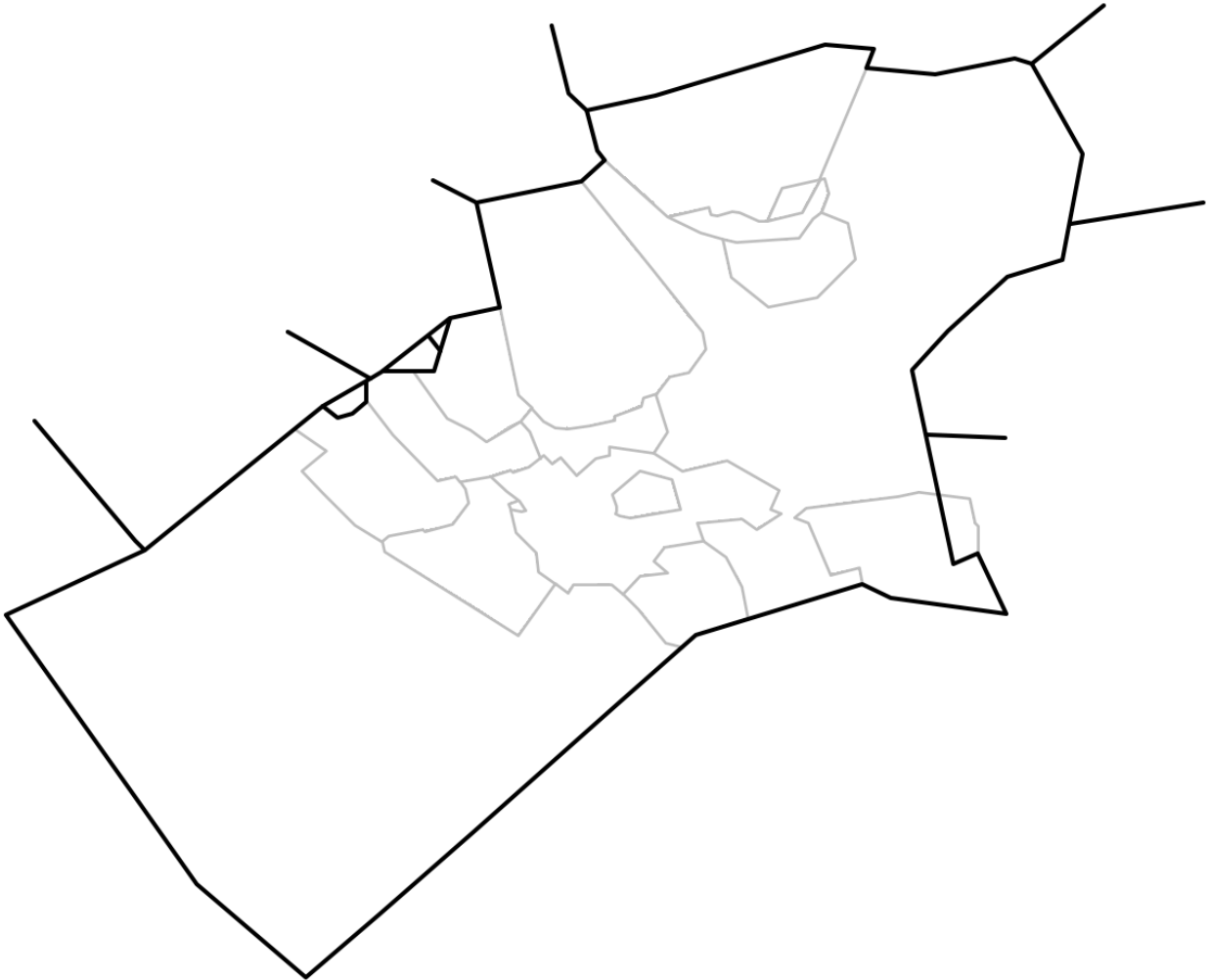


VATSIM LOS ANGELES ARTCC STANDARD OPERATING PROCEDURES



September 24, 2023

VATSIM LOS ANGELES ARTCC STANDARD OPERATING PROCEDURES

FOREWORD

This document establishes facility Standard Operating Procedures for all center (LAX_CTR) positions in the VATSIM Los Angeles ARTCC. These procedures should be adhered to to the extent practical, and controllers should use their best judgment when encountering situations not covered by this SOP.

This document is to be used for simulation purposes only; it is not authorized for or intended for real world use.

Nick Christopher
Air Traffic Manager
VATSIM Los Angeles ARTCC

TABLE OF CONTENTS

CHANGELOG	5
CHAPTER 1. GENERAL	6
SECTION 1. COMBINED OPERATIONS	6
1-1-1. CALL SIGN AND FREQUENCY USAGE	6
1-1-2. AIRSPACE	7
CHAPTER 2. ZLA INDIVIDUAL SECTORS	8
SECTION 1. SECTOR 04	8
2-1-1. NARRATIVE AND CONFLICT POINTS	9
2-1-2. SECTOR SPECIFIC DIRECTIVES	9
SECTION 2. SECTOR 16	10
2-2-1. NARRATIVE AND CONFLICT POINTS	11
2-2-2. SECTOR SPECIFIC DIRECTIVES	11
SECTION 3. SECTOR 25	12
2-3-1. NARRATIVE AND CONFLICT POINTS	13
2-3-2. SECTOR SPECIFIC DIRECTIVES	13
SECTION 4. SECTOR 26	14
2-4-1. NARRATIVE AND CONFLICT POINTS	15
2-4-2. SECTOR SPECIFIC DIRECTIVES	15
SECTION 5. SECTOR 28	16
2-5-1. NARRATIVE AND CONFLICT POINTS	17
2-5-2. SECTOR SPECIFIC DIRECTIVES	17
SECTION 6. SECTOR 30	18
2-6-1. NARRATIVE AND CONFLICT POINTS	19
2-6-2. SECTOR SPECIFIC DIRECTIVES	19
SECTION 7. SECTOR 31	20
2-7-1. NARRATIVE AND CONFLICT POINTS	21
2-7-2. SECTOR SPECIFIC DIRECTIVES	21
SECTION 8. SECTOR 35	22
2-8-1. NARRATIVE AND CONFLICT POINTS	23
2-8-2. SECTOR SPECIFIC DIRECTIVES	23
SECTION 9. SECTOR 37	24
2-9-1. NARRATIVE AND CONFLICT POINTS	25

2-9-2. SECTOR SPECIFIC DIRECTIVES	25
SECTION 10. SECTOR 39	26
2-10-1. NARRATIVE AND CONFLICT POINTS	27
2-10-2. SECTOR SPECIFIC DIRECTIVES	27
SECTION 11. SECTOR 54	28
2-11-1. NARRATIVE AND CONFLICT POINTS	29
2-11-2. SECTOR SPECIFIC DIRECTIVES	29

CHANGELOG

Date	Change(s)
21 AUG 2019	Renamed Sector 13 to Sector 28
12 OCT 2019	Renamed Sector 06 to Sector 16 Renamed Sector 36 to Sector 35
17 MAR 2020	Updated frequency usage guidance for AFV
21 Aug 2021	Changed LAX_CTR combined to 135.55 to deconflict with KFLG_ATIS Changed LAX_X_CTR to 119.05
14 MAR 2022	Changed combined, all-transceiver frequencies Changed combined, all-transceiver call signs Updated frequencies to 25 MHz spacing
9 SEP 2023	Fixed typos
24 SEP 2023	Updated callsign sector table.

