OAKLAND CENTER - STANDARD OPERATING PROCEDURES
Version 1.5

List of Changes

Change	Date	Description
--	03APR2018	Initial write of policy
CHG 1	27JUN2018	Format change, added purpose and distribution, add Sacramento info for 41, 44.
CHG 2	28FEB2019	Removed "Traffic Description", "Sector Flows", "3NM Separation Minima/ Single Site adaptation"; Replaced arrivals with procedure explanations for all sectors. Added new PIRAT STAR.
CHG 3	20OCT2019	Removed VOX Channel from position tables due to AFV release.
CHG 4	15JUL2021	Added optional RW sectors, major rewrite to remove redundant sections already mentioned in LOAs.
CHG 5	07FEB2022	.xx5 frequency change update.

Table of Contents

Section 1. General Information

1-1 Purpose

This Standard Operating Procedure (SOP) outlines the procedures to be used by controllers working Oakland Center Sectors on the Vatsim network, to ensure that traffic flows are handled in as efficient and timely a manner as possible. This SOP is for simulation purposes only and shall not be used for real world use or reference.

1-2 Distribution

This SOP is distributed to all members of the Oakland ARTCC on Vatsim.

1-3 Cancellation

All previous procedures are canceled.

1-4 Daily Procedures

a. General Procedures
    i. When combined, ZOA shall operate all sectors as OAK_CTR using the primary frequency 132.200.
    ii. Aircraft unable to accept a STAR or appropriate re-route shall be vectored and sequenced with the closest stream to their location.
    iii. Minimum radar separation required by each facility is 5 nautical miles (NM) constant or increasing, at the time of communications change.
b. Letters of Agreement
    i. A general familiarity with the following Letters of Agreement is necessary in order to provide surrounding and underlying sectors an orderly traffic flow. The following Letters of Agreement and can be found on the SOPs/LOAs page.
        1. Oakland Center (ZOA) – SBA TRACON (SBA) LOA
        2. Los Angeles Center (ZLA) – LOA-KZLA
        3. Salt Lake City Center (ZLC) – LOA-KZLC
        4. Seattle Center (ZSE) – LOA-KZSE
c. Pre-Arranged Coordination Procedures
    i. The transfer of radar identification, altitude control and/or fourth line control information without verbal coordination is authorized during a radar handoff when both of the following conditions are met:
        1. Flight data is displayed in full data blocks; and

2. Procedure is valid only between Oakland Center radar sectors

ii. This procedure is not authorized for use if more than one P-ACP is contained within a radar sector that may conflict either laterally or vertically simultaneously. Either one of the other may be utilized but not both at the same time.

iii. Either the transferring controller or the receiving controller may issue an altitude change if necessary.

iv. These procedures require that verbal coordination be completed as per Order JO 7110.65 Air Traffic Control, paragraph 2-1-14, Coordinate Use of Airspace; paragraph 2-1-15, Control Transfer; paragraph 5-4-5, transferring Controller Handoff; paragraph 5- 4-6, Receiving Controller Handoff; or paragraph 5-4-7, Point Out.

v. The procedures listed are not valid when the sectors identified are combined with each other.

vi. All sectors involved must display the full data block until aircraft enter the final radar sector listed in the P-ACP.

1-5 Aircraft Definitions

ACFT	DESCRIPTION
P (Prop)	Non-jet aircraft with a cruise speed of 179 knots or less
T (Turbo-Prop)	Non-jet aircraft with a cruise speed of 180 knots or greater
J (Jet)	Jet aircraft and 4-engine turboprop aircraft

1-6 Traffic Flow Descriptions

Flow	DESCRIPTION
SFOW	SFO landing Runways 01 or 28; OAK landing Runways 28 and 30; SJC landing Runways 30.
SFOE	SFO landing Runways 10 or 19; OAK landing Runways 10 and 12; SJC landing Runways 12.
OAKE	SFO landing Runways 01 or 28 and OAK landing Runways 10 and 12.
SJCE	SFO landing Runways 01 or 28; OAK landing Runways 28 and 30; SJC landing Runway 12.

Section 2. Area East Operating Procedures

2-1 General Information

SECTOR	CALLSIGN	RADIO CALLSIGN	FREQUENCY
Sector 44	OAK_44_CTR	Oakland Center	127.950

a. Pre-Arranged Coordination
    i. PACP between Area North and Area East for Sacramento Complex Departures
        1. Aircraft filing a SID will not be cleared off the filed route by Area North, unless verbal coordination has been accomplished.
    ii. Area East has control from Area North for turns up to 20 degrees left of course, or direct Friant VORTAC (FRA).
    i. PACP for SMF arrivals routed via the SUUTR STAR, Area East/South:
        1. Area South will issue a descend via clearance and enter the appropriate altitude into the datablock and point out to Area East.
        2. If necessary Area East must verbally coordinate with Area South if PACP is terminated for the given aircraft.

