not depict Class airspace exclusions common to all Alert Areas and described in the Legend and SUA Tabulated data table.

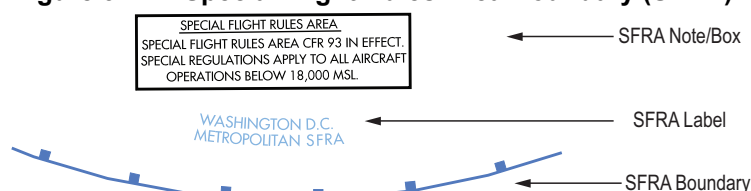
### 3.7.7.3.10 Special Flight Rules Area (SFRA)

Special Flight Rules Areas located in Part 93 Special Air Traffic Rules are charted only by special request.

#### 3.7.7.3.10.1 Washington DC Metropolitan Area Special Flight Rules Area

The external boundary described by the Special Flight Rules Area for the Washington DC Metropolitan Area shall be charted. Text “WASHINGTON D.C. METROPOLITAN SFRA” labeling the boundary shall be shown stacked and parallel to the boundary, sufficient to readily identify the boundary. A boxed note as shown below shall also be charted.

**Figure 3.117 Special Flight Rules Area Boundary (SFRA)**



#### 3.7.7.3.10.2 Grand Canyon National Park Special Flight Rules Area

The external boundary described by the Special Flight Rules (SFAR 50-2) for the Grand Canyon National Park shall be charted. Text labeling the boundary shall not be added, however a boxed note as shown below shall be charted.

**Figure 3.118 Grand Canyon National Park SFRA Note**



### 3.7.7.3.11 Air Defense Identification Zones (ADIZ, CADIZ) and Defense Areas

Air Defense Identification Zones (ADIZ) and Defense Areas shall be shown, along with defining boundaries. Those charted shall include the Alaska ADIZ, Conterminous U.S. ADIZ and the Canada ADIZ. Identification shall be positioned within the area, adjacent and parallel to the boundary symbol, and should appear at least once between external chart folds or as frequently as necessary in order to readily identify the boundary.

**Figure 3.119 ADIZ and Defense Area Boundaries**



The Defense Area for the conterminous U.S. shall be shown using the same boundary symbology as the ADIZ. Only along the Mexican and Canadian international boundaries will the text “DEFENSE AREA” be shown. Identification shall be positioned within the area, adjacent and parallel to the boundary symbol, and should appear at least once between external chart folds or as frequently as necessary in order to readily identify the boundary. It shall not be labeled as such, when beyond the U.S. continental limits

When two ADIZs share a common boundary, the dot portion of the symbology shall be shown on either side of a common boundary.

**Figure 3.120 Adjoining ADIZ Boundaries**



When an ADIZ, or two adjoining ADIZs share a common boundary with another linear features boundary, i.e., FIR, international boundary, projection line, or OCA, the other linear features’ boundary shall suffice for the ADIZ boundary.

When a FIR boundary coincides with the boundary of an ADIZ, the ADIZ symbol without the line shall be positioned adjacent to the FIR symbol, utilizing a common delimiting line.

**Figure 3.121 FIR Boundary Coincides with the Boundary of an ADIZ**



### 3.7.7.3.12 Flight Information Regions (FIR)

Flight Information Regions (FIR) shall be shown the same as U.S. Class G airspace, along with defining boundaries. These boundaries shall be symbolized by tick marks, evenly spaced, perpendicular to and extending into the area. Identification shall be positioned within the area, adjacent and parallel to the boundary symbol, and should appear at least once between external chart folds or as frequently as necessary in order to readily identify the boundary. Large FIR airspace areas require text to be placed within the area, readable relative to true north. If a space does not permit charting within the FIR airspace area, text may be placed outside, using a leader and arrow to point to the area.

**Figure 3.122 FIR Boundary**



When two FIRs share a common boundary, the “tick” portion of the symbology shall be shown on either side of the common boundary equally spaced and alternating.

**Figure 3.123 Adjoining FIRs**



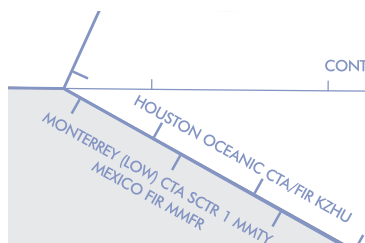
When oceanic control is implemented within a FIR and is available in addition to the FIR services, the areas shall be designated as CTA/FIR. The CTA/FIR areas shall be shown as open (white) areas (Class E Airspace).

**Figure 3.124 Adjoining CTA/FIRs**



When air traffic control is implemented within a portion of a FIR area, the portrayal techniques of open area (white) for Class E airspace (CTA/FIR), and the screened area (tone) for Class G/Unclassified airspace (FIR) shall be employed. The boundary shall be supported on either side by the appropriate and applicable FIR or CTA/FIR identification data.

**Figure 3.125 CTA/FIR collocated with a FIR & with Class G/Unclassified Airspace**



### 3.7.7.3.13 Air Route Traffic Control Center (ARTCC), Area Control Center (ACC), Remote Center Air/Ground (RCAG)

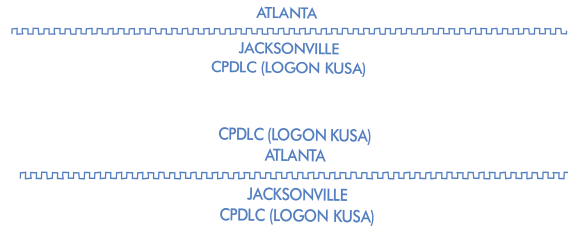
U.S. Air Route Traffic Control Center (ARTCC) shall be shown as open (white) areas (Class E airspace), along with defining boundaries. Identification shall be positioned within the area, adjacent and parallel to the boundary and should appear at least once between external chart folds or as frequently as necessary in order to readily identify the boundary. Canadian Area Control Centers (ACC) are comparable to U.S. ARTCCs and a shared boundary will be shown similarly.

**Figure 3.126 ARTCC or ACC Boundary**



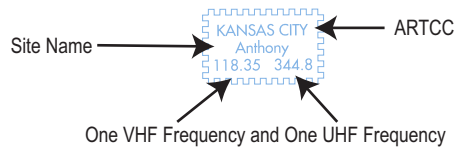
When Controller Pilot Data Link Communication (CPDLC) exists in the authoritative source database for an ARTCC, the text CPDLC (LOGON KUSA) will be shown parallel to the boundary above or below the ARTCC identification as shown below. When space is a concern, the text may be placed adjacent and parallel to the boundary following the ARTCC identifier.

**Figure 3.127 ARTCC Boundary with CPDLC Identification**



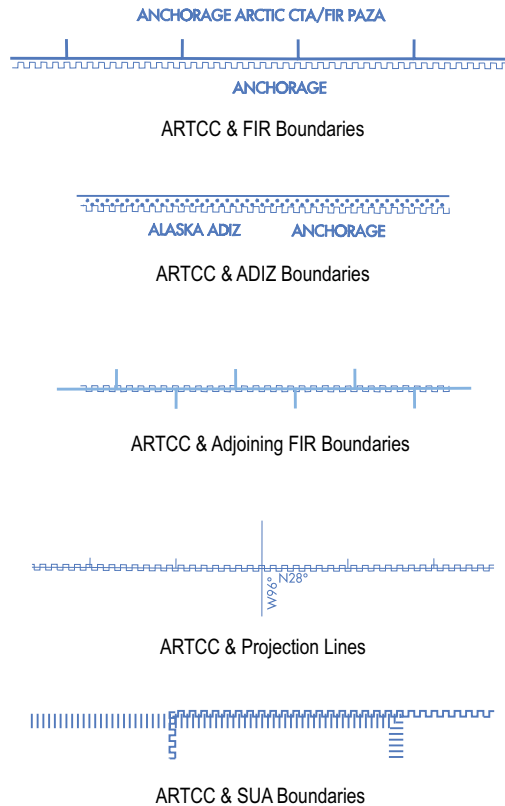
Remote Communications A/G (RCAG) site boxes, if possible, should be located at their correct geographical positions or within 25 NM. Location symbol for the site location shall not be shown. Only one VHF and one UHF frequency designated in the authoritative source database for Low Altitude enroute charting shall be shown. Guard/emergency frequencies 121.5, 243.0 shall not be charted.

**Figure 3.128 ARTCC Remote Communications A/G (RCAG)**



When ARTCC boundaries are collocated with other linear boundaries (ex., ADIZ, FIR), the ARTCC symbology shall be offset into the ARTCC side. When ARTCC boundaries are collocated with a FIR on both sides, the ARTCC symbol shall not be offset. The ARTCC or ACC symbology shall not be offset, but centered upon projections or SUA external or internal boundaries.

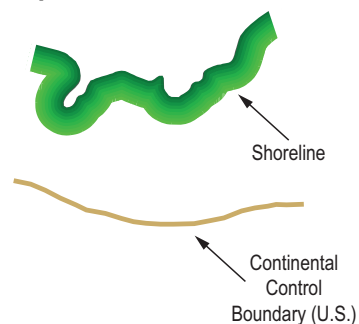
**Figure 3.129 ARTCC Boundaries Collocated with Other Linear Symbols**



#### 3.7.7.3.14 Continental Control Boundary (U.S.)

The boundary of the U.S. Continental Control (12 mile limit) shall be shown as a continuous unbroken brown line. There shall be no identification of the Continental Control boundary.

**Figure 3.130 Example of Continental Control Boundary (U.S.)**





### 3.7.7.3.15 Altimeter Setting

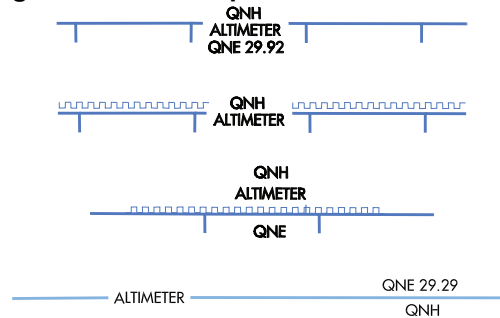
Altimeter settings for certain areas and the location or point of change of altimeter settings shall be indicated on the charts.

The word “ALTIMETER” shall be shown:

1. at the point of change; i.e., edge of a control area, on a FIR or CTA/FIR boundary or other land area boundary or when within 100 NM of land area; or
2. to indicate an altimeter setting change area such as a control area or a FIR.

“ALTIMETER”, when shown at the point of change shall be supported on both sides by the applicable altimeter setting; i.e., QNH or 29.92 and/or notes, as appropriate.

**Figure 3.131 Example of Altimeter Settings**



An appropriate note, such as “Use altimeter setting of QNH within control area” may be shown to indicate a specific altimeter setting for a particular area of the chart.

An appropriate note indicating an altimeter setting area, such as control area or a FIR or CTA/FIR shall be shown for each such area unless it is stated that the altimeter setting information shown is applicable for the entire chart area.

Transition level (TL) or transition altitude (TA), may also be shown in conjunction with the word “ALTIMETER”, when appropriate.

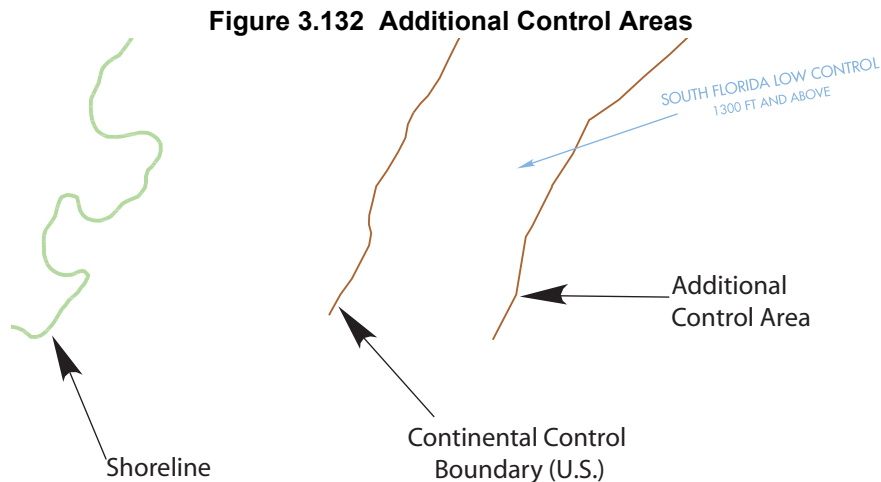
Small arrowheads, when deemed necessary, may be used in conjunction with the symbols and/or notes to more clearly define the direction or area to which the change applies.

### 3.7.7.3.16 Additional Control Areas

#### 3.7.7.3.16.1 Additional Control Areas

Additional Control Areas, both domestic and offshore, shall be shown, plotted as designated, symbolized as open area white, within the uncontrolled airspace screen, as specified in Section 3.7.7.3.16.2.

To specifically define the limits of each offshore, additional control area within that area defined and depicted as controlled airspace boundaries of the Additional Control Areas shall be shown, symbolized by a brown line.



A bearing or radial line shall be used as the center line, supplemented by the MEA, when designated, and the appropriate mileages between applicable NAVAIDS and reporting points.

Notes, as required, pertaining to Additional Control Areas, shall be shown centered within or immediately outside the area. See

#### 3.7.7.3.16.2 Offshore Additional Control Areas

Offshore Additional Control Areas shall be identified and positioned immediately within and parallel to the limits of the area.

**Figure 3.133 Offshore Airspace Areas - Vertical Limits**



### 3.7.8 Airways/Routes

Airways/Routes type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within these specifications.

Reference:

[Appendix 48](#) - Airway/Route Types



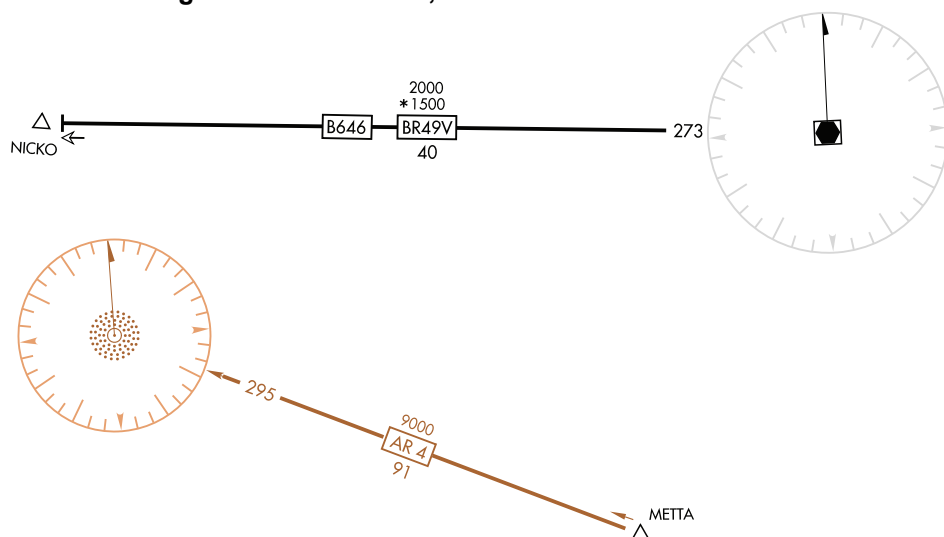
Color for the airway centerline symbology shall be predicated by the type of NAVAID, i.e. VHF/UHF, LF/MF defining the route. The centerline symbology shall not change for the entirety of the route. Route segments predicated on VHF/UHF and LF/MF NAVAIDS shall show the route centerline in black.

### 3.7.8.2.3 Oceanic, Atlantic, Gulf, Puerto Rico and Bahamas Routes

Oceanic, Bahamas, Atlantic, Gulf and Puerto Rico routes shall be charted. Routes that include segments with Minimum Enroute Altitudes (MEA) of 18,000' MSL and above shall be charted in their entirety when a portion of that route has an MEA of less than 18,000' MSL.

Color for the airway centerline symbology shall be predicated by the type of NAVAID i.e., VHF/UHF, LF/MF, defining the route. The centerline symbology shall not change for the entirety of the route. Route segments predicated on VHF/UHF and LF/MF NAVAIDS shall show the route centerline in black.

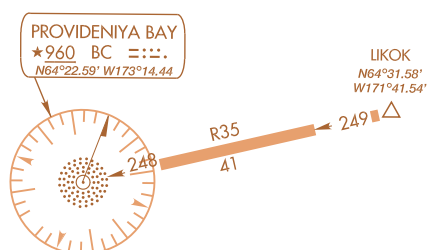
**Figure 3.137 Oceanic, Atlantic and Bahamas Routes**



### 3.7.8.2.4 Air Traffic Service (ATS) Routes

ATS routes shall be charted as illustrated below.

**Figure 3.138 Air Traffic Service Routes**



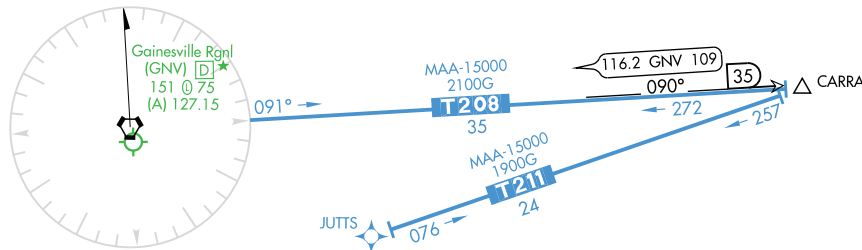
Color for the route centerline symbology shall be predicated by the type of NAVAID, i.e., VHF/UHF, LF/MF, defining the route. The centerline symbology shall not change for the entirety of the route. Route segments predicated on VHF/UHF and LF/MF NAVAIDS shall show the route centerline in black.

### 3.7.8.2.5 Area Navigation (RNAV) T-Routes and TK-Routes

Low altitude “T” and “TK” (helicopter) RNAV Routes will be depicted.

(AK) In Alaska, low altitude “T” RNAV routes, requiring TSO-C145 or C146, shall be shown.

**Figure 3.139 RNAV T and TK Routes**



When “T” Routes are coincident with Victor airways, information common to both routes will be shown only once and in black, and information unique to the RNAV Route will be depicted in blue. The center line of the RNAV routes, requiring GNSS, shall not be shown.

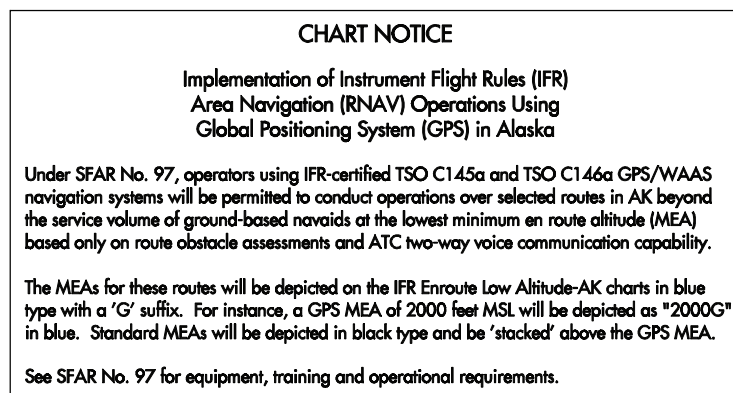
**Figure 3.140 RNAV T and TK Routes - Coincident**



#### 3.7.8.2.5.1 (AK) Chart Notice - GPS/WAAS Navigation Operations in Alaska

A Chart Notice titled “Implementation of Instrument Flight Rules (IFR) Area Navigation (RNAV) Operations Using Global Positioning System (GPS) in Alaska” shall be shown centered below the “Corrections, Comments and/or Procurement Note” and above the OROCA Notice.

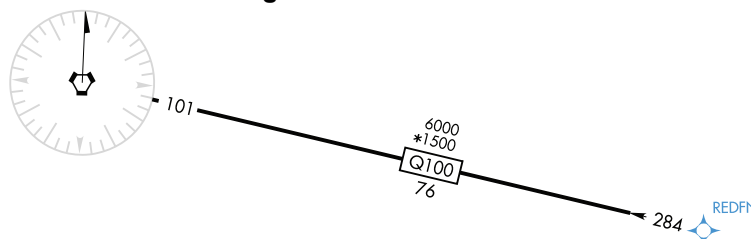
**Figure 3.141 (AK) GPS/WAAS Chart Notice**



### 3.7.8.2.6 Gulf of Mexico “Q” (RNAV) Routes

Low Altitude RNAV “Q” Routes located only in the Gulf of Mexico area shall be shown. The route designator will use a height level “Q” letter identifier for the prefix with a three digit number (e.g., Q201). All route data shall be shown as black with the exception of waypoint symbology.

**Figure 3.142 Q Routes**



### 3.7.8.2.7 Unusable Airway/Route Segments

Routes segments designated by the FAA as unusable, and required for charting, shall be shown.

The unusable airway/route symbol shall be centered on the unusable airway/route centerline segment. The symbology shall not be broken for identifications, mileages, changeover points, fixes or mileage break points.

Radial or bearing values associated with the unusable airway/route segments shall be overprinted with diagonal lines in a NE to SW direction. (See also Section 3.7.8.3.4.1.)

The unusable route symbol shall be cleared for a substitute route symbol when appropriate.

**Figure 3.143 Unusable Airway/Route Segment**



When two airways/routes are coincident, but only one airway/route is designated as unusable, a note indicating which airway the unusable symbology applies to will be placed parallel to the airway and in close proximity to the airway/route ident.

**Figure 3.144 Coincident Airways/Routes with Unusable Segment**



### 3.7.8.2.8 Substitute Airway/Route

Airways/routes officially designated by the FAA as substitute airways/routes and in effect for at least 28 days in the life cycle of the chart, shall be charted.

**Figure 3.145 Substitute Airway/Route Symbol**



All substitute airway/route data shall be portrayed in accordance with criteria established in this section and in Section 3.7.8.3 - Airway/Route Data.

An operational note, e.g., “CHECK NOTAMS”, shall be shown when the enroute NAVAID is shut down and the route structure is not materially changed.

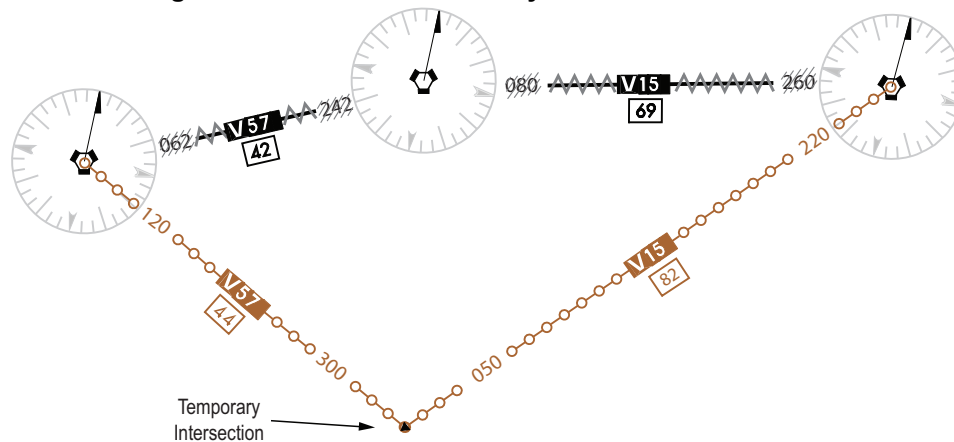
#### 3.7.8.2.8.1 Substitute Airways/Routes Not Coincident with Another Airway/Route

A substitute route centerline symbology, not coincident with another airway or route, and the associated data, shall be shown in brown.

NAVAIDs and designated points normally not shown on the Enroute Low Charts, because they do not meet charting criteria, shall be shown when required for the designation of substitute routes. These features shall be added for the period of time the substitute route is in effect and depicted in accordance with the following sections:

- Section 3.7.4 - Radio Aids to Navigation (NAVAIDs)
- Section 3.7.9 - Navigational and Procedural Information.

**Figure 3.146 Substitute Airway/Route Non Coincident**



#### 3.7.8.2.8.2 Substitute Airways/Routes Coincident with Another Airway/Route

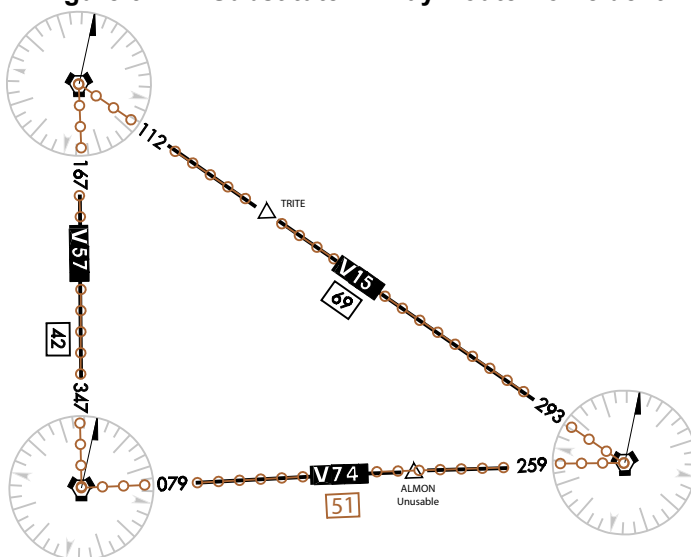
The substitute route centerline symbology, coincident with another airway or route, shall be shown centered on the coinciding route centerline. Existing route information shall not be over printed by the substitute route symbology.

Substitute route centerline symbology and associated route data shall be shown in brown. The substitute route data is only shown, however, if it doesn't duplicate the airway data of the coincidental unusable route.

Unusable intersections shall be labeled with the text “unusable” under the intersection name.

NAVAIDs affected and shutdown shall be identified as provided in Section 3.7.4.6.6.

**Figure 3.147 Substitute Airway/Route Coincident**



### 3.7.8.2.8.3 Special Notice for Substitute Route

If substitute airways/routes cannot readily be charted, and/or when provided by source, a chart note may be required, i.e., Safety Alert, NOTAM, etc. An operational note shall be placed in the vicinity of the substitute route, using a leader line when appropriate.

**Figure 3.148 Substitute Routes - NOTAM and Special Notice Notes**

See NOTAMs or appropriate publications for specific information.

### 3.7.8.2.9 Military Training Routes (MTR)

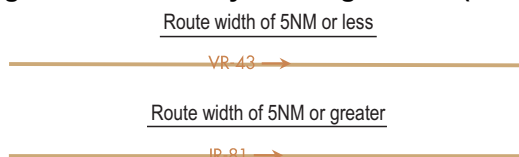
IFR (IR) MTRs shall be shown. Those individual segments considered to be alternate entries or exits shall not be shown.

VFR (VR) MTRs having route designators of up to five characters and flight elevation is above 1500' AGL, even though some segments may be below 1500', shall be shown. Those individual segments considered to be alternate entries or exits shall not be shown.

All segments of IR or VR MTRs, having route widths of 5NM or less on both sides of the centerline, shall be shown by a continuous .020" brown line.

All segments of IR and VR MTRs, having a route widths greater than 5NM, on either side of the centerline, shall be shown by a continuous .035" brown line.

**Figure 3.149 Military Training Routes (MTRs)**





MTRs shall be identified by the route designator, e.g., IR-123, VR-321. Route designators shall be positioned, centered on the unbroken route centerline, and positioned at least once between external chart folds and as frequently as necessary in order to readily identify the route.

**Figure 3.150 IR and VR MTRs on Same Route Segment**

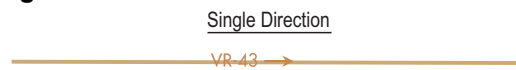


The repetitious use of “IR” or “VR” shall be eliminated when two or more IR or VR routes are coincident over the same airspace, e.g., IR-201-205-227. IR and VR MTRs shall always be identified with separate text. In congested areas multiple route designators may be stacked or leadered to the applicable route.

Routes numbered 001 to 099 shall be shown without leading zero digits (e.g. VR-010 shown as VR-10).

Direction of flight for IFR and VFR MTRs shall be indicated by the placement of an arrowhead, centered on the centerline and adjacent to the route designator.

**Figure 3.151 MTRs Directional Arrowheads**



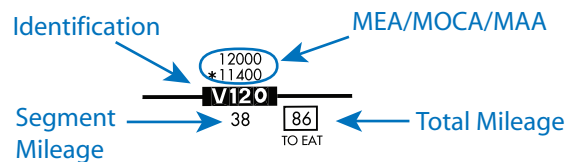
All MTRs and altitudes shall be tabulated. See Section 3.5.1.

### 3.7.8.3 Airway/Route Data

#### 3.7.8.3.1 General

Airway and route data (i.e., identification, MEA, MOCA, MAA, segment and total mileage), shall be grouped together.

**Figure 3.152 Airway/Route Data Grouping**



If necessary, to avoid overprinting of other symbology or text, data may be shifted from its normal position.

Partial or complete airway/route data may be omitted when such data cannot be shown for short segments which extend off the chart as long as this data is shown on overlapping or adjacent charts.

The color of the airway/route data is determined by the associated airway/route type.

#### 3.7.8.3.2 Identification

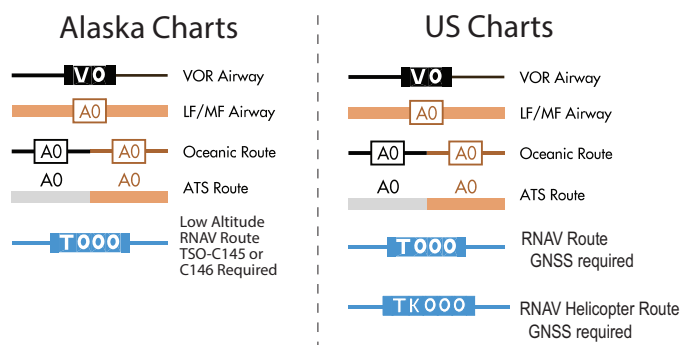
Every airway/route shall be uniquely identified by a letter(s) and number, to indicate the type of airway/route and the specific airway/route.

Victor Airway, RNAV “T” and RNAV “TK” route identification shall be shown as negative type, centered on and breaking the centerlines.

LF/MF Oceanic (includes Atlantic, Puerto Rico, Gulf and Bahama), Gulf of Mexico RNAV “Q” airway/route identification shall be enclosed within a box. ATS identification shall not be enclosed within a box.

Victor, LF/MF, Oceanic (includes Atlantic, Puerto Rico, Gulf and Bahama), RNAV “T”, RNAV “TK” and Gulf of Mexico RNAV “Q” airway/route identifications shall be centered on and breaking the centerlines. ATS route identifications shall be centered above the route centerline. Bahama Routes shall show the suffix of “V” or “L”, as designated, following the route number, e.g., “BR63V”.

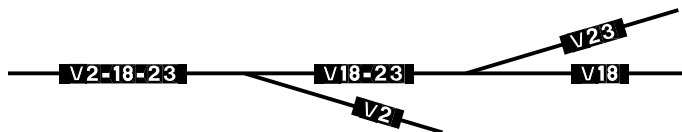
**Figure 3.153 Route Identifications**



Airways/routes shall be identified and shown aligned with and centrally located on airway segments where necessary, and if possible. Identify at least once between external chart folds and as frequently as necessary in order to readily identify the airway/route.

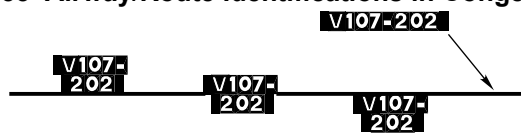
When two or more airways/routes of the same type have been designated concurrently over the same airspace, i.e., coincidental routes, then identifications shall be shown in numerically ascending order and the repetitious letter of the identifications shall be eliminated. When coincidental routes separate each individual route segment shall be identified.

**Figure 3.154 Coincidental Routes of the Same Classification**



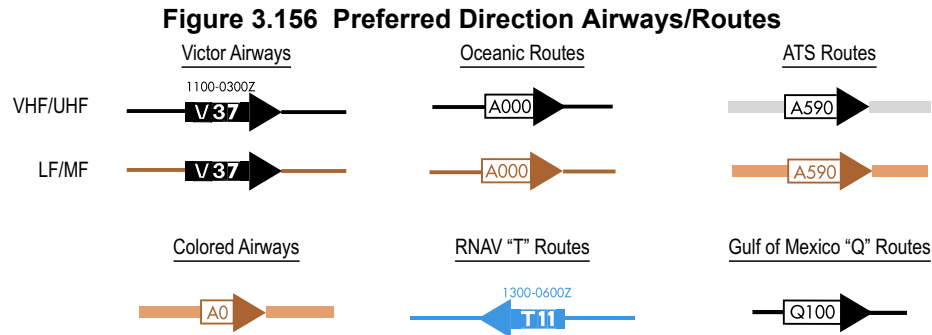
In congested areas identifications may be offset, either above or below, but should remain flush with the centerline. In extremely congested areas identification may be shown off the centerline and a pointer used from the identification to the airway/route centerline, however, in such cases the identification should remain aligned to the centerline.

**Figure 3.155 Airway/Route Identifications in Congested Areas**



### 3.7.8.3.3 Preferred Direction Airways/Routes

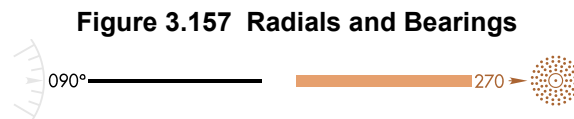
Preferred direction airways/routes shall be shown with an arrowhead symbol adjoining the airway/route identification and pointing in the preferred direction of flight. ATS airway/route identifications, normally shown above the centerline, shall be enclosed within an identification box with an arrow, and centered on the centerline. Direction hours of operation, when other than continuous, shall be shown above the route identification in Coordinated Universal Time (UTC).



### 3.7.8.3.4 Radials and Bearings

All airways/routes shall be shown with magnetic radial or bearing values at NAVAIDs. Bearings and radials shall be consistent with the overall airway/route centerline between NAVAIDs or to designated airway turning points or end terminus.

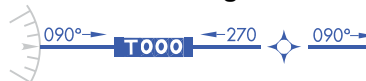
Airway/route segments predicted on VHF/UHF NAVAIDs shall be shown with magnetic outbound radial values. Those airway/route segments predicated on LF/MF NAVAIDs shall be shown with magnetic inbound bearing values, supplemented with an arrowhead symbol adjacent to the bearing and pointing towards the NAVAID. These value shall be shown centered on and breaking the airway/route centerlines and adjacent to the compass rose if shown.



Magnetic reference bearings for RNAV Routes shall be calculated using local magnetic variations at that point. Non-regulatory RNAV Routes shall have magnetic reference bearings calculated at each point along the route. Regulatory RNAV Routes shall have magnetic reference bearings calculated between the points designated in the legal description of the airway.

RNAV "T" and "TK" route magnetic reference bearings values shall be shown above the route centerline, near the NAVAID, fix or waypoint, and supplemented with an arrowhead symbol adjacent to the bearing pointing away from the NAVAID, fix or waypoint. Only those NAVAIDs and waypoints that were part of the original route docket description will be shown with magnetic reference bearings.

**Figure 3.158 RNAV T Route Magnetic Reference Bearings**



Gulf of Mexico RNAV “Q” route magnetic reference bearing values shall be shown centered on and breaking the route centerline, near the NAVAID, fix or waypoint, supplemented with an arrowhead symbol adjacent to the bearing pointing away from the NAVAID or waypoint.

**Figure 3.159 Gulf of Mexico Q Routes**



ATS and Oceanic (includes Atlantic, Puerto Rico, Pacific and Gulf) routes shall be shown with magnetic outbound bearings, centered on and breaking the route centerline, adjacent to the fix or waypoint, and supplemented with an arrowhead symbol adjacent to the bearing pointing away from the fix or waypoint.

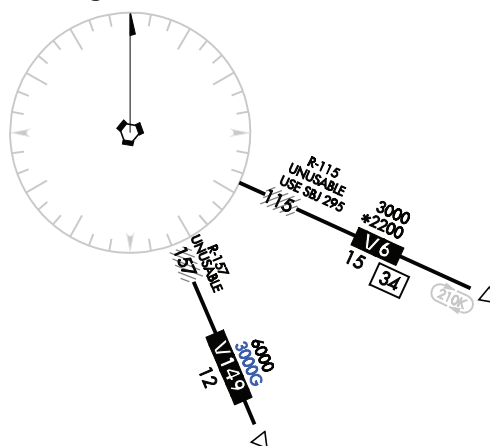
In congested areas, or to avoid overprinting, radial and bearing values may be offset above or below the centerline, further out or closer to the NAVAID, intersection or compose rose.

#### 3.7.8.3.4.1 Airways/Routes with Unusable Radials or Bearings

Airways at NAVAIDs having bearings or radials restricting usage to certain altitudes, distances, or as entirely unusable, are published in the MEA Consolidation, shall be shown.

Airway bearings or radial values that are entirely unusable at all altitudes and distances shall be overprinted with lines in a NE to SW direction using similar symbology as the NAVAID Abnormal Status A note indicating the bearing restriction shall be shown adjacent to bearing. See 3.7.4.6.6 - Abnormal Status.

**Figure 3.160 Unusable Radial**

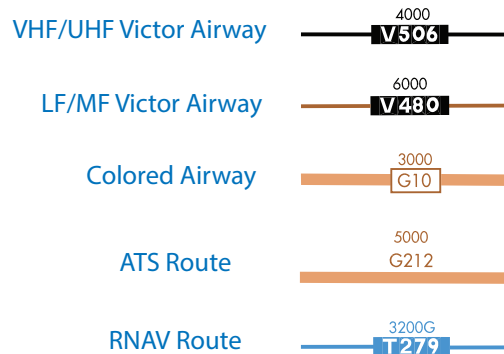


Notes restricting usage of airway or route bearing values to certain altitudes and distances, shall be shown by placing a note adjacent to the bearing value. The bearing or radial values shall not be overprinted with lines in a NE to SW direction.

### 3.7.8.3.5 Minimum Enroute Altitudes (MEA), Minimum Obstruction Clearance Altitude (MOCA) and Maximum Authorized Altitudes (MAA)

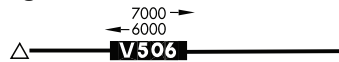
Minimum Enroute Altitudes (MEA) shall be shown, normally positioned above the airway/route identification box. MEAs for RNAV “T” and “TK” routes will be identified with a “G” suffix. RNAV MEAs for GNSS RNAV aircraft will be depicted in blue type.

**Figure 3.161 MEAs**



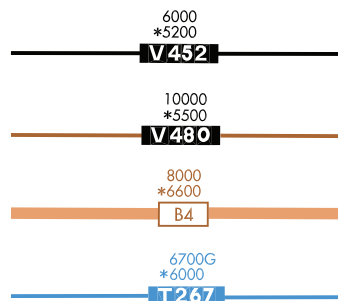
Airway segments designated as having a different MEA in each direction shall show the lowest altitude next to the airway symbol or identification box. The MEA figures shall be supported by arrowheads (the same as used to designate the formation of reporting points) (see [Figure 3.162](#)), centered on the MEA, parallel with the airway and pointing in the appropriate direction.

**Figure 3.162 Different MEAs**



Minimum Obstruction Clearance Altitude (MOCA) shall also be shown when lower than the minimum enroute altitude. When shown, the MOCA shall be preceded by an asterisk (\*) and shall be positioned as prescribed for the MEA. The MEA shall then be relocated directly above the MOCA.

**Figure 3.163 MOCAs**

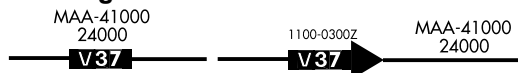


Maximum Authorized Altitude (MAA) shall be shown centrally positioned above the MEA. The MAA value shall be preceded by the appropriate abbreviation, e.g., MAA-14000.

**Figure 3.164 MAAs**



**Figure 3.165 MEAs and MAAs**

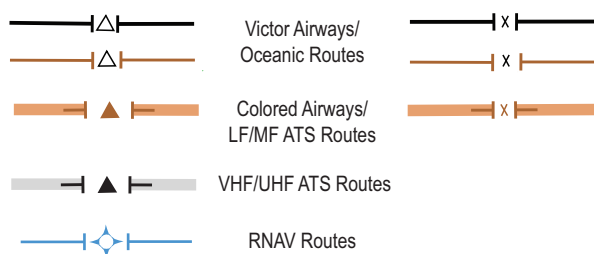


MEA, MOCA, and MAA changes along a route, when established at fixes other than NAVAIDS, shall be shown using “T” symbols. When there is no named fix involved, a symbol “x” shall be shown between the altitude change symbols to indicate mileages thereto. Airway/route centerlines shall always be broken when the altitude change symbol is shown. Only one MEA, MOCA and/or MAA value shall be shown between the change symbols and/or NAVAIDS.

**Figure 3.166 “T” Symbol**



**Figure 3.167 Altitude Changes Along a Route**

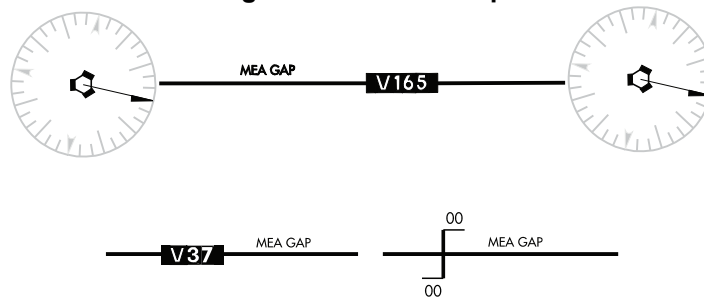


NAVAIDS used in designating a change in MEAs, MOCAs, and/or MAAs shall be identified. Normally, these NAVAIDS are located on the chart and are identified. NAVAIDS, however, located off the chart, used in designating altitude changes along airways, shall be identified as described in Section 3.7.9.1.4.