CHAPTER 1. GENERAL

SECTION 1. COMBINED OPERATIONS

1-1-1. CALL SIGN AND FREQUENCY USAGE

When LA Center is combined, the call sign LAX_55_CTR and frequency 135.55 shall be used. The AFV client shall be configured to use "LAX_55_CTR."

When ad-hoc center splits are in effect, the following call signs and frequencies may be used:

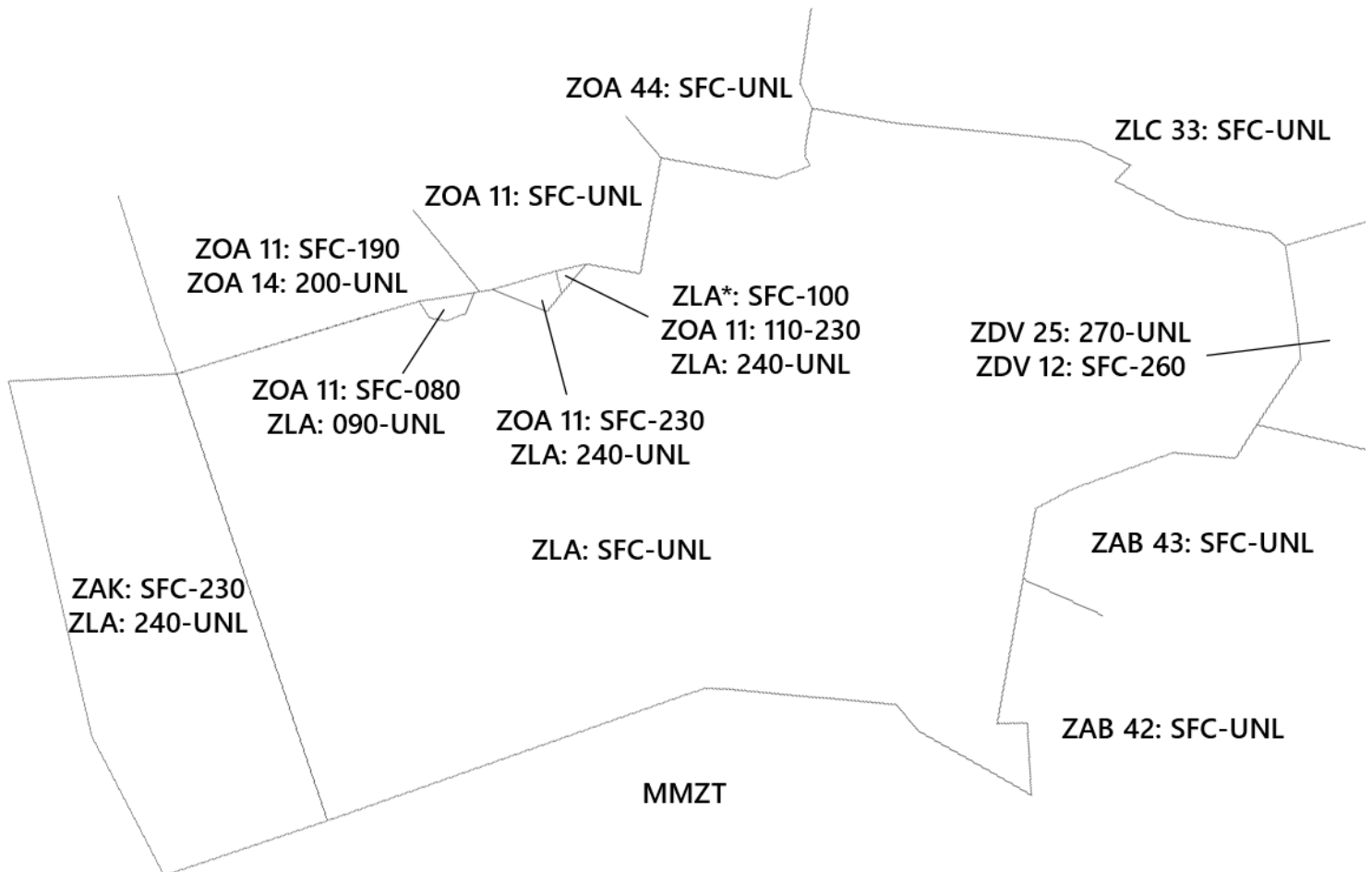
SECTOR	FREQUENCY	INTERPHONE	CALLSIGN
55	135.550	"Fifty-five"	LAX_55_CTR
34	132.625	"Thirty-four"	LAX_34_CTR
36	127.350	"Thirty-six"	LAX_36_CTR
53	118.025	"Fifty-three"	LAX_53_CTR

The AFV call signs and frequencies above are configured to utilize all ZLA transceivers to ensure full radio coverage.

Call signs and frequencies for individual sectors (e.g., LAX_54_CTR) are configured to use only the transceivers for that sector. Use individual sector call signs and frequencies when you are providing services only in that sector.