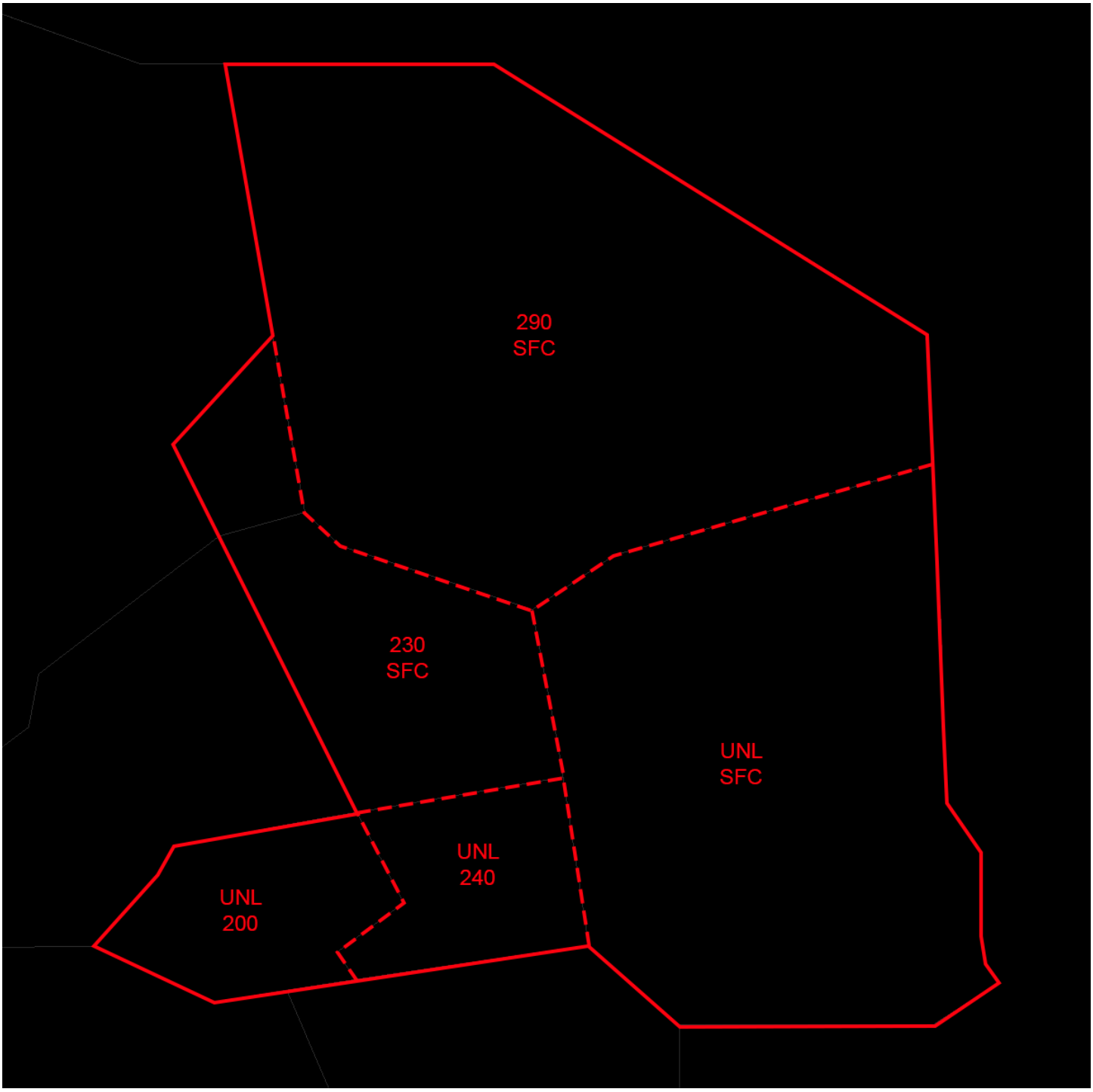
2-2 Sector Information

Area East is the easternmost area in ZOA's airspace, along the ZOA/ZLC border and a small portion of the ZSE border. Its primary traffic flows are arrivals and departures into Norcal to and from the east, Reno arrivals/departures, and north-south traffic transiting between the Pacific Northwest and Las Vegas and point further southeast.