### 3.7.8.3.6 MEA Gap

Navigational signal gap notes, e.g., “MEA GAP”, shall be shown above route segments between the NAVAIDs, fix or mileage breaks defining the route segment where the signal gap exists. The “MEA GAP” note shall be to the right of airway/route identification if one is shown in that location. If a VOR changeover point is designated in conjunction with an MEA GAP, the gap note should be placed in proximity to the changeover point so there will be no question concerning the probable location of the signal gap.

Figure 3.168 MEA Gap



### 3.7.8.3.7 Minimum Crossing Altitudes (MCA) and Minimum Turning Altitudes (MTA)

MCAs and MTAs associated with a NAVAID or fix shall be shown with the MCA/MTA symbol (flag containing an “X”) attached to the top of the NAVAID or fix symbol. The flag should be orientated to drape downward. In congested areas, the MCA/MTA symbol may be rotated, shortened or attached elsewhere on the NAVAID or fix symbol. MCA/MTA textural information shall consist of route identification, altitude and direction. MCA/MTA flag symbol and identification shall be shown in the same color as prescribed for the airway to which they pertain.

Figure 3.169 MCA/MTA Flag Symbol



For a fix, the information shall be centered below the fix name. MCA text associated with fixes, if an MTA has not been established at the same location, need not include the text “MCA”. MTA text associated with fixes will always include the text “MTA”. When both an MCA and an MTA are associated with a single fix, the lines of associated text be identified as “MCA” and “MTA” respectively.

Figure 3.170 MCA and MTA Data at a Fix

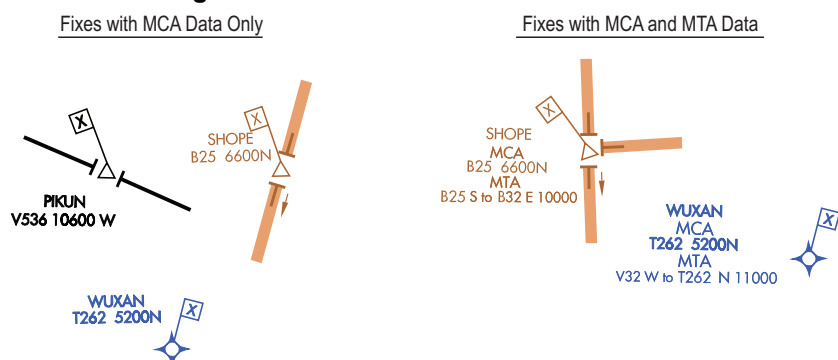
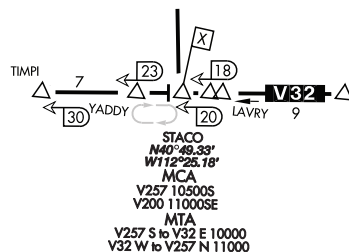


Figure 3.171 MCA &amp; MTA Data Complex Example

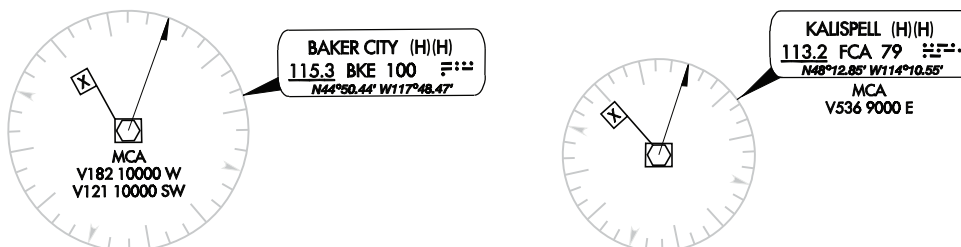


For a NAVAID, the information shall be positioned in close proximity to the NAVAID symbol or facility box. When associated with a NAVAID, both MTA and MCA text shall always be preceded by identifying “MTA” or “MCA”.

Figure 3.172 Minimum Crossing Altitudes (MCA) at a NAVAID

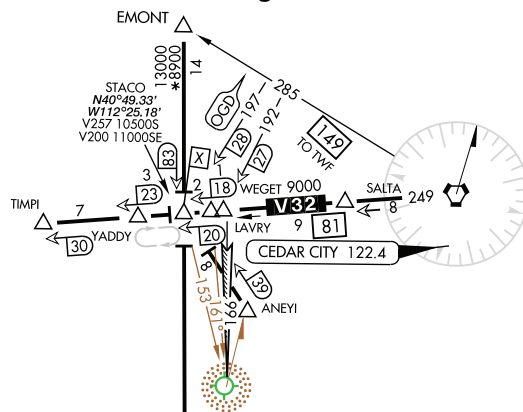
MCA Information Adjacent to MCA Flag

MCA Information Adjacent to NAVAID ID Box



In areas of congestion when MCA and/or MTA data cannot be positioned in close proximity to the subject symbol or facility box, the text may be leadered to the symbol and shall always include identifying “MCA” or “MTA” text for clarification.

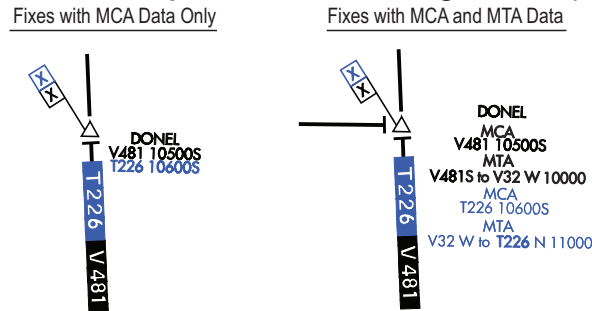
Figure 3.173 MCA in a Congested Area with Leader Line





Multiple MCA data, applicable to a single point, may be consolidated when altitudes and direction of flight are identical, precluding unnecessary duplication, e.g., V11-181-238 6800W, V49-81 4400W. MCA data may not be consolidated with MTA in a single note, but must be listed separately, each restriction clearly prefaced by “MCA” or “MTA”.

**Figure 3.174 Multiple Minimum Crossing Altitude (MCAs)**

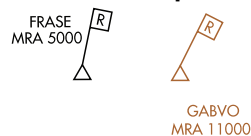


Multiple MTA data, applicable to a single point, may not be consolidated and must be charted exactly as sourced.

### 3.7.8.3.8 Minimum Reception Altitudes (MRA)

MRAs shall be shown and identified by a flag symbol attached to the top point of the associated symbols. MRA flag symbol shall be oriented so that the flag portion drapes downward either to the left or right. In congested areas, the flag symbol should be rotated, shortened or attached elsewhere on the fix symbol. Text for an MRA shall consist of “MRA” and the altitude, centered below the fix name. MRA symbol and identification shall be shown in the same color as prescribed for the airways to which they pertain.

**Figure 3.175 Minimum Reception Altitudes (MRA)**

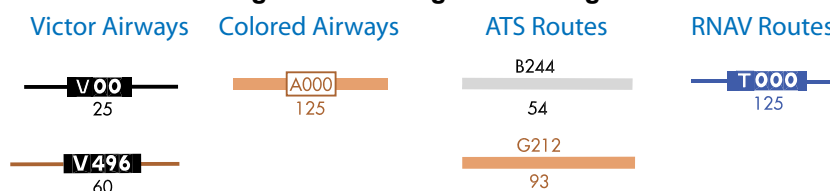


### 3.7.8.3.9 Mileage Distances

Two types of mileages may be both shown on an airway/route, segment mileage and box mileage.

Segment mileage shall be shown for each route segment. These segment mileages should be centered below each airway/route segment midpoint. If an airway/route identification is shown, the segment mileage should be placed below the identification. In congested areas, the mileage distances may be offset or in extremely congested areas, positioned above the route.

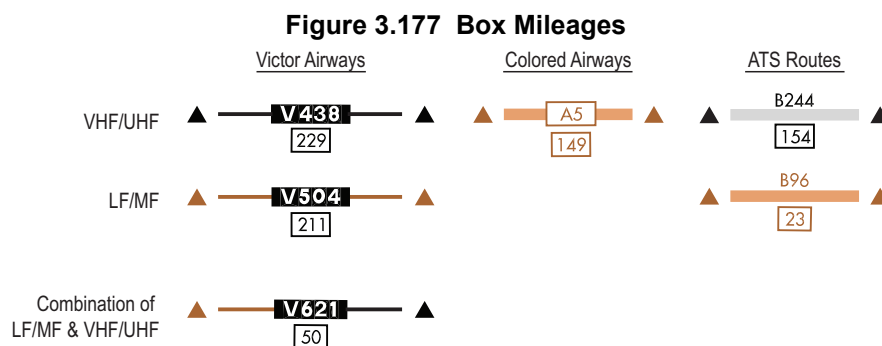
**Figure 3.176 Segment Mileages**



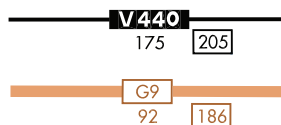
Box mileages shall be shown for each airway/route only between NAVAIDs, NAVAIDs and compulsory fixes, and/or between two compulsory fixes. Box mileage shall not be shown on RNAV “T” and “TK” Routes.

Box mileage shall be enclosed within a box and positioned below and parallel to the route identification. If a segment mileage is present at the same location, the box mileage shall be offset to the right. In congested areas, box mileages may be offset along the route. In extremely congested areas, box mileages may be placed above the route.

In congested areas, the type size may be reduced and the mileage box proportionally reduced.

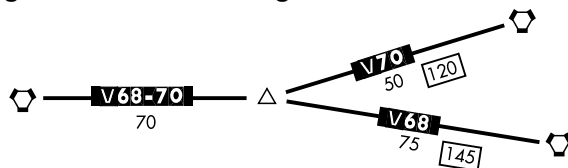


**Figure 3.178 Box Mileages Offset by Segment Mileage**



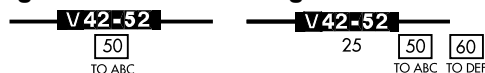
On coincidental airways/routes, box mileages shall be positioned below their associated airway/route identification, shifting segment mileage as necessary. If coincidental airways/routes diverge, the box mileages shall then be positioned below their respective airway/route identifications.

**Figure 3.179 Box Mileages - Coincidental Routes**



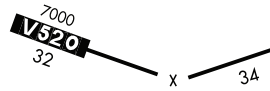
To clarify which NAVAID or fix a box mileage is referring to, a “TO” note shall be used. When the “TO” note is referring to a NAVAID, only the NAVAID identifier shall be shown. For a compulsory fix, only the name of the fix shall be shown. The “TO” note shall be shown below the box mileage. In congested areas, the note may be shown to the right of the box mileage.

**Figure 3.180 Box Mileages - “TO” Notes**



In the absence of fixes and NAVAIDs, the symbol “x” shall be used to indicate mileage breaks and intersections or airway/route turning points. Mileages shown for this purpose shall not be boxed.

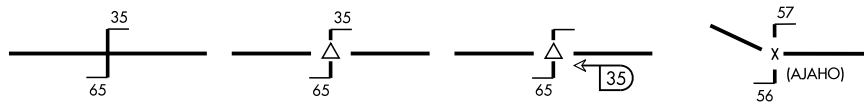
### Figure 3.181 Mileage Breaks



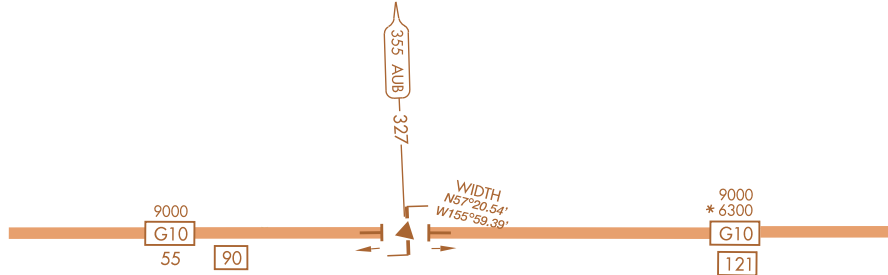
### 3.7.8.3.10 VOR Changeover Points (COP)

COPs shall be shown except for those at the midpoint between two NAVAIDs or a doglegs. COP symbols shall be centered on and perpendicular to the route, located at the proper distance from the defining NAVAID. When located at intersections or mileage breaks, the COP symbol shall be broken and not touch the intersection or mileage break. Mileages shall be shown in whole miles. Mileages from the COP to the NAVAIDs shall be positioned outside and parallel with the short 'pointer' line. COP mileages shall be omitted when the COP is located at an intersection with a DME mileage on the route.

**Figure 3.182 Changeover Points (COP)**

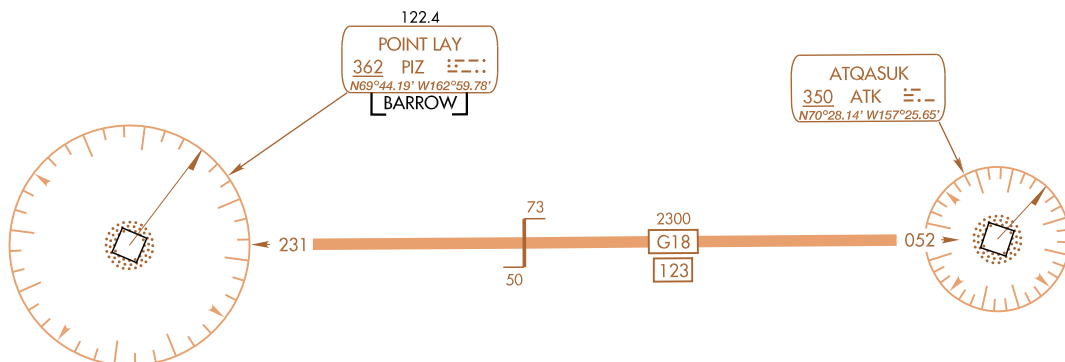


**Figure 3.183 Changeover Points (COP) - LF/MF Establishing COP**



NAVAIDs used in establishing VOR airway COPs shall be identified. Normally, these NAVAIDs are located on the chart and identified. However, NAVAIDs located off the chart used in establishing COPs along airways shall be identified as described in Section 3.7.9.1.4.

**Figure 3.184 Changeover Points (COP) - LF/MF with DME**



3.7.9 Navigation and Procedural Information

Navigation and Procedural Information type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within these specifications.

References:

[Appendix 50](#) - Navigation & Procedural Information

3.7.9.1 **Fixes**

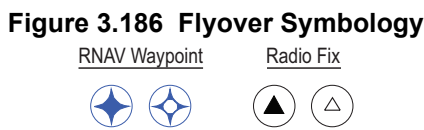
3.7.9.1.1 **Operational Notes**

Operational notes pertaining to fixes shall be shown.



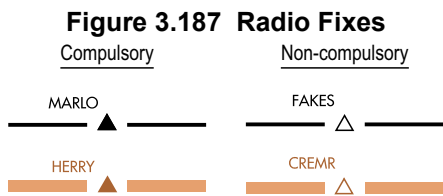
3.7.9.1.2 **Flyover Symbology**

If the fix is designated as flyover then the appropriate symbol, waypoint or fix shall be enclosed in a circle.



3.7.9.1.3 **Radio Intersections & DME Fixes**

Intersections and DME fixes designated for enroute low charting shall be identified by name and with a compulsory or non-compulsory reporting function. All low makeups associated with an intersection or fix shall be shown. Fixes associated with a VHF/UHF route shall be shown in black and those associated with a LF/MF route shall be shown in brown.



Offshore fixes without makeups and not associated with a route shall be shown in brown.



No additional name is necessary when the NAVAID and the fix have the same name. NAVAID name shall suffice for both.

When no misinterpretation will result, same name fixes applicable to LF/MF and VHF/UHF systems shall be identified (name) only once, in black.

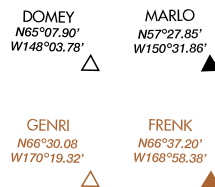
### 3.7.9.1.3.1 Radio Fix Geographic Coordinates

Coordinates shall be shown for:

- fixes with compulsory reporting function,
- fixes beyond the continental control boundary,
- fixes charted with a holding pattern,
- or fixes on ATS routes.

Coordinates shall be stacked and placed below the intersection/fix name. Coordinates type shall be the same color as the fix name and symbol.

**Figure 3.189 Radio Fix Geographic Coordinates**



### 3.7.9.1.3.2 Radio Fix Make Ups

#### 3.7.9.1.3.2.1 Non DME Radio Fix Makeups

Radio fixes with a makeup defined from a NAVAID without DME capability which is located on the same route as the radio fix, shall be shown with a solid facility arrow symbol positioned below and parallel to the route, adjacent to the fix symbol. VHF/UHF NAVAID facility arrow symbols are black and point toward the fix, and LF/MF NAVAID facility arrow symbols a brown and point toward the NAVAID. In congested areas, the facility arrows may be placed above the routes.

**Figure 3.190 NAVAIDS without DME Capability**



#### 3.7.9.1.3.2.2 DME Radio Fix Makeups

Radio fixes with a makeup defined from a NAVAID with DME capability, i.e., VOR/DME, TACAN, VORTAC and NDB/DME, which is located on the same route as the radio fix, shall be shown with an open DME arrow symbol positioned below and parallel to the route, adjacent to the fix symbol. In congested areas, DME arrows may be placed above the route.

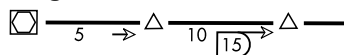
**Figure 3.191 NAVAIDS with DME Capability**



### 3.7.9.1.3.2.3 DME “Boats”

DME “boats” shall be used for each DME fix makeup beyond the first fix, along a route. The mileage from the NAVAID to the fix shall be placed within the DME boat and positioned below, parallel to the route and adjacent to the fix. In congested areas, DME boats may be placed above the routes and/or reduced in size.

**Figure 3.192 DME Boats**



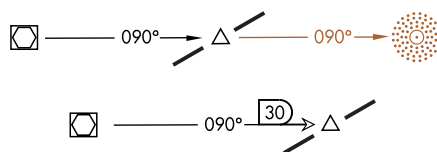
### 3.7.9.1.3.2.4 Off Route Radio Fix Makeups

Fix makeups defined from NAVAIDs off route shall be shown with a radial or bearing line between the NAVAID and the fix. Radial and bearing lines shall be shown only on the chart where the fix is located.

Makeups from a VHF/UHF NAVAID with only a radial value shall end with a facility arrow pointing toward the fix. Fixes with an additional DME mileage makeup shall end with a DME boat. The boat should be placed above and on the radial line.

Makeups from a LF/MF NAVAID with only a radial value shall end with a facility arrow pointing toward the NAVAID.

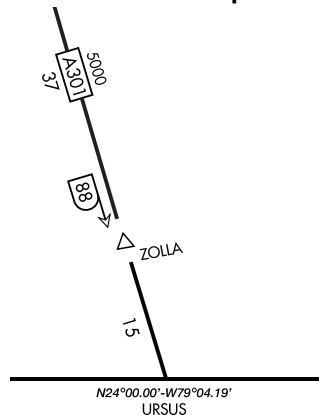
**Figure 3.193 NAVAIDs Used for Fix Makeups**



### 3.7.9.1.3.2.5 Offshore Fixes Not Falling within Chart Coverage

Offshore fixes not falling within chart coverage shall be indicated by the use of a lead name supported by the geographic coordinates.

**Figure 3.194 Radio Fix Makeup for Offshore Fixes**

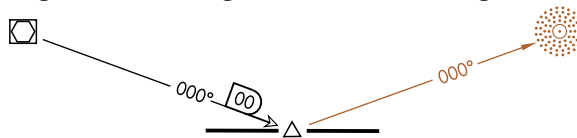


### 3.7.9.1.3.2.6 Magnetic Radial/Bearing Values

Radial and bearing magnetic values shall be placed on and breaking the radial/bearing line on the half nearest the reporting point for VHF/UHF NAVAIDs or on the half nearest the NAVAID for LF/MF NAVAIDs.

Radial values shall be outbound and shown in black and bearing values shall be inbound and shown in brown.

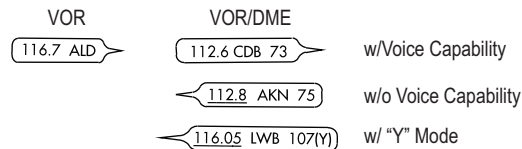
**Figure 3.195 Magnetic Radial/Bearing Values**



### 3.7.9.1.4 Facility Locator Boats

Facility locator boats shall be used to provide NAVAID information for fix makeups, establishing Minimum Enroute Altitude (MEA) change and Victor Airway COPs. They shall consist of frequency, no voice underline, identification, frequency protection, channel and paired frequency, and “Y” mode.

**Figure 3.196 VOR and VOR/DME Capability Facility Locator Boats**

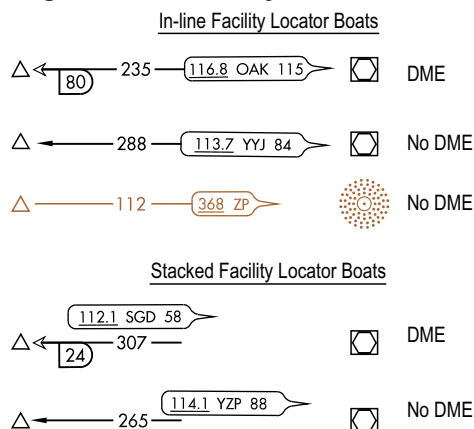


**Figure 3.197 NDB and NDB/DME Facility Locator Boats**

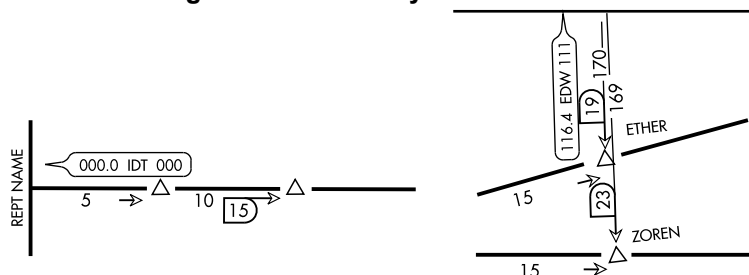


Facility locator boats are used whenever a NAVAID that defines a fix, establishes MEA changes or Victor Airway COPs, is located beyond the chart neatline. Facility locator boats can be used to minimize chart clutter when defining fixes within a chart. When radials/bearings are long and shortening them is necessary for clarity or congestion, facility locator boats should be used.

**Figure 3.198 Facility Locator Boats**



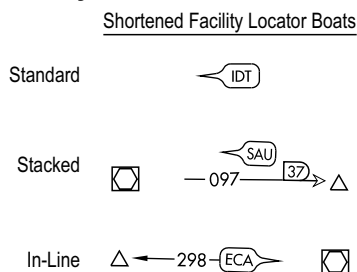
**Figure 3.199 Facility Locator Boats**



Facility locator boats shall be centered on the end of radials and point toward the NAVAID used in the formation of the fix. When used on the end of LF/MF bearings, the bearing arrowhead shall be omitted. In congested areas, a facility locator boat should be placed either above or below, and parallel to the radial or bearing line.

In very congested areas, facility locator boats should be shortened to contain only the NAVAID identification.

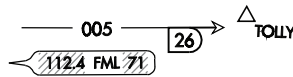
**Figure 3.200 Facility Locator Boats in Congested Areas**





When locator boats are associated with a NAVAID that is published as “Shutdown”, the applicable frequency and/or channel shall be overprinted with diagonal lines in a NE to SW direction.

**Figure 3.201 Facility Locator Boats - Unusable NAVAID**



### 3.7.9.1.5 RNAV Waypoints

RNAV waypoints required for enroute low charting shall be shown and identified by name and symbolized with either a compulsory or noncompulsory reporting function. Enclose the waypoint if the waypoint is designated as a flyover waypoint. Symbol, identification and coordinates shall be in blue.

**Figure 3.202 RNAV Waypoints Reporting & Flyover Function**

	Standard	Flyover
Compulsory		
Non-compulsory		

Waypoints not part of a route description and those located on or beyond the boundary of the U.S. Continental Control (12 mile limit) shall be shown with geographic coordinates. Coordinates shall be stacked below the waypoint name and shown to the hundredth of a minute. Waypoints which are part of a route description or are located within the U.S. Continental Control shall not have coordinates charted.

**Figure 3.203 Waypoints - Not Part of a Route Description**

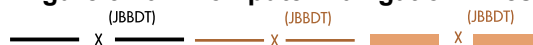


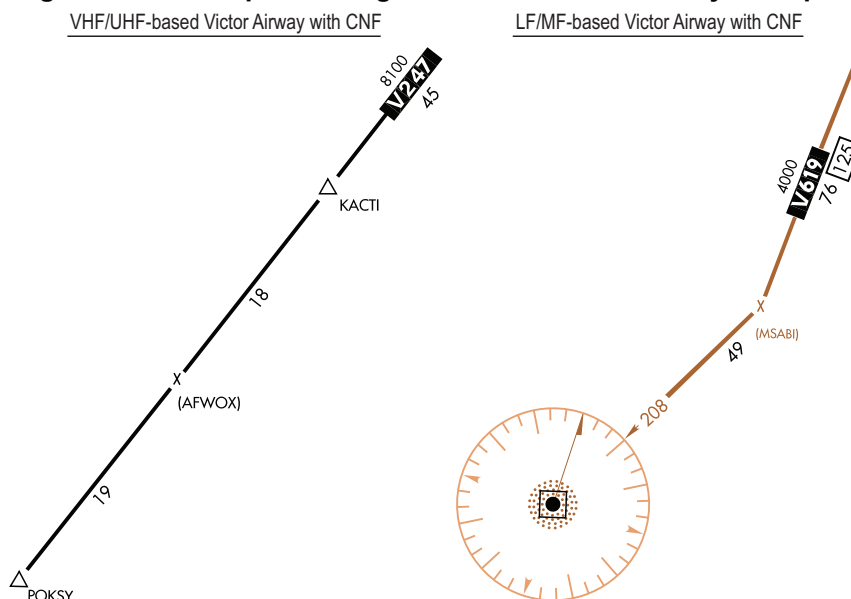
Waypoints shall not be shown if located in the same geographical position as existing reporting point or NAVAID.

### 3.7.9.2 Computer Navigation Fixes (CNF)

CNFs shall be shown and identified by name, enclosed within parentheses. CNFs shall use the same symbol as a mileage break point, e.g., “x”.

**Figure 3.204 Computer Navigation Fixes**



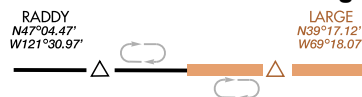
**Figure 3.205 Computer Navigation Fixes - Victor Airway Examples**

### 3.7.9.3 Holding Patterns

Holding patterns approved by the FAA for enroute low charting shall be shown.

#### 3.7.9.3.1 NAVAID-based Holding Patterns

Only one holding pattern shall be charted at an intersection or NAVAID. Holding patterns located on routes should be shown as close to the point of holding as possible and offset from the airway centerline to avoid overprinting.

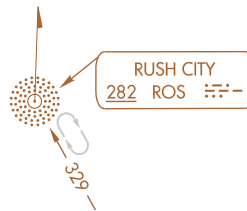
**Figure 3.206 Conventional Holding Patterns**

Maximum restricted airspeeds shall be depicted within the holding pattern symbol. For restricted airspeeds, 210 KIAS applies to altitudes above 6000 feet to and including 14,000 feet and 175 KIAS applies to all altitudes.

**Figure 3.207 Holding Patterns with Speed Restriction**

Off route holding patterns shall be shown with radial or bearing lines for positioning and alignment. Holding patterns based on LF/MF NAVAIDs shall be charted with inbound bearing values with an arrowhead placed on the end pointing toward the NAVAID symbol and those based on VHF/UHF NAVAIDs shall be charted with outbound radial values with an arrowhead pointing away from the NAVAID symbol. Magnetic radial/bearing values shall be placed on and breaking the radial/bearing lines. The holding pattern should be shown as close to the point of holding as possible and offset from the radial/bearing line to avoid overprinting.

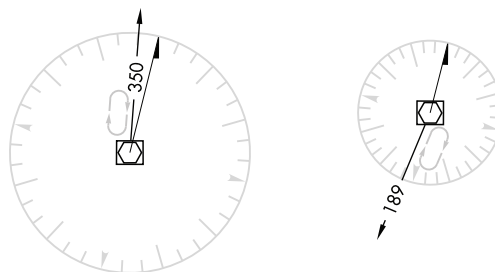
**Figure 3.208 Off Route NDB Holding Pattern**



**Figure 3.209 Off Route Holding Pattern within Compass Rose**

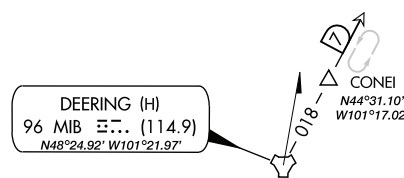
Within Large Compass Rose

Within Small Compass Rose

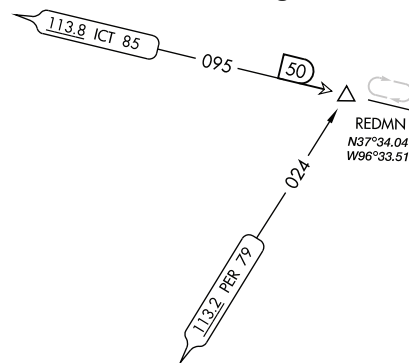


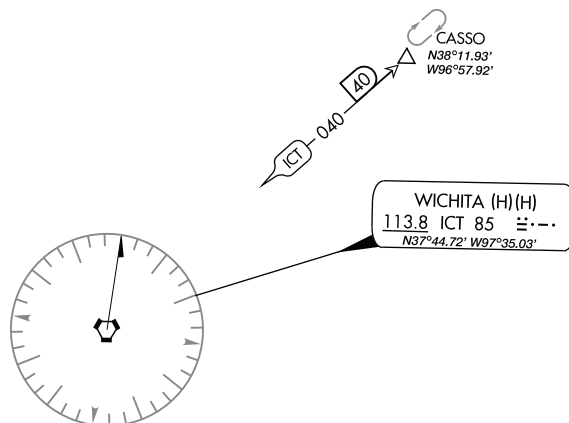
Geographic coordinates shall be shown for all holding patterns established over off route fixes.

**Figure 3.210 Off Route Holding Pattern Off a TACAN**



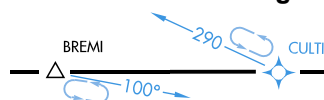
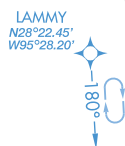
**Figure 3.211 Offroute VHF Defined Fix Holding Pattern with Extended Radial Line**



**Figure 3.212 Off Route VHF Defined Fix Holding Pattern**

### 3.7.9.3.2 RNAV-based Holding Patterns

RNAV holding patterns shall be shown with a magnetic reference bearing value and line for positioning and alignment. Holding patterns shall be charted with outbound values and an arrowhead placed on the end of the line and pointing away from the fix. Coordinate values will be shown only for holding patterns beyond the U.S. Continental Control (12 mile limit).

**Figure 3.213 RNAV Holding Patterns****Figure 3.214 RNAV Holding Pattern Beyond U.S. Continental Control**

When a NAVAID-based holding pattern and an RNAV holding pattern are established at any fix or facility, only the NAVAID-based holding pattern will be shown.

### 3.7.10 Area Chart Coverage Areas on Enroute Charts

Area Chart Coverage Areas type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within these specifications.

References:

[Appendix 51](#) - Chart Area of Coverage - Area Charts

#### 3.7.10.1 General

Area Chart coverage areas shall be clearly defined by using a dashed outline and supported by an appropriate note, positioned along and parallel to the delimiting line, at least once within every two panels.

**Figure 3.215 Area Chart Coverage Area Boundary within Enroute Charts**

Additional notes may be required for clarity, dictated by the size of the area and chart folds.

In congested areas, notes may be located outside the area's dashed outline. These notes shall be located adjacent and parallel to the dashed outline.

**(AK)** Area Chart coverage areas on Alaska enroute charts shall be identified by an appropriate note, providing the area name, title and chart number, e.g., “SEE VANCOUVER AREA CHART FOR DETAIL.”

### 3.7.10.2 Data Depicted Within the Outlined Areas

The data depicted within the outlined areas on the enroute chart which delineate the area charts charted within the contiguous United States and Alaska, except for the Washington Area and Vancouver Area, shall be skeletonized and information within the area chart shall be as such to provide transition to and from the enroute chart and the area chart. Information shall be charted and shown according to basic specifications described elsewhere within this specification.

#### 3.7.10.2.1 Data Depicted within the Outlined Area for Washington

Data depicted within the outlined area for Washington Area shall not be skeletonized and is just a composite of the Washington Area to aid end users to be able to see airspace depicted from Charts L-29, L-30, L-34 and L-36.

#### 3.7.10.2.2 (AK) Data Depicted within the Outlined Area for Vancouver

Data depicted within the outline area for Vancouver shall comply with the following:

- Airports shall not be depicted.
- NAVAIDs depicted with the Area Chart Boundary area for Vancouver (AK L-1) shall be skeletonized. NAVAID boxes will only contain the NAVAID ident. Should the NAVAID be paired with an FSS, a shadow box is used, FSS frequencies will not be listed.

**Figure 3.216 (AK) NAVAIDS Depicted within Vancouver Area Chart Boundary Area**



(Refer to AK L-1 - Vancouver Area)

- No route data will be depicted within the outlined area.
- Mode C boundary depiction is omitted within the Area Chart Boundary area for Vancouver - AK L-1.
- Airway/Route depictions are omitted within the Area Chart Boundary area for Vancouver - AK L-1.

### 3.7.10.2.3 Chart Detail within the Outline Areas

#### 3.7.10.2.3.1 Airports

Airports shall be shown by symbol and name only (conterminous U.S. only). FAR 93 (SFAR) airports shall be appropriately identified.

**3.7.10.2.3.2      NAVAIDs**

NAVAIDs upon which an airway is predicated shall be shown and identified in full. Additional NAVAIDs located within the area shall be shown:

1. to portray the formation of fixes, and;
2. when the NAVAID (including NDBs which are used as an LOM) is the initial approach fix in an instrument procedure (high or low) servicing an airport located outside of the area.

The additional NAVAIDs shall be identified in full, except in extremely congested areas, where they may be identified by the identification call letters and frequency. However, the shadow box feature, channel number, controlling FSS with associated frequencies, and operational notes shall be retained.

**3.7.10.2.3.3      Airspace Information**

The following airspace information shall be shown:

- ADIZ, CADIZ, SFRA, etc., boundaries shall be shown and identified.
- Oceanic Control Area/Channels shall be shown and identified.
- FIR boundaries shall be shown and identified.
- ARTCC boundaries and Remote Communication Air to Ground (RCAG) shall be shown and identified.
- Airspace (controlled/uncontrolled) shall be shown.
- Mode C boundaries shall be shown and identified.
- SUAs and MOAs shall be shown and identified.

**3.7.10.2.3.4      Airways/Routes**

The following Airway/Route information shall be shown:

- All airways/routes shall be shown and identified. Identification shall consist of the airway identification, bearing/radial, mileage, VOR changeover points, MCA, MRA, MAA, MOCA and MEA.
- Airways data within area chart coverage may be skeletonized when data cannot be legibly depicted.
- Military Training Routes shall be shown and identified by route designator.

### 3.7.10.2.3.5 Navigational and Procedural Information

The following Navigational and Procedural Information shall be shown:

- All compulsory reporting points shall be shown and identified. All non-compulsory reporting points, identified as having an enroute function, shall be shown and identified. This is intended to include:
  1. A change in MEA, MOCA, MAA.
  2. The designation of an MCA or MRA.
  3. DME fixes.
  4. To clarify the airway structure.
  5. To clarify an airway distance.
  6. When they service an airport located outside of the area.
- Holding patterns, when specifically identified as an enroute holding fix.

### 3.7.11 (AK) Registration Guide Marks for Wall Chart Assembly

The Alaska series of enroute charts serves dual purposes, i.e., for in-flight use and for assembly into a wall chart for planning purposes. The method of assembly may pose a problem to users, but can be overcome by the placement of registration guide marks, in the form of half airplane silhouettes are used in conspicuous positions on the charts to insure correct alignment.

Alignment of registration guide marks is critical to insure that aeronautical information matches when the charts are assembled. Care should be taken in compilation to provide for similar location of adjoining data on matching charts.

**Figure 3.217 (AK) Registration Marks**



The following chart sequence of assembly is suggested. The marginal area (that area from the border line to the trim) on charts No. 3 (north, east and south) and No. 2 (north and east) must be removed prior to registration and assembly. The entire marginal area on all charts may be removed for the most desirous results of appearance.

The registration guide marks shall be positioned far enough apart along each adjoining chart edge to afford the most accurate chart alignment possible. However, care should be exercised in the placement of registration guide marks in order to avoid overprinting.

The airplane silhouette shall be encompassed by a continuous line. The line shall not be shown along or at the joining edge or middle of the airplane symbol.

References:

**Appendix 50** - Navigational & Procedural Information

3.8 INSET CHARTS

3.8.1 General

Inset charts are defined as small scale charts appearing within a specified portion of an open water area on the basic enroute chart. These Inset Charts, therefore, bring within the scope of the chart series, coverage of those areas (providing primarily over-water routings) that lie outside the basic sheet line limits of the chart series.

Except for scale and those items described herein, content and portrayal techniques of the Inset Chart shall be the same as the Enroute Chart as described in Section 3.1 through Section 3.7.

References:

- Appendix 14 - Chart Layout - U.S. L-23
- Appendix 18 - Chart Layout - U.S. L-34

3.8.2 Border Information

3.8.2.1 Inset Chart Title

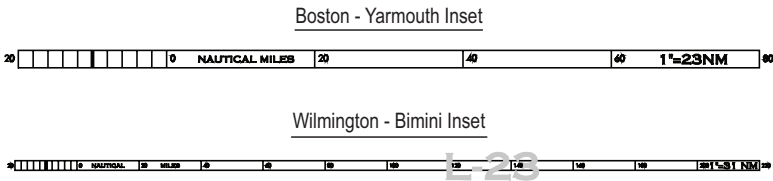
The title of each Inset Chart and scale factor shall be shown in black centered above the charted area, within the margin area specified in Section 2.1.2.2.

Figure 3.218 Inset Chart Title  
BOSTON - YARMOUTH INSET

3.8.2.2 Bar Scale

A nautical mile bar scale, similar to that contained on the Enroute Chart, shall be shown, positioned within the chart area, parallel to and adjoining the bottom (lower) border line. Bar scale shall extend the full length of the charted area.

Figure 3.219 Inset Chart Bar Scale



Refer to Section 1.2.5.2 for specific information on individual Inset Chart Scales.

3.8.2.3 Overlap Notes

Applicable overlap notes, e.g., “Overlaps Enroute Chart No. L-22”, indicating adjoining Enroute Charts, other than that upon which the Inset Chart is positioned, shall be shown, appropriately positioned between the two border lines, or when this area is not appropriate, within the marginal area of the Enroute Chart.

Figure 3.220 Inset Chart Overlap Note

Overlaps with U.S. Charts	Overlaps with Non-U.S. Charts
Overlaps Chart L-32	Overlaps CANADA & NORTH ATLANTIC Chart LO-10



#### **3.8.2.4 Airways**

Airway lead names shall be positioned 1/40" within the Inset Chart, along and parallel to the double border, and 1/40" outside and parallel to the normal enroute border line within the marginal area.

### **3.8.3 Chart Detail**

Chart detail shall be such as to provide a means of transition from the Enroute Chart to and from the Inset Chart with specific attention to the following items:

- Projection lines, ticks and values
- Vignetted shoreline
- Airports shall not be shown
- Only NAVAIDs upon which the over-water oceanic routes are predicated, or are used in establishing a reporting point or fix along the route, shall be shown, symbolized and identified in full.

#### **3.8.3.1 Airspace Information**

The following airspace information shall be shown as depicted on the Enroute Charts:

- Only airways (Victor and Colored Airways) that tie in and/or provide transition to the Oceanic Routes shall be shown.
- All over water Oceanic Routes, primary and secondary, as designated, shall be shown.
- Military Training Routes shall not be shown.

#### **3.8.3.2 Airway Data**

Airway data shall be shown for those airways depicted.

Oceanic Routes shall be identified by the appropriate and applicable name or identification, mileage, radial or bearing and minimum enroute altitude (MEA). Inbound bearings shall be shown at all fixes along the Oceanic Route.

#### **3.8.3.3 Navigation and Procedural Information**

All navigation and procedural information shall be shown; however, only those reporting points and fixes upon which the airways and Oceanic Routes are predicated shall be depicted.

Radial and/or bearing lines used in establishing these reporting points and fixes shall be shown, so as to provide positive identification.

## **3.9 CHART DETAIL IN FOREIGN AREAS**

Chart detail information will be shown as indicated below, in the appendices and when referenced to Section 3.7 - Chart Detail.

The following data is required to be shown:

### **3.9.1 Projection Lines**

Projection lines will be shown in accordance with Section 3.7.1.

### 3.9.2 Base Detail

Base detail will be shown as indicated in the following sections:

- [3.7.2.1](#) - Shoreline
- [3.7.2.2](#) - International Boundary
- [3.7.2.3](#) - (AK) United States/Russia Maritime Boundary
- [3.7.2.4](#) - Time Zones
- [3.7.2.5](#) - International Date Line

#### 3.9.2.1 Off-route Obstruction Clearance Altitude (OROCA)

OROCA will be shown as indicated in Section [3.7.2.7](#). OROCA values will only be depicted within each airspace quadrangle that crosses into U.S. Airspace. Russian Airspace will not have OROCA values depicted.

### 3.9.3 Foreign Airports

#### 3.9.3.1 Charting Criteria

All active airports published in the authoritative source database with hard surface runways of 3000' (before rounding) or longer will be charted.