1-1-2. AIRSPACE

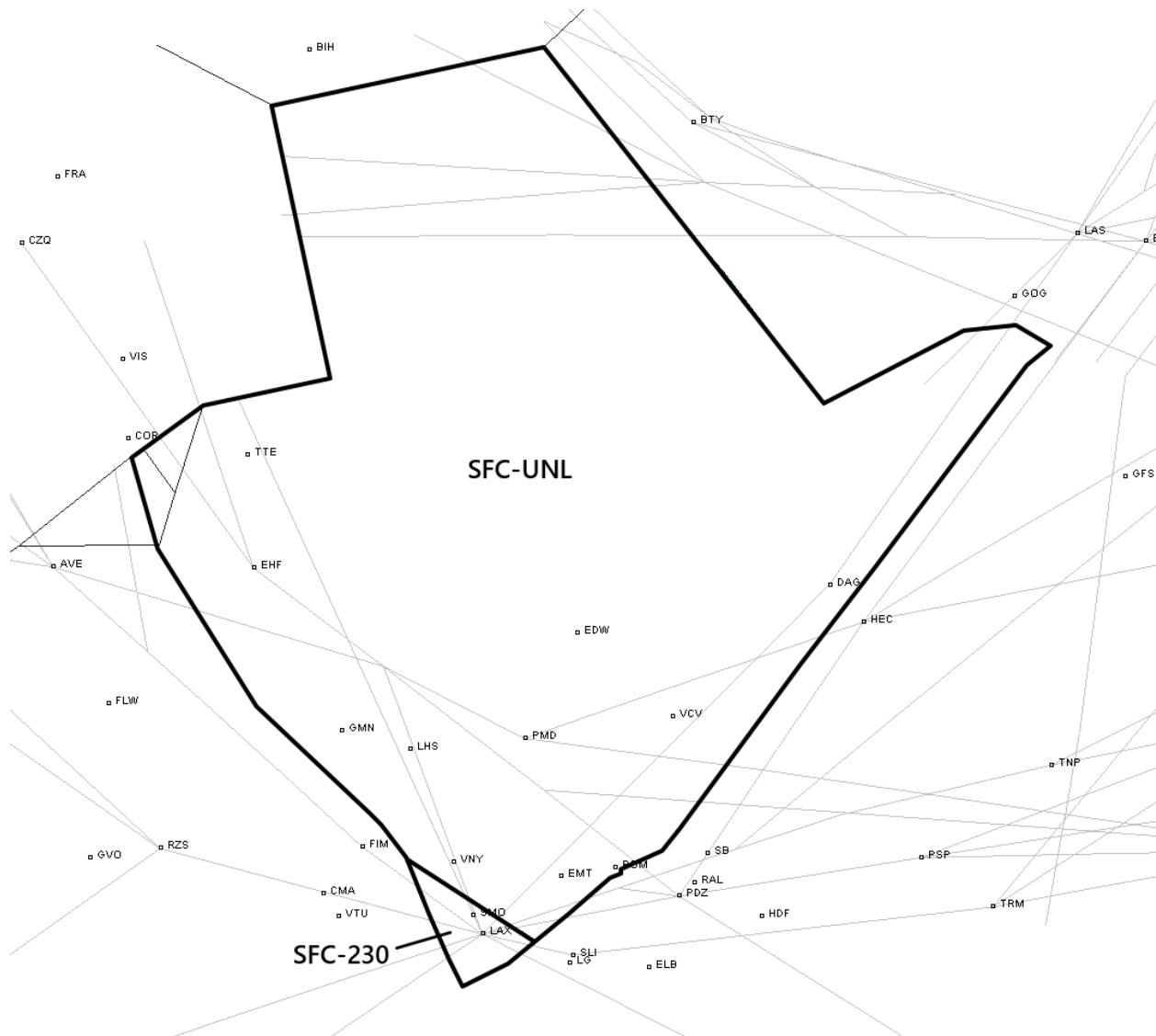
When LAX_CTR is staffed "top-down" (i.e. no controllers online below) it owns the airspace depicted in the following diagram:



*NOTE: BFL owns the SFC-100 shelf in this area when it is staffed.

CHAPTER 2. ZLA INDIVIDUAL SECTORS

SECTION 1. SECTOR 04



Vertical limits - SFC-UNL except:

SHELF	ALTITUDES
04/30	SFC-FL230

2-1-1. NARRATIVE AND CONFLICT POINTS

Sector 04 is a deceptively small sector. It is bounded primarily by the Joshua Control Facility (JCF), which owns the R-2508 complex in most of Sector 04's airspace. It is also bounded by the Southern California TRACON (SCT) in the southern portion of its airspace, and the Bakersfield TRACON (BFL) in the northwestern portion of its airspace. In the far northeast, Sector 04 is bounded by the Las Vegas TRACON (L30). Sector 04 assumes control of BFL and JCF when they are unstaffed.

Sector 04's main traffic flows comes from departures out of the LA Basin routed via DAG, GMN, and PMD. Additional traffic flows include arrivals into BUR/VNY routed via ROKKR and JANNY and propeller-driven arrivals to the LA Basin. Sector 04 is also responsible for arrivals to L30 routed via CLARR, along with northwest arrivals to the Palmpex and arrivals to ONT over PMD.

Conflicts may arise between arrivals to the BUR/Empire areas routed over PMD and slow-climbing departures out of BUR via SLAPP/PMD. They may also arise northeast of POM on the parallel tracks out of the LA Basin to BEALE, HAILO, and LAS, along with departures from the LA Basin landing in L30 airspace.

2-1-2. SECTOR SPECIFIC DIRECTIVES

- a. Use primary frequency 125.8.
- b. SECTOR 30:
 - i. Aircraft landing SAN when SAN is in East configuration must cross LAX at FL250.
- c. SECTOR 37:
 - i. Aircraft routed via the BOGET, GUERA, and JANNY STARs must cross KREME/JOEES at FL240. Sector 04 has control to issue a "descend via" clearance.
 - ii. Aircraft routed via the KIMMO and LYNXX STARs must cross the 04/37 boundary at FL230. Sector 04 has control for descent.
 - iii. Aircraft routed via PMD.V137.PSP and the SIZLR STAR will briefly enter Sector 37's airspace southeast of HITOP. These aircraft will already have their communications transferred to SCT, and a pointout to Sector 37 is not required.
- d. BFL:
 - i. Aircraft landing BFL airspace filed above 14,000' must be at or descending to 14,000' prior to handoff.

SECTION 2. SECTOR 16



Vertical limits - SFC-UNL

2-2-1. NARRATIVE AND CONFLICT POINTS

Sector 16 is also a deceptively small sector. Most of Sector 16's airspace is assumed by the Nellis Air Traffic Control Facility (NATCF) when staffed. Sector 16 is bounded by JCF to the west and NATCF to the west. L30 also owns airspace in the southeastern portion of Sector 16's airspace. Sector 16 assumes control for L30 and NATCF when they are unstaffed.