2-3 Procedures

a. **NCT arrivals and departures** are handled in accordance with the ZOA-NCT LOA.
b. **NFL arrivals and departures** are handled in accordance with the ZOA-NFL LOA.
c. **SJC RAZRR** arrivals via MDOWS/STSHH will be descended to FL240 before handing off to Area South.
c. **South Lake Tahoe arrivals** may be routed via the appropriate routing or direct the airport. Arrivals may cancel in the air or require an instrument approach to TVL. Some instrument approaches may require coordination with NCT.
d. **Truckee-Tahoe arrivals** may be routed via the appropriate route or direct the airport. Arrivals may cancel in the air or require an instrument approach. Some instrument approaches may require coordination with NCT.
e. **Minden-Tahoe arrivals** may request the RNAV-B approach. Coordination is required with NCT for this approach.
f. **South Lake Tahoe departures** will make their requests on the ground at TVL. Certain RICHY departure transitions require coordination with NCT.
g. **NAS Fallon and Fallon Municipal Airport arrivals and departures** will be handled in accordance with the ZOA-NFL LOA. Aircraft requesting a high-altitude approach may be routed as requested after coordination with NFL.
h. **Susanville airport arrivals** may require coordination with Area North, ZSE, and/or NCT depending on the requested approach.
i. **Bishop and Mammoth airport arrivals** are normally routed over NIKOL, BIH, or other appropriate IAFs. Caution should be exercised to avoid descending aircraft below the relevant MIAs for the approach.
j. **Mammoth airport departures** may require coordination with Area South if routed west or southwest-bound.

2-4 Sector Diagram



Section 3. Area North Operating Procedures

3-1 General Information

SECTOR	CALLSIGN	RADIO CALLSIGN	FREQUENCY
Sector 41	OAK_41_CTR	Oakland Center	125.850

a. Pre-Arranged Coordination
   i. PACP between Area North and Pac North for SMF Departures to the north (SEA, PDX, BFI, YVR)
      1. Area North will enter a temporary altitude FL230 into the data block and initiate a radar handoff to Pac North
      2. Pac North has control for speed assignments and turns up to 30 degrees left or right of course, and/or to clear the aircraft direct to any subsequent NAVAID, fix, or waypoint filed in the aircraft's assigned route of flight.
      3. Pac North will be responsible for point outs to any other sectors which may be impacted by radar vectors or route assignment issued by Pac North
   ii. PACP between Area North and Pac North for SFO and OAK Airport Departures
      1. Area North will enter a temporary altitude FL230 into the data block and initiate a radar handoff to Pac North.
      2. After radar handoff, Pac North has control for speed assignments and turns up to 30 degrees left or right of course, and/or to clear the aircraft direct to any subsequent NAVAID, fix, or waypoint filed in the aircraft's assigned route of flight.
      3. Pac North will be responsible for point outs to any other sectors which may be impacted by radar vectors or route assignment issued by Pac North
   iii. PACP between Area North and Pac North for SFO, OAK, HWD, and SJC airport arrivals
      1. Pac North will enter a temporary altitude FL240 into the data block and initiate a radar handoff to Area North.
      2. After radar handoff, Area North has control for speed assignments and turns up to 30 degrees left or right of course, and/or to clear the aircraft direct to any subsequence NAVAID, fix, or waypoint filed in aircraft's assigned route of flight. Area North will be responsible for point outs to any sector which may be impacted by radar vectors or route assignment issued by Area North
      3. Area North will enter assigned radar vector headings into the scratchpad while the aircraft is above Area North
      4. Area North will be responsible for separation between the aircraft they have accepted the handoff and established communications with, regardless of altitude.
   iv. PACP between Area North and Area East for Sacramento Complex Departures

1. Aircraft filing a SID will not be cleared off the filed route by Area North, unless verbal coordination has been accomplished.
2. Area east has control from Area North for turns up to 20 degrees left of course, or direct Friant VORTAC (FRA).

3-2 Sector Information

Area North is one of ZOA's northernmost areas, covering much of the ZOA/ZSE border and a portion of the ZLC border in its eastern portion. Its primary flows are NCT departures to the east and north, arrivals from the north, and north-south traffic transiting ZOA airspace.

3-3 Procedures

Sector 41 is a sector located in the northernmost portion of ZOA's airspace, southward to over Wine Country when it reaches the border with NCT and Travis RAPCON. Its primary traffic flows are arrivals from the north landing the Bay Area and Sacramento complexes and arrival/departure traffic in Wine Country and the Redding/Chico area.

a. **NCT arrivals and departures** are handled in accordance with the ZOA-NCT LOA.
b. **Travis AFB and Area airport arrivals and departures** are handled in accordance with the ZOA-Travis RAPCON LOA.
c. **TVL and TRK arrivals** should be descended under NCT eastbound departures and Sacramento complex arrivals from the east and handed off to Area East.
d. **Santa Rosa/Sonoma County (STS)**. The ILS is the primary approach; visual approaches may be used when weather conditions permit.
e. **Napa County (APC)**. Visual approaches may be used when weather conditions permit.
f. **Ukiah Airport (UKI)**. Arrivals are normally routed over ENI.
g. **Gnoss Airport (DVO)**. Arrivals are normally routed over RACFE for the GPS RWY 13 instrument approach. This approach is not separated from any approaches into STS, APC, or O69 airports.
h. **Petaluma Airport (O69)**. Arrivals are normally routed over SGD for the VOR/DME or JIVLI for the GPS RWY 29 instrument approach. This approach must be sequenced with traffic at SGD VORTAC. Additionally, these procedures are not separated from RWY 32 instrument approaches at STS airport.
i. **Redding Airport**. Area North sequences arrivals at Redding Airport. The ILS RWY 34 is the primary instrument approach.
j. **Chico Airport.** Area North sequences arrivals at Chico Airport. The ILS RWY 13L is the primary approach.