#### 3.9.3.2 Airport Symbolology

All airports will be depicted with a standard airport symbol as shown below. All airports will be shown in black. Airports will be identified with the airport name followed by the ICAO identifier placed in parentheses.

**Figure 3.221 Foreign Airports**



### 3.9.4 Foreign NAVAIDs

#### 3.9.4.1 Charting Criteria

Only NAVAIDs utilized in the definition of an airway/route will be shown.

#### 3.9.4.2 NAVAID Symbolology

NAVAIDs will be symbolized as indicated in Section [3.7.4.2](#) with the exception that all NAVAIDs will be depicted in black. NAVAIDs outside the U.S. will not be designated as compulsory.

#### 3.9.4.3 NAVAID North Arrow

NAVAID north arrows will be symbolized as indicated in Section [3.7.4.4](#) with the exception that all NAVAID north arrows will be depicted in black.

#### 3.9.4.4 Compass Roses

Compass roses will be charted as indicated in Section [3.7.4.5](#) with the exception that all compass roses will be depicted in black.

### 3.9.4.5 NAVAID Identification Boxes

NAVAID identification boxes will be symbolized as indicated in Section 3.7.4.6 with the exception that all NAVAID identification boxes will be depicted in black.

### 3.9.4.6 NAVAID Types

NAVAIDs will be symbolized as indicated in Section 3.7.4.7 with the exception that all NAVAIDs will be depicted in black. ILS Components will not be shown.

## 3.9.5 Foreign Airspace Information

All foreign airspace will be shown 10% black. The FIR/CTA boundary line will be used to define the extent of U.S. aeronautical data, except for Cleveland ARTCC (ZOB) airspace. ZOB airspace will be shown beyond the FIR/CTA boundary line to the ARTCC boundary line.

### 3.9.5.1 Airspace Notes

#### 3.9.5.1.1 Foreign Airspace Note

The following masked note will be enclosed with a box and will be charted once between external chart folds.

**Figure 3.222 Foreign Airspace Note**

NOTE: Limited chart information provided outside U.S. airspace.  
Refer to DoD (NGA) or foreign charts and flight information  
publications outside U.S. airspace.

#### 3.9.5.1.2 Foreign Airspace Notes – HAVANA FIR

The following note will be positioned near the Havana FIR boundary.

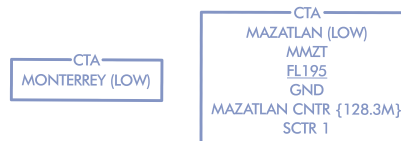
**Figure 3.223 Havana FIR Note**

CAUTION: ACCURACY OF AIR TRAFFIC  
SERVICES RELATIVE TO HAVANA FIR CANNOT  
BE CONFIRMED CONSULT NOTAMS

#### 3.9.5.1.3 Foreign General Air Traffic Service (ATS) Area Information

Foreign controlled facility ATS information shall include as depicted below and where available: type of service, identification name, ICAO ident, vertical limits of control when designated with the upper and lower limits separated by a line, the call sign, and all applicable frequencies paired to the appropriate service.

**Figure 3.224 Foreign General Air Traffic Service (ATS) Area Information**



### 3.9.5.2 CTA/FIR Boundaries

CTA and/or FIR boundaries will be symbolized as indicated in Section 3.7.7.3.12. Only CTA/FIR boundaries that are coincident with U.S. CTA/FIR boundaries will be shown and identified.

### 3.9.5.3 ARTCC and ACC Boundaries

U.S. Air Route Traffic Control Centers (ARTCC) and Canadian Area Control Centers (ACC) boundaries will be symbolized as indicated in Section 3.7.7.3.13. Only ACC boundaries that touch the U.S. ARTCC boundaries will be shown and identified.

### 3.9.6 Foreign Airways/Routes

The depiction of Airways/Routes outside of the U.S. boundary will be simplified as described below. Refer to Section 3.7.8.3 for expanded guidance bearing in mind that the items in this section will be the only items shown.

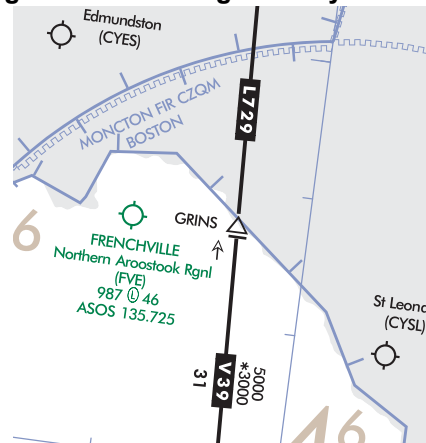
All foreign airways/routes that are published in the authoritative source database will be shown.

All airway route centerlines and identification charted in non-U.S. airspace will be shown in black.

Bearing and mileage values will only be shown when they are used to form the make-up of a U.S. fix.

A “T” symbol will be shown along every airway/route at the FIR/CTA boundary line (on the U.S. side of the boundary).

**Figure 3.225 Foreign Airways/Routes**



### 3.9.7 Foreign Navigational and Procedural Information

#### 3.9.7.1 Foreign Fixes/Waypoints

All fixes/waypoints which are a part of a charted non-U.S. airway/route published in the authoritative source database will be shown and identified by name. Fixes/waypoints will be symbolized as indicated in Section 3.7.9.1 with the exception that all fixes/waypoints will be depicted in black. Fixes/waypoints outside the U.S. will not be designated as compulsory.

### 3.10 AREA CHARTS - U.S. (A-1 & A-2) AND ALASKA (AK)

Area Charts shall be prepared as required and specified.

Approval must be obtained from the appropriate authority prior to:

- The initial production of any new Area Chart.
- A change to the number appearing on an approved Area Chart
- Changing the scale or coverage of an existing chart.

The Area Charts shall be produced and distributed as an integral part of the basic IFR Enroute Chart Series.

Area Chart type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within these specifications.

References:

[Appendix 60](#) - Terrain Contours - Area Charts

### 3.10.1 Chart Detail

Except for scale and those items described herein, content and portrayal techniques of the Area Chart shall be the same as the Enroute Chart as described in Section 3.1 through Section 3.7. The following items, however, shall not be shown: Time Zones, Altimeter Settings and Cruising Altitude Diagrams.

#### 3.10.1.1 Projection Lines

Projection lines and ticks shown shall generally be in accordance with that specified for the enroute chart, but shall be adequately supplemented to identify the latitude and longitude within the charted area, i.e., at least two lines of longitude. See Section 3.7.1.

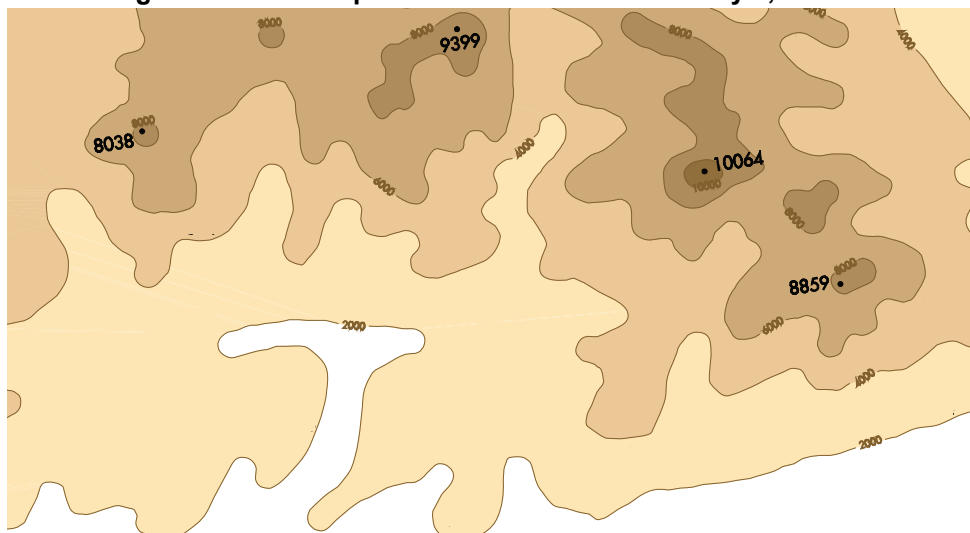
### 3.10.2 Terrain Contours on Area Charts

References:

[Appendix 60](#) - Terrain Contours - Area Charts

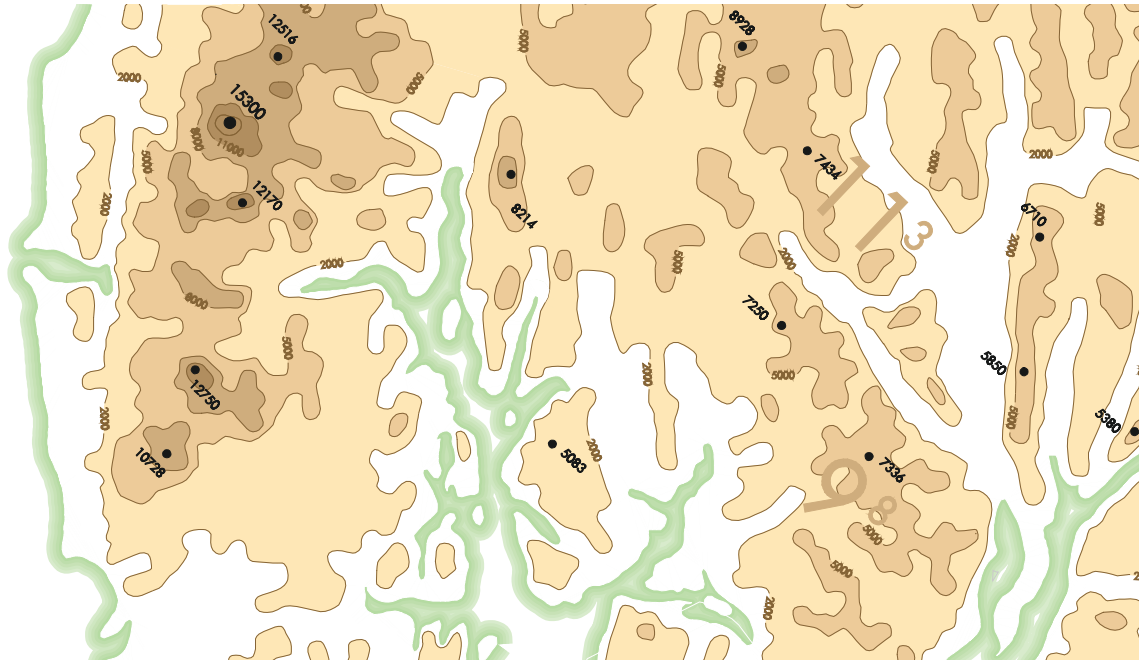
The initial contour value (lowest elevation) depicted will be at least 1000', but not more than 2000', above the airport elevation. The initial contour value may be less than 1000' above the airport elevation only if needed to depict a rise in the terrain close to the airport. Subsequent contour values will be depicted at whole 1000' increment (2000'/4000' etc., NOT 2500'/4500', etc.). Contour intervals, after the initial contour value, will be constant and at the most suitable intervals, 2000' or 3000', to adequately depict the rising terrain.

**Figure 3.226 Example No. 1 - Contour Lines every 2,000 feet**



Contour lines and contour values will be shown with a brown tint that is darker than the darkest tint used for the contour layers. Contour lines will be broken to depict the contour value. Contour layers will be shown in brown tints (no more than four), with consecutively darker tints used for consecutively higher contour layers. When more than 4 tinted contour layers are needed to depict the terrain, the fifth and subsequent layers will contain the same brown tint, but will be separated by contour lines and values.

**Figure 3.227 Example No. 2 - Contour Lines every 3,000 feet**



Spot Elevations and the highest point on the area chart will be shown in solid black and differentiated as they are currently on visual and IAP charts.

### 3.10.2.1 Terrain Contour Note

The following boxed note will be placed in or near each Area Chart that contains contours.

**Figure 3.228 Terrain Contour Note**

NOTE: TERRAIN CONTOURS HAVE BEEN  
ADDED TO THOSE AREA CHARTS WHERE  
THE TERRAIN ON THE CHART IS 1000 FOOT  
OR GREATER THAN THE ELEVATION  
OF THE PRIMARY AIRPORT

### 3.10.3 Airspace Notes

The following boxed note will be placed in or near each Area Chart that contains Uncontrolled Airspace.

**Figure 3.229 Uncontrolled Airspace Note**

UNCONTROLLED AIRSPACE BOUNDARIES ARE  
DEPICTED WITH A SOLID BROWN LINE AND A 0.125"  
WIDE SHADED BAND. THE SHADED SIDE  
REPRESENTS THE UNCONTROLLED SIDE.

### 3.11 AREA CHART (A-1 & A-2)

Area Chart type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within these specifications.

References:

- [Appendix 51](#) - Chart Area of Coverage - Area Charts
- [Appendix 52](#) - Chart Layout - Area Chart A-1
- [Appendix 53](#) - Chart Layout - Area Chart A-2
- [Appendix 54](#) - Title Panel Information - Area Charts
- [Appendix 55](#) - Chart Identification & Title Area - Area Charts
- [Appendix 56](#) - Chart Index - Area Charts
- [Appendix 57](#) - Margin Information - Bar Scales - Area Charts
- [Appendix 58](#) - Military Training Routes Tabulation - Area Charts
- [Appendix 59](#) - SUA & MOA Tabulation - Area Charts

#### 3.11.1 Title Panel

The title panel data shall be positioned to read perpendicular to the side trim in the extreme left panel of what will be referred to as the front or title panel of the charts. This panel shall be printed in black, unless otherwise noted, and shall serve as the outside “fold” or title panel on the chart (sheet) when completely folded.

References:

- [Appendix 54](#) - Title Panel Information - Area Charts
- [Appendix 55](#) - Chart Identification & Title Area - Area Charts

##### 3.11.1.1 **Area Chart Distinctive Header**

A series of “A’s” and alternating blank spaces of equal size shall be positioned along the top of the panel as specified in [Appendix 55](#).



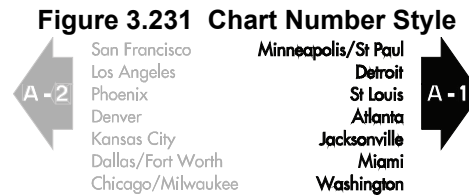
##### 3.11.1.2 **Foreign Airspace Warning Note**

The Foreign Airspace Note as is given in Section [3.3.1](#) shall be shown positioned as specified in the Appendices.

### 3.11.1.3 Chart Identification Area

#### 3.11.1.3.1 Chart Numbers

Area charts shall be dual identified by the letter “A” and number, e.g., A-1 and A-2. The letter and number combined shall be termed the chart number. Chart numbers shall be positioned on both sides (left and right) of the panel within the arrowhead, using white or open numbers, providing positive identification of charts appearing on both sides of the sheet.



#### 3.11.1.3.2 Arrowheads

Odd numbered arrowhead identifiers (chart numbers) shall be positioned on this panel, in the upper right corner.

Even numbered arrowhead identifiers (chart numbers) shall be positioned on this panel, in the upper left corner.

An arrowhead shall be shown, indicating in which direction (left or right) the chart should be opened.

#### 3.11.1.3.3 Area Chart Names

The names of each individual Area Chart shall be positioned to the right/left of the arrowhead staff, in order of appearance from left to right when the chart is fully opened, starting at the top edge of the arrowhead.

### 3.11.1.4 Title Area

#### 3.11.1.4.1 Chart Title

The title shall be depicted as indicated in [Appendix 55](#).

**Figure 3.232 IFR Area Chart Title Format**

UNITED STATES GOVERNMENT  
FLIGHT INFORMATION PUBLICATION  
IFR AREA CHARTS - U.S.

#### 3.11.1.4.2 Altitude Note

The Altitude Note, as depicted in Section [3.3.3.2](#), shall be shown and placed centered and below the Chart Title.

#### 3.11.1.4.3 Effective Dates and Times Note

The effective dates and times note, as depicted in Section [3.3.3.3](#), shall be shown and placed centered and below the Altitude Note.



**3.11.1.4.4 NOTAM Note**

A NOTAM note, as depicted in Section [3.3.3.4](#), shall be centered below the effective dates and times note.

**3.11.1.4.5 Legend Reference Note**

A legend reference note shall be shown below the NOTAM Note.

**Figure 3.233 Legend Information**

Consult ENROUTE CHARTS for LEGEND Information

**3.11.1.4.6 Publishers Credit Note**

The publishing agency credit note or seal, identical to that depicted from [3.3.3.5](#), shall be shown below the Legend Reference Note.

**3.11.1.4.7 Corrections, Comments, and/or Procurement**

The corrections, comments, and/or procurement information as depicted in Section [3.3.3.6](#), shall be shown centered and below the Publishers Credit Note.

**3.11.1.4.8 OROCA Note**

The OROCA Note, as depicted in Section [3.7.2.7.1](#), shall be shown and placed centered and at the bottom of the title panel.

**3.11.1.5 Chart Identification Labels**

This is a system of chart identification to facilitate a rapid identification of individual charts by number.

**Figure 3.234 Chart Identification Labels**

23 SEP 2010  
UNITED STATES

**3.11.1.5.1 Chart Numbers**

The odd numbered chart, i.e., A-1, shall be identified by a tab straddling the center fold. See [Appendix 28](#).

The tab shall be identified by the chart numbers of the charts (sheets) appearing on the front and back; e.g., A-1, A-2. The odd numbered chart identification shall be shown first, and the even numbered chart identification positioned directly below, centered within the tab, and 1/20" from the lower limits of the tab using white or open numbers on a solid background.

References:

[Appendix 28](#) - Chart Identification Labels - U.S., Alaska & Area Charts

**3.11.1.5.2 Chart Effective Date**

The effective date of the chart shall be shown and consist of the day, month (abbreviated) and year.

### 3.11.1.5.3 Area of Coverage

The area of coverage, i.e., “UNITED STATES”, shall be shown. The area chart identifier shall be positioned centered below the chart effective date.

### 3.11.1.6 FAA Logo/Banner

The FAA logo/banner shall be shown directly below the chart identification label.

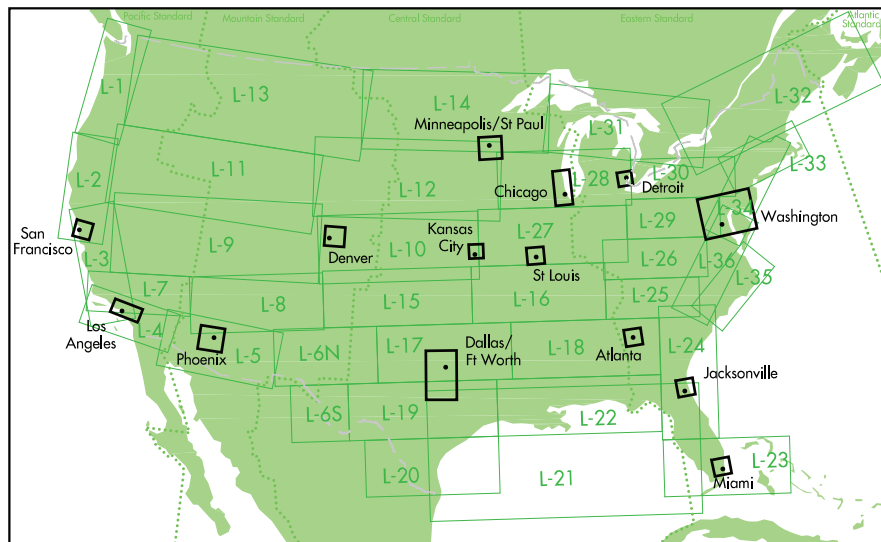
### 3.11.1.7 Chart Index

A chart index showing the complete Low Enroute Chart coverage of the conterminous United States and tailored to depict the Area Chart coverage of individual area charts, shall be positioned beneath the FAA Logo/Banner.

The area of coverage shall be consistent with that specified in Section 1.2.4.1 and Section 1.2.4.2.

Layout and format shall generally conform to that shown in the Appendices. The index chart shall be contained within a .012" border line, approximately 2.75" (high) x 4.6" (wide).

**Figure 3.235 Area Chart Indexing**



References:

[Appendix 56](#) - Chart Index - Area Charts

### 3.11.1.7.1 Land and Water Areas

Land area shall be shown and symbolized as described in Section 3.3.6.1

### 3.11.1.7.2 International Boundaries

International boundaries shall be shown as described in Section 3.3.6.2.

### 3.11.1.7.3 Low Altitude Chart Coverage

The limits of each low altitude chart shall be depicted by a green line. Each chart shall be identified, in green, by a chart number. Chart numbers shall be centrally positioned within the limits of each chart.

#### 3.11.1.7.4 Depiction of Area Chart Coverage & Cities

The chart index shall be tailored for each individual sheet by indicating the particular limits of both the front and the back charts in a black line. Area charts shall be identified by name adjacent to the location of the city, depicted by a black symbol.

**Figure 3.236 Area Chart Listing**



#### 3.11.1.7.5 Time Zone Boundaries and International Dateline

Time zone boundaries and the International Dateline shall be shown, symbolized and identified as specified in Section [3.3.6.6](#).

#### 3.11.1.8 Interagency Air Committee (IAC) Credit Note

The Interagency Air Committee (IAC) credit note as described in Section [3.3.7](#) shall be shown below the chart index.

#### 3.11.1.9 Bar Code

Bar code information and associated text as described in Section [3.3.9](#), and shall be positioned at the bottom of the title panel. Refer to [Appendix 55](#) for specifications on exact placement of Bar Code within Title Panel of Area Chart A-1/A-2.

### 3.11.2 Tabulated Data Area

Military Training Routes, Special Use Airspace and Military Operations Areas tabulations are included where space permits on the back side of the chart with the data and layout as specified in the references listed below. Airport Locations tabulation is omitted.

References:

[Appendix 53](#) - Chart Layout - Area Chart A-2

#### 3.11.2.1 Military Training Routes (MTR) Tabulation

A tabulation of the appropriate and applicable all-inclusive altitudes for each military training route shown on the chart shall be provided, and consist of the following information:

- Tables will be two columns wide with each column made up of three sub-columns. Sub-column headings shall be “NUMBER,” “ALTITUDE RANGE” and “AREA.”

**Figure 3.237 Military Training Routes Tabulation**  
**MILITARY TRAINING ROUTES**

NUMBER	ALTITUDE RANGE	AREA	NUMBER	ALTITUDE RANGE	AREA
IR-18	5000 TO 7000	Jacksonville	VR-163	500 AGL TO 3000	Dallas/Fort Worth
IR-32	5000 TO 7000	Jacksonville	VR-223	500 AGL TO 9000	Phoenix
IR-33	500 AGL TO 6000	Jacksonville	VR-231	100 AGL TO 7000	Phoenix
IR-103	100 AGL TO 5000	Dallas/Fort Worth	VR-239	300 AGL TO 9500	Phoenix
IR-105	100 AGL TO 7000	Dallas/Fort Worth	VR-241	300 AGL TO 9500	Phoenix
IR-139	100 AGL TO 6000	Dallas/Fort Worth	VR-242	300 AGL TO 9000	Phoenix
IR-614	500 AGL TO 8000	St Louis	VR-243	300 AGL TO 9500	Phoenix
IR-207	200 AGL TO 15000	San Francisco	VR-244	300 AGL TO 9000	Phoenix
IR-415	300 AGL TO 8000	Denver	VR-245	300 AGL TO 9000	Phoenix
IR-714	SURFACE TO 6000	Washington	VR-267	300 AGL TO 6000	Phoenix
IR-720	5000 TO 8000	Washington	VR-268	300 AGL TO 6000	Phoenix
IR-760	SURFACE TO 6000	Washington	VR-269	300 AGL TO 6000	Phoenix
VR-104	300 AGL TO 10000	Dallas/Fort Worth	VR-704	100 AGL TO 11000	Washington
VR-118	500 AGL TO 15500	Dallas/Fort Worth	VR-705	100 AGL TO 10000	Washington
VR-142	500 AGL TO 4000	Dallas/Fort Worth	VR-708	100 AGL TO 5500	Washington
VR-158	500 AGL TO 5000	Dallas/Fort Worth			

- As necessary due to space considerations on the panel, the MTR tabulation may be continued or carried over to an open area within the confines of the chart.
- The title “MILITARY TRAINING ROUTES” shall be positioned above the tabulation.
- MTRs shall be tabulated numerically by the route designator, e.g., IR-123, followed by the appropriate and applicable all-inclusive (composite) altitude range for each route.

#### 3.11.2.1.1 Number Column

The first column, titled “NUMBER”, shall be tabulated numerically by the route designator e.g., IR-203, VR-331, etc.

#### 3.11.2.1.2 Altitude Range Column

The second column, title “ALTITUDE RANGE”, shall list the corresponding and all-inclusive (composite) altitude range for each route geographically depicted on the chart.

#### 3.11.2.1.3 Area Column

The third column, titled “AREA”, shall list the name of the Area Chart where the MTR is depicted.

### 3.11.2.2 Special Use Airspace (SUA) and Military Operations Area (MOA) Tabulation Legend

The following SUA and MOA Tabulation Legend shall be positioned above the Special Use Airspace Tabulation on the Area Chart.

**Figure 3.238 SUA and MOA Tabulation Legend**

ARTCC three letter idents: Albuquerque ZAB, Atlanta ZTL, Boston ZBW, Chicago ZAU, Cleveland ZOB, Denver ZDV, Fort Worth ZFW, Houston ZHU, Indianapolis ZID, Jacksonville ZJX, Kansas City ZKC, Los Angeles ZLA, Memphis ZME, Miami ZMA, Minneapolis ZMP, New York ZNY, Oakland ZOA, Salt Lake City ZLC, Seattle ZSE, Washington ZDC

U.S.: P - PROHIBITED, R - RESTRICTED, W - WARNING, A - ALERT AREAS

All altitudes are MSL unless otherwise indicated

FL - Flight Level

Time - Hours shown are UTC unless otherwise indicated

Cont - Continuous: 24 hours a day, 7 days a week

‡

- During periods of Daylight Saving Time (DT)

effective hours will be one hour earlier than shown.

NOTAM - Use of this term in Restricted Areas indicates FAA And

DoD NOTAM systems. Use of this term in all other

Special Use areas indicates the DoD NOTAM system.

### 3.11.2.3 Special Use Airspace (SUA) Tabulation

A tabulation of the appropriate and applicable data for all SUA depicted in each area chart shall be shown. The SUA Tabulation shall be organized by Area Chart and depicted in alpha order by Area Chart title. The SUA tabulation will be presented as one table with the same column and information layout used on Low Altitude enroute charts with the addition of a row, spanning the width of the table, with the name of Area Chart title centered in the row. See Section 3.5.3 for detailed explanation for the columns.

**Figure 3.239 SUA Table - Area Chart**

SPECIAL USE AIRSPACE				
NUMBER	EFFECTIVE ALTITUDE	TIMES USED, UTC	CONTROLLING AGENCY A/G CALL	PANEL
CHICAGO				
R-6903	SFC TO FL 450	INTMT BY NOTAM	ZMP	J
DALLAS				
P-49	SFC TO 2000	CONT	NO A/G	K
JACKSONVILLE				
P-50	SFC TO BUT NOT INCL 3000	CONT	NO A/G	C
R-2904A	SFC TO BUT NOT INCL 1800	APR - AUG 1300 - 2200Z† DAILY; SEP - MAR 1300 - 2200Z† SAT - SUN; *1	JACKSONVILLE TRACON	C
W-135	SFC TO 1200	INTMT BY NOTAM	ZJX	C
LOS ANGELES				
R-2519	SFC TO UNLTD	CONT	ZLA	G
W-289E,W	SFC TO UNLTD	INTMT BY NOTAM	ZLA	G
MIAMI				
A-291A,C	SFC TO 2500	1100 - 0500Z† DAILY	NO A/G	C
A-291B,D	SFC TO 3900	1100 - 0500Z† DAILY	NO A/G	C
PHOENIX				
R-2301E	SFC TO FL 800	1330 - 0700Z DAILY; *1	ZAB	H
R-2310C	17000 TO 35000	INTMT BY NOTAM	ZAB	H
A-231	500 AGL TO 6500	CONT	NO A/G	H
SAN FRANCISCO				
A-682	N OF TRAVIS AFB RUNWAYS 21L/03R EXTENDED CENTERLINES SFC TO 6000' S OF TRAVIS AFB RUNWAYS 21L/03R EXTENDED CENTERLINES SFC TO 3000' SFC TO 3000	1600 - 0500Z† MON - FRI	NO A/G	G
WASHINGTON				
P-40	SFC TO BUT NOT INCL 5000	CONT	NO A/G	D
P-56	SFC TO 18000	CONT	NO A/G	D
P-73	SFC TO BUT NOT INCL 1500	CONT	NO A/G	D
R-4001A	SFC TO UNLTD	SFC TO UNLTD 1200 - 0500Z†; SFC TO 10000 0500 - 1200Z†; HIGHER ALTITUDES BY NOTAM	ZDC	E
R-4001B	SFC TO 10000	INTMT BY NOTAM	ZDC	E
R-5802D	17000 TO BUT NOT INCL FL 220	FEB 15 - MAY 10 1300 - 0400Z† SAT 1300 - 1700Z† SUN; SEP 1 - DEC 15 1300 - 0400Z† SAT 1300 - 1700Z† SUN; MAY 11 - AUG 31 1300 - 0500Z† SAT 1300 - 0100Z† SUN - FRI; *1	ZNY	E
W-386	SFC TO UNLTD	INTMT BY NOTAM	ZDC	F
A-220	SFC TO 4500	1300 - 0300Z† DAILY	NO A/G	F

Alert Areas do not extend into Class A, B, C and D airspace, or Class E airport surface areas.

### 3.11.2.4 Military Operations Areas (MOA) Tabulation

A tabulation of the appropriate and applicable data for all military training routes depicted in each area chart shall be shown. The MOA tabulation will be presented as one table with the same column and information layout used on Low Altitude enroute charts with the addition a row, spanning the width of the table, with the name of Area Chart title centered. See Section 3.5.4 for detailed explanation for the columns.

**Figure 3.240 MOA Table - Area Chart**

MILITARY OPERATIONS AREAS				
NUMBER	EFFECTIVE ALTITUDE	TIMES USED, UTC	CONTROLLING AGENCY A/G CALL	PANEL
CHICAGO				
MINNOW	10000 *2	INTMT BY NOTAM NML DURING DALGT HRS	ZMP	J
JACKSONVILLE				
MAYPORT HIGH	3000 *2	INTMT BY NOTAM 2300 - 0300Z; NOT TO EXCEED 8 ONE-HR BLOCK TIMES MONTHLY	ZJX	C
MAYPORT LOW	500 TO BUT NOT INCL 3000	INTMT BY NOTAM 1300 - 0300Z; NOT TO EXCEED 30 ONE-HR BLOCK TIMES MONTHLY	JACKSONVILLE TRACON	C
PHOENIX				
GLADDEN 1	7000 OR 5000 AGL WHICHEVER IS HIGHER TO BUT NOT INCL FL 180	1300 - 0200Z MON - FRI; *1	ZAB	H
OUTLAW	8000 OR 3000 AGL WHICHEVER IS HIGHER *2, EXCLD R-2310A B AND C WHEN ACT	1400 - 0100Z MON - FRI; 0100 - 0500Z MON - FRI BY NOTAM; INTMT SAT-SUN BY NOTAM	ZAB	H
SELLS 1	10000 *2	1300 - 0200Z MON - FRI; *1	ZAB	H
WASHINGTON				
DEMO 1	500 TO 5000	INTMT BY NOTAM	POTOMAC TRACON	D
DEMO 2	10000 TO 15000	INTMT BY NOTAM	POTOMAC TRACON	D
DEMO 3	5001 TO 15000	INTMT BY NOTAM	POTOMAC TRACON	D
HILL	SFC TO 3000	SR - SS DAILY	POTOMAC APP	D

\*1 Other Times By NOTAM  
 \*2 To But Not Including FL 180  
 \*4 Whichever is Higher, To But Not Including FL 180  
 \*8 To But Not Including 18000

### 3.11.3 Margin Information

Margin information shall be positioned between the neatline of the chart and the trim edge, but excluding title and legend panel information.

#### 3.11.3.1 Bar Scales

A nautical mile bar scale, similar to that contained on the enroute chart, shall be shown for all individual Area Charts, positioned outside the chart area, parallel to and .2" from the border line, as illustrated in the Appendices. Bar scales shall be compatible with the limits of individual area chart coverage.

Exception to the enroute Chart Bar Scales shall be that the mile division breakdown of the scale shall be shown and labeled on both sides of the bar scale.

Refer to 1.2.5.3 for specific information on individual Area Chart Scales.

#### 3.11.3.2 Area Chart Title

Each individual area chart shall be identified by area name, the scale factor, e.g., 1" = 10 NM and, in parenthesis, the enroute chart number(s) on which the area is located. The title data shall be shown on one line, centrally positioned adjacent and above the top border line, or the bar scale, of each chart.

**Figure 3.241 Area Chart Title**

MIAMI 1" = 6 NM (On Chart L-23)

### **3.11.3.3 Panel Fold Information**

A two-fold system, whereby every two panels of the chart area is identified by a letter identifier and by the name of the Area Chart contained therein. These names will enable the user to readily locate the specific area chart desired.

These panel/fold identifications shall be positioned along both the top and bottom trim edges of all charts, on both sides of each two panels within each two-panel fold of the chart, as indicated in the Appendices.

The letters A, B, C, D, E and F shall be used as the letter identifier on odd numbered charts (front side) and the letters G, H, I, J, K and L shall be used as the letter identifier on even numbered charts (reverse side). Letter identifiers shall be positioned .1" down (up) from the trim edge and 3/20" to the right of the first, third, fifth and seventh folds and also 3/20" to the left of the third, fifth and seventh folds and the right trim edge of all charts.

The Area Chart name shall be positioned 3/20" to the left/right of each letter identifier, within the appropriate panel.

The Area Chart name and letter identifier shall be aligned at the top and bottom edges of the chart.

### **3.11.3.4 Reverse Side - Even Numbered Charts**

The following data shall be positioned to read perpendicular to the side trim in the extreme left panel of the reverse chart (even numbered chart). This panel shall be printed in black, unless otherwise noted, and shall serve as the reverse or inside "fold" or panel on the chart (sheet) when completely folded. Maximum width of the data appearing on this panel shall be 4.6".

References:

[Appendix 53](#) - Chart Layout - Area Chart A-2

### **3.11.3.5 Airway/Route Leads**

Airway/route leads shall be positioned outside the chart area immediately adjacent to the border line in their appropriate color.

## **3.12 CHART L-21 - OFFSHORE NAVIGATIONAL CHART**

Offshore Navigational Chart type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within these specifications.

The Offshore Navigational Charts is a skeletonized chart depicting the airspace of the Gulf of Mexico.

References:

[Appendix 61](#) - Title Panel Layout - U.S. L-21

### 3.12.1 Title Panel Information

#### 3.12.1.1 L-21 Offshore Navigation Only Note

The L-21 Offshore Navigation Note will be placed centered above the OROCA note.

**Figure 3.242 Offshore Navigation Note**

L-21 is intended for offshore navigation only.  
Detailed onshore information has been intentionally omitted.  
Refer to charts L-19/20, L-22, L-23/24 for detailed onshore information.

References:

[Appendix 61](#) - Title Panel Layout - U.S. L-21

### 3.12.2 Margin Information

#### 3.12.2.1 Bar Scales

Bar scales for Chart L-21 shall be subdivided into 20NM increments. The first 20NM increment shall be subdivided into 2NM increments.

### 3.12.3 Chart Detail

Chart detail shall be such as to provide a means of transition from the enroute chart to and from the Offshore Navigation Chart.

#### 3.12.3.1 Airports

##### 3.12.3.1.1 Charting Criteria

Airports shall be symbolized as either military, civil or civil-military airports. Seaplane Bases shall be symbolized. See Section [3.7.3.2](#).

##### 3.12.3.1.2 Airport Names

Airports within the contiguous United States shall be identified by airport name. For public, private, military airports and seaplane bases, the FAA airport identifier will be placed in parentheses immediately after the airport name.

Airports outside the contiguous United States shall be identified by airport name and ICAO identifier placed in parentheses immediately after the airport name.

**Figure 3.243 Airports Naming**



Those airports cited in FAR Part 93 identified as having special air traffic rules governing operations to and from the airport shall be additionally identified by enclosing the airport name within a .010" lineweight box. The color will be the same as the airport name.

**Figure 3.244 Airports Under SFAR**





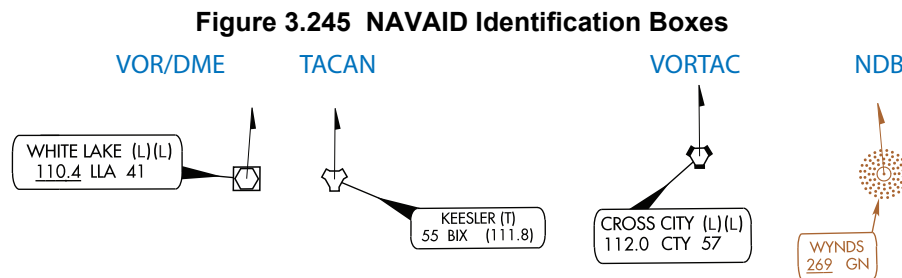
### 3.12.3.2 NAVAIDs

#### 3.12.3.2.1 Charting Criteria

Only NAVAIDs upon which the over water oceanic routes are predicated, or are used in establishing a reporting point or fix along the route, shall be shown, symbolized and identified in full.

#### 3.12.3.2.2 NAVAID Identification Boxes Criteria

Arrangement of NAVAID data within the box shall be in the following sequence: NAVAID Name, SSV(s) as appropriate, Frequency, Call or Identification Letters, and Channel Numbers.



#### 3.12.3.3 Airspace Information

Class B and Class C airspace information shall be shown. Mode C information shall be shown. All SUAs and MOAs airspace information shall be shown.

References:

[3.7.7.3.2](#) - Class B Airspace

[3.7.7.3.3](#) - Class C Airspace

[3.7.7.3.7](#) - Mode C Required Areas

[3.7.7.3.9](#) - Special Use Airspace (SUA) and Military Operation Areas (MOA)

#### 3.12.3.4 Airways/Routes

Only airways/routes (Victor Airways, RNAV T Routes and Colored Airways) that tie in and/or provide transition to the Oceanic Routes or RNAV Q Routes shall be shown.

All over-water Oceanic Routes, primary and secondary, as designated, shall be shown.

Military Training Routes shall not be shown.

### 3.13 (AK) L-2 - LOW ALTITUDE ROUTE SELECTION CHART

#### 3.13.1 General

A route selection chart shall be provided, positioned on chart L-2 as illustrated in [Appendix 20](#).

Alaska Low Altitude Route Selection Chart type and symbol specifications shall be shown as indicated in the appendices except as otherwise indicated within these specifications.

All type shall be 6 point. Unless otherwise specified, all symbols shall be as specified for the IFR Enroute Chart series, except they shall be reduced 25%.

The titles shall be shown, positioned above and below the chart in the same manner as provided for panel identifier. Type size shall be 12 point (C/L).

References:

[Appendix 20](#) - Chart Layout - Alaska L-2

### **3.13.2 Chart Detail**

#### **3.13.2.1 Base Detail**

##### **3.13.2.1.1 Land and Water Areas**

Only major bodies of water shall be shown using the shoreline symbology as shown in Section [3.7.2.1](#).

##### **3.13.2.1.2 International Boundaries**

International Boundaries shall be shown as described in Section [3.7.2.2](#).

##### **3.13.2.1.3 U.S. - Russia Maritime Boundary**

The U.S. – Russia Maritime Boundary be shown as described in Section [3.7.2.3](#).

#### **3.13.2.2 Radio Aids to Navigation (NAVAIDs)**

All NAVAIDs upon which airways or routes are predicated, shall be shown, symbolized and identified by name. Additional NAVAIDs may be shown when specifically requested.

NAVAIDS (UHF/VHF, black; LF/MF, brown).

#### **3.13.2.3 Airways/Routes**

Airways and Routes consisting of symbolization, identification, mileages and MEAs shall be shown.

VHF/UHF airways centerline – black.

LF/MF airway centerline – brown.

#### **3.13.2.4 Navigational and Procedural Information**

##### **3.13.2.4.1 Compulsory and Non-compulsory Reporting Points**

All fixes with that are compulsory reporting points which are a part of the airway/route system shall be shown and identified by name.

Fixes that are non-compulsory reporting points shall be shown only to clarify the airway/route structure or to provide a reference point where airways/routes begin or terminate at places other than NAVAIDs.