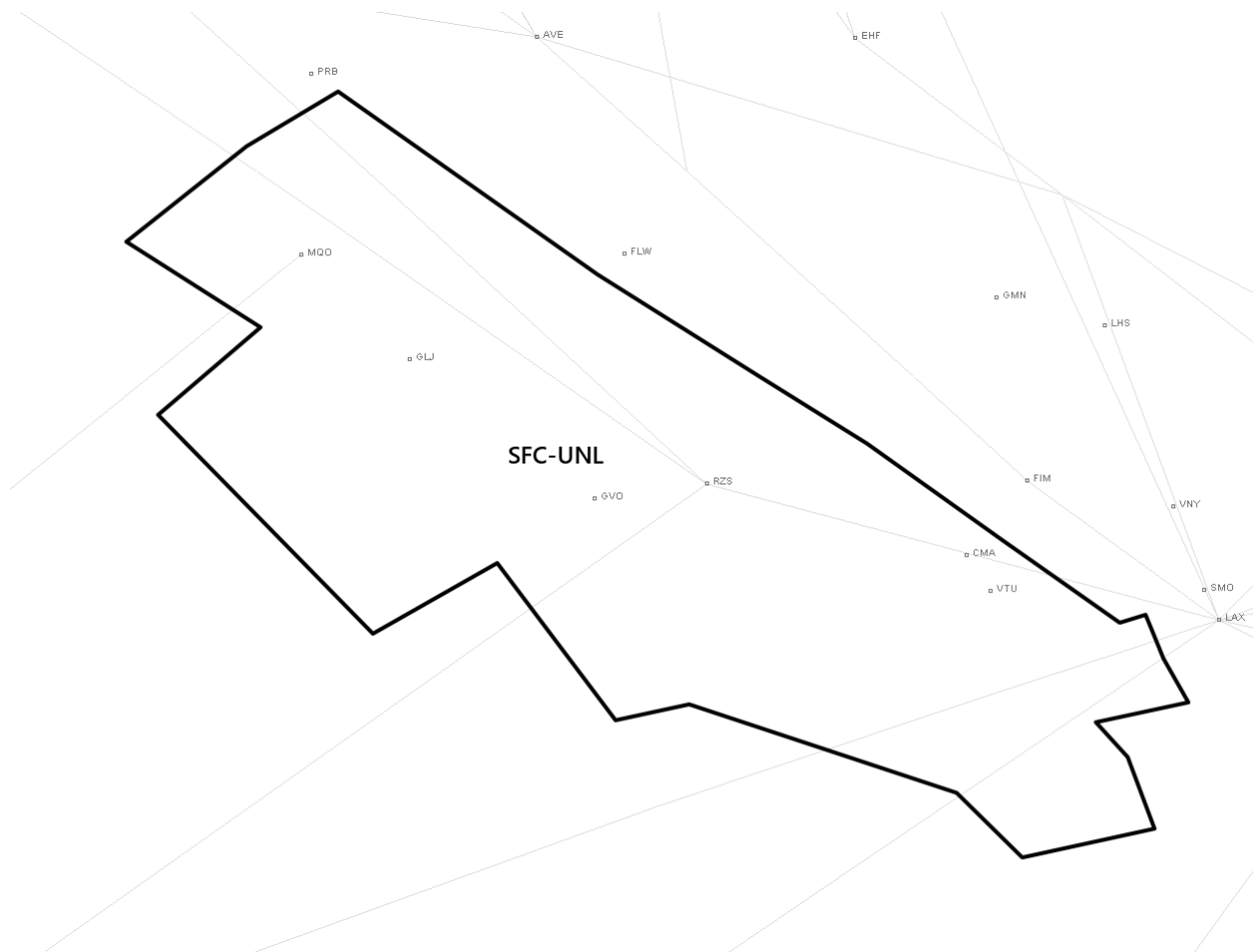
Sector 16's main traffic flows are into and out of L30 routed via SHEAD and FUZZY. Additional overflight traffic frequents the sector, typically destined for the San Francisco Bay Area from the Phoenix area.

Conflicts may arise due to the lack of space in Sector 16; controllers should be proficient in speed control as there is not much room to vector aircraft within the sector.

2-2-2. SECTOR SPECIFIC DIRECTIVES

- a. Use primary frequency 124.625.
- b. SECTOR 35:
 - i. Traffic landing the PHX area must cross the 06/35 boundary at or below FL370. Sector 35 has control for descent.

SECTION 3. SECTOR 25



Vertical limits - SFC-UNL

2-3-1. NARRATIVE AND CONFLICT POINTS

Sector 25 is a narrow sector with mostly northwest bound traffic out of the LA Basin. Other flows include traffic landing LGB/SNA via the BAUBB/TILLT arrivals, and LAX arrivals via the HUULL and RYDRR arrivals. Below Sector 25 lies SBA, NTD, and portions of SCT. Sector 25 assumes control of SBA and NTD airspace when they are unstaffed. Sector 25 is bounded by Sector 26 to the east, Sector 30 to the southeast, a small portion of Sector 04 over LAX, and Sector 28 to the west.

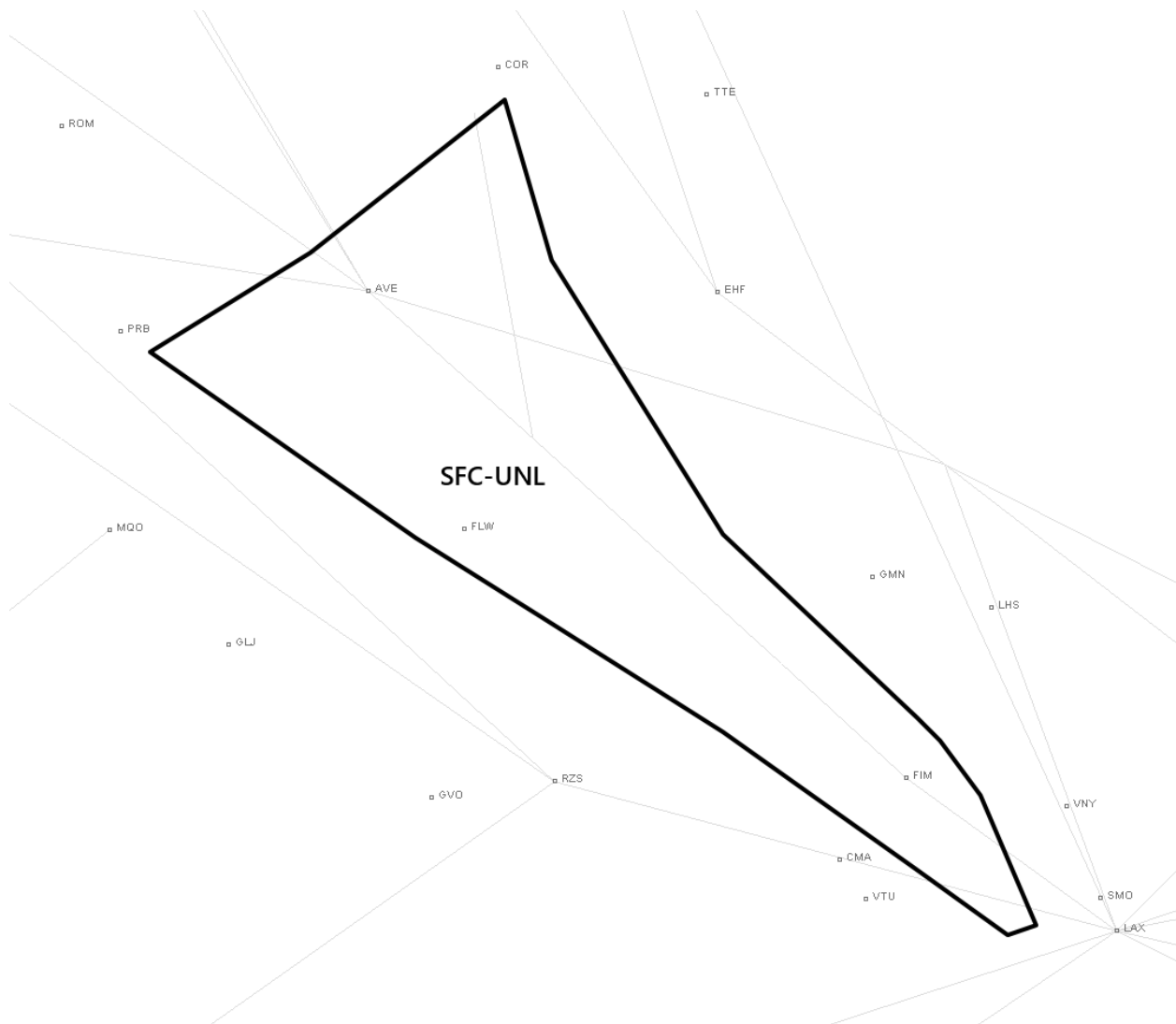
Sector 25 is often combined with other sectors due to low traffic volume, generally Sector 28 unless traffic conditions dictate otherwise.