k. **NCT departures** are handled in accordance with the ZOA-NCT LOA.
l. **Travis AFB and Area Airport departures** are handled in accordance with the ZOA-Travis RAPCON LOA.
m. **Santa Rosa/Sonoma County Airport**. Departures are normally assigned the CHRLY SID or the published ODP.
n. **Napa County Aiport**. Aircraft are normally assigned the MER, LIZRD, NAPAA or OZIEE SIDs or vectors to SGD VOR.
o. **Ukiah Airport**. Departures are assigned the appropriate SID, ODP, or direct ENI then on course.
p. **Gnoss Field Airport**. Departures are assigned the IFR ODP or direct SGD then on course.
q. **Petaluma Airport**. Departures are assigned the IFR ODP or direct SGD then on course.
r. **Redding Airport**. The SHSTA, KREST, KENDL, or HOMAN SIDs or the published ODP are typically assigned.
s. **Chico Airport**. The CIC SID or published ODP are typically assigned.

3-4 Sector Diagram

Section 4. Area South Operating Procedures

4-1 General Information

SECTOR	CALLSIGN	RADIO CALLSIGN	FREQUENCY
Sector 11	OAK_11_CTR	Oakland Center	133.700

a. Pre-Arranged Coordination
    i. PACP for SMF arrivals routed via the SUUTR STAR, Areas South/East:
        1. Area South will issue a descend via clearance and enter the appropriate altitude into the datablock and point out to Area East.
        2. If necessary Area East must verbally coordinate with Area South if PACP is terminated for the given aircraft.