#### **3.13.2.5 Operational and/or Information Notes**

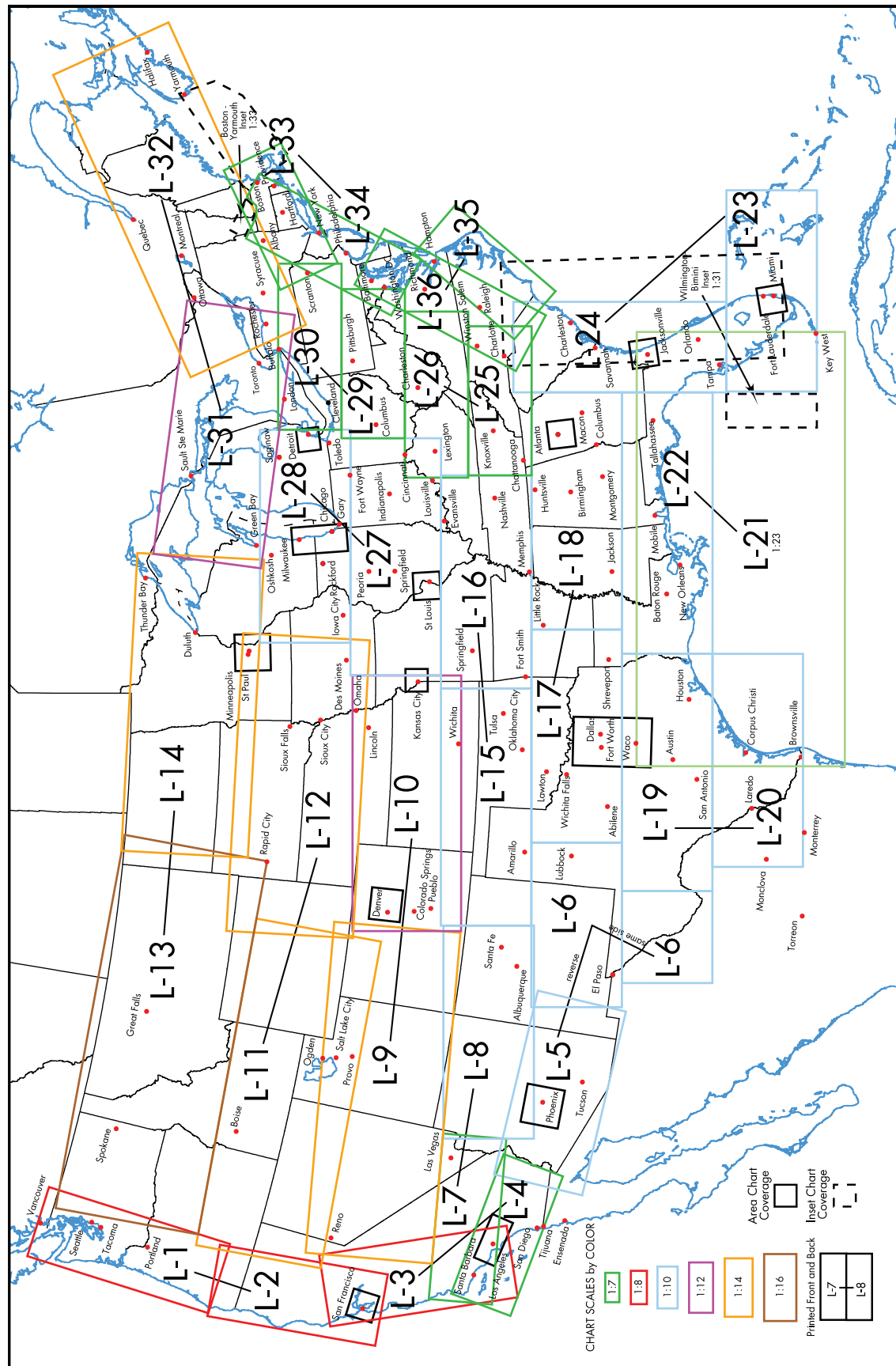
Operational and/or information notes, as may be required, shall be shown. Type size may vary depending on the importance of the note and space limitation.

# APPENDIX 1

## LOW ENROUTE CHART AREA OF COVERAGE – U.S.

### IFR ENROUTE LOW ALTITUDE CHARTS

### UNITED STATES CHART INDEX

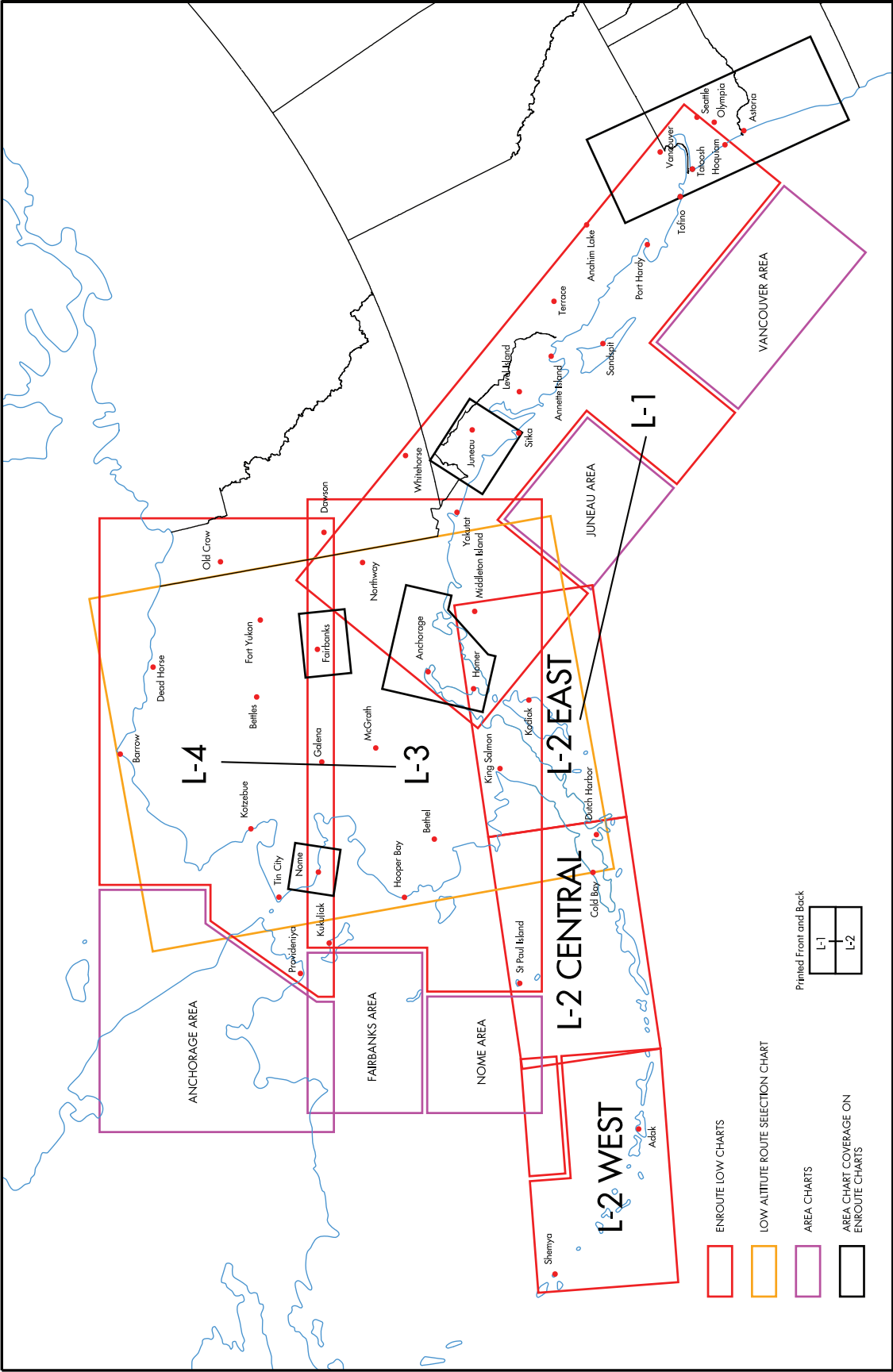


APPENDIX 2

ALASKA LOW ENROUTE CHART AREA OF COVERAGE

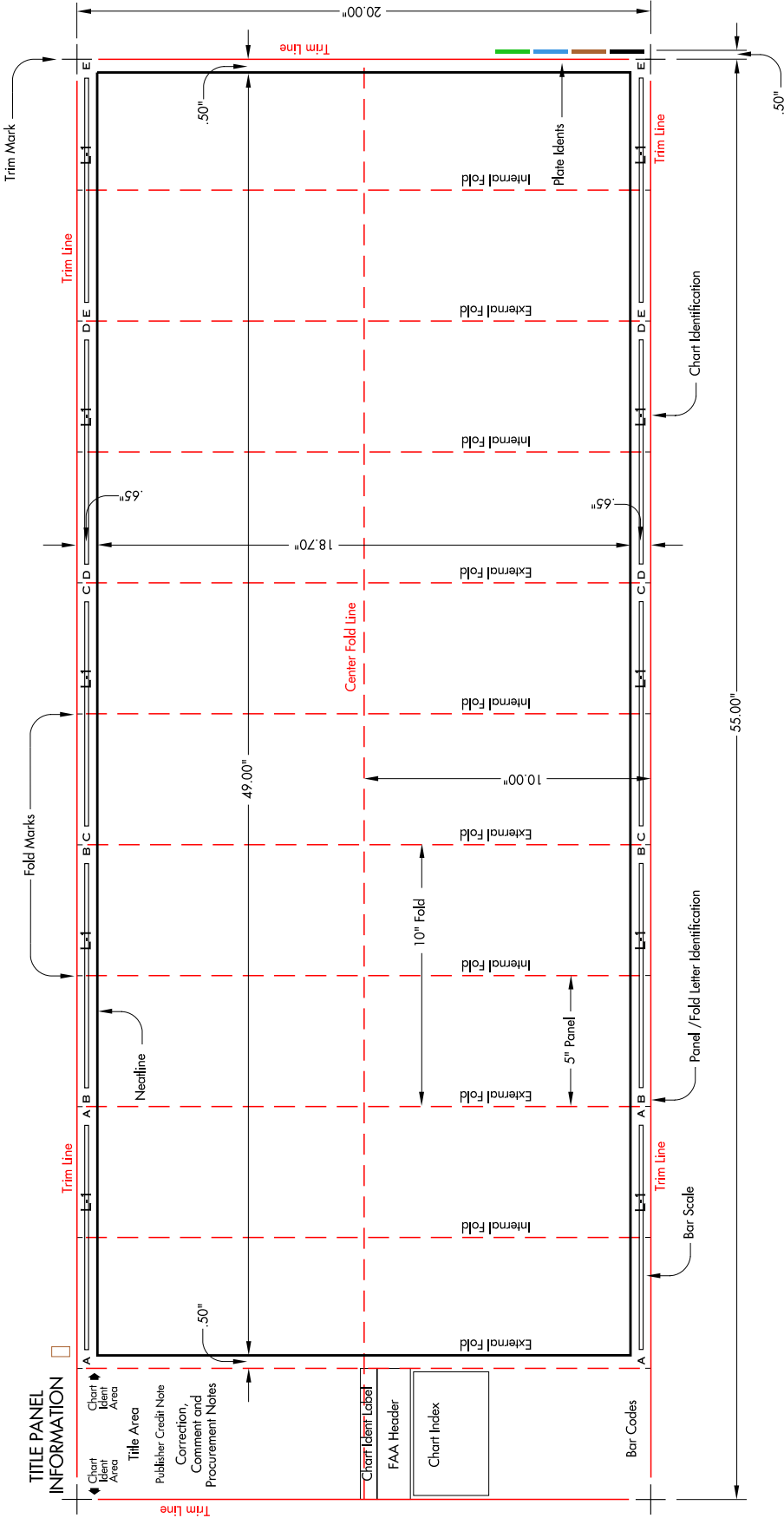
IFR ENROUTE LOW ALTITUDE CHARTS

ALASKA CHART INDEX



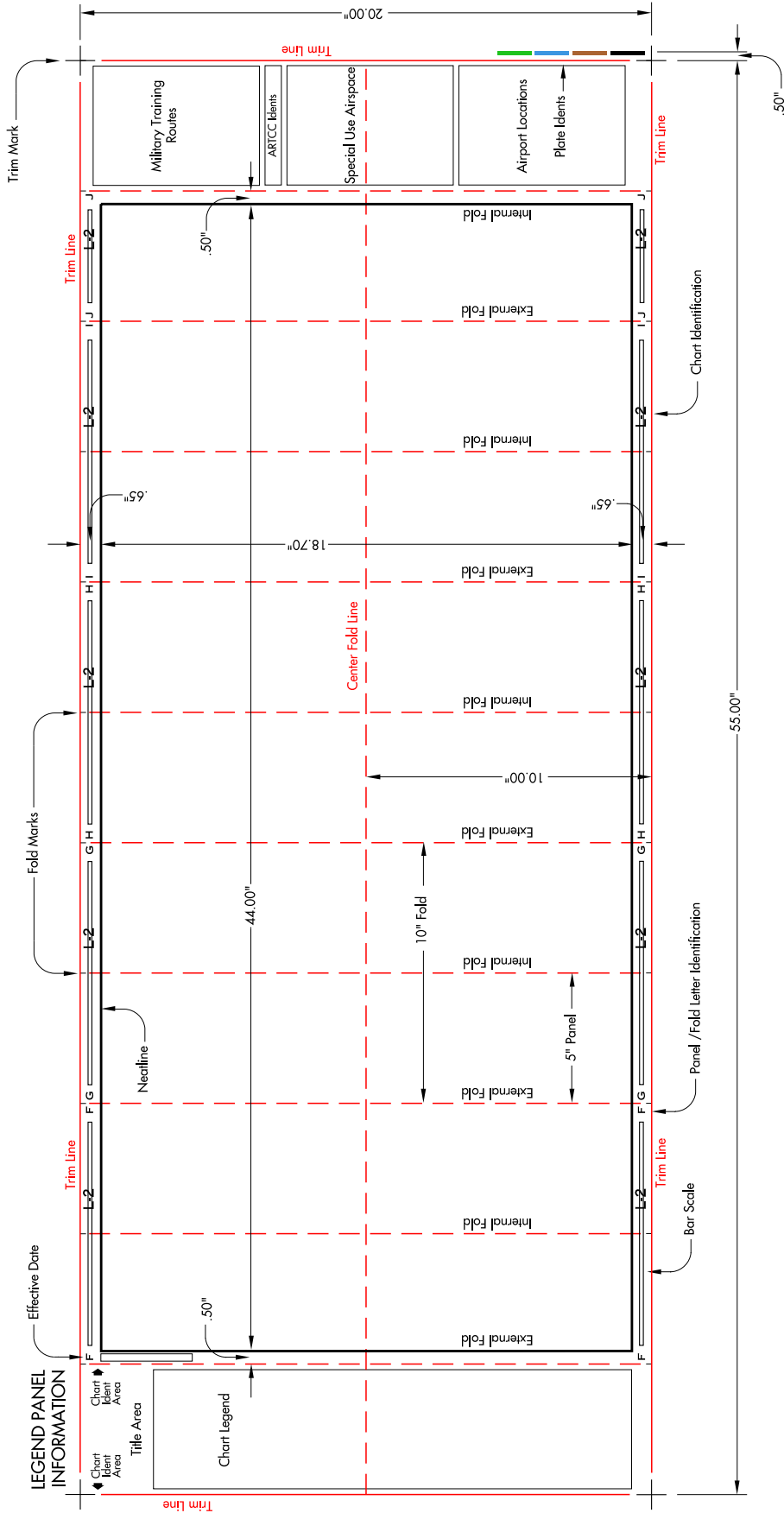
APPENDIX 3  
CHART LAYOUT - U.S. L-1 AND L-7

IFR ENROUTE LOW ALTITUDE CHARTS  
CHART LAYOUT  
U.S. L-1 and L-7



APPENDIX 4  
CHART LAYOUT - U.S. L-2 AND L-8

IFR ENROUTE LOW ALTITUDE CHARTS  
CHART LAYOUT  
U.S. L-2 and L-8



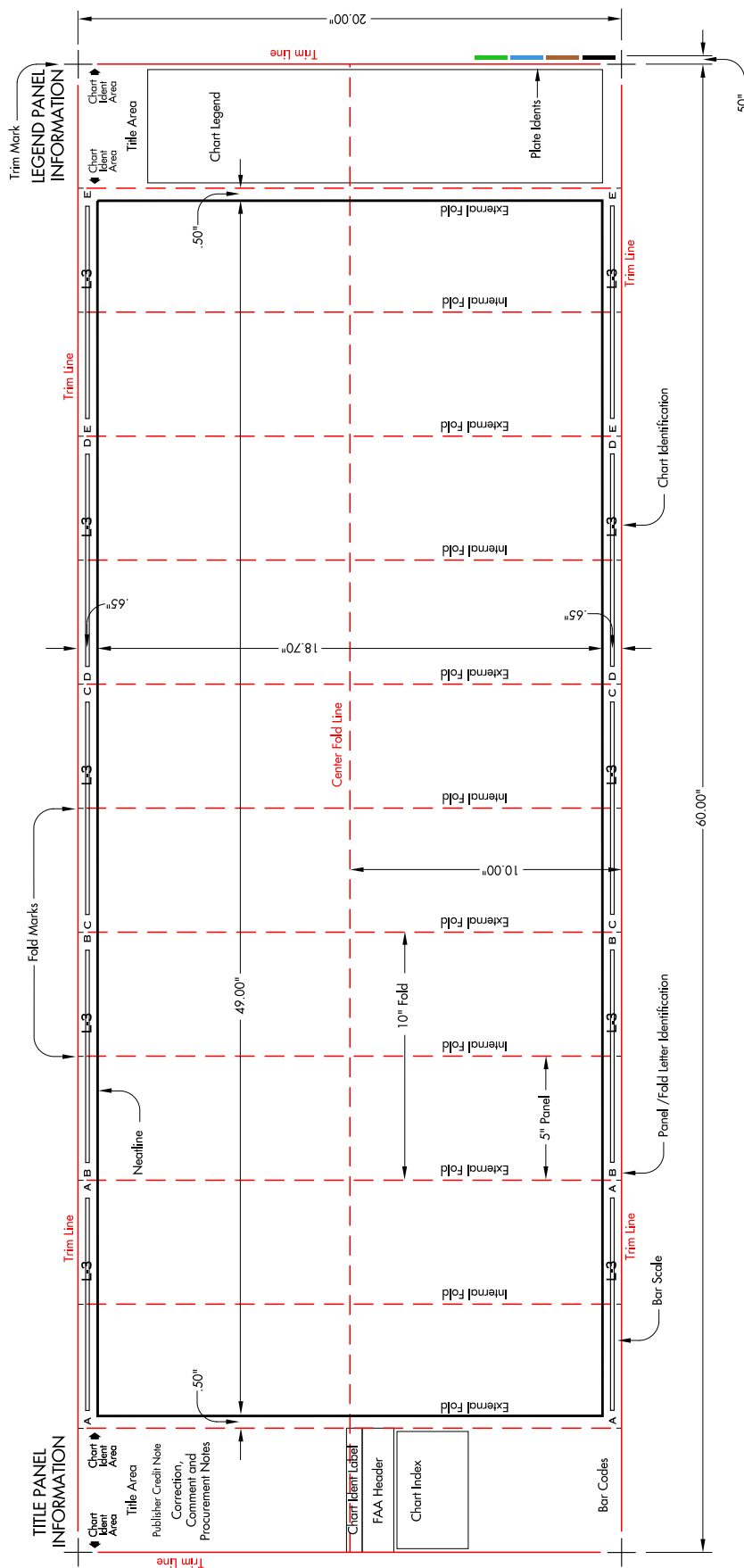
## APPENDIX 5

### CHART LAYOUT - U.S. L-3, L-9, L-11, L-13, L-15, L-19, L-27 AND L-29

IFR ENROUTE LOW ALTITUDE CHARTS

**CHART LAYOUT**

U.S. L-3, L-9, L-11, L-13, L-15, L-19, L-27 and L-29



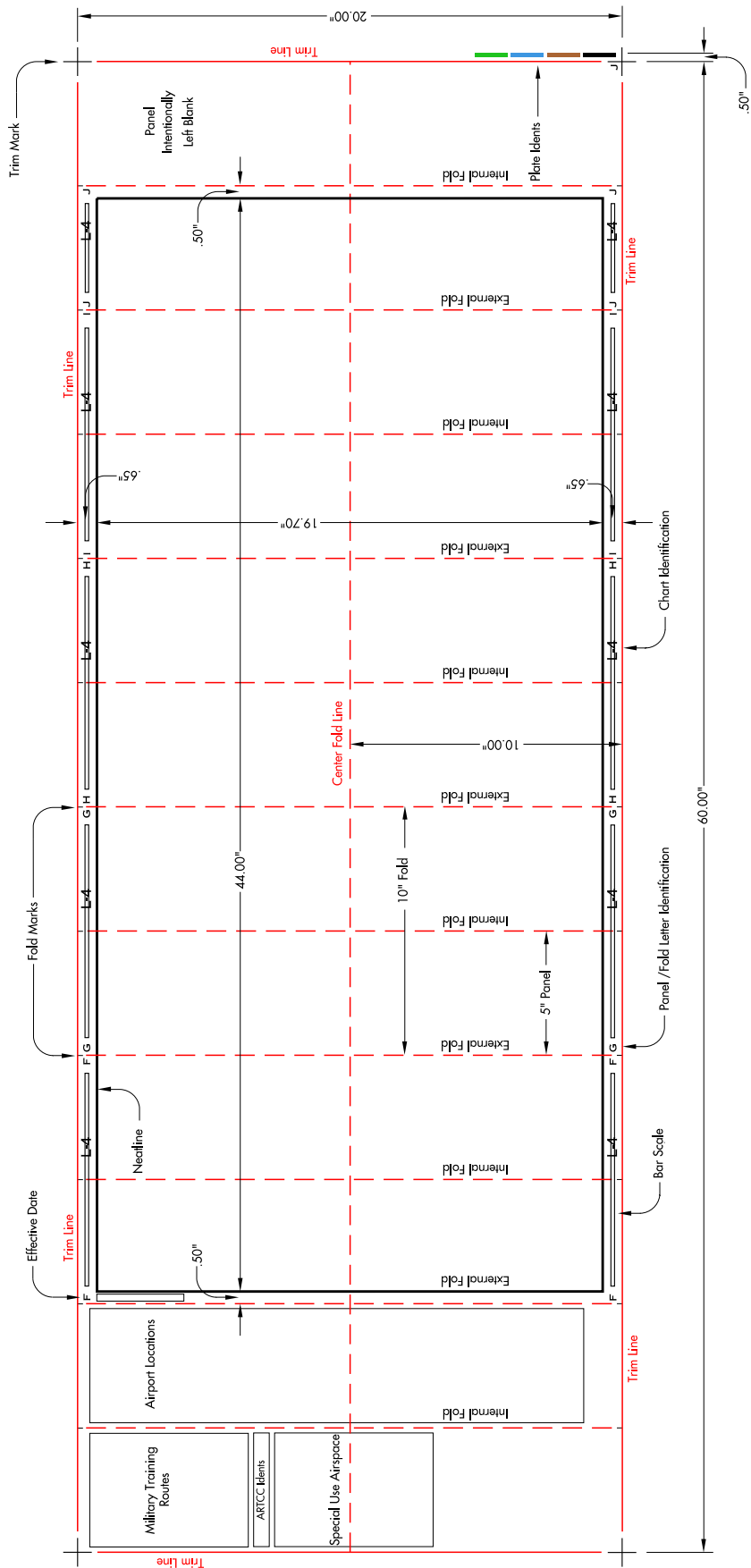
APPENDIX 6

CHART LAYOUT - U.S. L-4, L-10, L-12, L-14, L-16 AND L-24

IFR ENROUTE HIGH ALTITUDE CHARTS

CHART LAYOUT

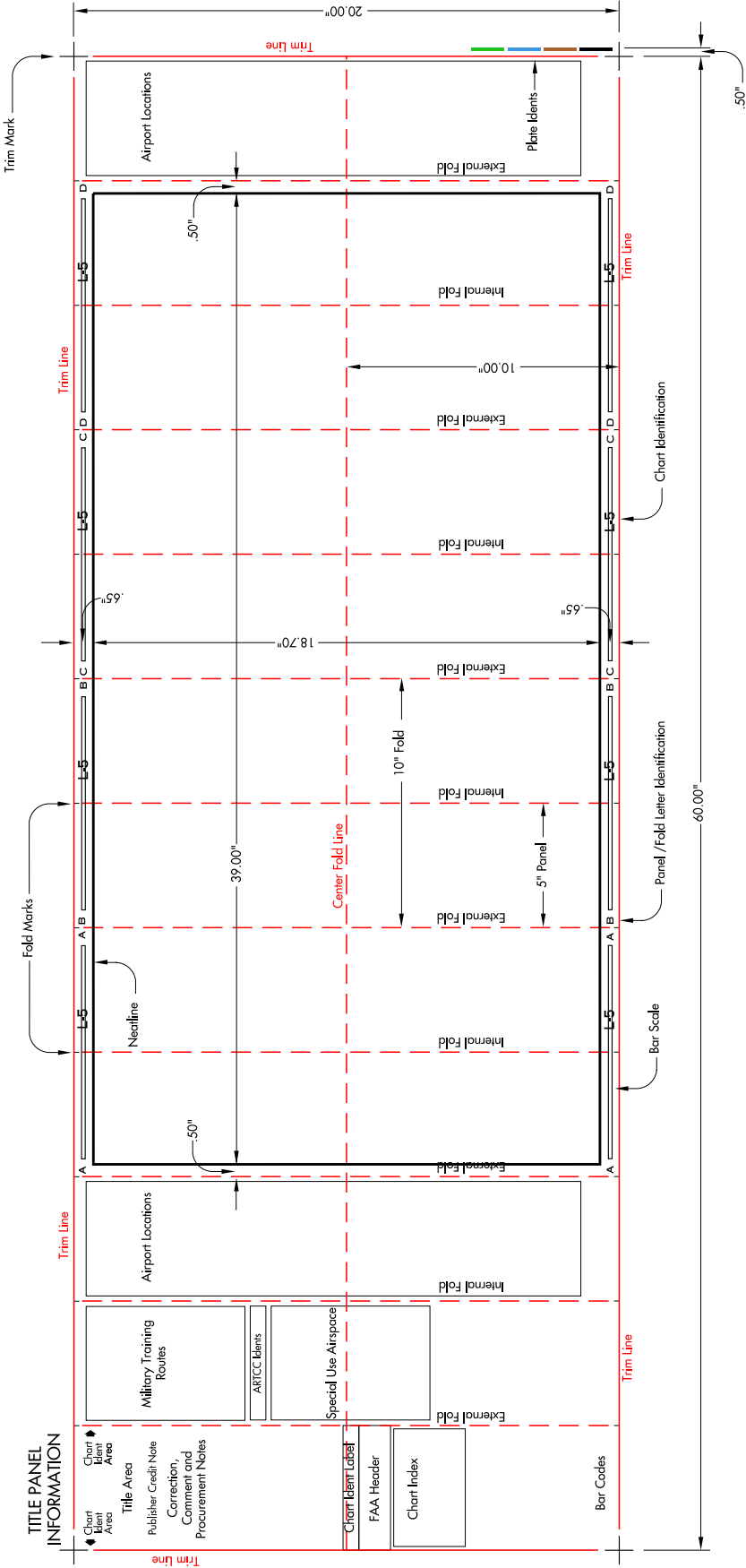
U.S. L-4, L-10, L-12, L-14, L-16 and L-24