Conflicts may arise between slow-climbing departures out of LAX via the DARRK, SUMMR, and VTU departures and oceanic arrivals into LAX.

2-3-2. SECTOR SPECIFIC DIRECTIVES

- a. Use primary frequency 126.525.
- b. SECTOR 28:
 - i. Aircraft routed via the RYDRR STAR must be issued a descend via clearance.
 - ii. Aircraft routed via the SADDE STAR must cross the 13/25 boundary at or below FL250.
- c. SBA:
 - i. Aircraft landing SBA airspace filed above 9,000' must be at or descending to 9,000' prior to handoff.
- d. NTD:
 - i. Aircraft landing NTD airspace filed above 9,000' must be at or descending to 9,000' prior to handoff.

SECTION 4. SECTOR 26



Vertical limits - SFC-UNL

2-4-1. NARRATIVE AND CONFLICT POINTS

Sector 26 is a narrow sector with mainly southeast bound traffic. Traffic flows include the IRNMN, ROKKR, PCIFC, and OHSEA arrivals into the LA Basin. Additional traffic flows come from northwest bound aircraft landing the Bay Area routed via MAKRS, and aircraft routed via MCKEY.LAX landing the SAN area. Sector 26 is bounded by Sector 25 to the west and south, and Sector 04 to the east.

Sector 26 generally combines with Sectors 25 and 28 during a typical event split.

Conflicts may arise between slow-climbing aircraft from the LA Basin routed northwest bound and south bound aircraft from ZOA descending into the LA Basin.

2-4-2. SECTOR SPECIFIC DIRECTIVES

- a. Use primary frequency 135.3.
- b. SECTOR 30:
 - i. Sector 30 has control from Sector 26 for aircraft landing the SAN area for descent no lower than FL290.
 - ii. Aircraft landing the SAN Area during SAN east or 9/27 must cross LAX at FL250.

SECTION 5. SECTOR 28



Vertical limits - SFC-UNL except:

SHELF	ALTITUDES
ZAK/28	240-UNL

2-5-1. NARRATIVE AND CONFLICT POINTS

Sector 28 is a large sector, responsible primarily for aircraft leaving and entering ZLA airspace via oceanic routings. Sector 28 is bordered by Sectors 25 and 30 to the east, along with the Santa Barbara TRACON (SBA), Point Mugu RATCF (NTD), and SCT at lower altitudes. Sector 28 assumes control of NUC Approach Control's airspace when it is not staffed.

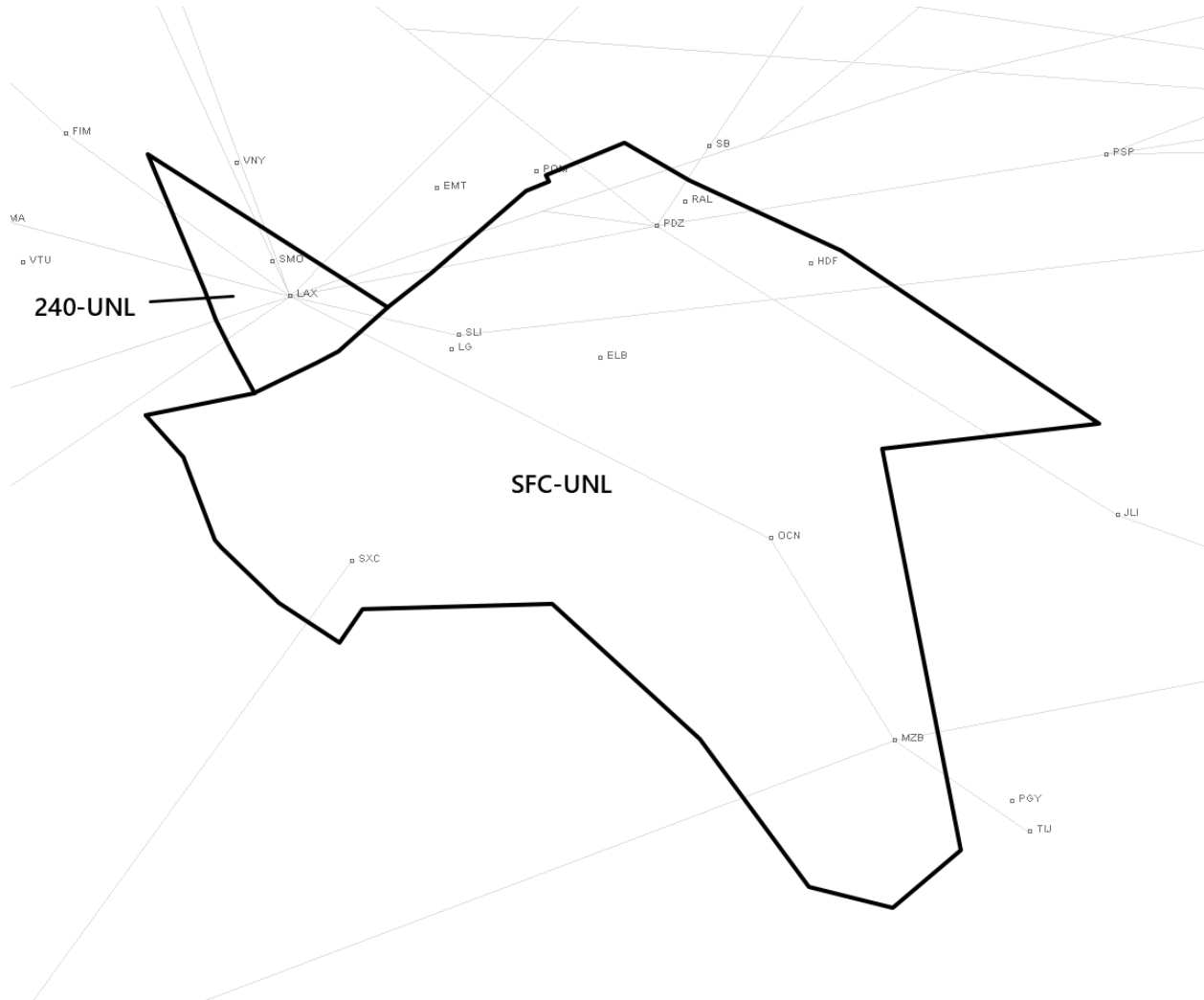
Due to the relatively low volume of traffic this sector typically experiences on VATSIM, Sector 28 is typically combined with other center sectors, typically 25 and sometimes 26, depending on traffic.