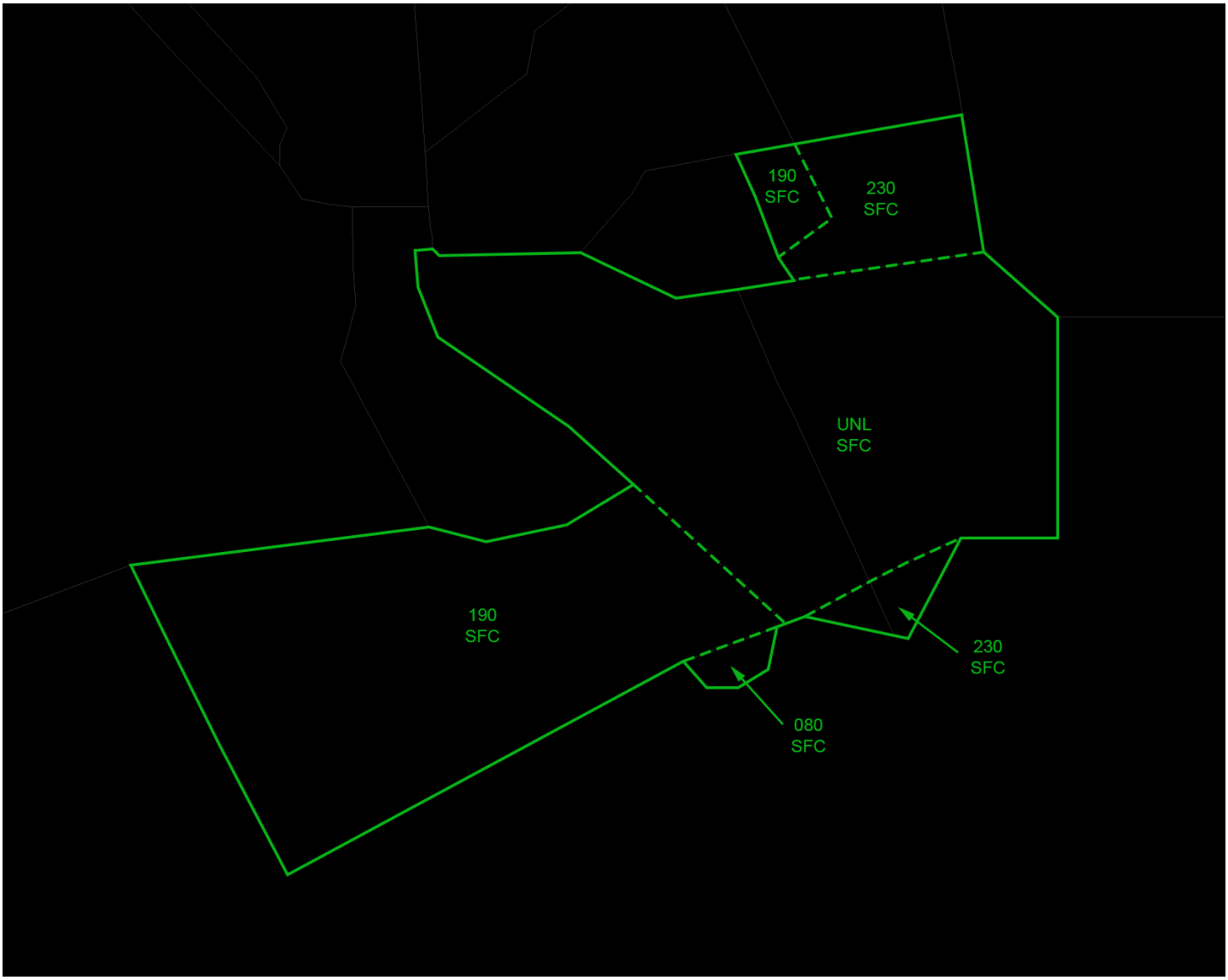
4-2 Sector Description

Area South is one of the southernmost areas of ZOA's airspace, covering much of the ZOA/ZLA border. Its primary traffic flows are Socal arrivals departing NCT and points further north, and other north-south traffic transiting between California and the Pacific Northwest.

4-3 Procedures

a. **NCT arrivals and departures** will be handled in accordance with the published ZOA-NCT LOA.
b. **NLC arrivals and departures** are handled in accordance with the ZOA-NLC LOA.
c. **FAT arrivals and departures** are handled in accordance with the ZOA-FAT LOA.
d. **TVL/TRK arrivals** should be routed SWR destination. These aircraft should be descended to FL300 or the lowest available altitude and handed off to Area East.
e. **PRB arrivals** may be routed via the IAF or direct PRB. Area South is the approach control authority for the PRB airport.
f. **Mariposa-Yosemite, Pine Mountain Lake, and Columbia Airports**. Aircraft landing these airports will be coordinated individually with NCT for arrival instructions. Flights requesting approach from NCT will be pointed out and issued approach clearance by NCT. Flights requesting approach from Area South will be pointed out to NCT and issued approach clearance.
g. **PRB departures** are routed via the ODP or BRALY/JEDGI SIDs.
h. **Mariposa-Yosemite, Pine Mountain Lake, And Columbia Airport departures** will be issued clearance on the ground, if required. Some departures may require coordination with NCT.

4-4 Sector Diagram



Section 5. Pac North Operating Procedures

5-1 General Information

SECTOR	CALLSIGN	RADIO CALLSIGN	FREQUENCY
Sector 36	OAK_36_CTR	Oakland Center	119.975

a. Pre-Arranged Coordination
   i. PACP between Area North and Pac North for SMF Departures to SEA, PDX, & BFI
      1. Area North will enter a temporary altitude FL230 into the data block and initiate a radar handoff to Pac North
      2. Pac North has control for speed assignments and turns up to 30 degrees left or right of course, and/or to clear the aircraft direct to any subsequent NAVAID, fix, or waypoint filed in the aircraft's assigned route of flight.
      3. Pac North will be responsible for point outs to any other sectors which may be impacted by radar vectors or route assignment issued by Pac North
   ii. PACP between Area North and Pac North for SFO and OAK Airport Departures
      1. Area North will enter a temporary altitude FL230 into the data block and initiate a radar handoff to Pac North
      2. After handoff, Pac North has control for speed assignments and turns up to 30 degrees left or right of course, and/or to clear the aircraft direct to any subsequent NAVAID, fix, or waypoint filed in the aircraft's assigned route of flight.
      3. Pac North will be responsible for point outs to any other sectors which may be impacted by radar vectors or route assignment issued by Pac North
   iii. PACP between Area North and Pac North for SFO, OAK, HWD, and SJC airport arrivals
      1. Pac North will enter a temporary altitude FL240 into the data block and initiate a radar handoff to Area North.
      2. After handoff, Area North has control for speed assignments and turns up to 30 degrees left or right of course, and/or to clear the aircraft direct to any subsequence NAVAID, fix, or waypoint filed in aircraft's assigned route of flight. Area North will be responsible for point outs to any sector which may be impacted by radar vectors or route assignment issued by Area North.
      3. Area North will enter assigned radar vector headings into the scratchpad while the aircraft is above FL230
      4. Area North will be responsible for separation between the aircraft they have accepted the handoff and established communications with, regardless of altitude.