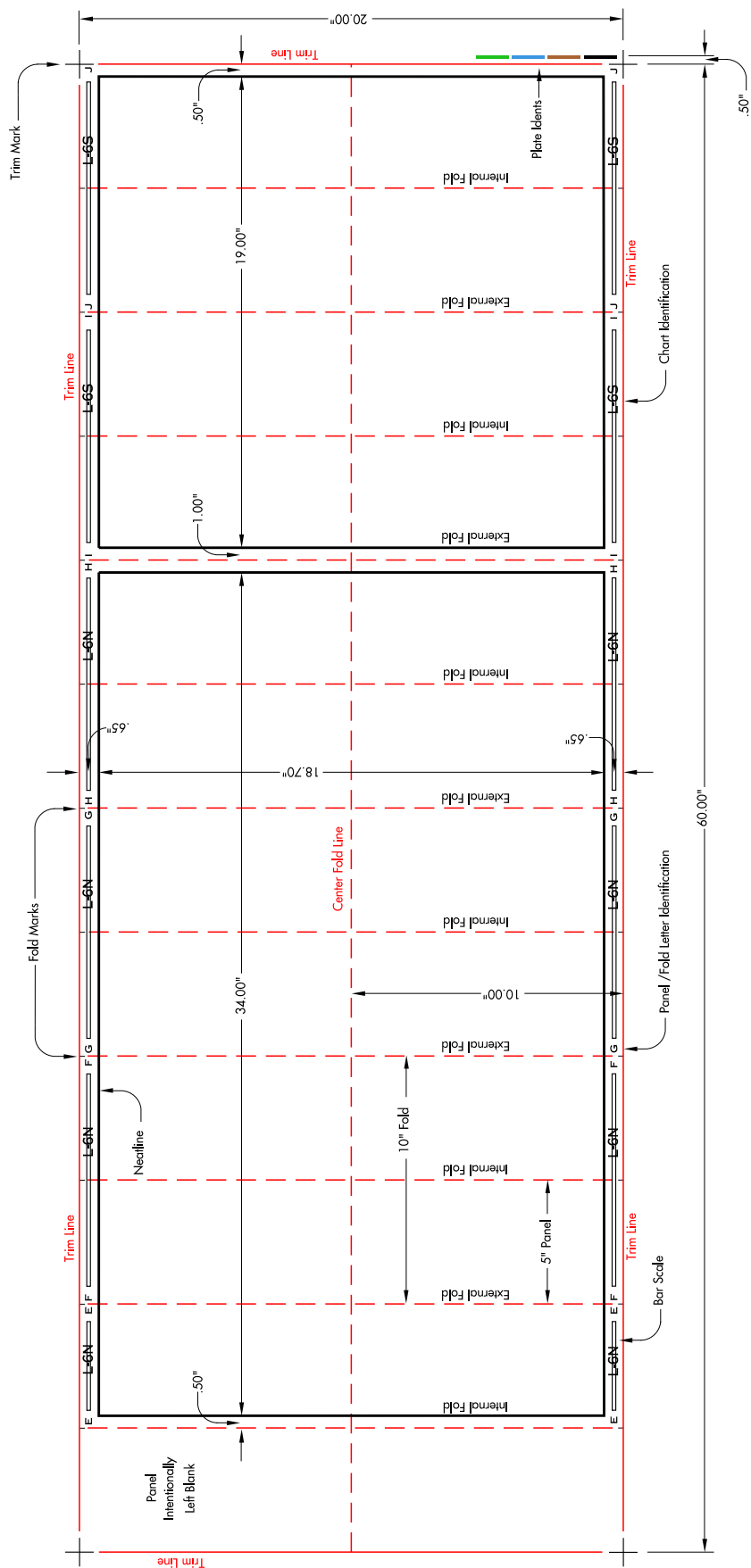


APPENDIX 7  
CHART LAYOUT - U.S. L-5

IFR ENROUTE LOW ALTITUDE CHARTS  
CHART LAYOUT  
U.S. L-5



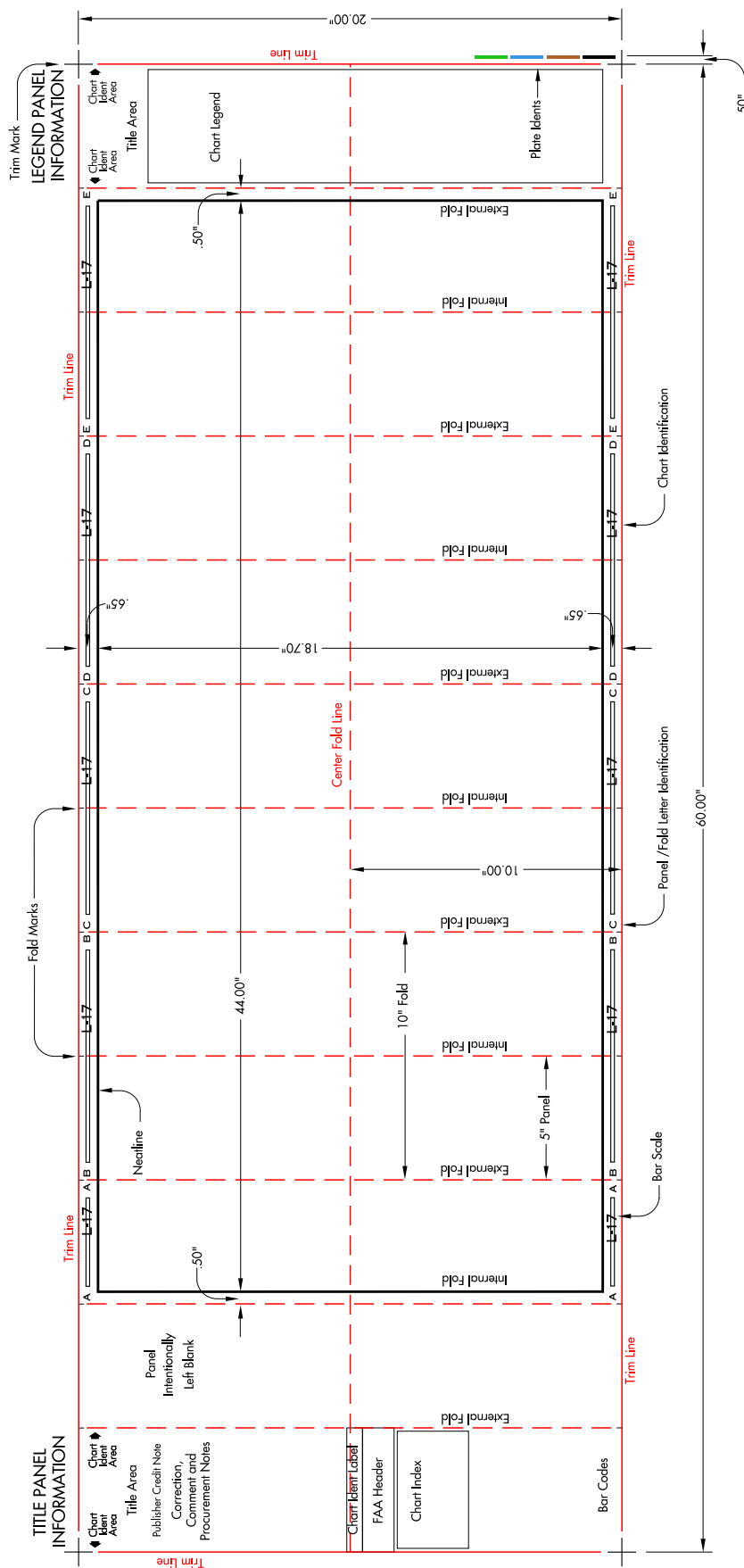
# CHART LAYOUT



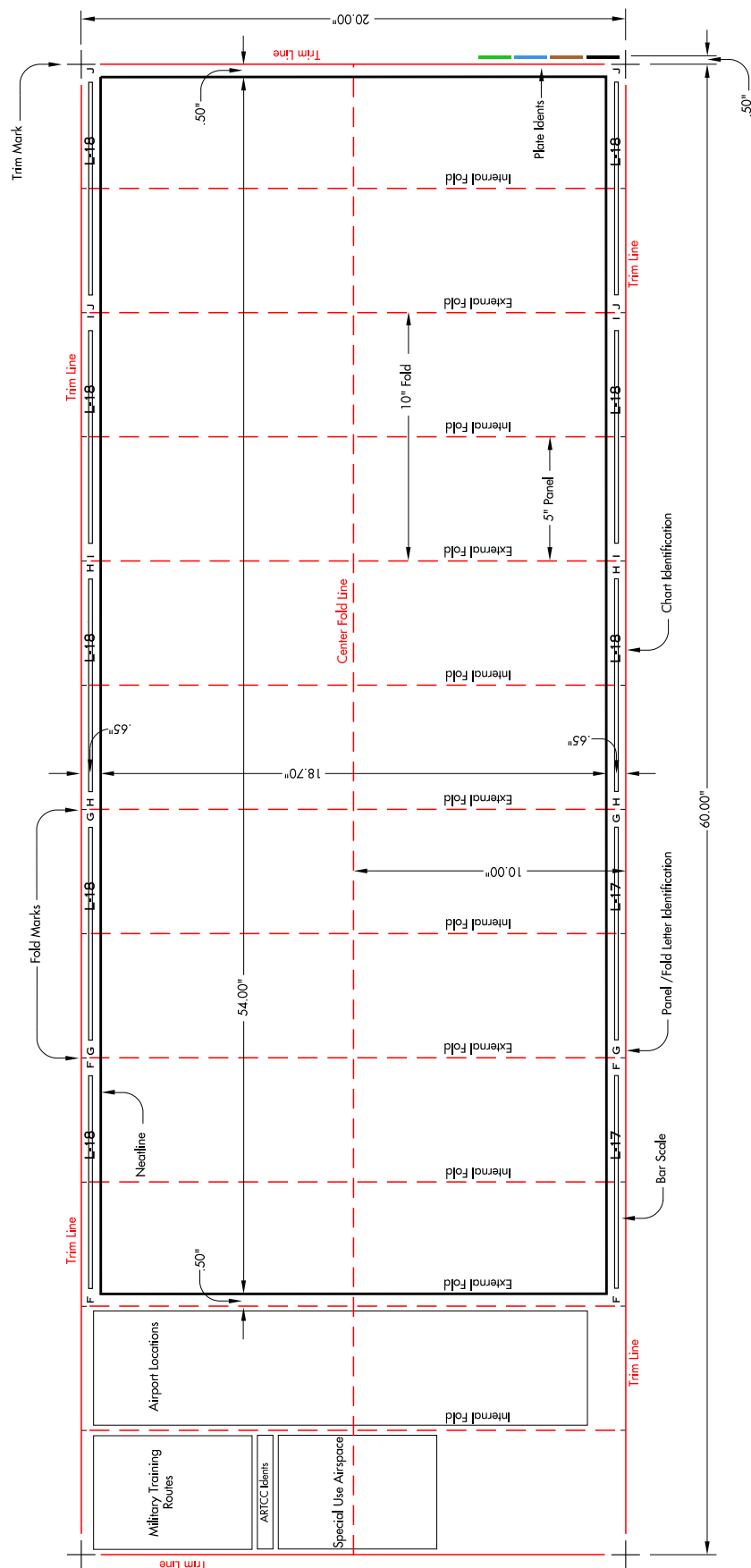
## APPENDIX 9

### CHART LAYOUT - U.S. L-17 AND L-31

# CHART LAYOUT



# CHART LAYOUT



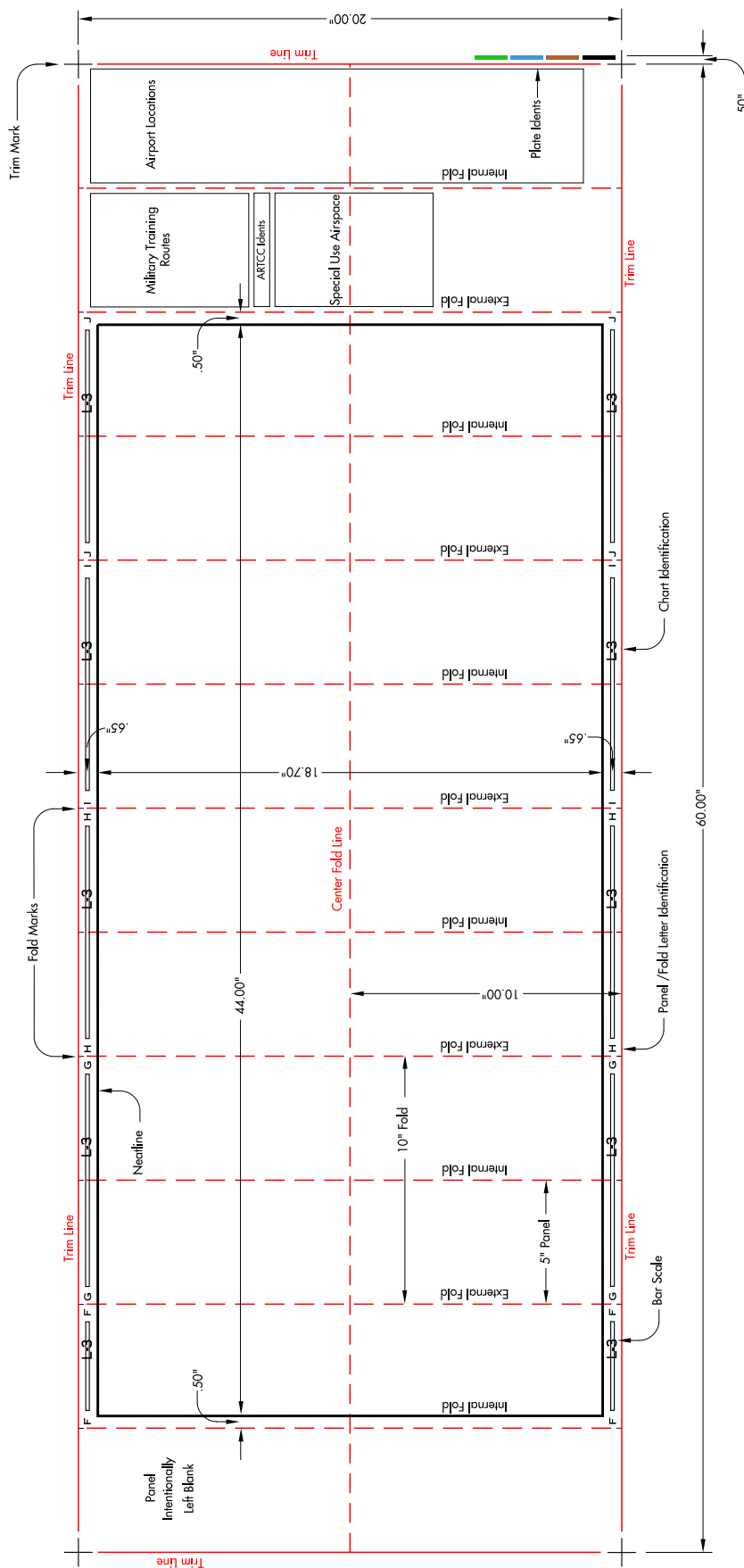
# APPENDIX 11

## CHART LAYOUT - U.S. L-20 AND L-28

### IFR ENROUTE LOW ALTITUDE CHARTS

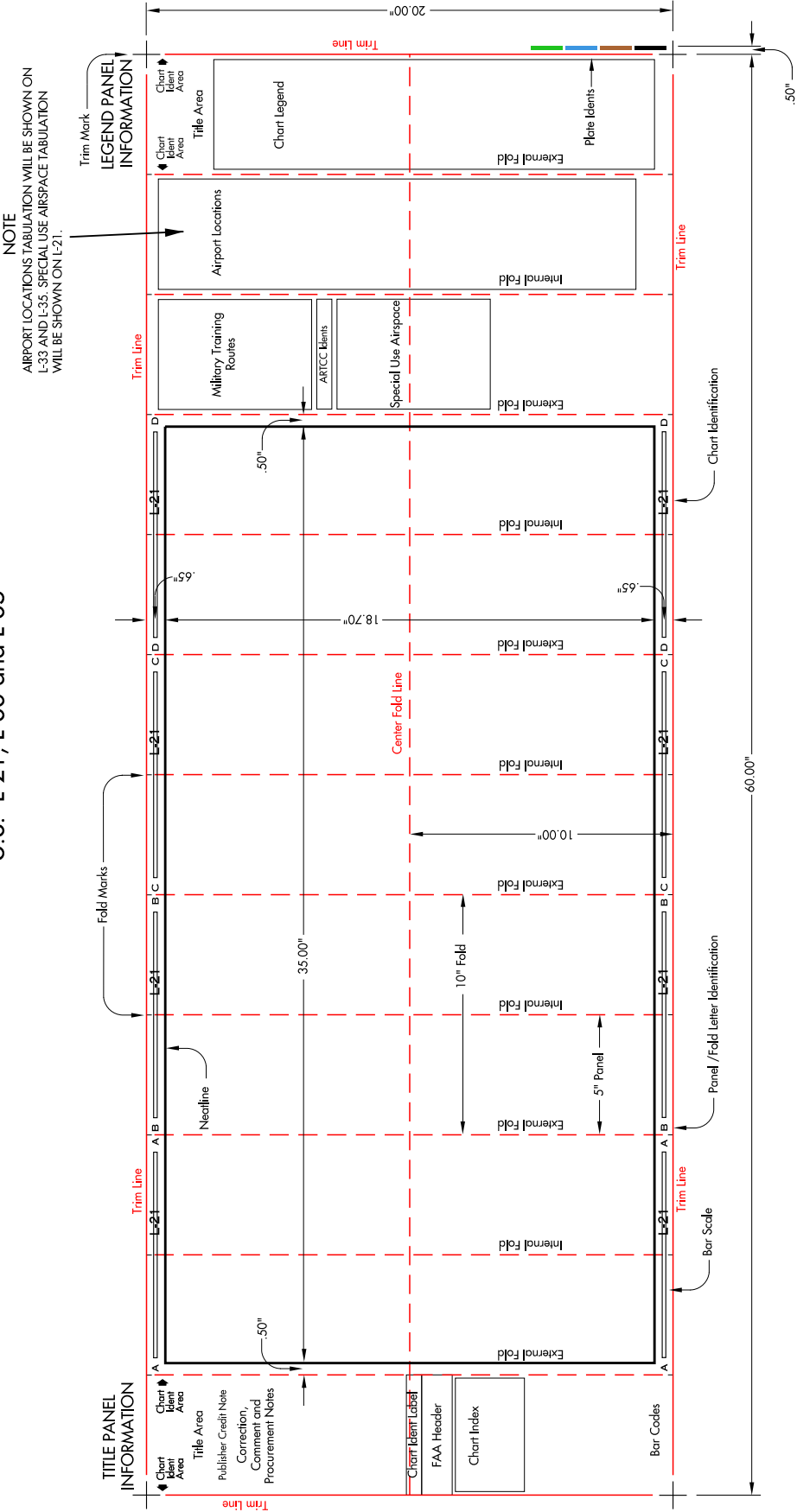
### CHART LAYOUT

### U.S. L-20 and L-28



APPENDIX 12  
CHART LAYOUT - U.S. L-21, L-33 AND L-35

IFR ENROUTE LOW ALTITUDE CHARTS  
CHART LAYOUT  
U.S. L-21, L-33 and L-35



## APPENDIX 13

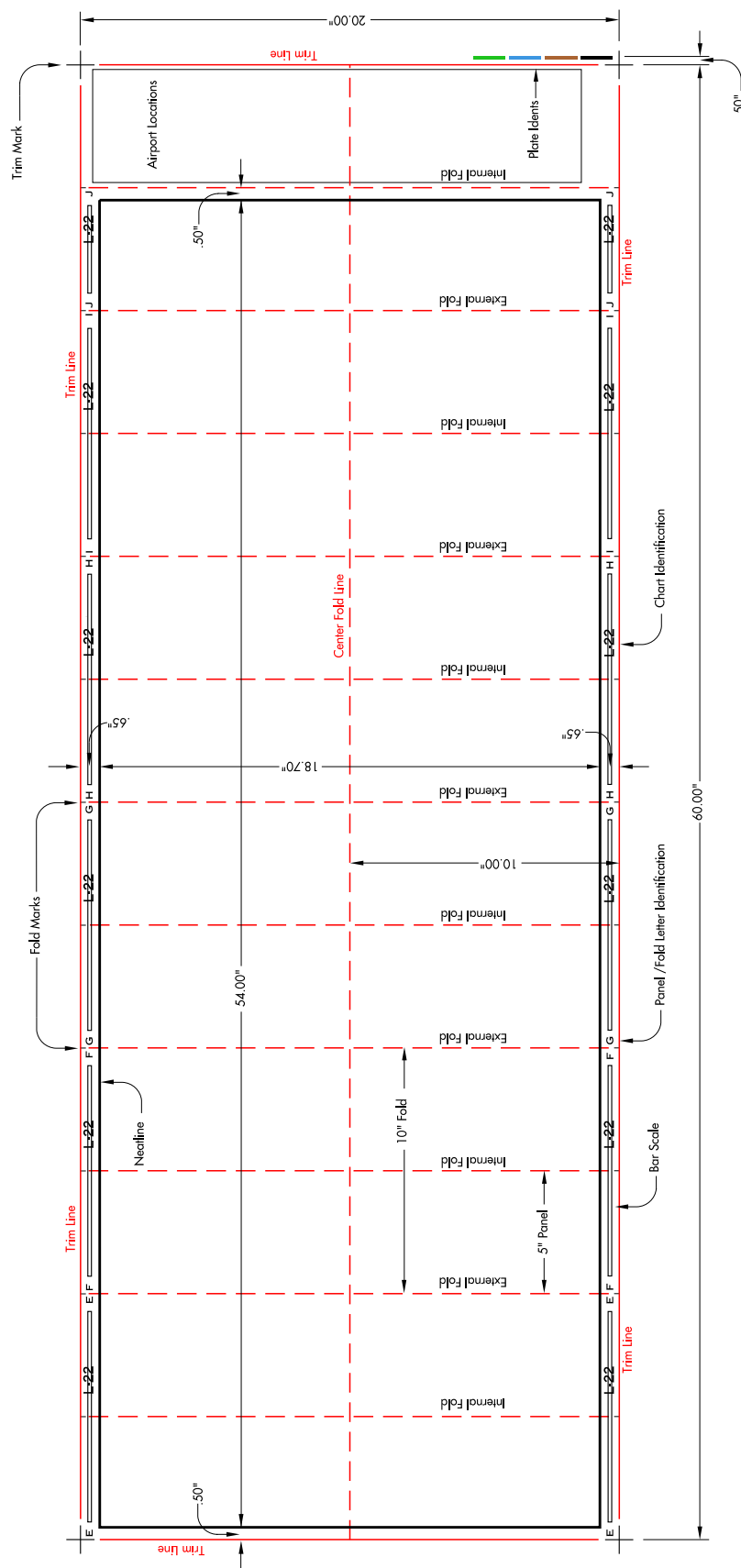
### CHART LAYOUT - U.S. L-22 AND L-36

# IFR ENROUTE LOW ALTITUDE CHARTS

## CHART LAYOUT

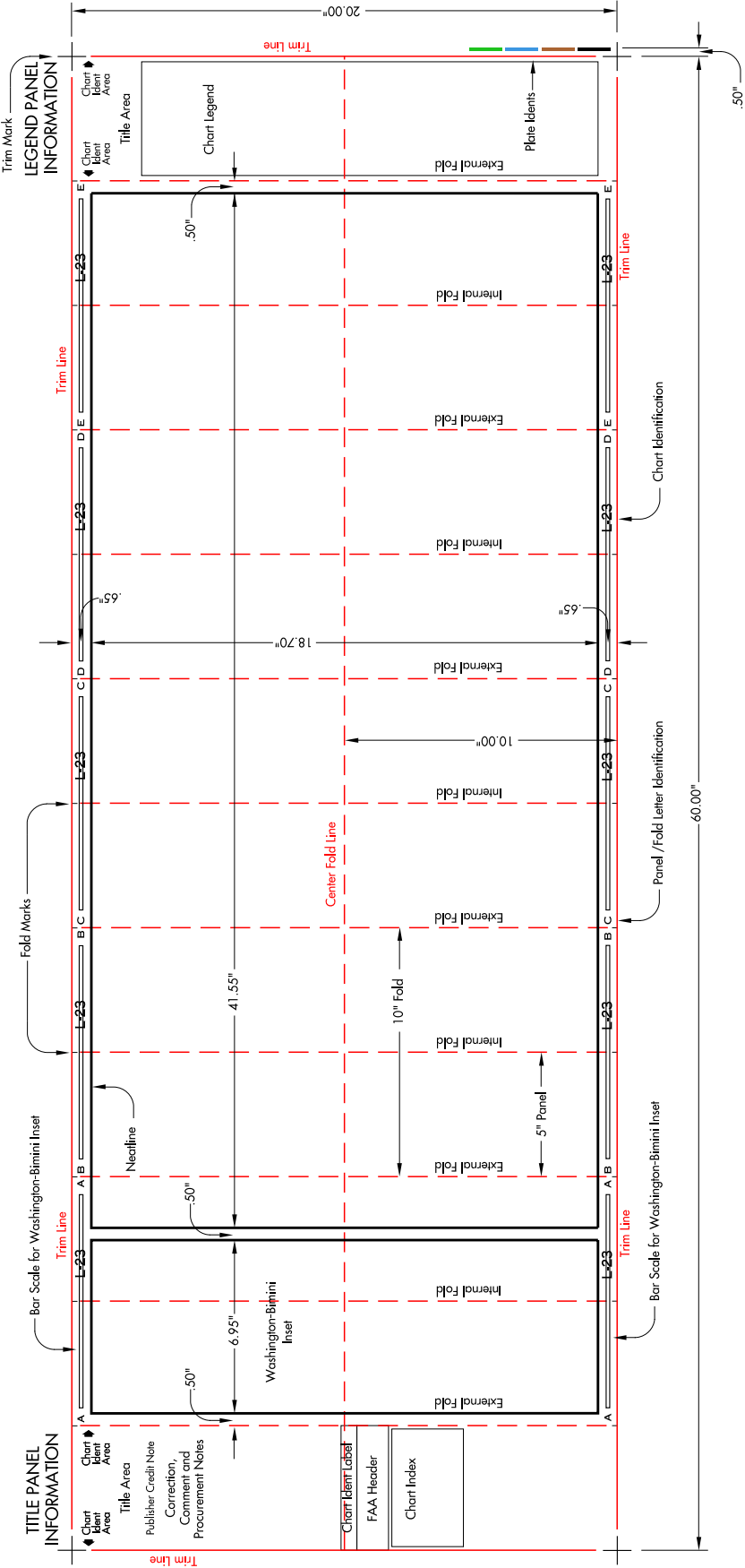
U.S. L-22 and L-36

**NOTE**  
AIRPORT LOCATIONS TABULATION WILL BE SHOWN ON  
H-22, PANEL WILL BE LEFT BLANK ON H-36



APPENDIX 14  
CHART LAYOUT - U.S. L-23

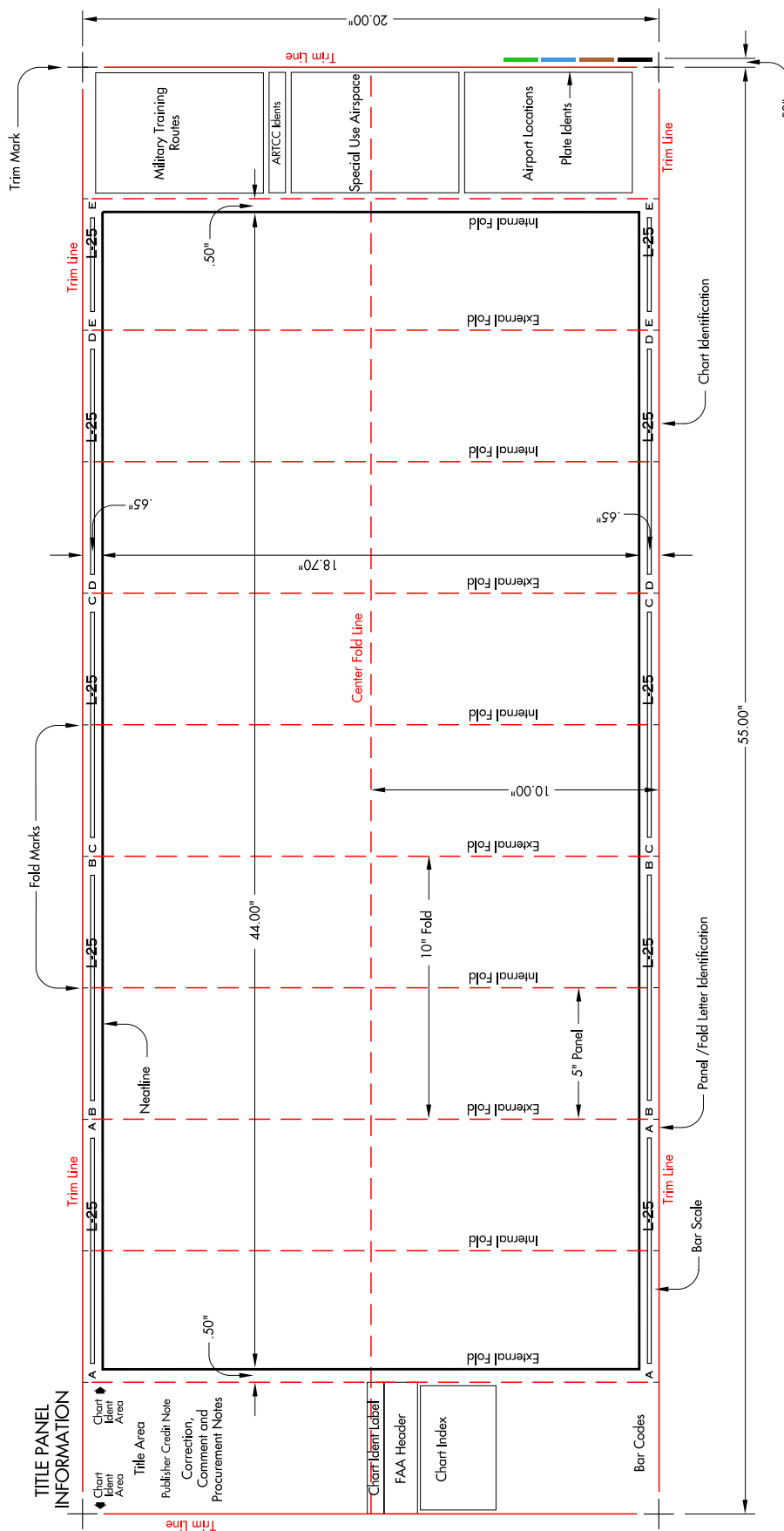
IFR ENROUTE LOW ALTITUDE CHARTS  
CHART LAYOUT  
U.S. L-23





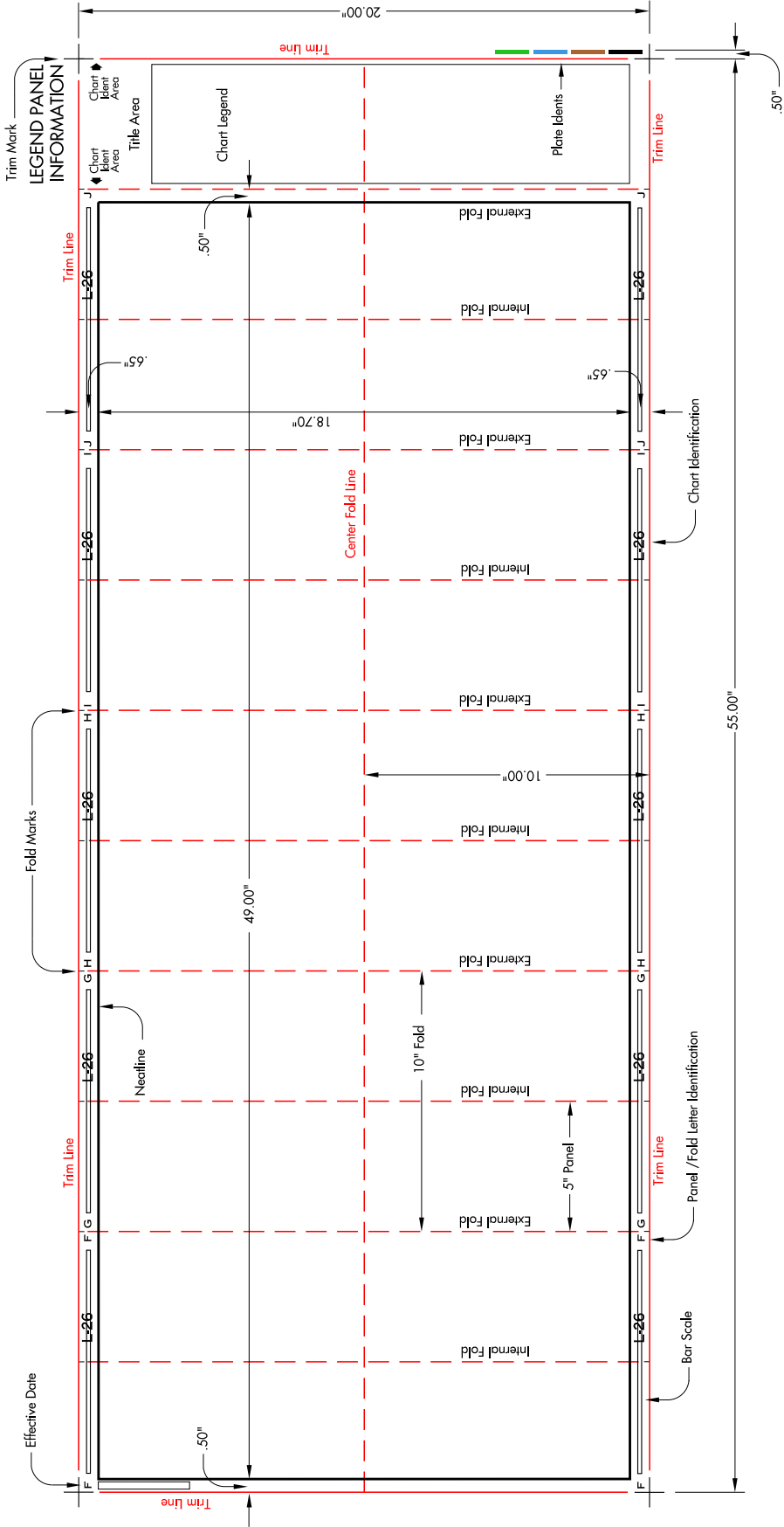
# APPENDIX 15 CHART LAYOUT - U.S. L-25

## IFR ENROUTE LOW ALTITUDE CHARTS CHART LAYOUT U.S. L-25



APPENDIX 16  
CHART LAYOUT - U.S. L-26

IFR ENROUTE LOW ALTITUDE CHARTS  
CHART LAYOUT  
U.S. L-26



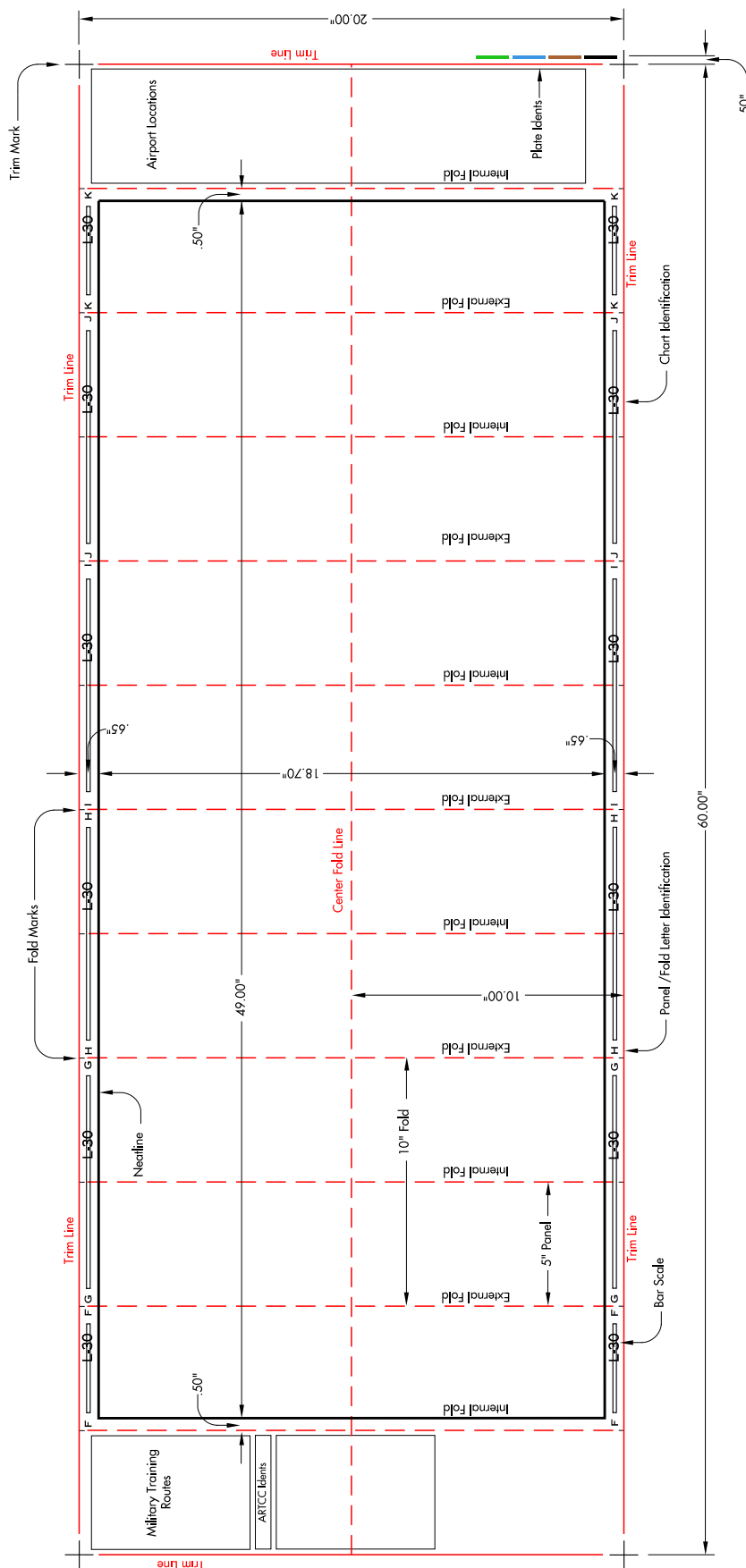
# APPENDIX 17

## CHART LAYOUT - U.S. L-30

### IFR ENROUTE LOW ALTITUDE CHARTS

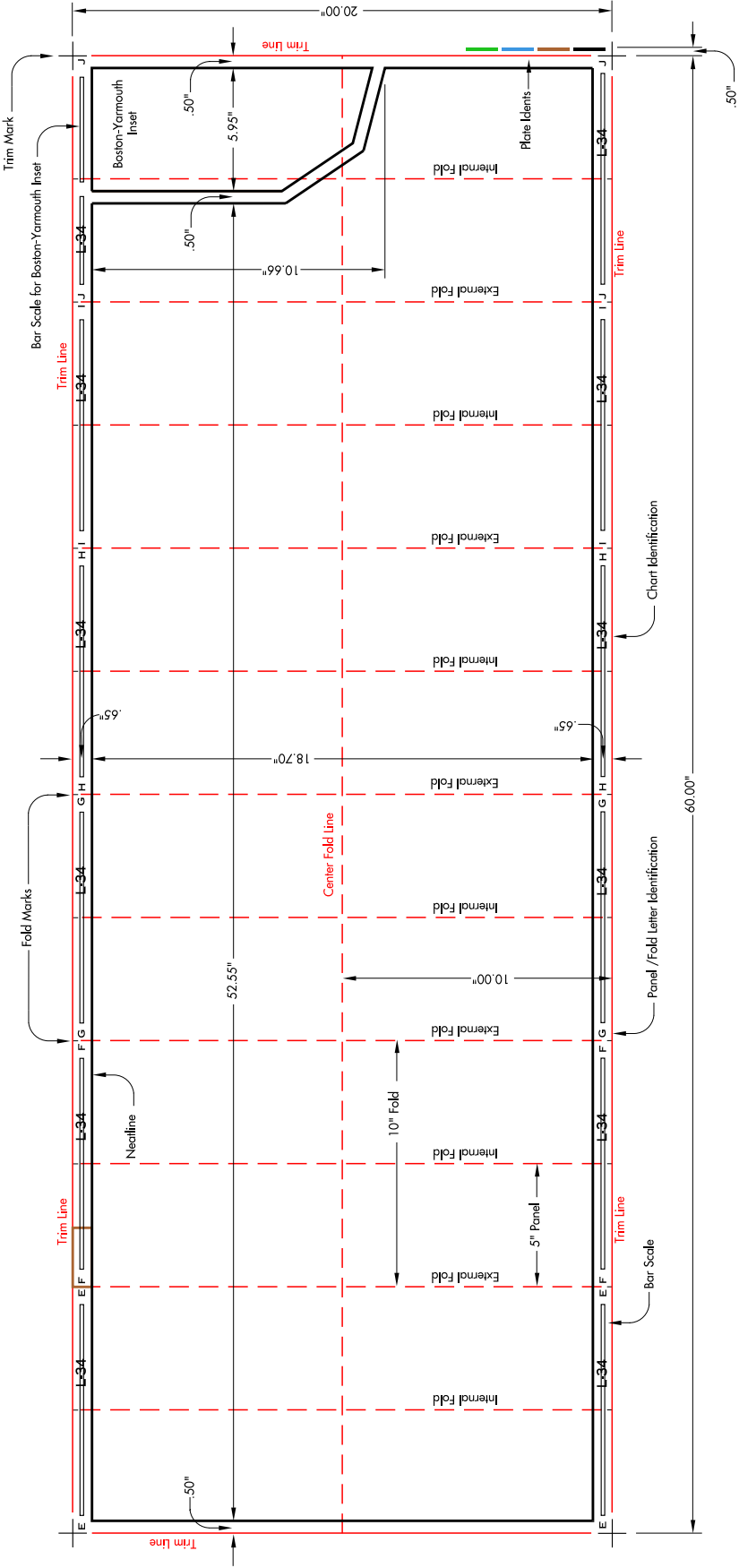
## CHART LAYOUT

### U.S. L-30



APPENDIX 18  
CHART LAYOUT - U.S. L-34

IFR ENROUTE LOW ALTITUDE CHARTS  
CHART LAYOUT  
U.S. L-34



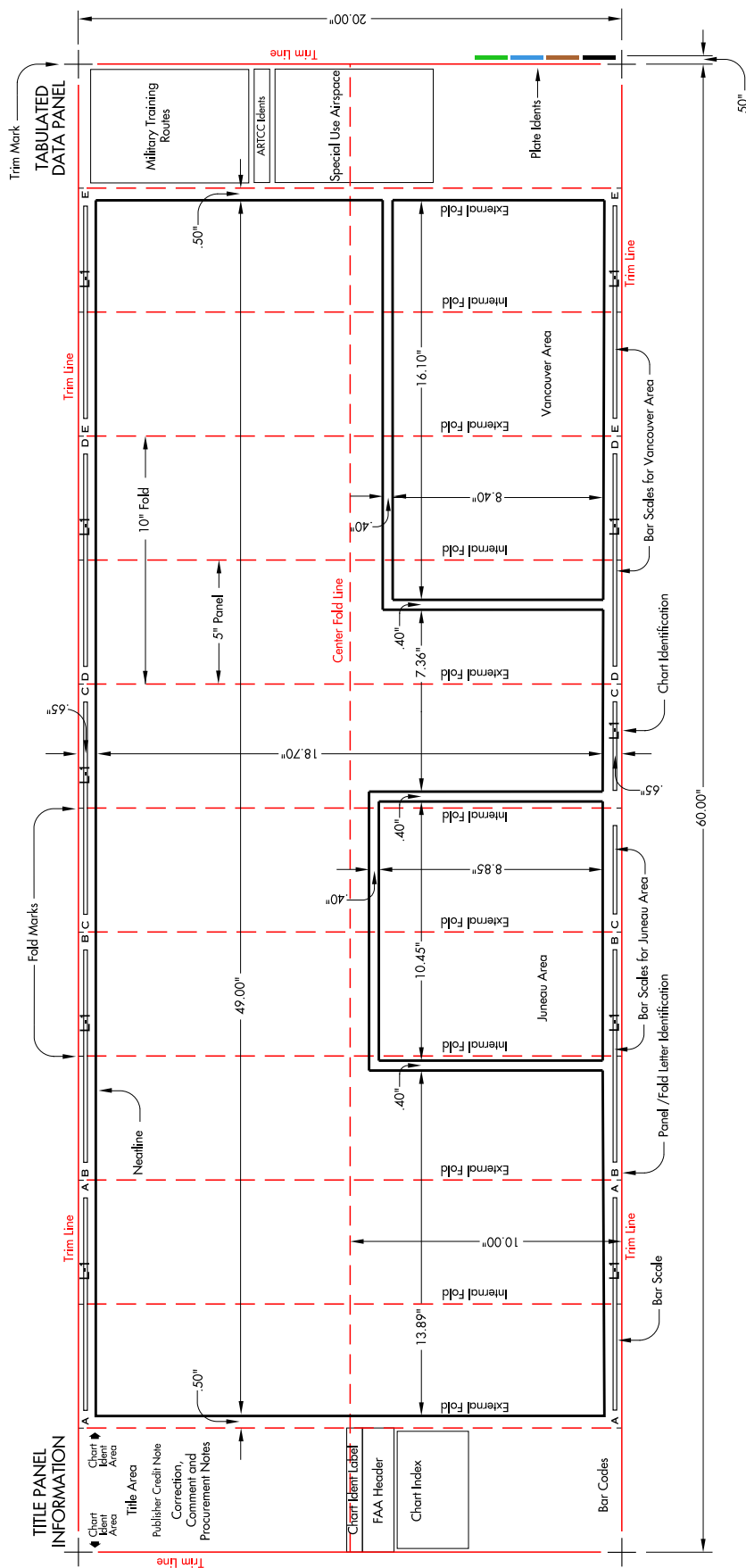
# APPENDIX 19

## CHART LAYOUT - ALASKA L-1

### IFR ENROUTE LOW ALTITUDE CHARTS

## CHART LAYOUT

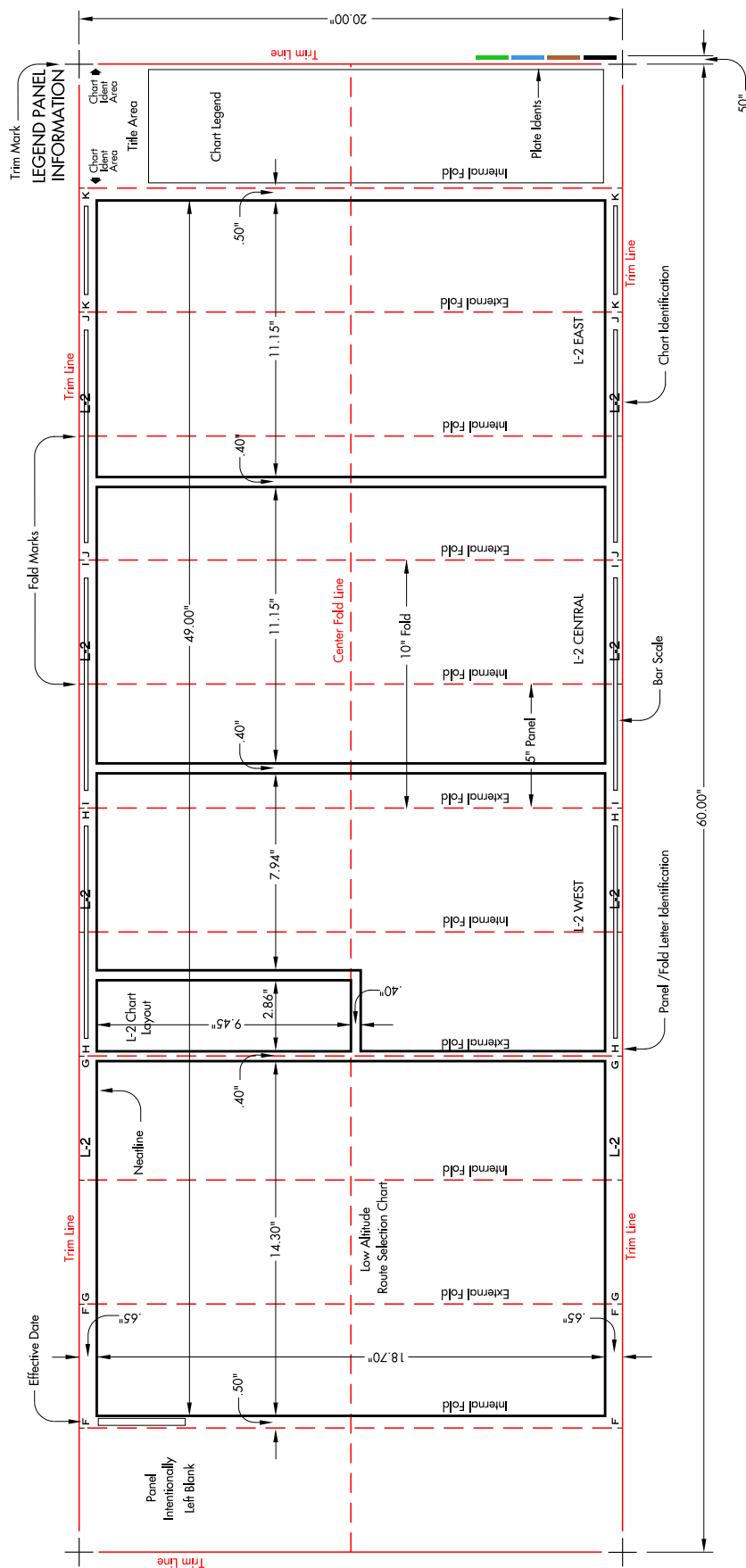
### ALASKA L-1



# IFR ENROUTE LOW ALTITUDE CHARTS

## CHART LAYOUT

### ALASKA L-2



# IFR ENROUTE LOW ALTITUDE CHARTS

## CHART LAYOUT

### ALASKA L-3



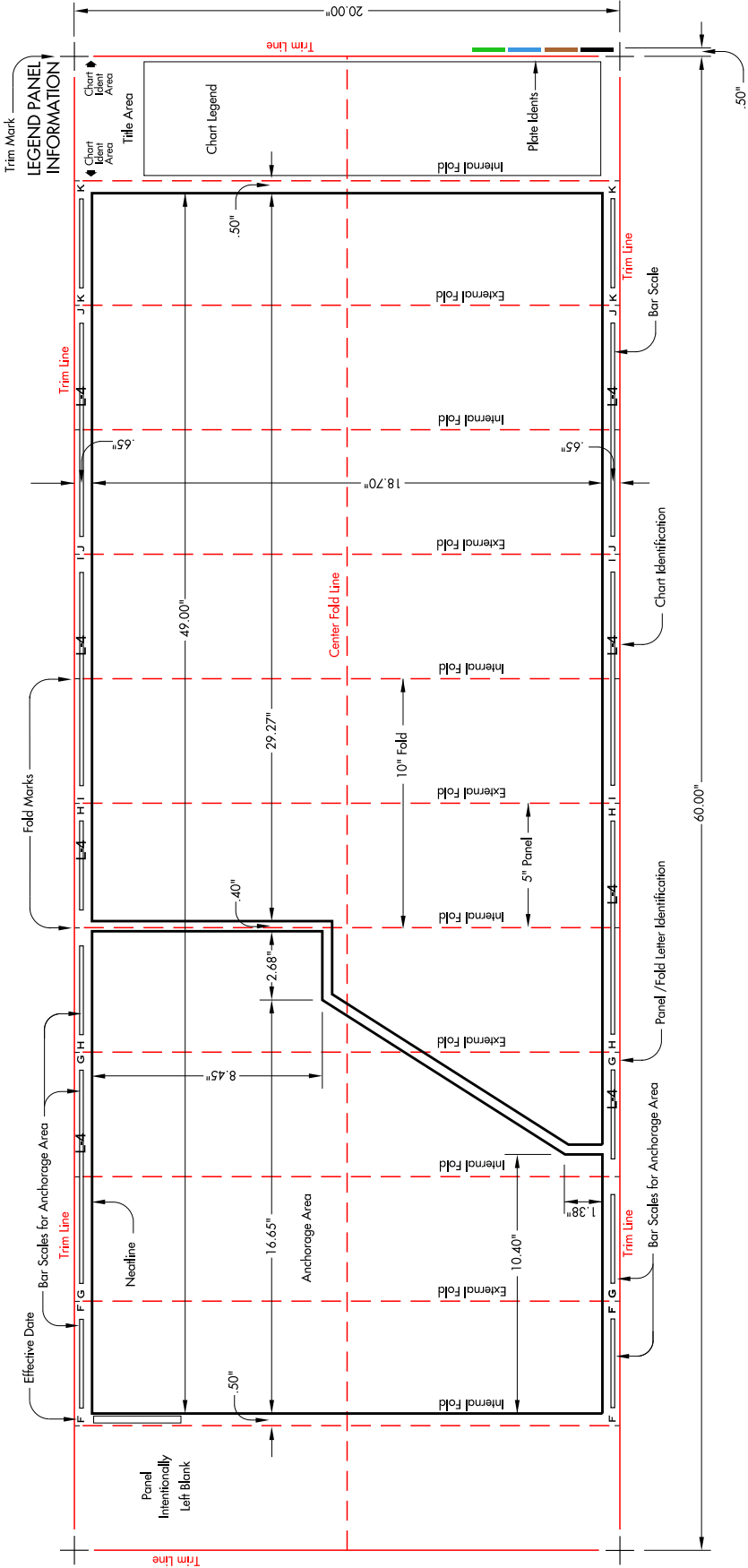
APPENDIX 22

CHART LAYOUT - ALASKA L-4

IFR ENROUTE LOW ALTITUDE CHARTS

CHART LAYOUT

ALASKA L-4





# APPENDIX 23

## SAMPLE TITLE PANELS - U.S. & ALASKA

**TRIM LINE**

**L-2**  
PANELS  
FGHIJ  
1"=8 NM

**UNITED STATES GOVERNMENT  
FLIGHT INFORMATION PUBLICATION  
IFR ENROUTE LOW ALTITUDE - U.S.**  
For use up to but not including 18,000' MSL

**EFFECTIVE 0901Z 12 AUG 2021  
TO 0901Z 7 OCT 2021**

Consult NOTAMs for latest information  
[Consult/Subscribe to FAA Safety Alerts and Charting Notices at:](#)

**CORRECTIONS, COMMENTS, AND/OR PROCUREMENT**  
FOR CHARTING ERRORS, OR FOR CHANGES, ADDITIONS, RECOMMENDATIONS ON PROCEDURAL ASPECTS CONTACT:

Current Charting Errors, or Recommendations Address:

**FOR PROCUREMENT:**  
For digital products, visit our website at: [www.faa.gov/procurement](#)  
For a list of approved FAA Print Providers, visit our website at: [www.faa.gov/procurement](#)

**MILITARY**  
For Corrections Information, See Chapter 11 of General Planning (GP). For Procurement refer to DOD Catalog of Aeronautical Charts and Flight Information Publications.

Frequently asked questions (FAQ) are answered on our web site at [www.faa.gov/faq](#). See the FAQs prior to contact via toll free number or email.

**L-1**  
PANELS  
ABCDE  
1"=8 NM

**FOLD LINE**

**ATTENTION**

THIS CHART CONTAINS OFF ROUTE OBSTRUCTION CLEARANCE ALTITUDES (OROCA). The OROCA is shown in THOUSANDS and HUNDREDS of feet above mean sea level for a quadrangle bounded by solid lines of latitude and longitude. OROCA is based on the highest known terrain feature or obstruction in each quadrangle, and provides a 1,000 foot buffer over the feature in designated non-mountainous areas for a 2,000 foot buffer in designated mountainous areas within the United States. These OROCA altitudes are not assessed for NAVD83 signal coverage, air traffic control surveillance or communications coverage, and are published for general situational awareness, flight planning, and in-flight contingency use.