Sector 28's primary traffic flows are east and west bound aircraft exiting and entering ZLA airspace via AUDIA, DINTY, ELKEY, and FICKY. Controllers working Sector 28 should watch particularly for aircraft routed over ROSIN and FICKY, as slow climbing aircraft out of SCT may cause traffic conflicts with aircraft descending into SCT.

2-5-2. SECTOR SPECIFIC DIRECTIVES

- a. Use primary frequency 132.15.
- b. SECTOR 25:
 - i. Aircraft routed via the RYDRR STAR must be issued a descend via clearance.
 - ii. Aircraft routed via the SADDE STAR must cross the 13/25 boundary at or below FL250.
- c. SECTOR 30:
 - i. Aircraft landing SAN airspace routed via SXC must cross SXC at:
 - 1. SAN West - FL270
 - 2. SAN East or 9/27 - FL250
 - ii. Sector 30 has control for descent.

SECTION 6. SECTOR 30



Vertical limits - SFC-UNL except:

SHELF	ALTITUDES
04/30	240-UNL

2-6-1. NARRATIVE AND CONFLICT POINTS

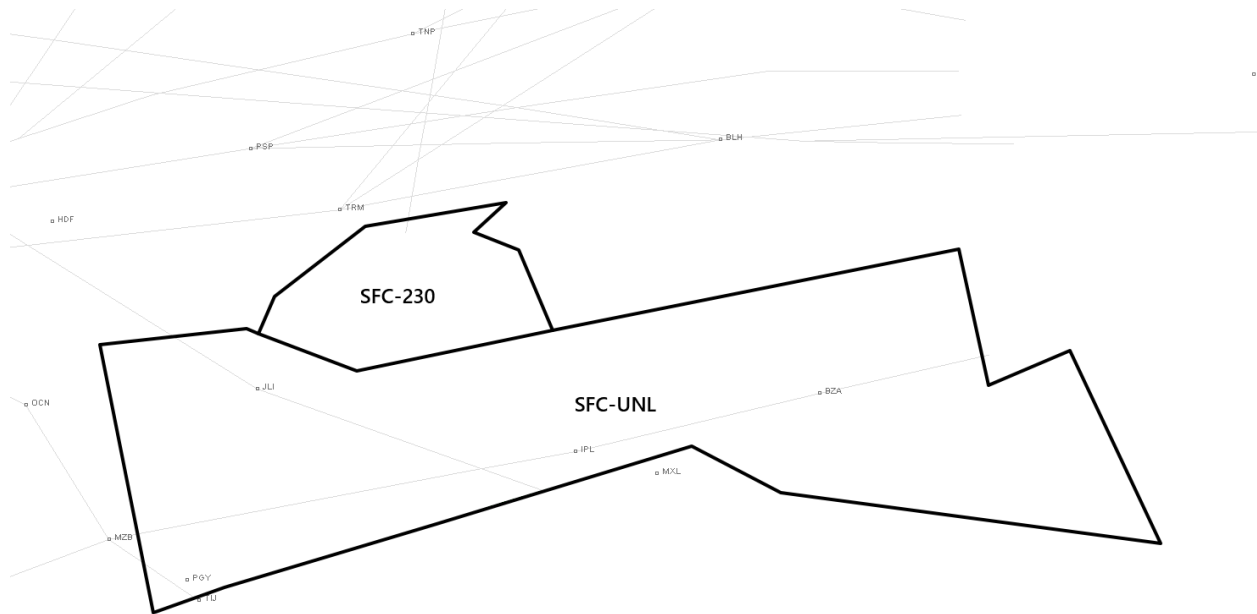
Sector 30 is a large sector that sits over much of the southern area of SCT. Its main traffic flows come from departures out of the LA Basin, primarily routed over SLI and eastward. Other sources of traffic include arrivals to SAN routed over LAX. Sector 30 is bordered by Sector 28 to the west, Sectors 25/26 to the northwest, Sector 04 to the northeast, Sectors 37/39 to the northeast, and Sector 31 to the east.

Primary sources of conflict are SAN arrivals over LAX conflicting with overflight traffic over LAX. Other traffic climbing out of SCT may also come into conflict with SAN arrivals.

2-6-2. SECTOR SPECIFIC DIRECTIVES

- a. Use primary frequency 119.95.
- b. SECTOR 04:
 - i. Aircraft landing SAN when SAN is in East configuration must cross LAX at FL250.
- c. SECTOR 28:
 - i. Aircraft landing SAN airspace routed via SXC must cross SXC at:
 - 1. SAN West - FL270
 - 2. SAN East or 9/27 - FL250
 - ii. Sector 30 has control for descent.
- d. SECTOR 26:
 - i. Sector 30 has control from Sector 26 for aircraft landing the SAN area for descent no lower than FL290.
 - ii. Aircraft landing the SAN Area during SAN east or 9/27 must cross LAX at FL250.

SECTION 7. SECTOR 31



Vertical limits - SFC-UNL except:

SHELF	ALTITUDES
31/39	SFC-230

2-7-1. NARRATIVE AND CONFLICT POINTS

Sector 31's traffic mostly consists of SAN area arrivals and flows along J2/J18. Sector 31 is bordered by Sector 30 to the east and Sector 39 to the north. It also shares a large border with the Metro Mazatlan FIR, which can add a layer of complexity to the sector. Yuma Approach Control (NYL) sits in the eastern portion of the sector along the ZAB border. NYL airspace is assumed by Sector 31 when it is not staffed.

The main conflict point is slow-climbing eastbound departures from SAN over IPL and arrival traffic landing the SAN area. Traffic may also come into conflict in the vicinity of JLI, where northeast bound SAN area departures meet arrivals from over the Mexican border into LAX.