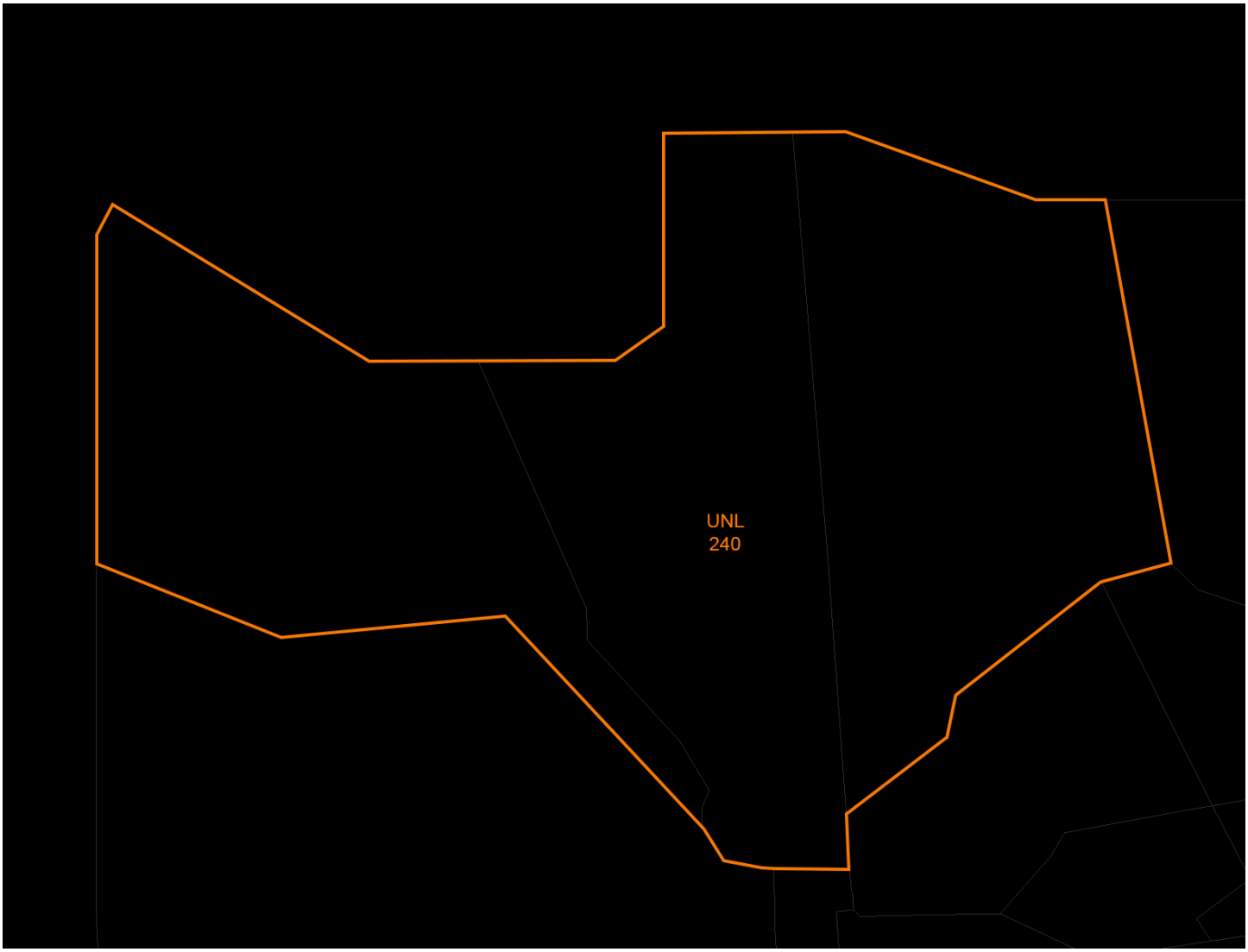
5-2 Sector Information

Pac North is a high-altitude area covering much of ZOA's northern border along with a portion of the ZOA/ZAK boundary. Its primary traffic flows are north or southbound traffic transiting between Southern California and the Pacific Northwest, northbound departures from NCT, and arrivals into NCT from the north.

5-3 Procedures

a. **NCT arrivals** are handled in accordance with the ZOA-NCT LOA.
b. **Oceanic flights**. Pac North is responsible for ensuring aircraft are established at appropriate altitudes and/or maintaining sufficient longitudinal spacing prior to crossing the Oceanic Control Boundary.

5-4 Sector Diagram



Section 6. Pac South Operating Procedures

6-1 General Information

SECTOR	CALLSIGN	RADIO CALLSIGN	FREQUENCY
Sector 14	OAK_14_CTR	Oakland Center	134.550

a. Pre-Arranged Coordination
    i. Reserved.