Example: 12,500 feet 12<sup>5</sup>

**L-1**

**12 AUG 2021  
UNITED STATES**

**Federal Aviation Administration**

**L-1**

Published from digital files compiled in accordance with Interagency Air Committee specifications and agreements approved by Department of Defense - Federal Aviation Administration

FAA Product ID: ELUS1

NSN 7641014109653  
ENRXXUSLCHT01

OFF DATE: 21224

**TRIM LINE**

**TRIM LINE**

**L-2**  
PANELS  
FGHIJ  
1"=25 NM

**UNITED STATES GOVERNMENT  
FLIGHT INFORMATION PUBLICATION  
IFR ENROUTE LOW ALTITUDE - ALASKA**  
For use up to but not including 18,000' MSL

**EFFECTIVE 0901Z 12 AUG 2021  
TO 0901Z 7 OCT 2021**

Consult NOTAMs for latest information  
[Consult/Subscribe to FAA Safety Alerts and Charting Notices at:](#)

**CORRECTIONS, COMMENTS, AND/OR PROCUREMENT**  
FOR CHARTING ERRORS, OR FOR CHANGES, ADDITIONS, RECOMMENDATIONS ON PROCEDURAL ASPECTS CONTACT:

Current Charting Errors, or Recommendations Address:

**FOR PROCUREMENT CONTACT:**  
For digital products, visit our website at: [www.faa.gov/procurement](#)  
For a list of approved FAA Print Providers, visit our website at: [www.faa.gov/procurement](#)

**MILITARY**  
For Corrections Information, See Chapter 11 of General Planning (GP). For Procurement refer to DOD Catalog of Aeronautical Charts and Flight Information Publications.

Frequently asked questions (FAQ) are answered on our web site at [www.faa.gov/faq](#). See the FAQs prior to contact via toll free number or email.

**L-1**  
PANELS  
ABCDE  
1"=25 NM

**FOLD LINE**

**CHART NOTICE**

**Implementation of Instrument Flight Rules (IFR) Area Navigation (RNAV) Operations Using Global Positioning System (GPS) in Alaska.**

Under SFAR No. 97, operators using IFR-certified TSO C145 and TSO C146 GPS/WAAS navigation systems will be permitted to conduct operations over selected routes in AK beyond the service volume of ground-based navaids at the lowest minimum en route altitude (MEL) based only on route obstacle assessments and AIC two-way communication capability.

The MELs for these routes will be depicted on the IFR Enroute Low Altitude-AK charts in blue type with a D suffix. For instance, a GPS MEL of 2000 feet MSL will be depicted as "2000D" in blue. Standard MELs will be depicted in black type and be blocked above the GPS MEL.

See SFAR No. 97 for equipment, training and operational requirements.

**ATTENTION**

THIS CHART CONTAINS OFF ROUTE OBSTRUCTION CLEARANCE ALTITUDES (OROCA). The OROCA is shown in THOUSANDS and HUNDREDS of feet above mean sea level for a quadrangle bounded by solid lines of latitude and longitude. OROCA is based on the highest known terrain feature or obstruction in each quadrangle, and provides a 1,000 foot buffer over the feature in designated non-mountainous areas for a 2,000 foot buffer in designated mountainous areas within the United States. These OROCA altitudes are not assessed for NAVD83 signal coverage, air traffic control surveillance or communications coverage, and are published for general situational awareness, flight planning, and in-flight contingency use.

Example: 12,500 feet 12<sup>5</sup>

**L-1/L-2**

**12 AUG 2021  
ALASKA**

**Federal Aviation Administration**

**L-1/L-2**

Published from digital files compiled in accordance with Interagency Air Committee specifications and agreements approved by Department of Defense - Federal Aviation Administration

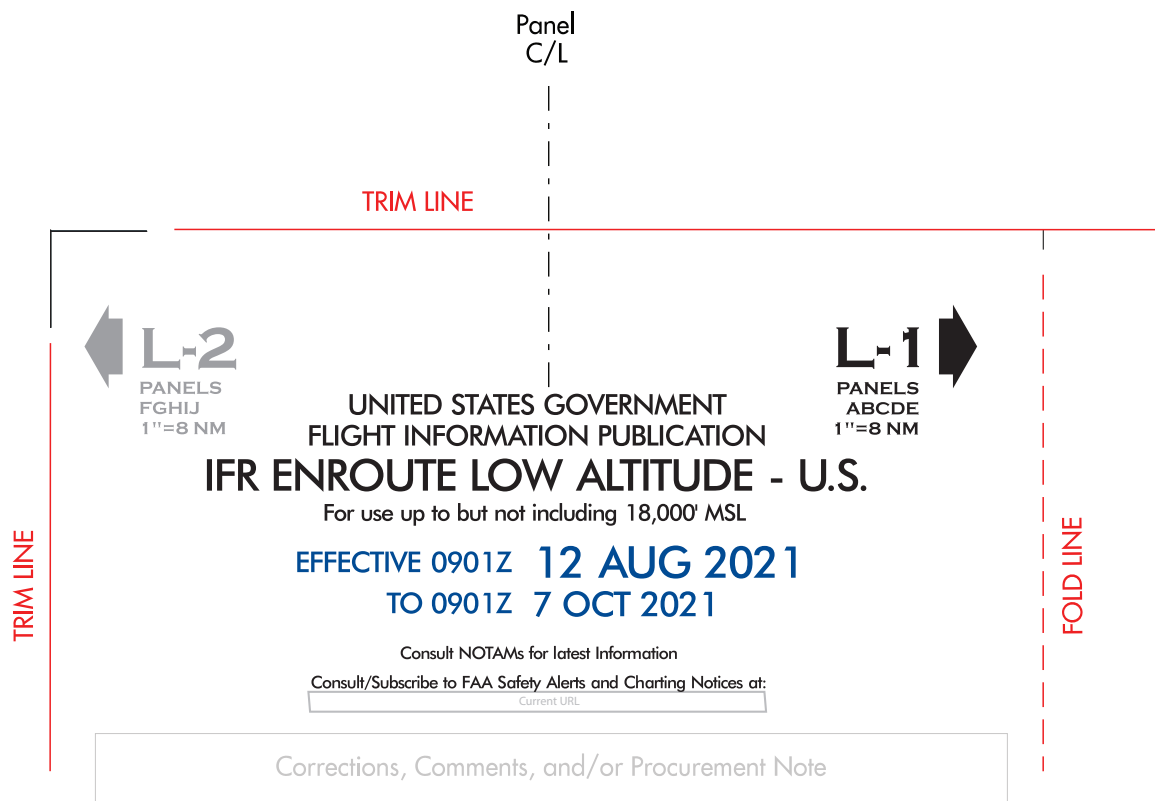
FAA Product ID: ELAK1

NSN 7641014970163  
ENRXXAKLCHT01

OFF DATE: 21224



**TRIM LINE**

**APPENDIX 24**  
**CHART IDENTIFICATION & TITLE PANEL AREA LAYOUT - U.S. & ALASKA**



## APPENDIX 24

## CHART IDENTIFICATION &amp; TITLE PANEL AREA LAYOUT - U.S. &amp; ALASKA (CONTINUED)

TITLE PANEL - LOW ENROUTE CHARTS					
Foreign Airspace Warning Text  Box Lineweight & Color	C/L	.07" Futura Medium/Black  .008"/Black		Warning: Refer to current foreign... <div></div>	
Chart Identification Area Chart Idents Text Color  Arrowheads  Panel Identifications Text Color  Chart Scales Text Color	CAPS	Even Numbers	Odd Numbers	Even Numbers	Odd Numbers
		.23" Copperplate Gothic 31		L-2	L-1
		45% Black	Black		
		45% Black	Black		
	CAPS	.07" Copperplate Gothic 31		PANELS FGHIJ	PANELS ABCDE
		45% Black	Black		
	CAPS	.07" Copperplate Gothic 31		1"=8 NM	1"=8 NM
		45% Black	Black		
Chart Title First and Second Lines  Third Line  Altitude Note	CAPS  CAPS	.11" Futura Medium/Black  .17" Futura Medium/Black  .09" Futura Medium/Black		UNITED STATES...  IFR ENROUTE...  For use up to but not...	
Effective Date & Times Note Effective Time  Effective Date  Expiration Time  Expiration Date	CAPS  CAPS  CAPS  CAPS	.11" Helvetica 65 Medium/Solid Blue  .17" Helvetica 65 Medium/Solid Blue  .11" Helvetica 65 Medium/Solid Blue  .13" Helvetica 65 Medium/Solid Blue		EFFECTIVE 0901Z  18 NOV 2010  TO 0901Z  13 JAN 2011	
NOTAM Note		.07" Futura Medium/Black		Consult NOTAMs for latest Information	

## APPENDIX 25

## CORRECTIONS, COMMENTS AND/OR PROCUREMENT AREA LAYOUT - U.S. &amp; ALASKA

Panel  
C/L

TRIM LINE

← **L-2**

PANELS  
FGHIJ  
1"=8 NM

Warning: Refer to current foreign charts and flight information publications for information within foreign airspace.

**L-1** →

PANELS  
ABCDE  
1"=8 NM

**UNITED STATES GOVERNMENT  
FLIGHT INFORMATION PUBLICATION  
IFR ENROUTE LOW ALTITUDE - U.S.**

For use up to but not including 18,000' MSL

**EFFECTIVE 0901Z 17 AUG 2017  
TO 0901Z 12 OCT 2017**

Consult NOTAMs for latest Information  
Consult/Subscribe to FAA Safety Alerts and Charting Notices at:

Current URL

**CORRECTIONS, COMMENTS, AND/OR PROCUREMENT**

FOR CHARTING ERRORS, OR FOR CHANGES, ADDITIONS, RECOMMENDATIONS ON PROCEDURAL ASPECTS  
CONTACT:

Charting Errors  
Contact Address  
Phone Number  
Email Address

**FOR PROCUREMENT:**

For digital products, visit our website at:

Current URL

For a list of approved FAA Print Providers, visit our website at:

Current URL

**MILITARY**

For Corrections Information, See Chapter 11 of General Planning (GP). For Procurement refer to DOD Catalog of Aeronautical Charts and Flight Information Publications.

Frequently asked questions (FAQ) are answered on our web site at

Current URL

See the FAQs prior to contact via toll free number or email.

TRIM LINE

FOLD LINE

## CORRECTIONS, COMMENTS AND/OR PROCUREMENT NOTES

Main Heading	CAPS	.08" Futura Medium/Black	CORRECTIONS, COMMENTS, AND...
Secondary Headings	CAPS	.07" Futura Medium/Black	FOR CHARTING ERRORS, OR...
Other Text	C/L	.07" Futura Medium/Black	FAA, Aeronautical Information Services For Corrections Information...
Frequently Asked Questions	Lowercase	.07" Futura Medium/Black	Frequently asked questions (FAQ)...

APPENDIX 26  
OROCA NOTICE

ATTENTION

THIS CHART CONTAINS OFF ROUTE OBSTRUCTION CLEARANCE ALTITUDES (OROCA).  
The OROCA is shown in THOUSANDS and HUNDREDS of feet above mean sea level for a quadrangle bounded by ticked lines of latitude and longitude. OROCA is based on the highest known terrain feature or obstruction in each quadrangle, and provides a 1,000 foot buffer over the feature in designated non-mountainous areas (or a 2,000 foot buffer in designated mountainous areas) within the United States. These OROCA altitudes are not assessed for NAVAID signal coverage, air traffic control surveillance, or communications coverage, and are published for general situational awareness, flight planning, and in-flight contingency use.

Example: 12,500 feet .....

12<sup>5</sup>

OROCA NOTICE			
Main Heading	CAPS	.09" Futura Medium/Black	<div>ATTENTION</div> <div>THIS CHART CONTAINS OFF ROUTE ...</div> <div>The OROCA is shown in THOUSANDS...</div> <div>Example: 12,500 feet ...</div> <div>12<sup>5</sup></div> <div></div>
First Line	CAPS	.07" Futura Medium/Black	
Remaining Text	Lowercase	.07" Futura Medium/Black	
Example			
Text	Lowercase	.07" Futura Medium/Black	
OROCA			
Thousands of feet		.36" Futura Medium/25% Brown	
Hundreds of feet		.16" Futura Medium/25% Brown	
Box Lineweight		.007"/Black	

APPENDIX 27

SFAR NO. 97 CHART NOTICE - ALASKA

CHART NOTICE

Implementation of Instrument Flight Rules (IFR)  
Area Navigation (RNAV) Operations Using  
Global Positioning System (GPS) in Alaska

Under SFAR No. 97, operators using IFR-certified TSO C145a and TSO C146a GPS/WAAS navigation systems will be permitted to conduct operations over selected routes in AK beyond the service volume of ground-based nav aids at the lowest minimum en route altitude (MEA) based only on route obstacle assessments and ATC two-way voice communication capability.

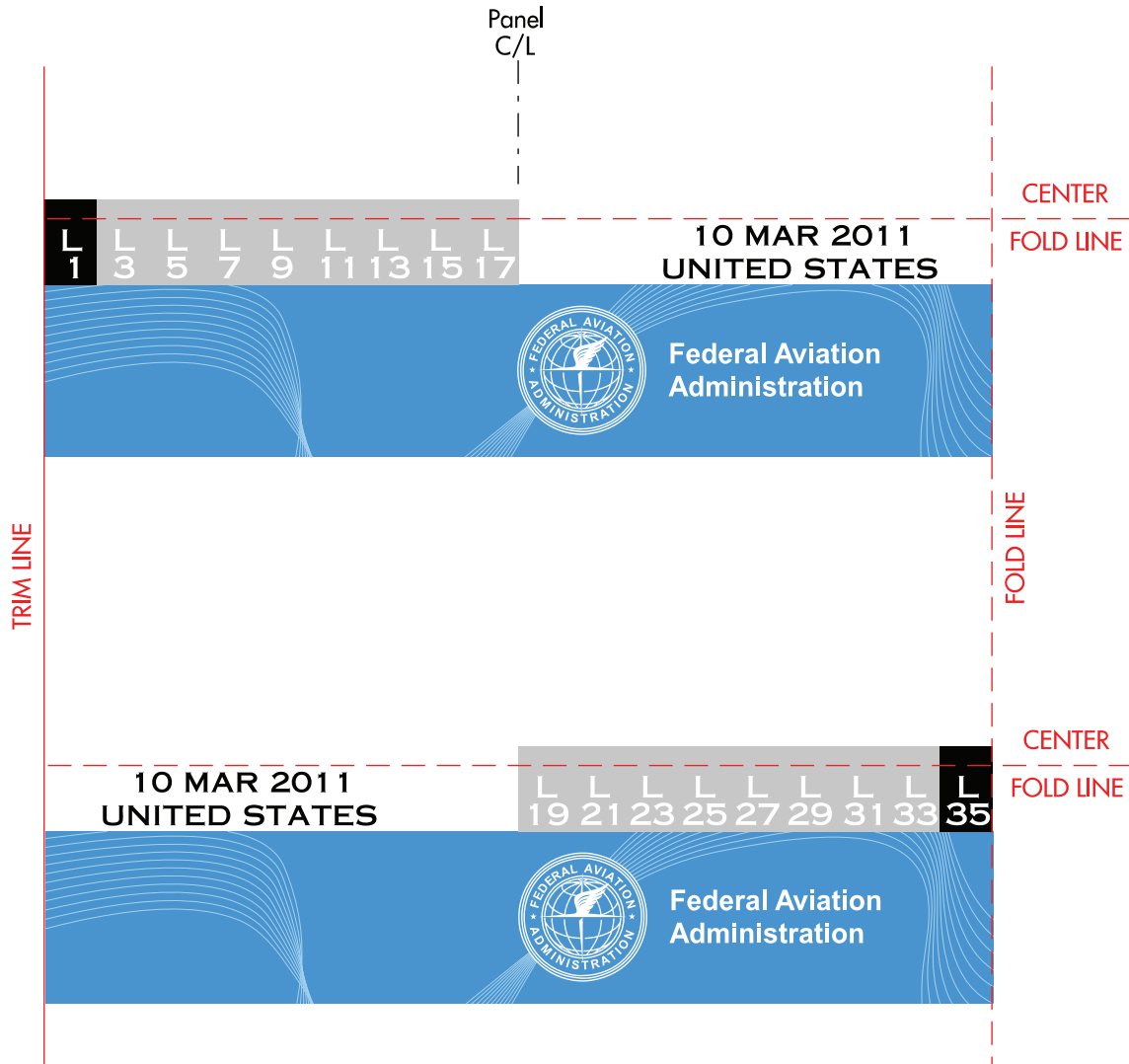
The MEAs for these routes will be depicted on the IFR Enroute Low Altitude-AK charts in blue type with a 'G' suffix. For instance, a GPS MEA of 2000 feet MSL will be depicted as "2000G" in blue. Standard MEAs will be depicted in black type and be 'stacked' above the GPS MEA.

See SFAR No. 97 for equipment, training and operational requirements.

SFAR NO. 97 - CHART NOTICE			
Title	CAPS	.09" Futura Medium/Black	CHART NOTICE
Content			
First Paragraph	C/L	.08" Futura Medium/Black	Implementation of Instrument...
Remaining Paragraphs		.07" Futura Medium/Black	Under SFAR No. 97, operators...
Box Lineweight		.007"/Black	<div></div>

# APPENDIX 28

## CHART IDENTIFICATION LABELS - U.S., ALASKA & AREA CHARTS



APPENDIX 28

CHART IDENTIFICATION LABELS - U.S., ALASKA & AREA CHARTS (CONTINUED)

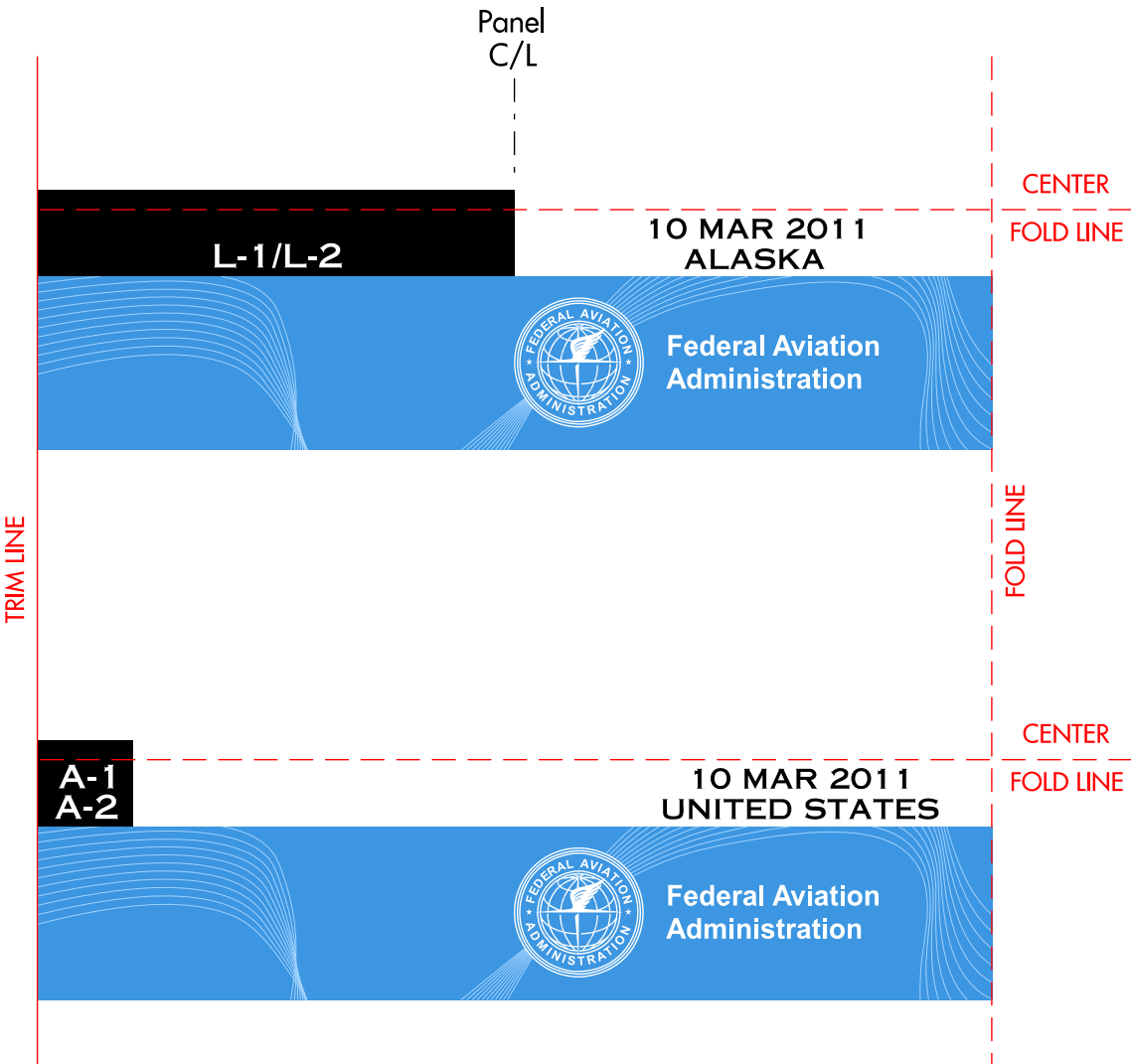
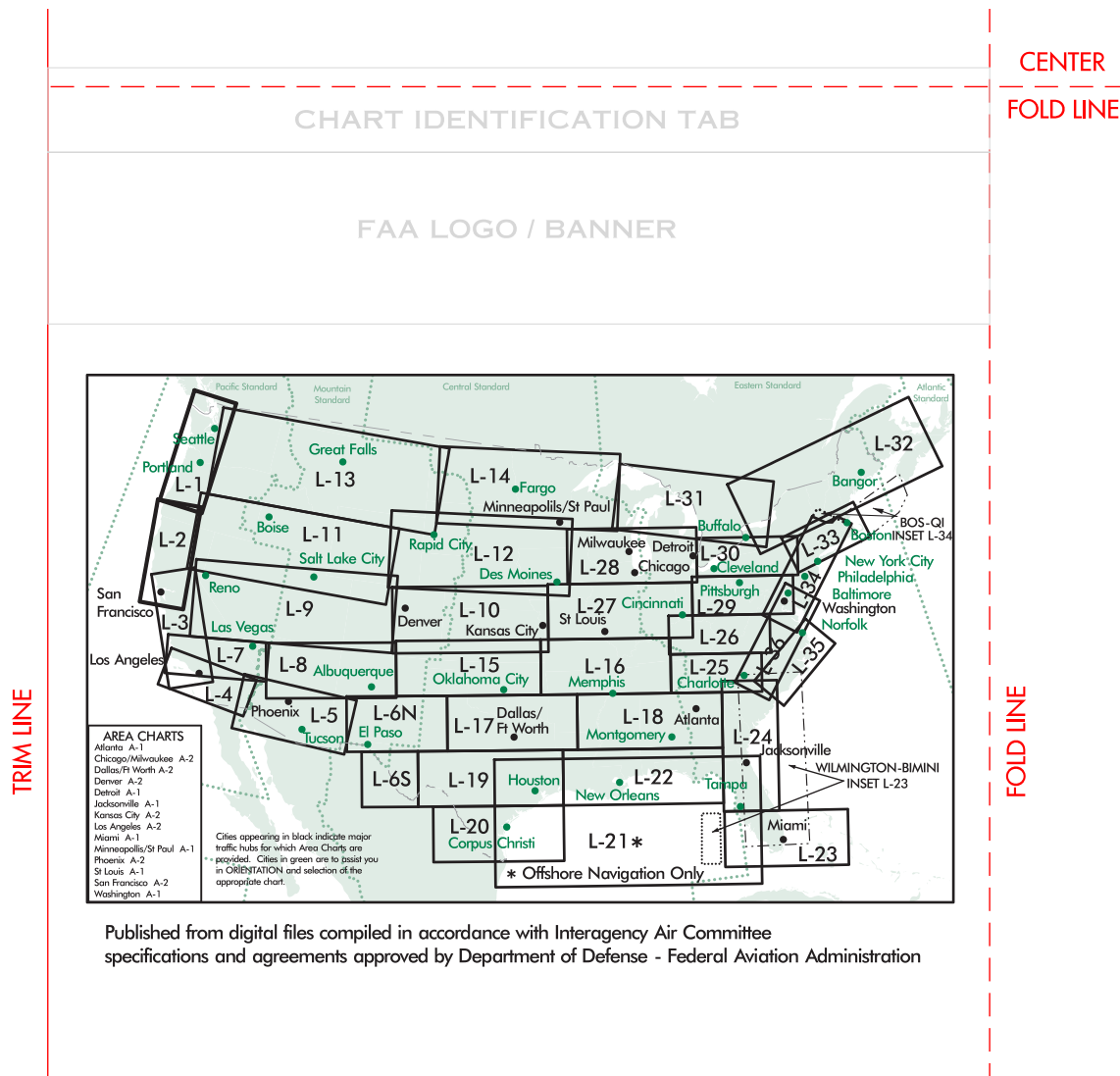


CHART IDENTIFICATION LABELS			
Chart Numbers Area & U.S.	CAPS	.12" Copperplate Gothic 31	<div>L1</div> <div>A-1 A-2</div>
Alaska	CAPS	.12" Copperplate Gothic 31	<div>L-1/L-2</div>
Chart Effective Date	CAPS	.11" Copperplate Gothic 31/Black	10 MAR 2011
Area of Coverage	CAPS	.11" Copperplate Gothic 31/Black	UNITED STATES



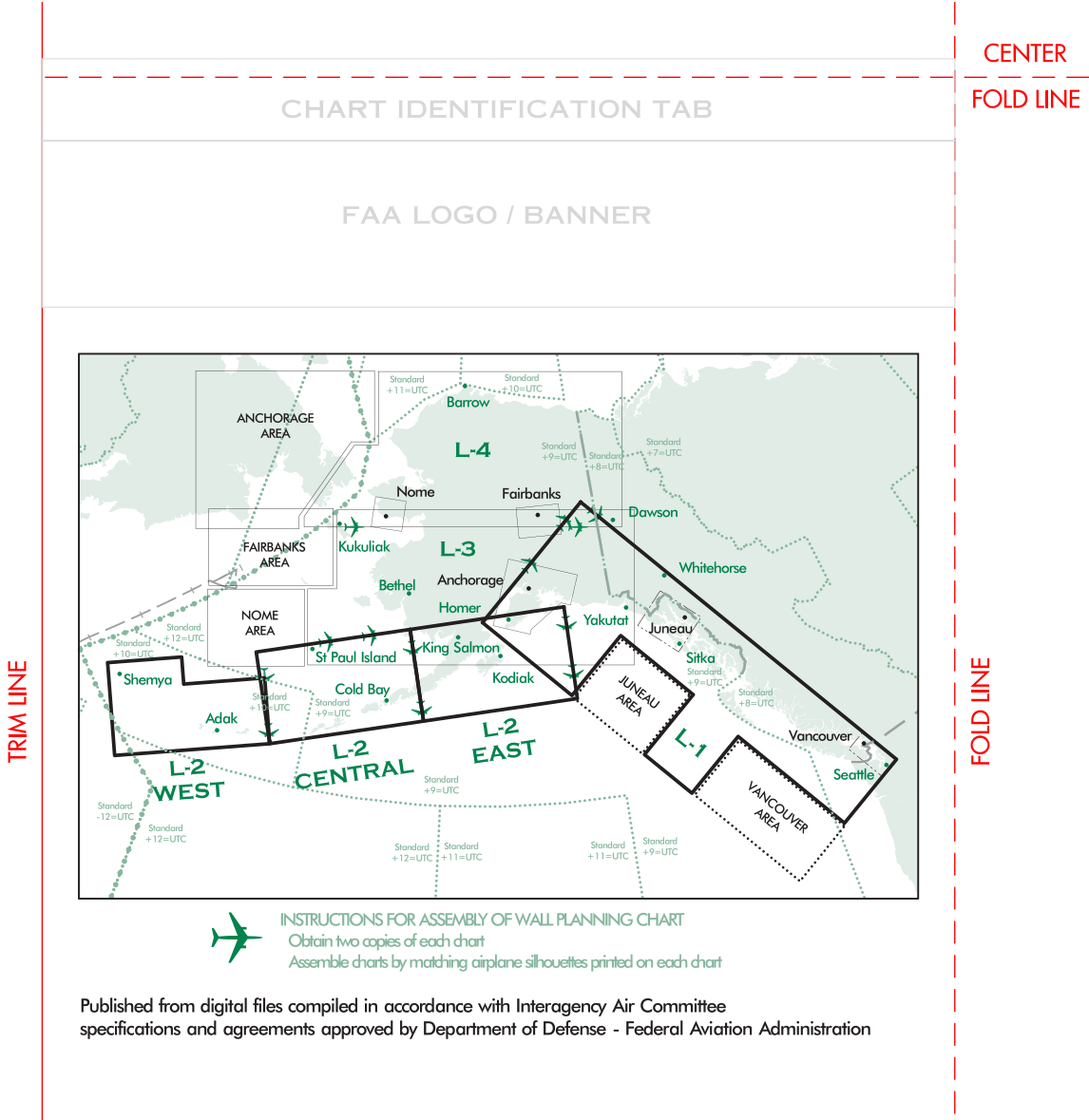
## APPENDIX 29

### CHART INDEX - U.S.















APPENDIX 30

CHART INDEX - ALASKA









## APPENDIX 31

### CHART INDEXES - U.S. AND ALASKA


CHART INDEXES - U.S. & ALASKA - COMMON ITEMS			
Cities			
Prominent Cities			
Symbol		.025" Diameter/Green	
Name	C/L	.06" Futura Medium/Green	Cold Bay
Area Chart Cities			
Symbol		.025" Diameter/Black	
Name	C/L	.06" Futura Medium/Black	Anchorage
Borders & Outlines			
Chart Index Border		.015"/Black	
Selected Charts			
Enroute Chart Coverage Border		.020"/Black	
Inset Chart Coverage Border		.015"/Black	
Time Zone Boundary			
Name	C/L	.04" Futura Medium/45% Green	Eastern Standard
Boundary		.015" Diameter/45% Green	
International Boundary		.008"/45% Black	
Land Areas		10% Green	
IAC Credit Note		.065" Futura Medium/Black	Published from digital files
CHART INDEXES - U.S. - UNIQUE ITEMS			
Chart Identificaton	CAPS	.08" Futura Medium/Black	L-21
Borders & Outlines			
Selected Charts			
Inset Chart Coverage Border		.020"/Black	
Non-Selected Charts			
Enroute Chart Coverage Border		.010"/Black	
Area Chart List Border		.012"/Black	
Area Chart List			
Title	CAPS	.05" Futura Medium/Black	AREA CHARTS
City Names	C/L	.04" Futura Medium/Black	Chicago/Milwaukee A-2
Inset Chart Title	CAPS	.05" Futura Medium/Black	WILMINGTON-BIMINI INSET L-23
Leader Line		.007"/Black	
Offshore Navigation Note	C/L	.065" Futura Medium/Black	* Offshore Navigation Only
Area Chart Cities Note	Lowercase	.04" Futura Medium/Black	Cities appearing in black indicate...

**APPENDIX 31**  
**CHART INDEXES - U.S. AND ALASKA (CONTINUED)**

<b>CHART INDEXES - ALASKA - UNIQUE ITEMS</b>			
Chart Identificaton Title	C/L	.09" Copperplate Gothic 31/Green	<b>L-2 CENTRAL</b>
Borders & Outlines			
Selected Charts			
Inset Chart Coverage Border		.005"/Black	
Non-Selected Charts			
Enroute Chart Outlines		.015"/Black	
Inset Chart Coverage Border		.008"/Black	
Inset Chart Title	CAPS	.05" Futura Medium/Black	NOME AREA
International Date Line		.030" Diameter/45% Green	
US/Russia Maritime Boundary		.008"/45% Black	
Wall Planning Chart			
Registration Mark		Green	
Title	CAPS	.06" Futura Medium/45% Green	INSTRUCTIONS FOR ASSEMBLY...
Text	Lowercase	.06" Futura Medium/45% Green	Obtain two copies of each chart...

APPENDIX 32  
BAR CODES



CHART BAR CODES			
FAA Product ID	C/L	.13" Futura Medium/Black	<div>FAA Product ID: ELUS1</div> <div>NSN 7641014109653</div> <div><small>NGA REF. NO.</small></div> <div>ENRXXUSLCHT01</div> <div><small>EFF. DATE</small></div> <div>17061</div> <div></div>
NSN Number	CAPS	.13" Futura Medium/Black	
"NGA Ref. No." Text	CAPS	.05" Futura Medium/Black	
NGA Reference Number	CAPS	.13" Futura Medium/Black	
"Eff. Date" Text	CAPS	.05" Futura Medium/Black	
Julian Date		.13" Futura Medium/Black	
Bar Code		.15" w39m/Black	

## APPENDIX 33

### LEGEND PANEL - U.S. AND ALASKA



[illegible]

# L-2

**PANELS**  
FHJHKL  
1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000-1001-1002-1003-1004-1005-1006-1007-1008-1009-1010-1011-1012-1013-1014-1015-1016-1017-1018-1019-1020-1021-1022-1

## APPENDIX 34

### LEGEND PANEL - CHART IDENTIFICATION LABELS U.S. & ALASKA

LEGEND PANEL - LOW ENROUTE CHARTS				
Chart Identification Area Chart Idents Text  Arrowheads  Panel Identifications Text  Chart Scales Text	CAPS	.23" Copperplate Gothic 31	45% Black	Black
			L-2	L-1
	CAPS	.07" Copperplate Gothic 31		
			PANELS FGHIJ	PANELS ABCDE
Chart Identification Color Chart Idents, Text, Arrowheads, Panel idents and Chart Scales	45% Black	U.S. Charts: L-1, L-4, L-6, L-7, L-10, L-12, L-14, L-16, L-18, L-20, L-22, L-24, L-25, L-28, L-29, L-32, L-34, and L-36  AK Charts: L-1 and L-3		
	Black	U.S. Charts: L-2, L-3, L-5, L-8, L-9, L-11, L-13, L-15, L-17, L-19, L-21, L-23, L-26, L-27, L-30, L-31, L-33, and L-35  AK Charts: L-2 and L-4		
Chart Title First and Second Lines  Third Line  Altitude Note  Horizontal Datum Note	CAPS	.11" Futura Medium/Black	UNITED STATES...  <b>IFR ENROUTE...</b>  For use up to but not...  HORIZONTAL DATUM: NORTH...	
	CAPS	.17" Futura Medium/Black		

APPENDIX 35

MILITARY TRAINING ROUTES TABULATION - U.S. & ALASKA

Panel  
C/L

TRIM LINE

MILITARY TRAINING ROUTES

NUMBER	ALTITUDE RANGE	NUMBER	ALTITUDE RANGE	NUMBER	ALTITUDE RANGE
IR-203	8000 TO 12000	IR-346	200 AGL TO FL 29000	IR-461	300 AGL TO 9000
IR-207	200 AGL TO 15000	IR-348	500 AGL TO 13000	VR-202	200 AGL TO 8000
IR-344	200 AGL TO 17000	IR-460	300 AGL TO 9000	VR-331	200 AGL TO 6000

TRIM LINE or FOLD LINE

TRIM LINE or FOLD LINE

MILITARY TRAINING ROUTES - ENROUTE CHARTS			
Table Title	CAPS	.08" Copperplate Gothic 31/Brown	MILITARY TRAINING ROUTES
Column Headings	CAPS	.07" Futura Medium/Brown	NUMBER ALTITUDE RANGE
Tabulated Information			
Number & Altitude Range	CAPS	.07" Futura Medium/Brown	VR-231 100 AGL TO 7000
Table Lineweight		.008" Brown	



# APPENDIX 36

## SUA & MOA TABULATION - U.S. & ALASKA

Panel  
C/L

TRIM LINE

### MILITARY TRAINING ROUTES


ARTCC three letter idents: Albuquerque ZAB, Atlanta ZTL, Boston ZBW, Chicago ZAU, Cleveland ZOB, Denver ZDV, Fort Worth ZFW, Houston ZHU, Indianapolis ZID, Jacksonville ZJX, Kansas City ZKC, Los Angeles ZLA, Memphis ZME, Miami ZMA, Minneapolis ZMP, New York ZNY, Oakland ZOA, Salt Lake City ZLC, Seattle ZSE, Washington ZDC

U.S.: P - PROHIBITED, R - RESTRICTED, W - WARNING, A - ALERT AREAS

All altitudes are MSL unless otherwise indicated

FL - Flight Level

Time - Hours shown are UTC unless otherwise indicated

Cont - Continuous: 24 hours a day, 7 days a week

‡ - During periods of Daylight Saving Time (DT) effective hours will be one hour earlier than shown.  
NOTAM - Use of this term in Restricted Areas indicates FAA And DoD NOTAM systems. Use of this term in all other Special Use areas indicates the DoD NOTAM system.

### SPECIAL USE AIRSPACE

NUMBER	EFFECTIVE ALTITUDE	TIMES USED, UTC	CONTROLLING AGENCY A/G CALL	PANEL
P-51	SFC TO BUT NOT INCL 2500	CONT	NO A/G	D
R-2531	SFC TO BUT NOT INCL 4000	1800 - 0450Z‡ MON - FRI; SAT - SUN BY NOTAM	N CA TRACON	F
R-6701	SFC TO 5000	INTMT BY NOTAM	WHIDBEY ISLAND NAS APP CON WA	E
R-6703A,B,C,D,E	SFC TO 14000	1500 - 0700Z‡ MON - FRI; *1	SEATTLE TRACON	D
R-6703F,G,H,I,J	SFC TO 5000	1500 - 0700Z‡ MON - FRI; *1	SEATTLE TRACON	D
W-93 N	SFC TO FL 500	1600 - 2400Z‡ DAILY; *1 2 HRS AND 30 MIN IN ADVANCE	ZSE	A,B,I,J
W-93 S	SFC TO FL 500	1600 - 2400Z‡ DAILY; *1	ZSE	I
W-237A LOW	SFC TO BUT NOT INCL FL 230	INTMT BY NOTAM	ZSE	‡D
A-680	SFC TO 3000	APR - OCT 1800 - 0930Z‡ MON - FRI; NOV - MAR 1800 - 0759Z‡ MON - FRI; *1	NO A/G	E
A-682	SFC TO 3000 N OF TRAVIS AFB RUNWAYS 21L/03R EXTENDED CENTERLINES SFC TO 6000' S OF TRAVIS AFB RUNWAYS 21L/03R EXTENDED CENTERLINES SFC TO 3000'	1600 - 0500Z‡ MON - FRI	NO A/G	FG

Alert Areas do not extend into Class A, B, C and D airspace, or Class E airport surface areas.