2-7-2. SECTOR SPECIFIC DIRECTIVES

- a. Use primary frequency 126.775.
- b. SECTOR 39:
 - i. Aircraft routed via the BARET/LUCKI/TOPGN arrivals must cross MOMAR at FL240.
 - ii. All other aircraft above FL240 landing SAN area airspace must cross the northern border of the 31/39 shelf at FL240.
 - iii. Sector 31 has control for descent.
- c. NYL:
 - i. Aircraft landing NYL airspace filed above FL240 must be at or descending to FL240 at the time of handoff.

SECTION 8. SECTOR 35



Vertical limits - SFC-UNL

2-8-1. NARRATIVE AND CONFLICT POINTS

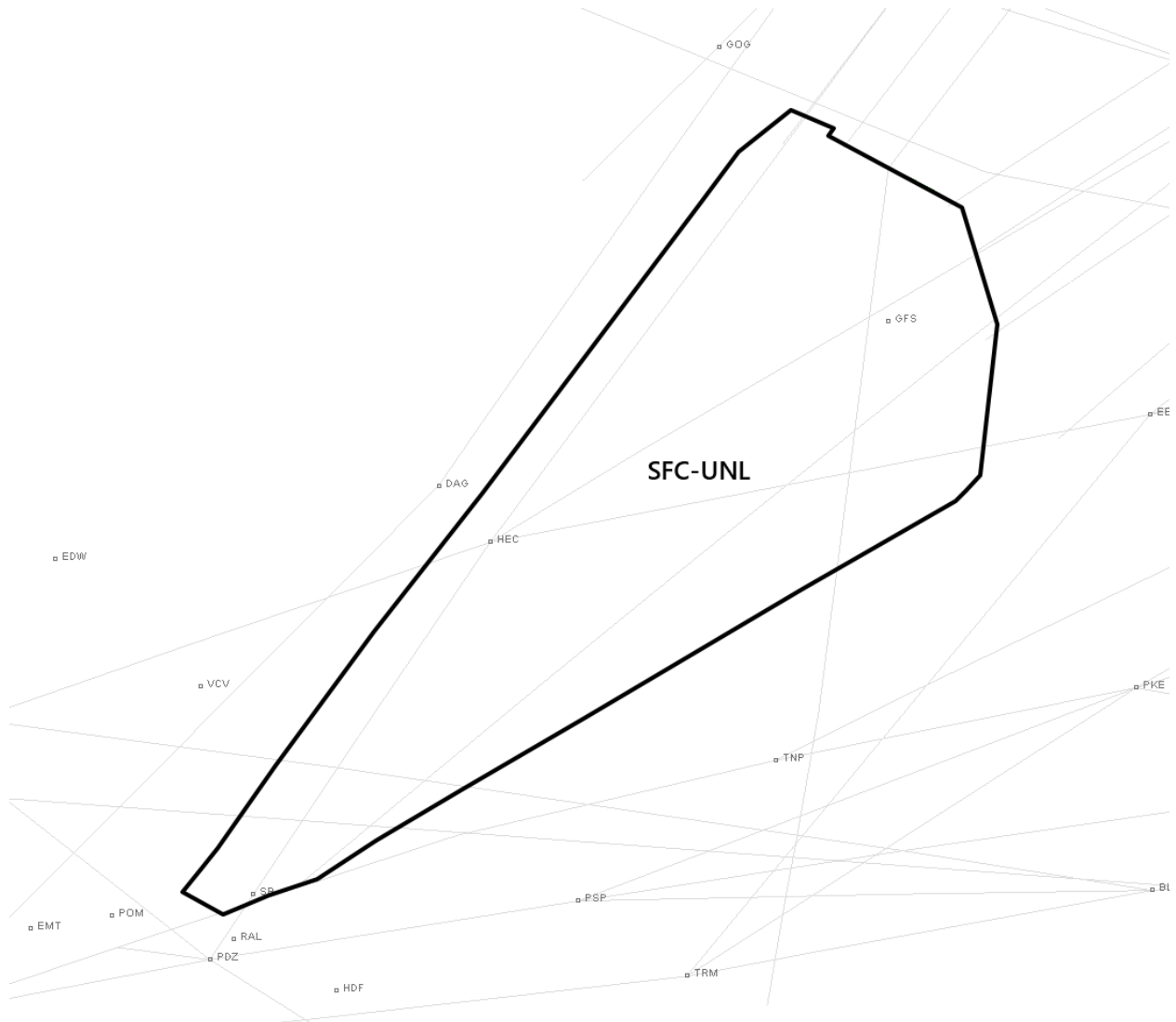
Sector 35 is a large and complex sector sitting over the Grand Canyon and as far west as Needles. Sector 35's traffic is possibly the most diverse in the airspace. Its responsibilities include operations at GCN, KADDY flows to LAS, northbound departures from the PHX area, and eastbound/westbound traffic at high altitudes throughout the sector. Sector 35 is bounded by Sector 54 to the north, Sector 16 to the northwest, Sector 37 to the west, and Sector 39 to the south.

As a result of its diverse traffic, there are many conflict points in the sector. Controllers should be aware of northbound PHX departures climbing into high-altitude traffic transiting the sector to the east and west. Controllers may also encounter difficulty descending south and southeast bound traffic landing the PHX area below these flows as well.

2-8-2. SECTOR SPECIFIC DIRECTIVES

- a. Use primary frequency 128.075.
- b. SECTOR 16:
 - i. Traffic landing the PHX area must cross the 06/36 boundary at or below FL370. Sector 35 has control for descent.
- c. SECTOR 37:
 - i. Sector 35 has control for descent for all PHX area arrivals.
- d. SECTOR 39:
 - i. All aircraft landing the ONT/PSP/SAN areas must cross the 36/39 boundary at or below FL300.
- e. SECTOR 54:
 - i. PHX area arrivals must cross the 54/36 boundary at or below FL330. Sector 35 has control for descent.