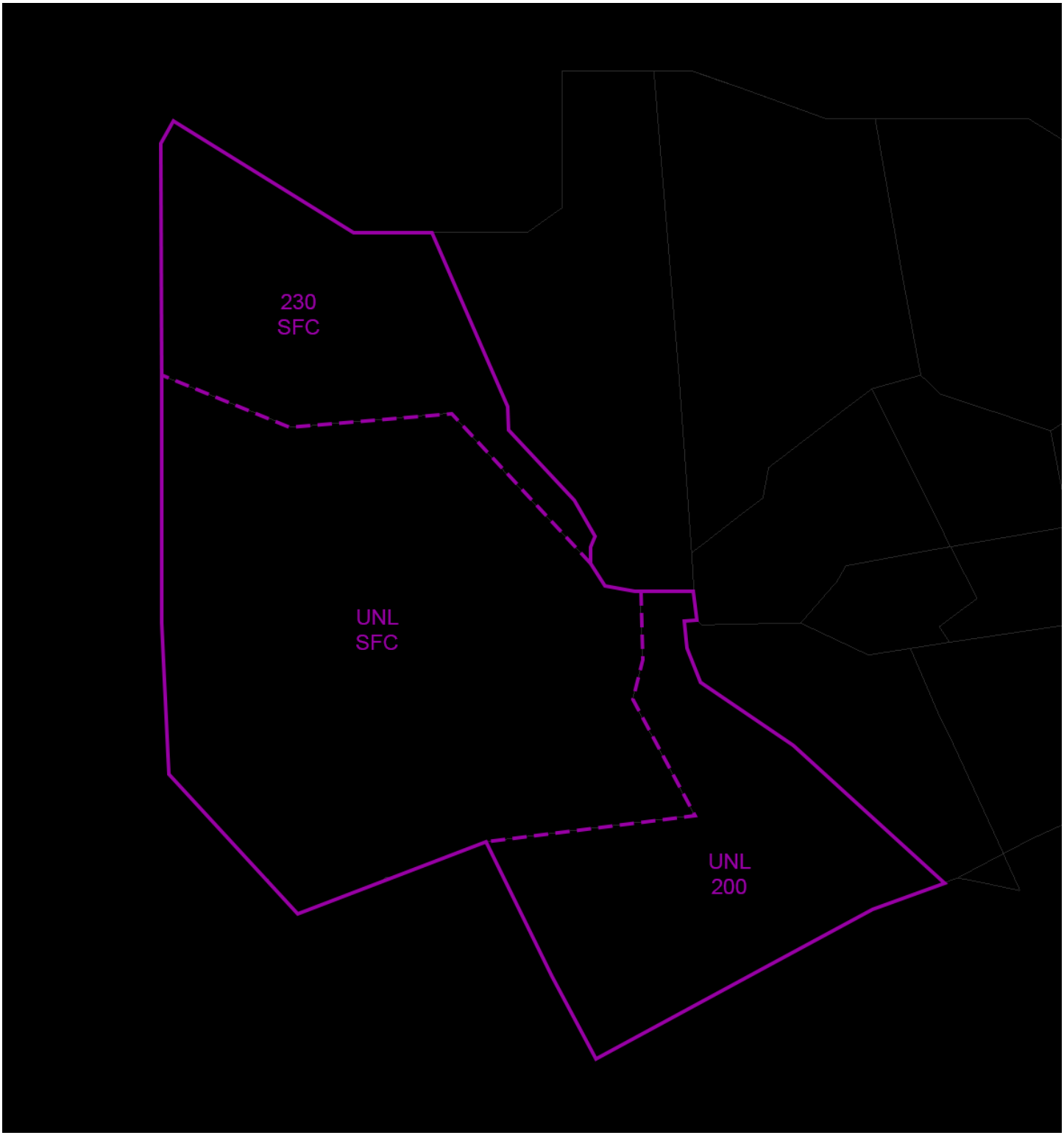
6-2 Sector Information

Pac South covers the southwestern most portion of ZOA's airspace. Its primary traffic flows are Bay Area arrivals from ZLA, Offshore departures from the Bay, and traffic entering and exiting oceanic airspace.