### MILITARY OPERATIONS AREAS

NUMBER	EFFECTIVE ALTITUDE	TIMES USED, UTC	CONTROLLING AGENCY A/G CALL	PANEL
CHINA	3000 AGL *2	1600Z‡ - SS DAILY	ZOA	G,H
CHINOOK A	300 TO 5000	INTMT BY NOTAM SR - SS	U S NAVY WHIDBEY ISLAND NAS APP CON	D,E
CHINOOK B	300 TO 5000	INTMT BY NOTAM SR - SS	U S NAVY WHIDBEY ISLAND NAS APP CON	E
DOLPHIN N	11000 *2	1600 - 2400Z‡ DAILY; *1	ZSE	A,B,I,J
DOLPHIN S	11000 *2	1600 - 2400Z‡ DAILY; *1	ZSE	I
MAXWELL 1,2,3	11000 OR 3000 AGL WHICHEVER IS HIGHER *2	1300 - 0400Z‡ MON - FRI; *1	ZOA	G,H
OLYMPIC A	6000 *2	BY NOTAM	ZSE	D
OLYMPIC B	6000 *2	BY NOTAM	ZSE	D,E
RAINIER 1,2	2000 TO 9000	INTMT BY NOTAM CONTACT NEAREST FLIGHT SERVICE STATION	SEATTLE TRACON	D
WHITMORE 1,2,3	11000 OR 3000 AGL WHICHEVER IS HIGHER *2	1530 - 0030Z‡ MON - FRI; *1	ZOA	

\*1 Other Times By NOTAM

\*2 To But Not Including FL 180

\*4 Whichever Is Higher, To But Not Including FL 180

TRIM LINE or FOLD LINE

TRIM LINE or FOLD LINE

APPENDIX 36

SUA & MOA TABULATION - U.S. & ALASKA (CONTINUED)

SUAs & MOAs TABULATION			
Table Title	CAPS	6.5pt Copperplate Gothic 31/Black	SPECIAL USE AIRSPACE
Legend	C/L	4.5pt Futura Medium/Black	P - PROHIBITED, R - RESTRICTED,
Tabulated Information			
Column Headings	CAPS	4.5pt Futura Medium/Black	NUMBER
Tabulated Information	CAPS	4.5pt Futura Medium/Black	BAKERSFIELD
Footnotes	C/L	4.5pt Futura Medium/Black	*1 Other Times By NOTAM
Table Lineweight		.008"/Black	<div></div>

APPENDIX 37  
AIRPORT LOCATIONS TABULATION - U.S. & ALASKA

Panel  
C/L

TRIM LINE

AIRPORT LOCATIONS

NAME	ID	PANEL	NAME	ID	PANEL	NAME	ID	PANEL
AJ Eisenberg	OKH	E	Harvey Fld	S43	D	Red Bluff Muni	RBL	H
Abbotsford	CYXX	E	Hayfork	F62	H	Redding Muni	RDD	H
Albany Muni	S12	B	Hayward Exec	HWD	F	Reid-Hillview of Santa	RHV	F
Anacortes	74S	E	Hobby Fld	77S	A	Renton Muni	RNT	D
Angwin-Parrett Fld	2O3	G	Hogan's Corner	5WA8	D	Rio Vista Muni	O88	F
Arcata	ACV	I	Illinois Valley	3S4	I	Roche Harbor	WA09	E
Arlington Muni	AWO	E	Independence State	7S5	B	Rogers Fld	O05	H

FOLD LINE

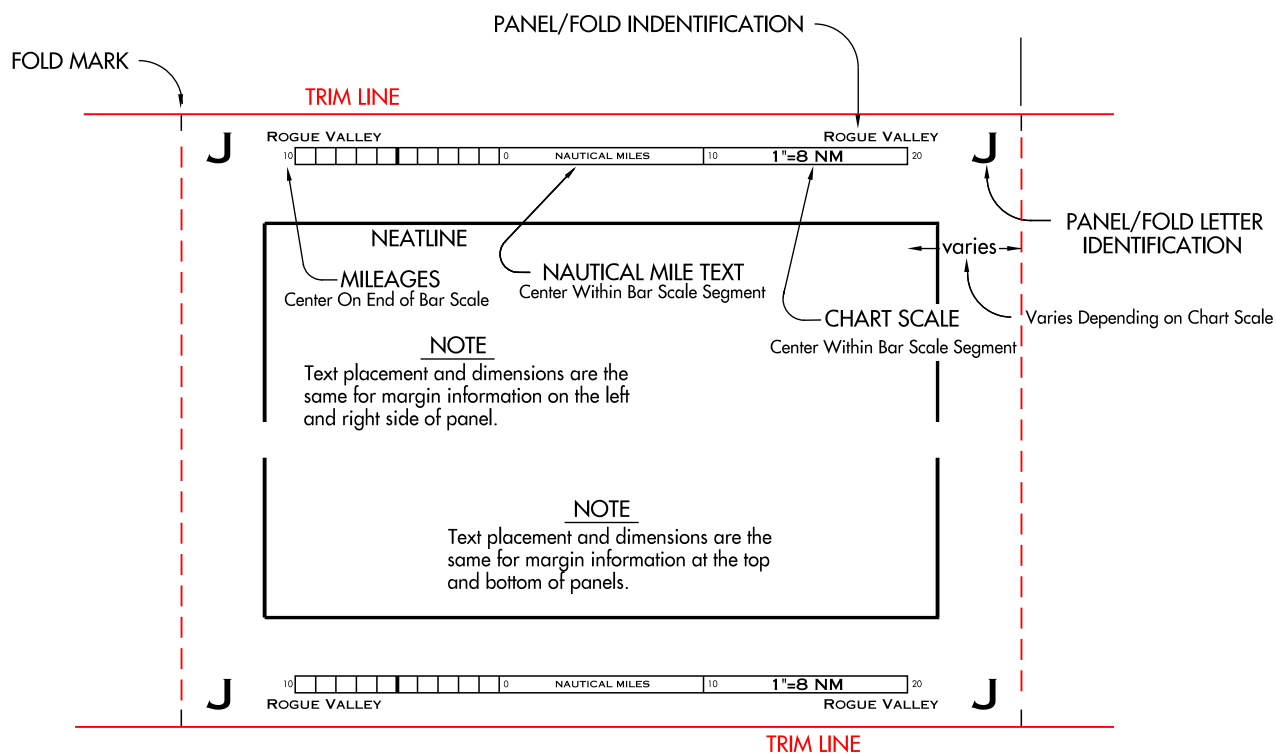
TRIM LINE or FOLD LINE

AIRPORT LOCATIONS TABULATION			
Table Title	CAPS	.09" Copperplate Gothic 31/Black	AIRPORT LOCATIONS
Tabulated Information			
Column Headings	CAPS	.07" Futura Medium/Black	NAME
Tabulated Information	C/L	.07" Futura Medium/Black	Agua Dulce L70 B
Table Lineweight		.008"/Black	

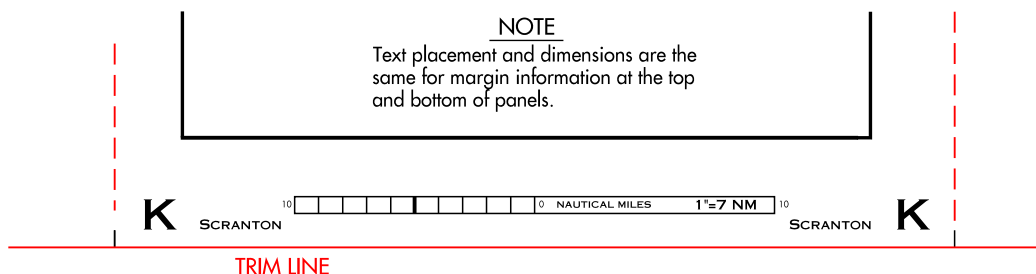
## APPENDIX 38

### MARGIN INFORMATION - U.S. & ALASKA

#### Bar Scales - One Panel - U.S. & Alaska



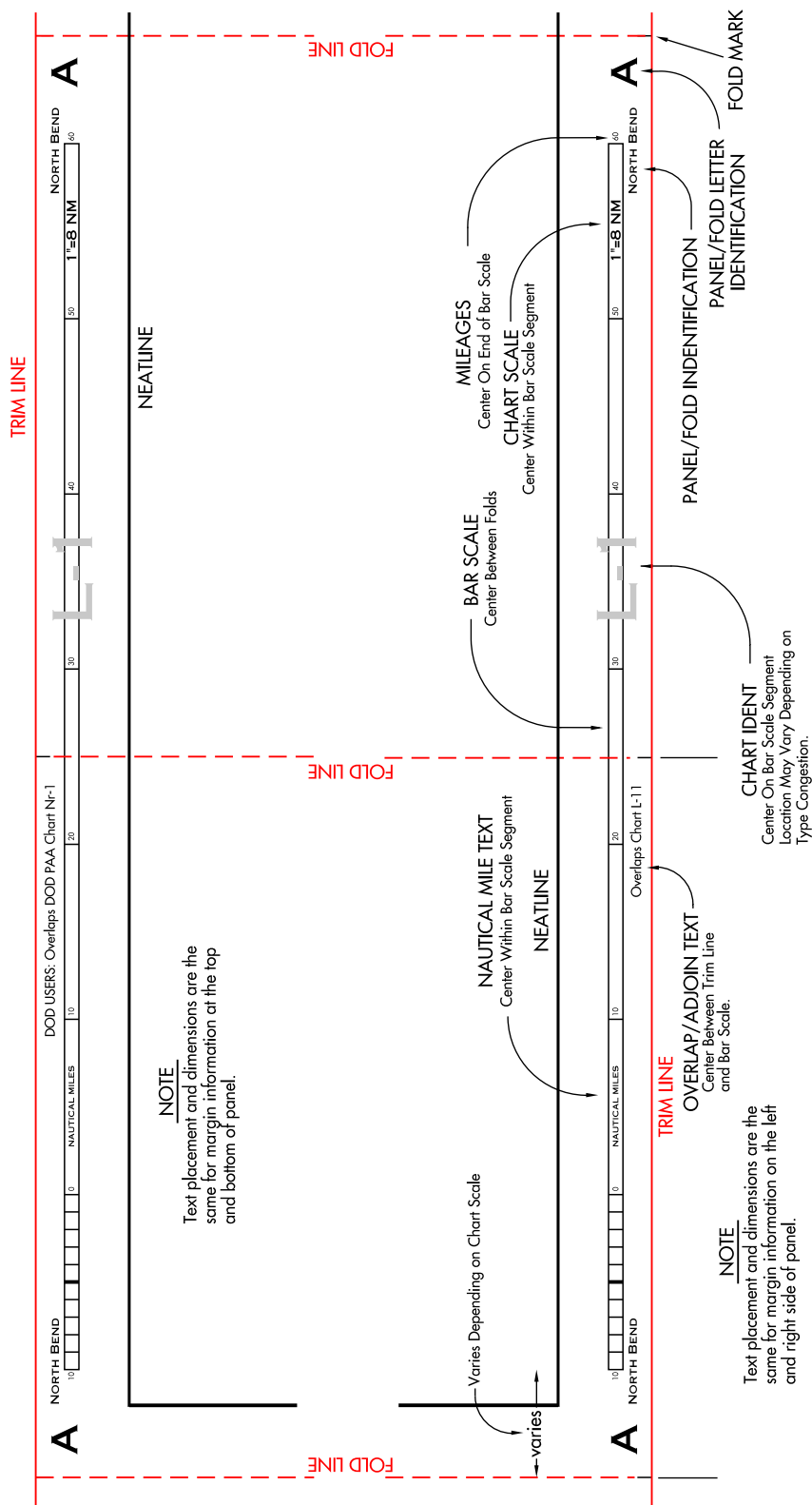
### Differences for Chart Scale 1:7



# APPENDIX 38

## MARGIN INFORMATION - U.S. & ALASKA (CONTINUED)

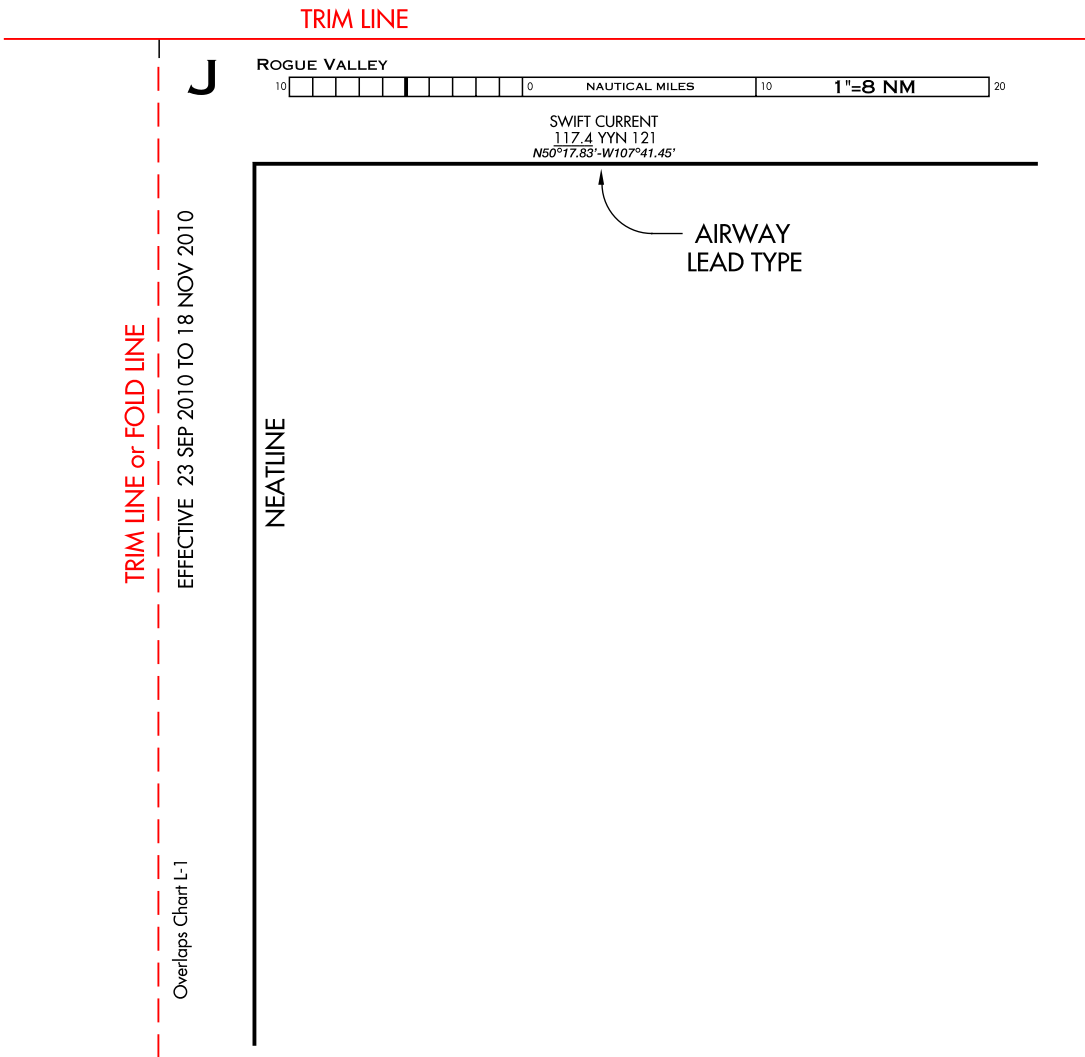
### Bar Scales - Two Panel - U.S. & Alaska



APPENDIX 38




MARGIN INFORMATION - U.S. & ALASKA (CONTINUED)

Spacing - All Charts

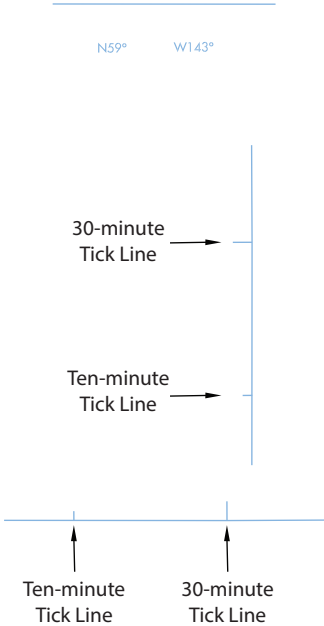


## APPENDIX 38

### MARGIN INFORMATION - U.S. & ALASKA (CONTINUED)

MARGIN INFORMATION - U.S. & ALASKA					
Panel Fold					
Letter	CAPS	.19" Copperplate Gothic 31/Black			<b>H</b> PHOENIX 
City or NAVAID Identification	CAPS	.06" Copperplate Gothic 31/Black			
Fold Mark Weight & Length		.008"/0.1"/Black			<b>L-2</b>
Chart Identification	CAPS	.29" Copperplate Gothic 31/Color?			
Chart Scale					
Units Text	CAPS	.04" Copperplate Gothic 31/Black			NAUTICAL MILES
Mileage Numbers		.04" Futura Medium/Black			20
Scale Text	CAPS	.06" Copperplate Gothic 31/Black			<b>1"=8 NM</b>
Scale Bar Lineweight		.008"/Black			
Effective Date (Even Side of Charts)	CAPS	.07" Futura Medium/Black			EFFECTIVE 18 NOV 2010 TO...
Adjoin Chart Text	C/L	.07" Futura Medium/Black			<b>Overlaps Chart L-3</b>
MARGIN INFORMATION - U.S. & ALASKA - AIRWAY/ROUTE INFORMATION					
Airway Route Text & Color					
VHF/UHF	CAPS	.06" Futura Medium/Black			MACON 112.9 MCM 76
LF/MF	CAPS	.06" Futura Medium/Brown			OSCARVILLE 251 OSE
LF/MF with DME					
LF/MF Data	CAPS	.06" Futura Medium/Brown			371 PDN 32 (109.5)
DME Data	CAPS	.06" Futura Medium/Black			
RNAV Waypoint	CAPS	.06" Futura Medium/Blue			DIBWO
Geographic Coordinates		VHF/UHF	LF/MF	RNAV	
Color		Black	Brown	Blue	N60°37.13'-W135°08.33'
Text		.05" Helvetica 66 Medium Italic			N60°26.37'-W134°51.68'
					N60°37.13'-W135°08.33'
Shutdown Status		VHF/UHF	LF/MF		
Color		45% Black	45% Brown		
Lineweight		.006"			



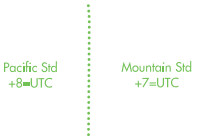


APPENDIX 39  
CHART DETAIL - PROJECTION LINES - U.S. & ALASKA

PROJECTION LINES - ALL CHARTS			
Projection Lines Lineweight Text	CAPS	.007"/45% Blue .05" Futura Medium/45% Blue	
Latitude Tick Line Length Ten-minute Thirty-minute		.05"/45% Blue .1"/45% Blue	
Longitude Tick Line Length Ten-minute Thirty-minute		.05"/45% Blue .1"/45% Blue	



## APPENDIX 40



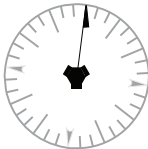
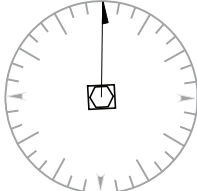
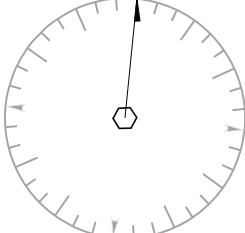

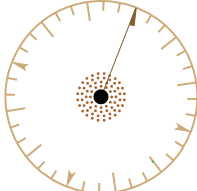
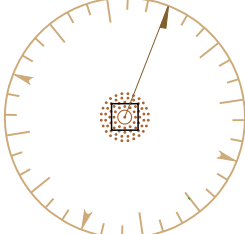
### BASE DETAIL - U.S. & ALASKA

BASE DETAIL - U.S. & ALASKA			
Shoreline		Green Vignette/Approx .15" wide	
International Boundary Lineweight Long Dash Length Short Dash Length Space between Dashes Text	CAPS	.020"/45% Blue .2"/45% Blue .1"/45% Blue .05" Gap .06" Futura Medium/45% Blue	
U.S./Russia Maritime Boundary Lineweight Horizontal Dash Length Vertical Dash Length Space between Dashes Text	CAPS	.020"/45% Blue .2"/45% Blue .1"/45% Blue .05" Gap .06" Futura Medium/45% Blue	
Time Zones - U.S. Text Dotted Border	C/L	.05" Futura Medium/45% Green .0075" Diameter/45% Green	
International Date Line Text Dotted Border	CAPS	.05" Futura Medium/45% Green .03" Diameter/45% Green	
Lines of Equal Magnetic Variation (Isogonic Lines) Text Lineweight	CAPS	.06" Techno Medium Italic/45% Green .005"/45% Green	
OROCA Values Thousands of feet value Hundreds of feet value		.36" Futura Medium/25% Brown .16" Futura Medium/25% Brown	










## APPENDIX 42

### NAVAID NORTH ARROWS & COMPASS ROSES

NAVAIDs - NORTH ARROWS & COMPASS ROSE					
NAVAID North Arrows Lineweight Color		VHF/UHF	LF/MF	VHF/UHF	LF/MF
		Black	Brown		
NAVAID Compass Rose Lineweight Color		VHF/UHF	LF/MF		
		25% Black	Brown		
Size		Small 0.75"	Medium 1"	Large 1.25"	
VHF/UHF					
LF/MF					



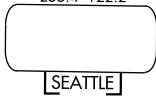




## APPENDIX 43

### NAVAID IDENTIFICATION BOXES

NAVAID IDENTIFICATION BOXES					
NAVAID Identification Box Lineweight & Color		VHF/UHF	LF/MF	VHF/UHF	LF/MF
		.007"/Black	.007"/Brown		
NAVAID Data Color - All Charts Font - All Charts Font Size  Geographic Coordinates Color Font & Size	CAPS	Black  Futura Medium .07"	Brown  Futura Medium .07"	<b>MYSTIC</b> <b>108.2 MYS</b>  <small>N62°57.06' W155°36.69'</small>	<b>GALBRAITH LAKE</b> <b>41Z GBH</b>  <small>N64°22.58' W173°14.44'</small>
Pointer (LF/MF Only)		.007"/Brown			
Leaderline (VHF/UHF Only)		.007"/Black			
SSV (VHF/UHF Only) Font & Color Font Size	CAPS	Futura Medium/Black .07"		(T) (L) (H) (VL) (VH) (DL) (DH)	
No Voice Color Lineweight		Black  .007"	Brown  .007"	VHF/UHF  —	LF/MF  —
Part-Time Color		Black	Brown	★	★
Y Mode Font & Color - All Charts Font Size	CAPS	Futura Medium/Black .07"		18(Y)	
Abnormal Status Color Lineweight		45% Black  .007"	45% Brown  .007"	VHF/UHF  	LF/MF  
Private NAVAIDs Color - All Charts Font - All Charts Font Size	CAPS	Black  Futura Medium .07"	Brown  Futura Medium .07"	<b>PRIVATE</b>	<b>PRIVATE</b>
ILS Components Localizer Course Front Bearing Text Back Course Text	CAPS CAPS	.07" Futura Medium/Black .05" Futura Medium/Black		 <b>BACK COURSE</b>	





## APPENDIX 44

### FLIGHT SERVICE STATIONS & REMOTE COMMUNICATIONS OUTLETS

FSSs & RCOs					
Associated with NAVAID		VHF/UHF	LF/MF	VHF/UHF	LF/MF
FSS Frequency(s) Shadow Box				122.6 122.45 	123.6 
RCO Frequency(s) Name Name "L" Brackets Lineweight	CAPS		.06" Futura Medium/Black Black	255.4 122.2 	126.7 122.5 
Not Associated with NAVAID FSS Frequency(s) Name Shadow Box	CAPS		.06" Futura Medium/Black .07" Futura Medium/Black Black	122.2 	
RCO Frequency(s) Name Box Lineweight	CAPS		.06" Futura Medium/Black .06" Futura Medium/Black .007" /Black		
Operational Hours and Notes	CAPS		.05" Futura Medium/Black	FSS VOICE AVAILABLE 1615-0745Z† OTHER TIMES CONTACT FAIRBANKS FSS	
FSS & RCO Location Indicator Circle Diameter & Color Lineweight Dot			.072" Diameter/Black .008" /Black .015" Diameter/Black		



## APPENDIX 45

### AUTOMATED WEATHER BROADCASTING SYSTEMS

AUTOMATED WEATHER BROADCASTING SYSTEM (AWBS)					
Associated with NAVAID  Symbol Color Symbol ASOS/AWOS		VHF/UHF	LF/MF	VHF/UHF	LF/MF
		Black	Brown		
Not Associated with NAVAID Name, AWBS, Frequency & FAA Ident Box Lineweight	CAPS	.06" Futura Medium/Black .007" /Black			
AWBS Location Indicator Circle Diameter & Color Lineweight Dot		.072" Diameter/Black .008" /Black .015" Diameter/Black			

## APPENDIX 46

### AIRSPACE INFORMATION

GENERAL ATS AREA INFORMATION			
ATS Area Data Service Type, Name & ICAO Identifier Vertical & Horizontal Limits Text Separator Line Call Sign & Frequencies  Box Lineweight  Pointer  Explanatory Notes	CAPS	.06" Futura Medium/45% Blue  .06" Futura Medium/45% Blue .007"/45% Blue .06" Futura Medium/45% Blue  .015"/45% Blue  .007"/45% Blue  .06" Futura Medium/45% Blue	<div> <div>CTA HOUSTON OCEANIC KZHU</div> <div>UNLTD 2500 AMSL</div> <div>NEW YORK RADIO 129.4 2887</div> <div>  </div> </div>
AIRSPACE NOTES			
U.S. Airspace Note	CAPS	.05" Futura Medium/45% Blue	FAA AIR TRAFFIC SERVICE OUTSIDE U.S. AIRSPACE IS PROVIDED IN ACCORDANCE WITH...
FOREIGN AIRSPACE NOTES			
Foreign Airspace Notes — All Non-U.S. Airspace Color Box Lineweight Color	CAPS	.06" Futura Medium Black .015" Black	Note: Limited chart information provided....  <div>  </div>
Havana FIR Airspace Note	CAPS	.05" Futura Medium/Black	CAUTION: ACCURACY OF AIR TRAFFIC SERVICES RELATIVE TO HAVANA FIR
OTHER AIRSPACE NOTES			
Miscellaneous Airspace Notes	CAPS	.05" Futura Medium/Black	REPORT TO FAA RADIO PRIOR TO ENTERING ADIZ







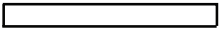
## APPENDIX 47

### AIRSPACE

AIRSPACE TYPES			
Foreign Airspace		10% Black	
Class B Airspace			
Lateral Limits		5% Blue	
Outer Limit/Boundary		.005"/Blue	
Airspace Box Lineweight		.015"/Black	
Airspace Name	CAPS	.05" Futura Medium/Black	CLASS B AIRSPACE
Class C Airspace			
Lateral Limits		5% Blue	
Outer Limit/Boundary		.005"/Blue	
Dashed Line Composition		.20" dash, .05" space, .10" dash, .05" space	
Class G Airspace, Uncontrolled Airspace, Unclassified Airspace		10% Brown	
Mode C Text	CAPS	.06" Futura Medium/Blue	30 NM
Border Lineweight		.005"/Blue	








## APPENDIX 47 AIRSPACE (CONTINUED)

AIRSPACE - BOUNDARIES					
Control Areas (CTA), Upper Control Areas (UTA), Oceanic Control Areas					
Boundary Limit			.010"/10% Brown		
First Line					
ID Text	CAPS		.06" Futura Medium/45% Blue		CONTROL 1316L
Second Line					
Altitudes & Associated Notes	CAPS		.05" Futura Medium/45% Blue (Caps)		5500 FT AND ABOVE
Special Use Airspace (SUA) & Military Operation Areas (MOA) Boundaries		SUA	MOA	SUA	MOA
Boundary Limit					
Lineweight		.010"	.010"		
Band Width (Line Length)		.075"	.075"		
Color		45% Blue	45% Brown		
Identification					
Font & Size	CAPS	.07" Futura Medium	.07" Futura Medium		
Color		45% Blue	45% Brown		
Exclusion Area Notes	CAPS	.05" Futura Medium (Caps)		ABEL NORTH, SOUTH, AND BRAVO MOAS EXCLUDE	THE AIRSPACE WITHIN R-2507 N-S-E AND R-2512
Overlap/Adjoin Line		.015"/45% Blue	.015"/45% Brown		
Pointer w/Arrowhead		.007"/45% Blue	.007"/45% Brown		
Small Areas - Boundaries		.070" Diameter/ 45% Blue			
Exclusion Area Text	CAPS	.05" Futura Medium	.05" Futura Medium		
Pointer w/Arrowhead		.007"/Black	.007"/Black		
Special Air Traffic Rules (SFAR 50-2 and SFRAs) Airspace Note Box			.015"/Black		
Airspace Note	CAPS	.05" Futura Medium/Black			SPECIAL FLIGHT RULES AREA
Boundary Limit					
Line		.015"/45% Blue			
Squares - Dimension		.05"/45% Blue			
Squares - Spacing		.50"			
SFRA Name	CAPS	.06" Futura Medium/45% Blue			WASHINGTON D.C. METROPOLITAN SFRA
















## APPENDIX 47

### AIRSPACE (CONTINUED)

AIRSPACE - BOUNDARIES			
ADIZ , CADIZ & Defense Areas  Text Boundary Limit Lineweight	CAPS	.06" Futura Medium/45% Blue  .010"/45% Blue	ALASKA ADIZ  
FIRS  Text Boundary Limit Lineweight Tick Height Tick Lineweight Spacing between Tick Lines	CAPS	.06" Futura Medium/45% Blue  .015"/45% Blue .10"/45% Blue .015"/45% Blue .060"/45% Blue	MIAMI OCEANIC CTA/FIR KZMA  
ARTCCs & ACCs  Text CPDLC Text Boundary Limit Lineweight	CAPS  CAPS	.06" Futura Medium/45% Blue .06" Futura Medium/45% Blue  .005"/45% Blue	MIAMI CPDLC (LOGON KUSA)  
ARTCC RCAG  ARTCC Name Remoted Site Frequency(s) Boundary Limit Lineweight	CAPS C/L	.06" Futura Medium/45% Blue .06" Futura Medium/45% Blue .06" Futura Medium/45% Blue  .005"/45% Blue	MIAMI Miami 132.4 281.5  
Continental Control Boundary (U.S.)  Boundary Limit Lineweight		.010"/Brown	
Altimeter Setting  Text & Altimeter Setting	CAPS	.06" Futura Medium/Black	QNH ALTIMETER















## APPENDIX 48

### AIRWAY/ROUTE TYPES

AIRWAY/ROUTE TYPES					
Victor Airways		VHF/UHF	LF/MF	VHF/UHF	LF/MF
Lineweight & Color		.02"/Black	.02"/Brown		
LF/MF Airways (Colored Airways)		.06"/25% Brown			
Oceanic, Atlantic, Gulf, Puerto Rico & Bahama Routes		VHF/UHF	LF/MF	VHF/UHF	LF/MF
Lineweight & Color		.02"/Black	.02"/Brown		
Air Traffic Services (ATS) Routes		VHF/UHF	LF/MF	VHF/UHF	LF/MF
Lineweight & Color		.060"/25% Black	.060"/25% Brown		
RNAV T & TK Routes		.02"/Blue			
RNAV Q Routes (Gulf of Mexico)		.02"/Black			
Unusable Airway/Route Segments		.020"/45% Black			
Coincident Airway/Route Unusable Note		.05" Futura Medium/Black		ONLY V292 UNUSABLE	
Substitute Airways/Routes		Brown			
Symbol & Color "Unusable"		.05" Futura Medium/Black		UNUSABLE	
Military Training Routes					
Route					
Lineweight & Color					
Route width < 5 NM		.020"/15% Brown			
Route width > 5 NM		.035"/15% Brown			
Route Designator		.07" Futura Medium/45% Brown		IR-18	VR-708
Direction Arrow					
Color		45% Brown			

## APPENDIX 49

### AIRWAY/ROUTE DATA















AIRWAY/ROUTE DATA					
Identification					
Victor Airways					
Identifier Text	CAPS	.10" Reverse Negative/ Futura Medium/Black (May be reduced to .09" in congested areas)			
Colored Airways					
Identifier Text	CAPS	.07" Futura Medium/Brown		A0	
Box Lineweight		.01"/ Brown			
RNAV T and TK Routes					
Identifier Text	CAPS	.10" Reverse Negative/ Futura Medium/Blue (May be reduced to .09" in congested areas)			
Oceanic, Atlantic, Gulf, Puerto Rico & Bahama Routes		VHF/UHF	LF/MF	VHF/UHF	LF/MF
Identifier Text	CAPS	.07" Futura Medium		A0	A0
Color		Black	Brown		
Box Lineweight		.01"/Black	.01"/Brown		
Air Traffic Service (ATS) Routes					
Identifier Text	CAPS	.07" Futura Medium		A0	A0
Color		Black	Brown		
RNAV Q Routes (Gulf of Mexico)					
Identifier Text	CAPS	.07" Futura Medium/Black		Q102	
Box Lineweight		.01"/Black			
Preferred Direction Arrows					
Arrowhead & Color		As appropriate for airway/route type			
Box Lineweight (ATS, Oceanic & RNAV Q Routes)		.01"/Black			
Hours of Operation					
Text	CAPS	.05" Futura Medium		1100-0300Z	1100-0300Z
Color		As appropriate for airway/route type			1100-0300Z
Radials & Bearings					
VHF/UHF		.07" Futura Medium/Black (May be reduced to .06" in congested areas)		090°	
Text		Black			
Arrow					
LF/MF		.07" Futura Medium/Brown (May be reduced to .06" in congested areas)		270	
Text		Brown			
Arrow					
Unusable Airway/Route		VHF/UHF	LF/MF	VHF/UHF	LF/MF
Radials or Bearings		.006"/45% Black			
Lineweight & Color		.006"/45% Black			
Radial/Bearing Information		.05" Futura Medium/Black		R-233 UNUSABLE	
Magnetic Bearings		T & TK Routes	Q Routes	T & TK Routes	Q Routes
Text		.07" Futura Medium (May be reduced to .06" in congested areas)		270	311
Color		Blue	Black		
Arrow Color		Blue	Black		

# **APPENDIX 49** **AIRWAY/ROUTE DATA (CONTINUED)**

<b>AIRWAY/ROUTE DATA</b>							
MEAs, MOCAs & MAAs	CAPS	.06" Futura Medium (May be reduced to .05" in congested areas) As appropriate for airway/route type			MEA	MOCA	MAA
Text					9000	* 2000	MAA-15000
Color					6000	* 2200	MAA-15000
					6200G	* 2000	MAA-15000
T Symbol Lineweight & Color	CAPS	VHF/UHF	LF/MF	RNAV	VHF/UHF	LF/MF	RNAV
		.015"/Black	.015"/Brown	.015"/Blue			
MEA Gap Note		.05" Futura Medium/Black			MEA GAP		
MCAs & MTAs	CAPS	As appropriate for airway/route type			VHF/UHF	LF/MF	RNAV
Symbol & Color							
Text					MTA V481S to V32 W 10000 MTA B25 S to B32 E 10000 MTA V32 W to T226 N 11000		
Color					MCA V481 10500S MCA B25 6600N MCA T226 10600S		
MILEAGE DISTANCES	CAPS	.07" Futura Medium (May be reduced to .06" in congested areas) As appropriate for airway/route type			25	125	125
Text							
Color							
Box Lineweight & Color	CAPS	VHF/UHF	LF/MF	VHF/UHF	LF/MF	RNAV	
TO Note		.01"/Black	.01"/Brown				
Text		.05" Futura Medium			TO MWH	TO MWH	TO MWH
Color							
Changeover Points (COP)	CAPS	VHF/UHF	LF/MF	VHF/UHF	LF/MF		
Symbol & Color		Black	Brown				
Text		.06" Futura Medium (May be reduced to .05" in congested areas)			21	96	
Color							
		Black	Brown				










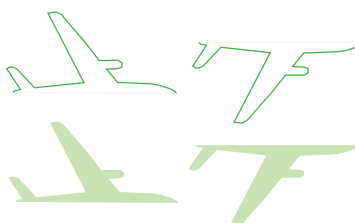
## APPENDIX 50

### NAVIGATIONAL & PROCEDURAL INFORMATION

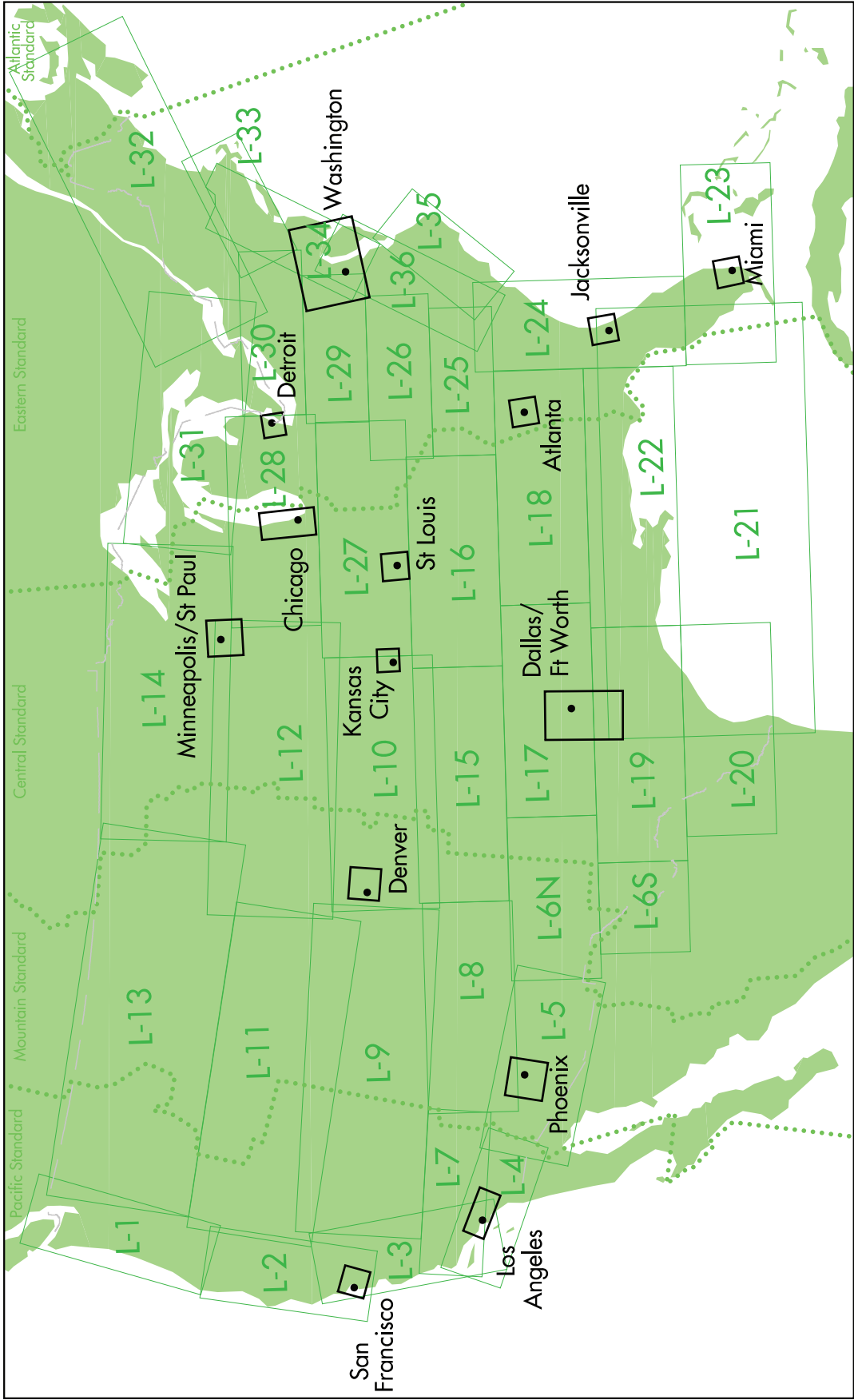
OPERATIONAL NOTES							
Color Text	CAPS	VHF/UHF	LF/MF	RNAV	VHF/UHF	LF/MF	RNAV
		Black	Brown	Blue	COMPULSORY FL 240 AND ABOVE	COMPULSORY A647 ONLY	COMPULSORY FL 240 AND ABOVE
		.05" Futura Medium					
FLYOVER SYMBOLOGY							
Symbol & Color		VHF/UHF	LF/MF	RNAV	VHF/UHF	LF/MF	RNAV
		Black	Brown	Blue			
RADIO INTERSECTIONS & DME FIXES							
Symbol & Color Fix Name Color Text Fix Geographic Coordinates Color Text Radio Fix Arrows Non-DME DME	CAPS	VHF/UHF	LF/MF	VHF/UHF	LF/MF		
		Black	Brown				
		Black	Brown	AMZIE	CRABB		
		.06" Futura Medium (May be reduced to .05" in congested areas)					
	CAPS	Black	Brown	N43°06.37' W67°17.17'	N42°12.80' W65°45.20'		
		.05" Futura Medium Italic					
		Black	Brown				
		Black	Black				
DME BOATS							
Symbol & Color Text		Black .07" Futura Medium/Black			 15		
RADIAL & BEARINGS USED FOR FIX MAKEUP							
Arrow Lineweight & Color Text Color Text Color		VHF/UHF	LF/MF	VHF/UHF	LF/MF		
		.007"/Black	.007"/Brown				
		Black	Brown	090°	090°		
		.07" Futura Medium (May be reduced to .06" in congested areas)					
FACILITY LOCATOR BOATS							
Symbol & Color NAVAID Data Color Text	CAPS	VHF/UHF	LF/MF	VHF/UHF	LF/MF		
		Black	Brown				
		Black	Brown	112.1 MLF 58	257 SQT		
		.06" Futura Medium (May be reduced to .05" in congested areas)					
RNAV WAYPOINTS							
Symbol & Color Waypoint Text & Color Geographic Coordinates Text & Color	CAPS	Blue .06" Futura Medium/Blue (May be reduced to .05" in congested areas)			 PHYLS		
	CAPS	.05" Futura Medium Italic/Blue			N39°33.03' W72°41.53'		

## APPENDIX 50

### NAVIGATIONAL & PROCEDURAL INFORMATION (CONTINUED)

MRAS							
Symbol & Color MRA Information Color Text	CAPS	VHF/UHF	LF/MF	RNAV	VHF/UHF	LF/MF	RNAV
		Black	Brown	Blue			
		Black	Brown	Blue			
		.06" Futura Medium (May be reduced to .05" in congested areas)			MRA 1800	MRA 1800	MRA 1800
NAVAID HOLDING PATTERNS							
Holding Pattern Symbol & Color Text & Color	CAPS	45% Black .05" Futura Medium/45% Black			 210K		
		VHF/UHF	LF/MF	VHF/UHF	LF/MF		
		.007"/Black Black .07" Futura Medium (May be reduced to .06" in congested areas)		.007"/Brown Brown		 210	 337
		Black Brown .05" Futura Medium Italic			N47°04.47' W121°30.97'		
RNAV HOLDING PATTERNS							
Holding Pattern Symbol & Color	CAPS	Blue					
		.007"/Blue					
		.07" Futura Medium/Blue (May be reduced to .06" in congested areas)			290		
		Blue .05" Futura Medium Italic			N27°50.00' W75°25.41'		
COMPUTER NAVIGATION FIXES (CNF)							
Symbol & Color	CAPS	VHF/UHF	LF/MF	VHF/UHF	LF/MF		
		Black	Brown	x	x		
		.07" Futura Medium (May be reduced to .06" in congested areas)		(JBBDT)	(JBBDT)		
AREA/OVERLAPPING CHART BOUNDARY							
Text Dash Line Weight & Color Length Spacing	CAPS	.09" Futura Medium/Green			AREA CHART A-2 FOR DETAIL		
		.04"/35% Green					
		.13"					
		.06"					
REGISTRATION GUIDE MARKS (Alaska Only)							
Silhouette Outline		.006"/Green					
		10% Green					
		1"					