SECTION 9. SECTOR 37



Vertical limits: SFC-UNL

2-9-1. NARRATIVE AND CONFLICT POINTS

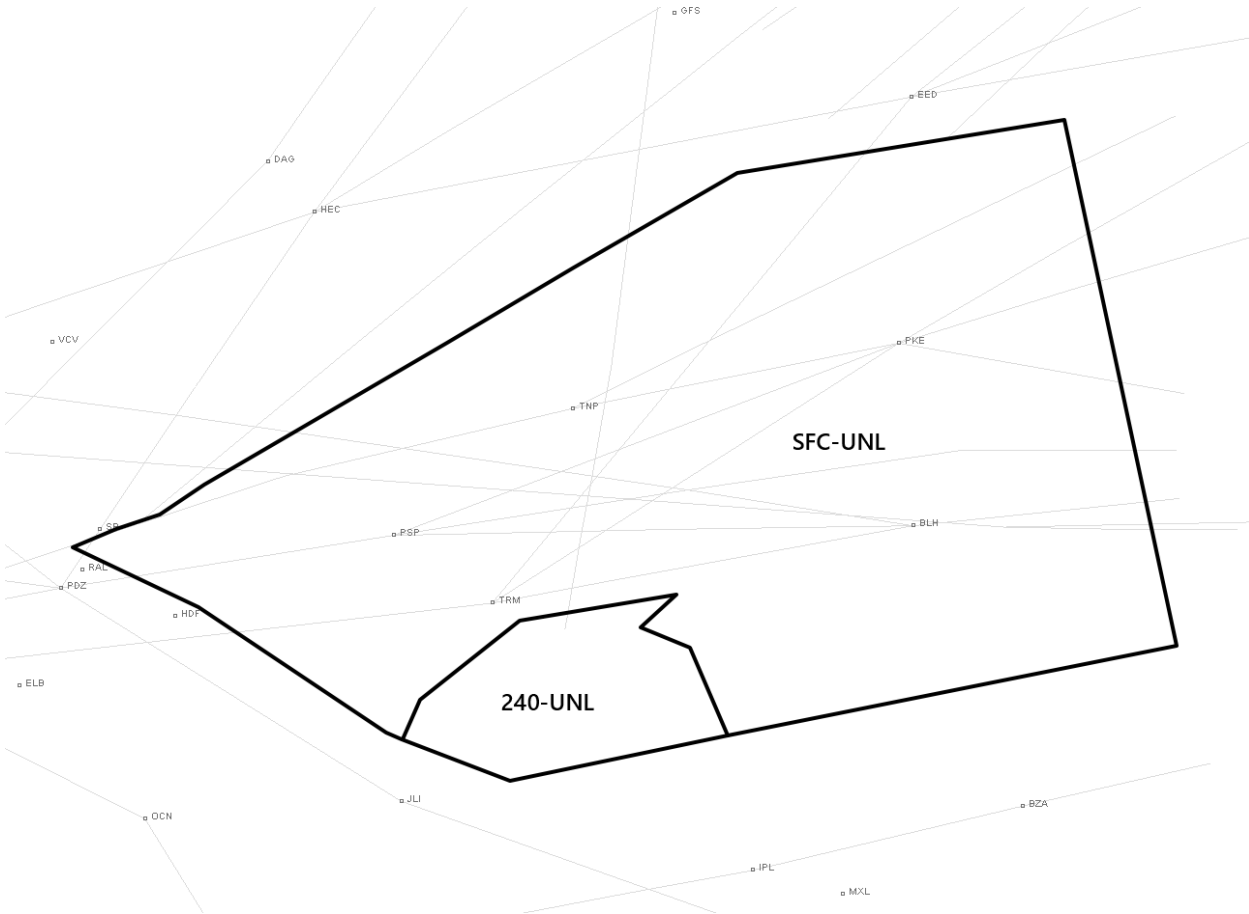
Sector 37 sits in the middle of ZLA airspace, and its primary responsibility is routing traffic over the HEC area into the LA Basin. Sector 37 is bounded by Sector 04 to the northwest, Sector 16 to the north, Sector 35 to the northeast, Sector 39 to the south, and Sector 30 to the southwest.

The primary source of conflict is traffic climbing north and northwest bound out of PSP conflicting with arrivals into the LA Basin.

2-9-2. SECTOR SPECIFIC DIRECTIVES

- a. Use primary frequency 133.550.
- b. SECTOR 04:
 - i. Aircraft routed via the BOGET, GUERA, and JANNY STARs must cross KREME/JOEES at FL240. Sector 04 has control to issue a “descend via” clearance.
 - ii. Aircraft routed via the KIMMO and LYNXX STARs must cross the 04/37 boundary at FL230. Sector 04 has control for descent.
 - iii. Aircraft routed via PMD.V137.PSP and the SIZLR STAR will briefly enter Sector 37’s airspace southeast of HITOP. These aircraft will already have their communications transferred to SCT, and a pointout to Sector 37 is not required.
- c. SECTOR 35:
 - i. Sector 35 has control for descent for all PHX area arrivals.
- d. SECTOR 39:
 - i. Aircraft landing the SAN/PSP areas must cross the 37/39 boundary at or below FL300.

SECTION 10. SECTOR 39



Vertical limits - SFC-UNL except:

SHELF	ALTITUDES
31/39	240-UNL

2-10-1. NARRATIVE AND CONFLICT POINTS

Sector 39 is a large, high density sector that works a large amount of traffic in and out of the LA Basin. Traffic primarily flows eastbound and westbound between SCT and the ZAB border. Sector 39 is bordered by Sector 31 to the south, Sector 30 to the west, Sector 37 to the northwest, and Sector 35 to the north.

The primary source of conflicts in Sector 39 comes from arrival traffic into the different areas of SCT. Planes may arrive in “reverse stacks” from adjacent sectors, where arrivals that are “lower” (i.e. PSP, Empire Area, SAN area) are at altitudes above the “higher” arrivals.

2-10-2. SECTOR SPECIFIC DIRECTIVES

- a. Use primary frequency 133.200.
- b. SECTOR 31:
 - i. Aircraft routed via the BARET/LUCKI/TOPGN arrivals must cross MOMAR at FL240.
 - ii. All other aircraft above FL240 landing SAN area airspace must cross the northern border of the 31/39 shelf at FL240.
 - iii. Sector 31 has control for descent.
- c. SECTOR 35:
 - i. All aircraft landing the ONT/PSP/SAN areas must cross the 36/39 boundary at or below FL300.
- d. SECTOR 37:
 - i. Aircraft landing the SAN/PSP areas must cross the 37/39 boundary at or below FL300.
- e. NYL:
 - i. Aircraft landing NYL airspace filed above FL240 must be at or descending to FL240 at the time of handoff.

SECTION 11. SECTOR 54



Vertical limits: SFC-UNL

2-11-1. NARRATIVE AND CONFLICT POINTS

Sector 54 is a large sector located in the northeastern corner of ZLA airspace, bordering ZLC and ZDV. Its main traffic flows are southwest bound toward the LA Basin, southbound toward the PHX area, and northeast and eastbound flights originating from L30 and points further southwest. Sector 54 is bounded by Sector 35 to the south, and Sector 16 to the west.

Main sources of conflict are eastbound departures from L30 and southbound flows out of ZLC. TRALR departures may also come into conflict with arrivals to L30 routed through the LUXOR gate.

2-11-2. SECTOR SPECIFIC DIRECTIVES

- a. Use primary frequency 135.250.
- b. SECTOR 35:
 - i. PHX area arrivals must cross the 54/35 boundary at or below FL330. Sector 35 has control for descent.