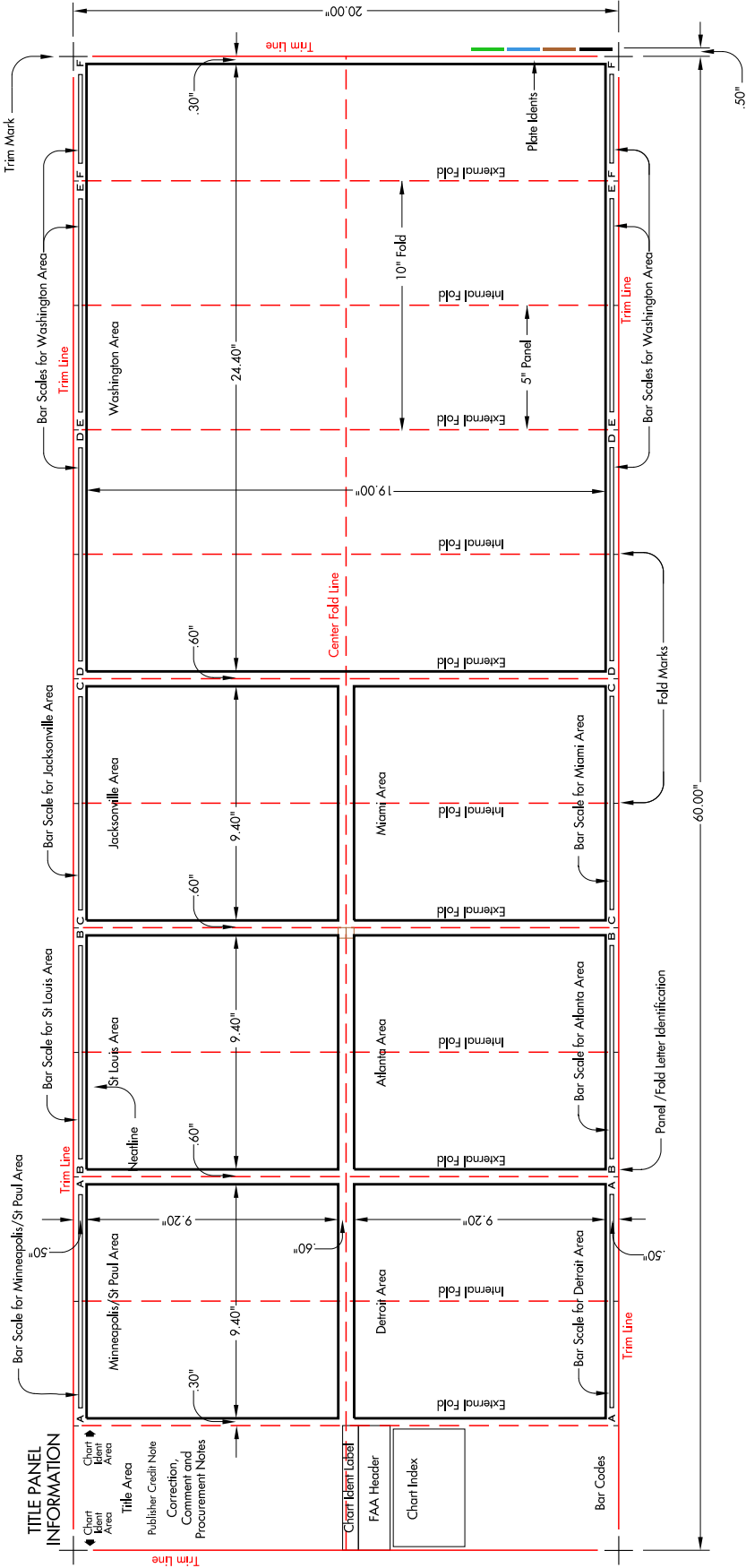
APPENDIX 51  
CHART AREA OF COVERAGE - AREA CHARTS





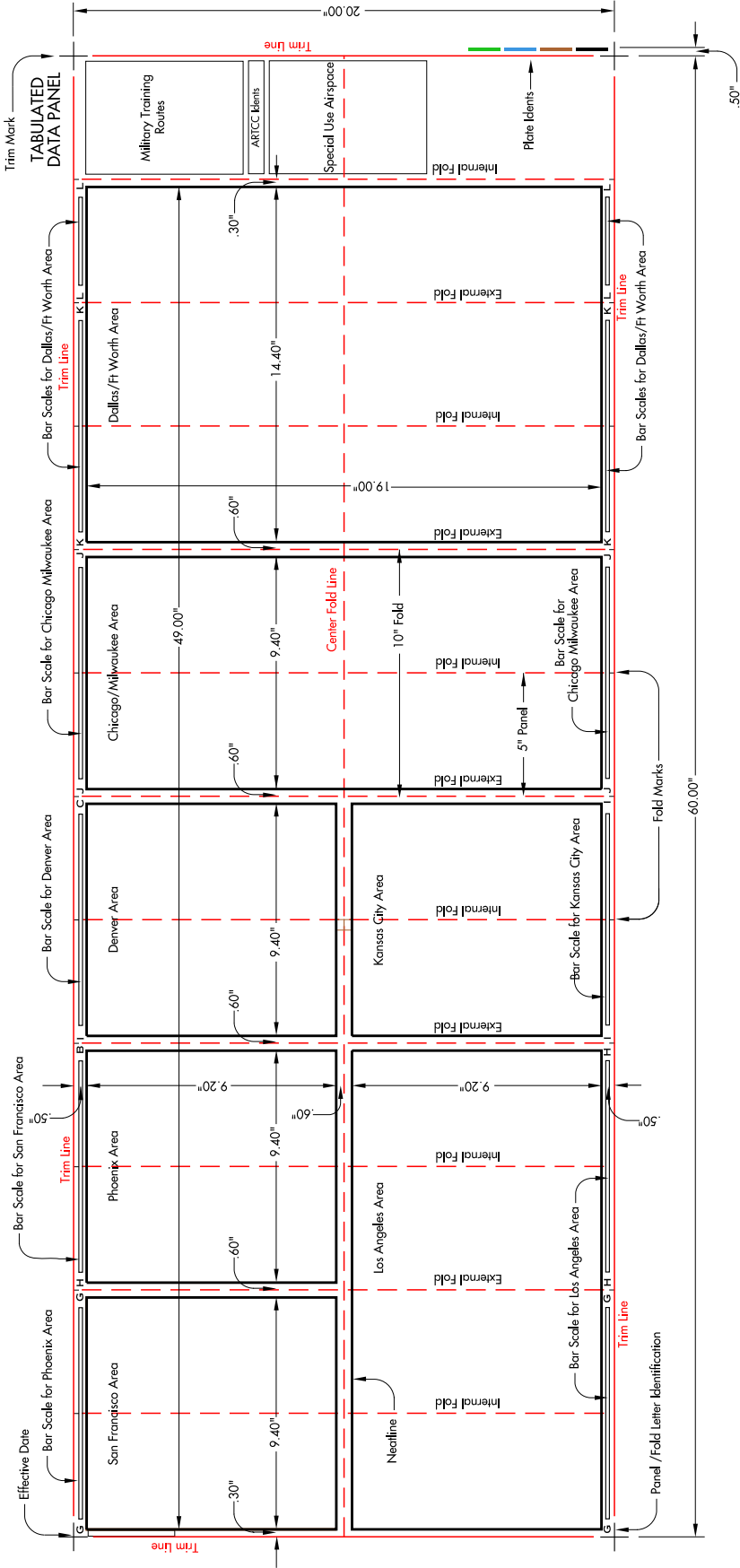
APPENDIX 52  
CHART LAYOUT - AREA CHART A-1

IFR ENROUTE LOW ALTITUDE CHARTS  
CHART LAYOUT  
AREA A-1



APPENDIX 53  
CHART LAYOUT - AREA CHART A-2

IFR ENROUTE LOW ALTITUDE CHARTS  
CHART LAYOUT  
AREA A-2



## APPENDIX 54

### TITLE PANEL INFORMATION - AREA CHARTS

TRIM LINE

TRIM LINE

FOLD LINE

FOLD LINE

CENTER FOLD LINE

TRIM LINE

A A A A A A A A A A A A A A A A

A-2

A-1

San Francisco  
Los Angeles  
Phoenix  
Denver  
Kansas City  
Dallas/Fort Worth  
Chicago/Milwaukee

Warning: Refer to current foreign charts and flight information publications for information within foreign airspace.

Minneapolis/St. Paul  
Detroit  
St. Louis  
Atlanta  
Jacksonville  
Miami  
Washington

UNITED STATES GOVERNMENT  
FLIGHT INFORMATION PUBLICATION  
IFR AREA CHARTS - U.S.  
For use up to but not including 18,000' MSL

EFFECTIVE 0901Z 17 AUG 2017  
TO 0901Z 12 OCT 2017

Consult NOTAMS for latest information  
Consult ENROUTE CHARTS for LEGEND information  
Consult/Subscribe to FAA Safety Alerts and Charting Notices at:

CORRECTIONS, COMMENTS, AND/OR PROCUREMENT

FOR CHARTING ERRORS, OR FOR CHANGES, ADDITIONS, RECOMMENDATIONS ON PROCEDURAL ASPECTS  
CONTACT:

Current Charting Events or  
Recommendations Address

FOR PROCUREMENT:

For digital products, visit our website at:

For a list of approved FAA Print Providers, visit our website at:

MILITARY

For Corrections Information, See Chapter 1.1 of General  
Planning (GP). For Procurement refer to DOD Catalog of  
Aeronautical Charts and Flight Information Publications.

Frequently asked questions (FAQ) are answered on our web site at:

See the FAQs prior to contact via toll free number or email.

ATTENTION

THIS CHART CONTAINS OFF ROUTE OBSTRUCTION CLEARANCE ALTITUDES (OROCA).  
The OROCA is shown in THOUSANDS and HUNDREDS of feet above mean sea level for a quadrangle bounded by  
tickled lines of latitude and longitude. OROCA is based on the highest known terrain feature or obstruction in each  
quadrangle, and provides a 1,000 foot buffer over the feature in designated non-mountainous areas (or a 2,000 foot  
buffer in designated mountainous areas) within the United States. These OROCA altitudes are not assessed for NAVD83  
signal coverage, air traffic control surveillance or communications coverage, and are published for general situational  
awareness, flight planning, and in-flight contingency use.

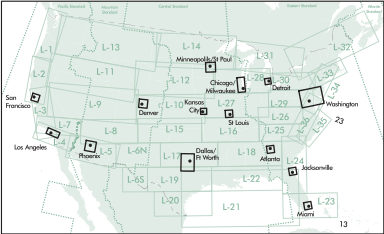
Example: 12,500 feet

12<sup>5</sup>


A-1  
A-2

17 AUG 2017  
UNITED STATES

Federal Aviation  
Administration



Published from digital files compiled in accordance with Interagency Air Committee  
specifications and agreements approved by Department of Defense - Federal Aviation Administration



FAA Product ID: AREA

NSN 7641014109648

ENRXXUSLCHTAA1

17229

Enroute Chart: A-1

Exported: 26-Jul-2017 at 07:12 AM

TRIM LINE

## APPENDIX 55

### CHART IDENTIFICATION & TITLE AREA - AREA CHARTS

Panel  
C/L

TRIM LINE

**A-2**

San Francisco  
Los Angeles  
Phoenix  
Denver  
Kansas City  
Dallas/Fort Worth  
Chicago/Milwaukee

**UNITED STATES GOVERNMENT  
FLIGHT INFORMATION PUBLICATION  
IFR AREA CHARTS - U.S.**

For use up to but not including 18,000' MSL

**EFFECTIVE 0901Z 17 AUG 2017  
TO 0901Z 12 OCT 2017**

Consult NOTAMs for latest Information  
Consult ENROUTE CHARTS for LEGEND Information  
Consult/Subscribe to FAA Safety Alerts and Charting Notices at:

**CORRECTIONS, COMMENTS, AND/OR PROCUREMENT**

FOR CHARTING ERRORS, OR FOR CHANGES, ADDITIONS, RECOMMENDATIONS ON PROCEDURAL ASPECTS  
CONTACT:

Corrections, Comments, and/or Procurement Note

**FOR PROCUREMENT:**

For digital products, visit our website at:

For a list of approved FAA Print Providers, visit our website at:

**MILITARY**

For Corrections Information, See Chapter 11 of General Planning (GP). For Procurement refer to DOD Catalog of Aeronautical Charts and Flight Information Publications.

Frequently asked questions (FAQ) are answered on our web site at   
See the FAQs prior to contact via toll free number or email.

**A-1**


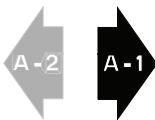
Minneapolis/St Paul  
Detroit  
St Louis  
Atlanta  
Jacksonville  
Miami  
Washington

TRIM LINE

FOLD LINE

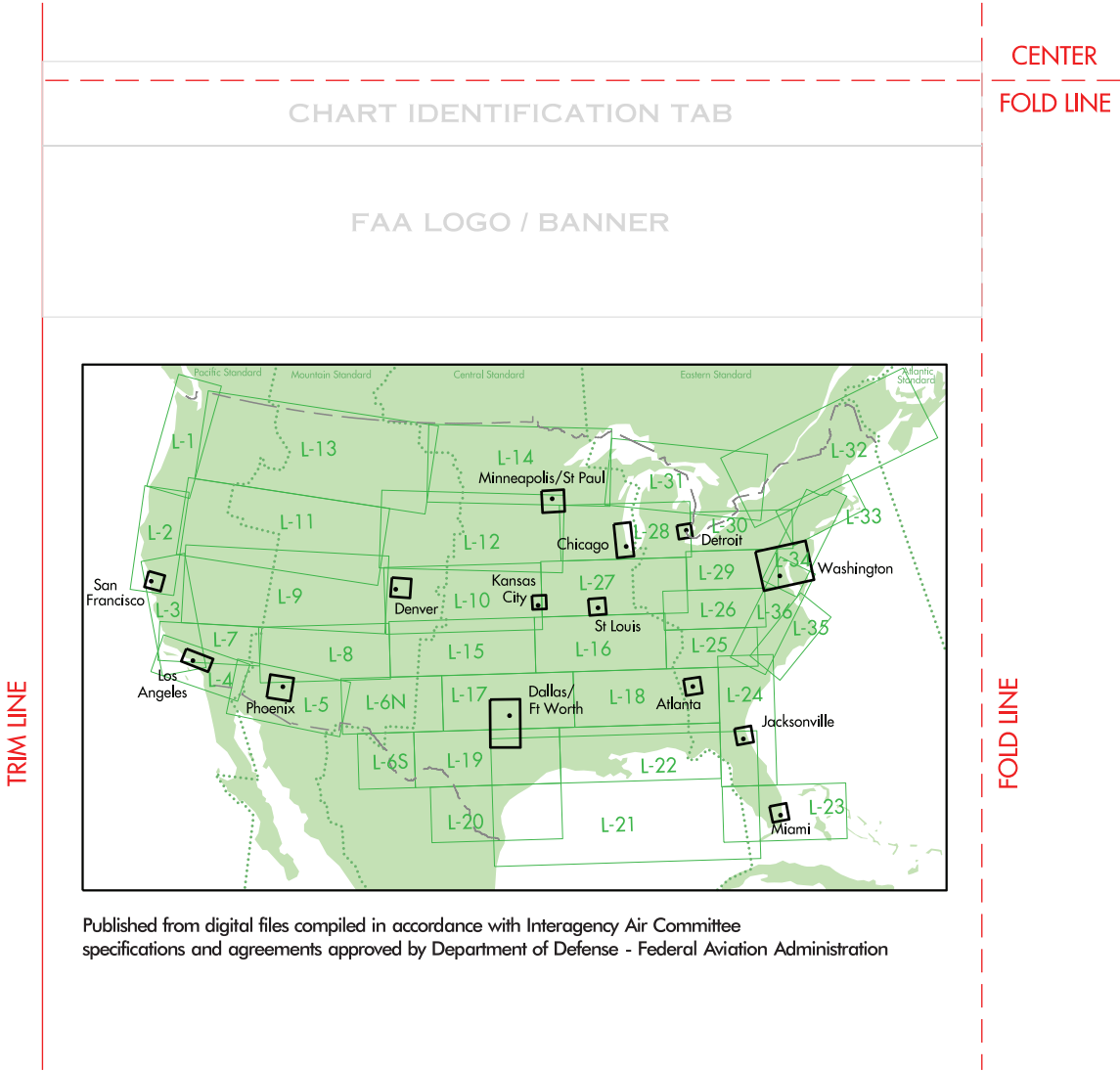
## APPENDIX 55

### CHART IDENTIFICATION & TITLE AREA - AREA CHARTS (CONTINUED)

TITLE PANEL - AREA CHARTS			
Area Chart Distinctive Header	CAPS	.14" Futura Medium/45% Blue	A A A A A
Foreign Airspace Warning Text	C/L	.07" Futura Medium/Black	Warning: Refer to current foreign...
Box Lineweight & Color		.008"/Black	
Chart Identification Area List of Cities Text Color	C/L	.07" Futura Medium 45% Black or Solid Black	<div style="display: flex; justify-content: space-between;"> <div> San Francisco Los Angeles Phoenix Denver Kansas City Dallas/Fort Worth Chicago/Milwaukee </div> <div> Minneapolis/St Paul Detroit St Louis Atlanta Jacksonville Miami Washington </div> </div>
Arrowheads Chart Identification Text Color	CAPS	.11" Reverse 45% Black or Solid Black	
Chart Title First and Second Lines	CAPS	.11" Futura Medium/Black	UNITED STATES...
Third Line	CAPS	.17" Futura Medium/Black	IFR AREA...
Altitude Note	C/L	.09" Futura Medium/Black	For use up to but not...
Effectivity & Expiration Note Effective Time	CAPS	.11" Helvetica 65 Medium/Solid Blue	EFFECTIVE 0901Z
Effective Date	CAPS	.17" Helvetica 65 Medium/Solid Blue	10 MAR 2011
Expiration Time	CAPS	.11" Helvetica 65 Medium/Solid Blue	TO 0901Z
Expiration Date	CAPS	.13" Helvetica 65 Medium/Solid Blue	5 MAY 2011
NOTAM Note	C/L	.07" Futura Medium/Black	Consult NOTAMs for latest Information
Legend Note	C/L	.07" Futura Medium/Black	Consult ENROUTE CHARTS for LEGEND...

APPENDIX 56

CHART INDEX - AREA CHARTS

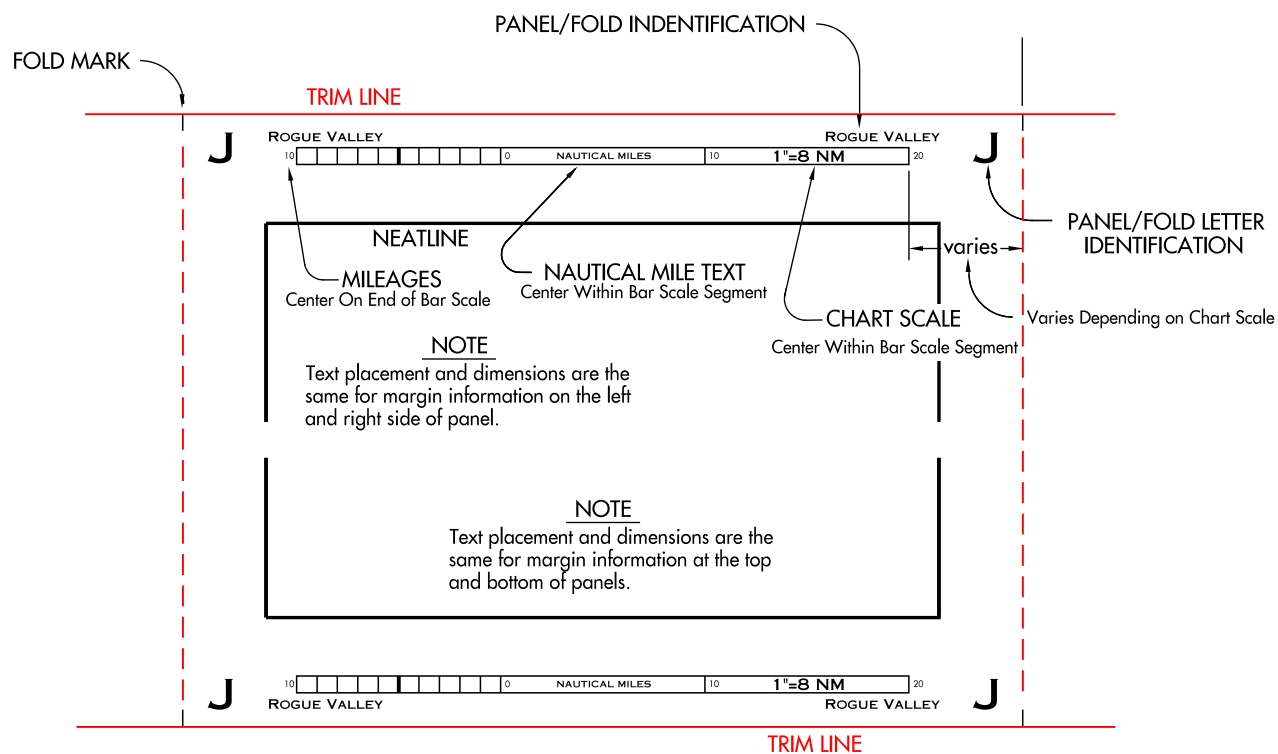


AREA CHARTS			
Chart Identificaton	CAPS	.08" Futura Medium/Green	L-21
Area Chart Cities			
Symbol		.025" Diameter/Black	•
Name	C/L	.06" Futura Medium/Black	Washington
Borders & Outlines			
Chart Index Border		.012"/Black	
Area Chart Coverage Border		.014"/Black	
Enroute Chart Outlines		.005"/Green	
Time Zones & Boundaries			
Time Zone Name	C/L	.04" Futura Medium/45% Green	Eastern Standard
Time Zone Boundary		.015" Diameter/45% Green	
Land Areas		10% Green	
IAC Credit Note	CAPS	.065" Futura Medium/Black	Published from digital files compiled

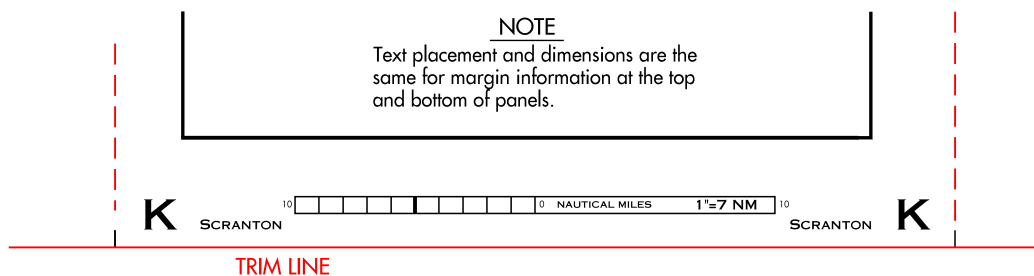
## APPENDIX 57

### MARGIN INFORMATION - BAR SCALES - AREA CHARTS

#### Bar Scales - One Panel - Area Charts



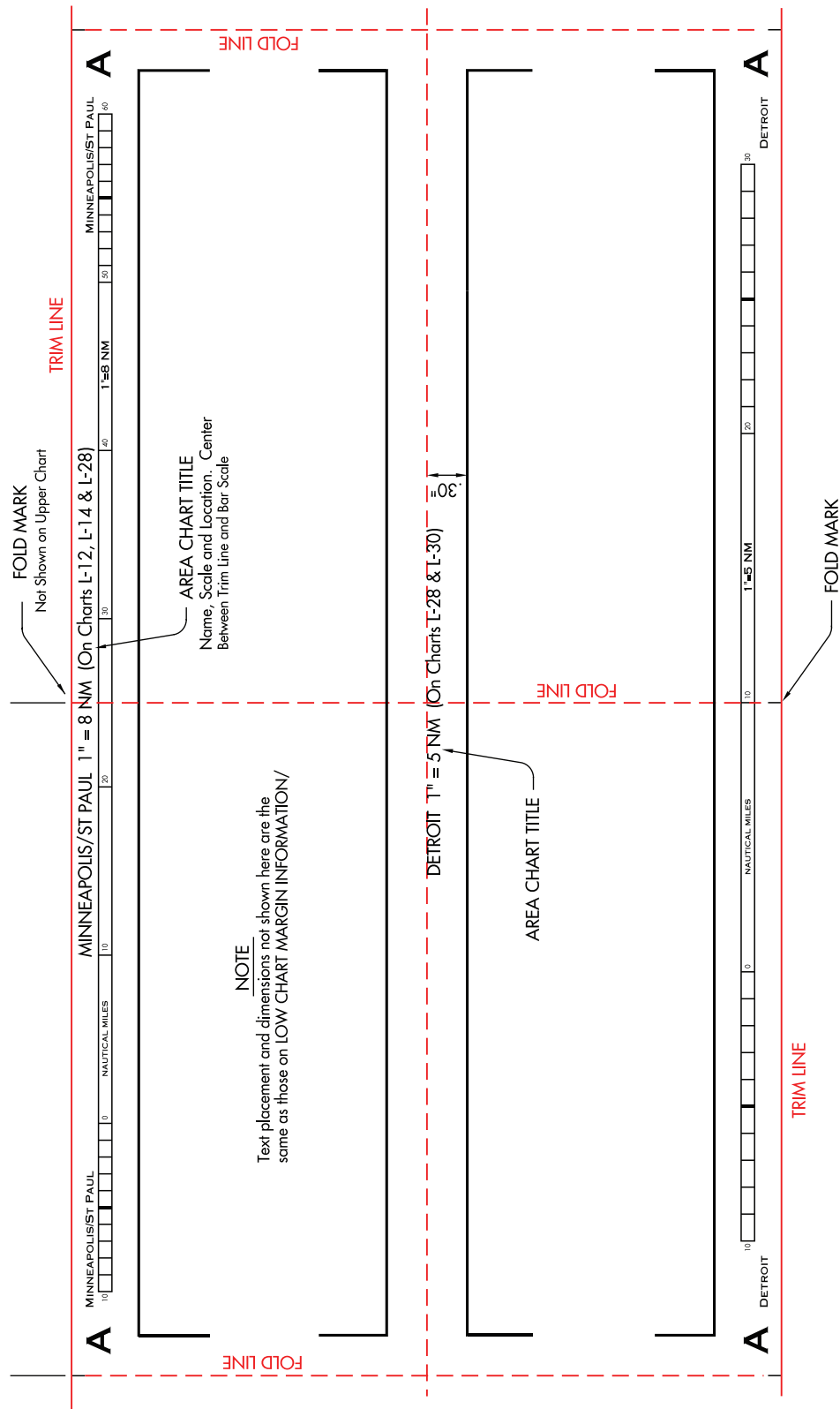
### Differences for Chart Scale 1:7



APPENDIX 57

MARGIN INFORMATION - BAR SCALES - AREA CHARTS (CONTINUED)






Bar Scales - Two Panel - Area Charts





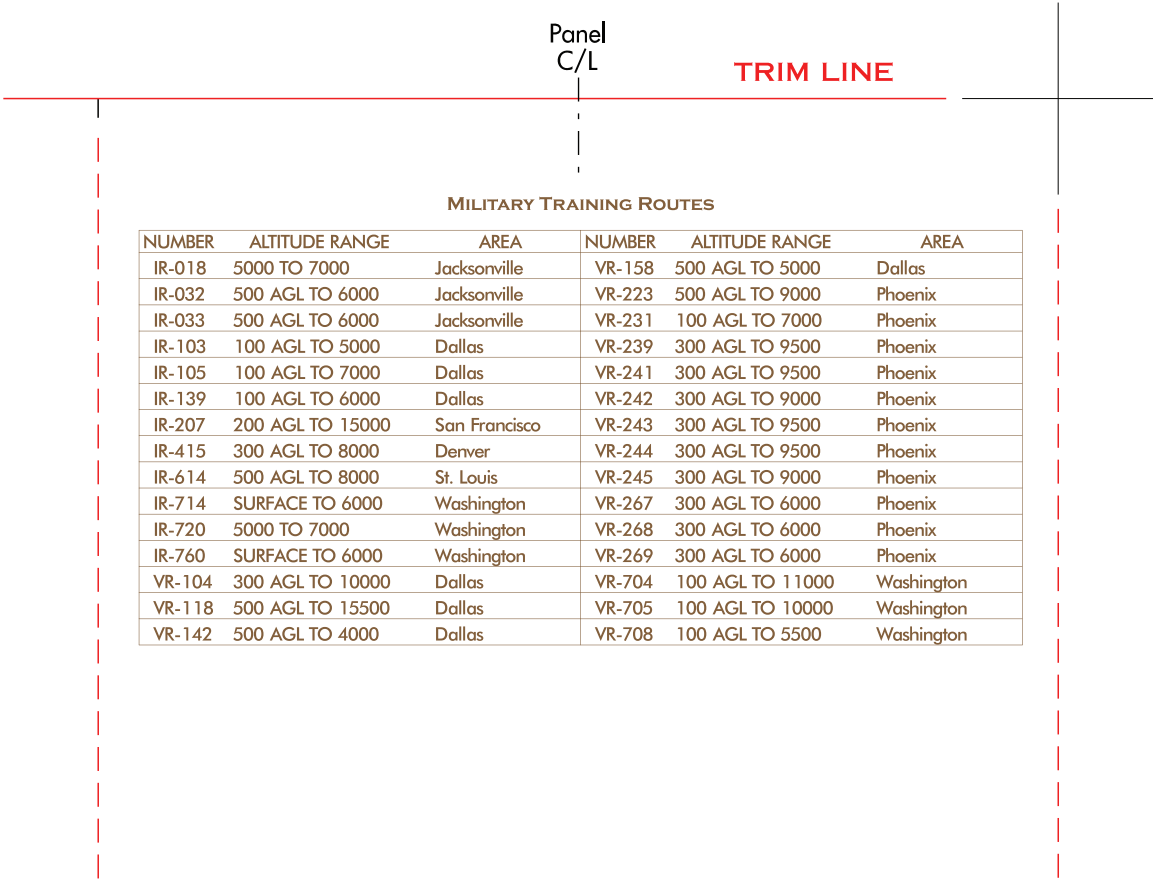
## APPENDIX 57

### MARGIN INFORMATION - BAR SCALES - AREA CHARTS (CONTINUED)

MARGIN INFORMATION - AREA CHART				
Chart Title				
Name & Scale	CAPS	.10" Futura Medium/Black		DENVER 1" = 7 NM
Chart References	C/L	.10" Futura Medium/Black		(On Chart L-10)
Panel Fold				
Letter	CAPS	.19" Copperplate Gothic 31/Black		<b>H</b>
City or NAVAID Identification	CAPS	.06" Copperplate Gothic 31/Black		PHOENIX
Fold Mark Weight & Length		.008"/.10"/Black		
Chart Scale				
Units Text	CAPS	.04" Copperplate Gothic 31/Black		NAUTICAL MILES
Mileage Numbers		.04" Futura Medium/Black		20
Scale Text	CAPS	.06" Copperplate Gothic 31/Black		<b>1"=8 NM</b>
Scale Bar Lineweight		.008"/Black		
Effective Date (Back side of Chart)	CAPS	.08" Futura Medium/Black		EFFECTIVE 18 NOV 2010 TO...
MARGIN INFORMATION - AIRWAY/ROUTE INFORMATION				
Airway Route Text & Color				
VHF/UHF	CAPS	.06" Futura Medium/Black		MACON 112.9 MCM 76
LF/MF	CAPS	.06" Futura Medium/Brown		OSCARVILLE <u>251</u> OSE
LF/MF with DME				
LF/MF Data	CAPS	.06" Futura Medium/Brown		<u>371</u> PDN 32 (109.5)
DME Data	CAPS	.06" Futura Medium/Black		
RNAV Waypoint	CAPS	.06" Futura Medium/Blue		DIBWO
Geographic Coordinates				
Color		Black Brown Blue		N60°37.13'-W135°08.33'
Text		.05" Futura Medium Medium Italic		N60°26.37'-W134°51.68'
				N60°37.13'-W135°08.33'
Shutdown Status				
Color		45% Black 45% Brown		 
Lineweight		.007"		 

APPENDIX 58

MILITARY TRAINING ROUTES TABULATION - AREA CHARTS



MILITARY TRAINING ROUTES - AREA CHART			
Table Title	CAPS	.08" Copperplate Gothic 31/Brown	MILITARY TRAINING ROUTES
Column Headings	CAPS	.07" Futura Medium/Brown	NUMBER ALTITUDE RANGE AREA
Tabulated Information			
Number & Altitude Range	CAPS	.07" Futura Medium/Brown	VR-223 500 AGL TO 9000 Phoenix
Area	C/L	.07" Futura Medium/Brown	
Table Lineweight		.008" Brown	

## APPENDIX 59

### SUA & MOA TABULATION - AREA CHARTS

Panel  
C/L

TRIM LINE

#### MILITARY TRAINING ROUTES

NUMBER	ALTITUDE RANGE	AREA	NUMBER	ALTITUDE RANGE	AREA
IR-018	5000 TO 7000	Jacksonville	VR-158	500 AGL TO 5000	Dallas
IR-032	500 AGL TO 6000	Jacksonville	VR-223	500 AGL TO 9000	Phoenix
IR-033	500 AGL TO 6000	Jacksonville	VR-231	100 AGL TO 7000	Phoenix

ARTCC three letter idents: Albuquerque ZAB, Atlanta ZTL, Boston ZBW, Chicago ZAU, Cleveland ZOB, Denver ZDV, Fort Worth ZFW, Houston ZHU, Indianapolis ZID, Jacksonville ZJX, Kansas City ZKC, Los Angeles ZLA, Memphis ZME, Miami ZMA, Minneapolis ZMP, New York ZNY, Oakland ZOA, Salt Lake City ZLC, Seattle ZSE, Washington ZDC

U.S.: P - PROHIBITED, R - RESTRICTED, W - WARNING, A - ALERT AREAS

All altitudes are MSL unless otherwise indicated

FL - Flight Level

Time - Hours shown are UTC unless otherwise indicated

Cont - Continuous: 24 hours a day, 7 days a week

‡ - During periods of Daylight Saving Time (DT) effective hours will be one hour earlier than shown.

NOTAM - Use of this term in Restricted Areas indicates FAA And DoD NOTAM systems. Use of this term in all other Special Use areas indicates the DoD NOTAM system.

#### SPECIAL USE AIRSPACE

NUMBER	EFFECTIVE ALTITUDE	TIMES USED, UTC	CONTROLLING AGENCY A/G CALL	PANEL
<b>CHICAGO</b>				
R-6903	SFC TO FL 450	INTMT BY NOTAM	ZMP	J
<b>DALLAS</b>				
P-49	SFC TO 2000	CONT	NO A/G	K
<b>JACKSONVILLE</b>				
P-50	SFC TO BUT NOT INCL 3000	CONT	NO A/G	C
R-2904A	SFC TO BUT NOT INCL 1800	APR - AUG 1300 - 2200Z‡ DAILY; SEP - MAR 1300 - 2200Z‡ SAT - SUN; *1	JACKSONVILLE TRACON	C
W-135	SFC TO 1200	INTMT BY NOTAM	ZJX	C
<b>LOS ANGELES</b>				
R-2519	SFC TO UNLTD	CONT	ZLA	G
W-289E,W	SFC TO UNLTD	INTMT BY NOTAM	ZLA	G
<b>MIAMI</b>				
A-291A,C	SFC TO 2500	1100 - 0500Z‡ DAILY	NO A/G	C
A-291B,D	SFC TO 3900	1100 - 0500Z‡ DAILY	NO A/G	C
<b>PHOENIX</b>				
R-2301E	SFC TO FL 800	1330 - 0700Z DAILY; *1	ZAB	H
R-2310C	17000 TO 35000	INTMT BY NOTAM	ZAB	H
A-231	500 AGL TO 6500	CONT	NO A/G	H
<b>SAN FRANCISCO</b>				
A-682	N OF TRAVIS AFB RUNWAYS 21L/03R EXTENDED CENTERLINES SFC TO 6000' S OF TRAVIS AFB RUNWAYS 21L/03R EXTENDED CENTERLINES SFC TO 3000' SFC TO 3000	1600 - 0500Z‡ MON - FRI	NO A/G	G
<b>WASHINGTON</b>				
P-40	SFC TO BUT NOT INCL 5000	CONT	NO A/G	D
P-56	SFC TO 18000	CONT	NO A/G	D
P-73	SFC TO BUT NOT INCL 1500	CONT	NO A/G	D
R-4001A	SFC TO UNLTD	SFC TO UNLTD 1200 - 0500Z‡; SFC TO 10000 0500 - 1200Z‡; HIGHER ALTITUDES BY NOTAM	ZDC	E
R-5802C	500 AGL TO BUT NOT INCL 17000	FEB 15 - MAY 10 1300 - 0400Z‡ SAT 1300 - 1700Z‡ SUN; SEP 1 - DEC 15 1300 - 0400Z‡ SAT 1300 - 1700Z‡ SUN; MAY 11 - AUG 31 1300 - 0500Z‡ SAT 1300 - 0100Z‡ SUN - FRI; *1	ZNY	E
R-5802D	17000 TO BUT NOT INCL FL 220	FEB 15 - MAY 10 1300 - 0400Z‡ SAT 1300 - 1700Z‡ SUN; SEP 1 - DEC 15 1300 - 0400Z‡ SAT 1300 - 1700Z‡ SUN; MAY 11 - AUG 31 1300 - 0500Z‡ SAT 1300 - 0100Z‡ SUN - FRI; *1	ZNY	E
R-5803	SFC TO 4000	1300 - 2100Z‡ MON - FRI	NO A/G	D
R-6608A,B,C	SFC TO 10000	1000 - 0500Z‡ DAILY; *1	POTOMAC TRACON	D
R-6611A	SFC TO 40000	1300 - 2200Z‡ MON - FRI; *1	ZDC	D,E
R-6612	SFC TO 7000	1300 - 2200Z‡ MON - FRI; *1	ZDC	D
R-6613A	SFC TO 40000	1300 - 2200Z‡ MON - FRI; *1	ZDC	E
W-386	SFC TO UNLTD	INTMT BY NOTAM	ZDC	F
A-220	SFC TO 4500	1300 - 0300Z‡ DAILY	NO A/G	F

Alert Areas do not extend into Class A, B, C and D airspace, or Class E airport surface areas.

TRIM LINE or FOLD LINE

TRIM LINE or FOLD LINE

APPENDIX 59

SUA & MOA TABULATION - AREA CHARTS (CONTINUED)

SUAs & MOAs TABULATION - AREA CHART			
ARTCC Listing	C/L	.06" Futura Medium/Black	ARTCC three letter idents: P - PROHIBITED, R - RESTRICTED, All altitudes are MSL unless otherwise indicated <b>SPECIAL USE AIRSPACE</b> CHICAGO  NUMBER R-6903      MINNOW *1 Other Times By NOTAM
Legend	C/L	.07" Futura Medium/Black	
Additional Text	C/L	.06" Futura Medium/Black	
Table Title	CAPS	.07" Copperplate Gothic 31/Black	
City Name	CAPS	.07" Futura Medium/Black	
Tabulated Information			
Column Headings	CAPS	.05" Futura Medium/Black	
Tabulated Information	CAPS	.05" Futura Medium/Black	
Footnotes	C/L	.05" Futura Medium/Black	
Table Lineweight		.008"/Black	

APPENDIX 60  
TERRAIN CONTOURS - AREA CHARTS



TERRAIN CONTOURS - AREA CHARTS			
Countours Values Lineweight  Colors		.04" Futura Medium/45% Brown .001"/45% Brown  Screened Brown	<div><div>2000</div><div></div><div><div></div><div></div><div></div><div></div><div></div></div><div>5%15%25%35%45%</div></div>
Spot Elevations Spot Elevations Symbol Value Highest Spot Elevations Symbol Value		.035" Diameter/Black .05" Futura Medium/Black  .050" Diameter/Black .06" Futura Medium/Black	<div><div>10955</div><div>13176</div></div>
Terrain Countours Note Text Lineweight	CAPS	.05" Futura Medium/Black .015"/Black	<div>NOTE: TERRAIN CONTOURS HAVE BEEN ADDED TO THOSE AREA CHARTS WHERE THE TERRAIN ON THE CHART IS 1000 FOOT OR GREATER THAN THE ELEVATION OF THE PRIMARY AIRPORT</div>

## APPENDIX 61

### TITLE PANEL LAYOUT - U.S. L-21



Warning: Refer to current foreign charts and flight information publications for information within foreign airspace.



## UNITED STATES GOVERNMENT FLIGHT INFORMATION PUBLICATION IFR ENROUTE LOW ALTITUDE - U.S.

For use up to but not including 18,000' MSL

**EFFECTIVE 0901Z 27 APR 2017**  
**TO 0901Z 22 JUN 2017**

Consult NOTAMs for latest Information  
Consult/Subscribe to FAA Safety Alerts and Charting Notices at:

Current URL

#### CORRECTIONS, COMMENTS, AND/OR PROCUREMENT

FOR CHARTING ERRORS, OR FOR CHANGES, ADDITIONS, RECOMMENDATIONS ON PROCEDURAL ASPECTS  
CONTACT:

Corrections, Comments, and/or Procurement Note

#### FOR PROCUREMENT:

For digital products, visit our website at:

Current URL

For a list of approved FAA Print Providers, visit our website at:

Current URL

#### MILITARY

For Corrections Information, See Chapter 11 of General Planning (GP). For Procurement refer to DOD Catalog of Aeronautical Charts and Flight Information Publications.

Frequently asked questions (FAQ) are answered on our web site at Current URL  
See the FAQs prior to contact via toll free number or email.

L-21 is intended for offshore navigation only.  
Detailed onshore information has been intentionally omitted.  
Refer to charts L-19/20, L-22, L-23/24 for detailed onshore information.

#### ATTENTION

THIS CHART CONTAINS OFF ROUTE OBSTRUCTION CLEARANCE ALTITUDES (OROCA). The OROCA is shown in THOUSANDS and HUNDREDS of feet above mean sea level for a quadrangle bounded by ticked lines of latitude and longitude. OROCA is based on the highest known terrain feature or obstruction in each quadrangle, and provides a 1,000 foot buffer over the feature in designated non-mountainous areas (or a 2,000 foot buffer in designated mountainous areas) within the United States. These OROCA altitudes are not assessed for NAVAID signal coverage, air traffic control surveillance or communications coverage, and are published for general situational awareness, flight planning, and in-flight contingency use.

Example: 12,500 feet .....

12<sup>5</sup>

**APPENDIX 61**  
**TITLE PANEL LAYOUT - U.S. L-21 (CONTINUED)**

TITLE PANEL - LOW ENROUTE CHART - L-21			
Offshore Navigation Note Main Heading Box Lineweight	C/L	.09" Futura Medium/Black .007"/Black	L-21 is intended for offshore... <div></div>

Page Intentionally Left Blank