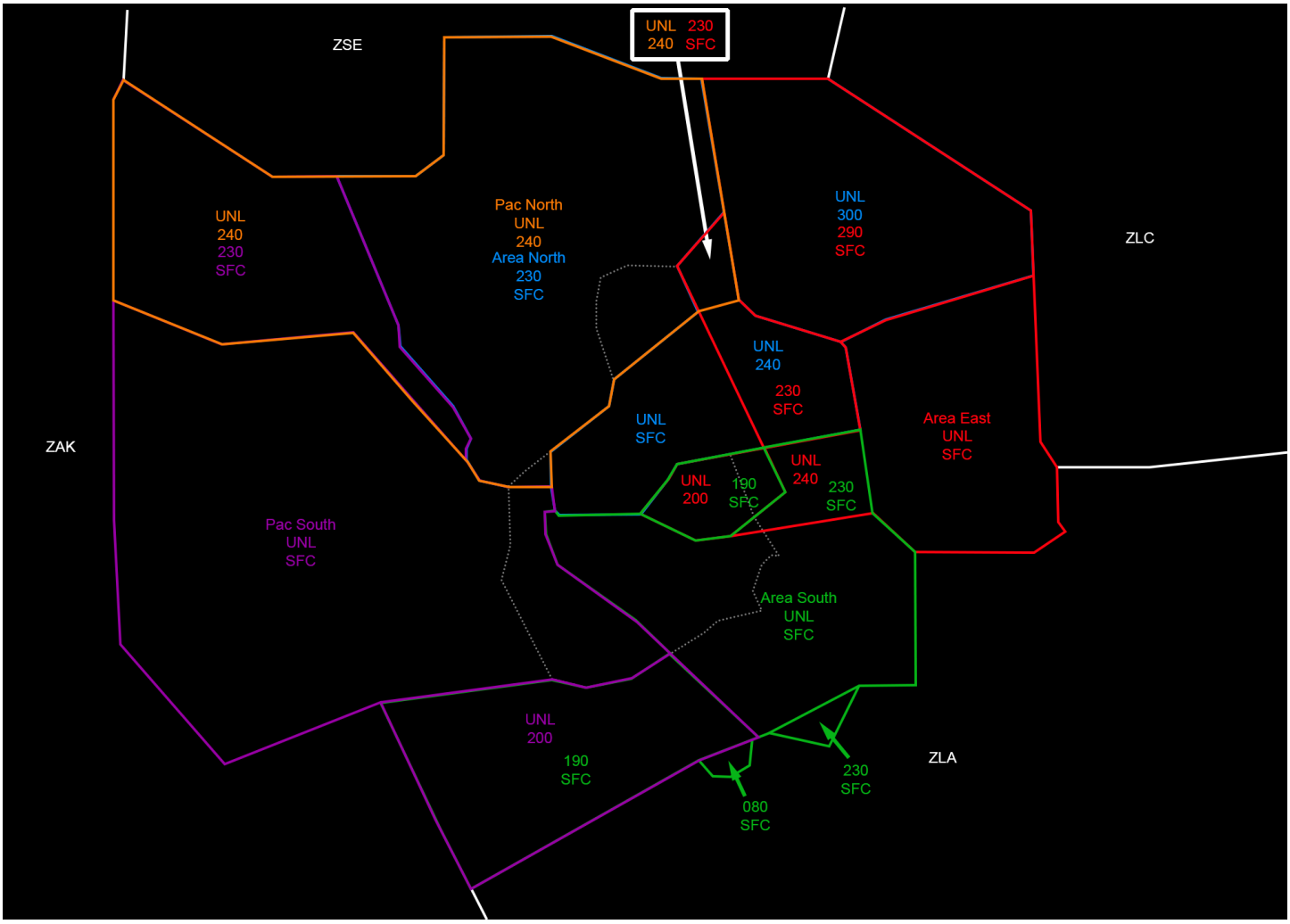
6-3 Procedures

a. **NCT arrivals** are handled in accordance with the ZOA-NCT LOA.
b. **Oceanic Flights**. Pac South is responsible for ensuring aircraft are established at appropriate altitudes and/or maintaining sufficient longitudinal spacing prior to crossing the Oceanic boundary, per FAAO 7110.65.

6-4 Sector Diagram



Appendix A. Combined Area Map



Appendix B. Additional ZOA Sectors

ZOA management may dictate a need for additional sectors to be split off/opened up based on traffic volume or complexity during events. In the event this occurs, ZOA management will provide additional documentation related to the nonstandard splits, if necessary. This Appendix serves as a reference for controllers to use to familiarize themselves with the airspace and need not be memorized as a part of training.

B-1. Sector frequencies and callsigns

SECTOR	AREA	CALLSIGN	FREQUENCY
Sector 10	South	OAK_10_CTR	128.700
Sector 11	South	OAK_11_CTR	133.700
Sector 13	South	OAK_13_CTR	127.450
Sector 14	Pac South	OAK_14_CTR	134.550
Sector 15	South	OAK_15_CTR	132.800
Sector 16	South	OAK_16_CTR	123.800
Sector 22	South	OAK_22_CTR	121.250
Sector 29	North	OAK_29_CTR	119.750
Sector 30	East	OAK_30_CTR	127.175
Sector 31	Pac North	OAK_31_CTR	134.975
Sector 32	North	OAK_32_CTR	132.950
Sector 33	East	OAK_33_CTR	132.050
Sector 34	East	OAK_34_CTR	134.375
Sector 35	Pac South	OAK_35_CTR	134.150
Sector 36	Pac North	OAK_36_CTR	119.975
Sector 40	North	OAK_40_CTR	127.800
Sector 41	North	OAK_41_CTR	125.850
Sector 42	North	OAK_42_CTR	132.200
Sector 43	North	OAK_43_CTR	134.450
Sector 44	East	OAK_44_CTR	127.950
Sector 45	East	OAK_45_CTR	128.800
Sector 46	East	OAK_46_CTR	125.750

B-2. Sector Diagrams

Area East Highs:

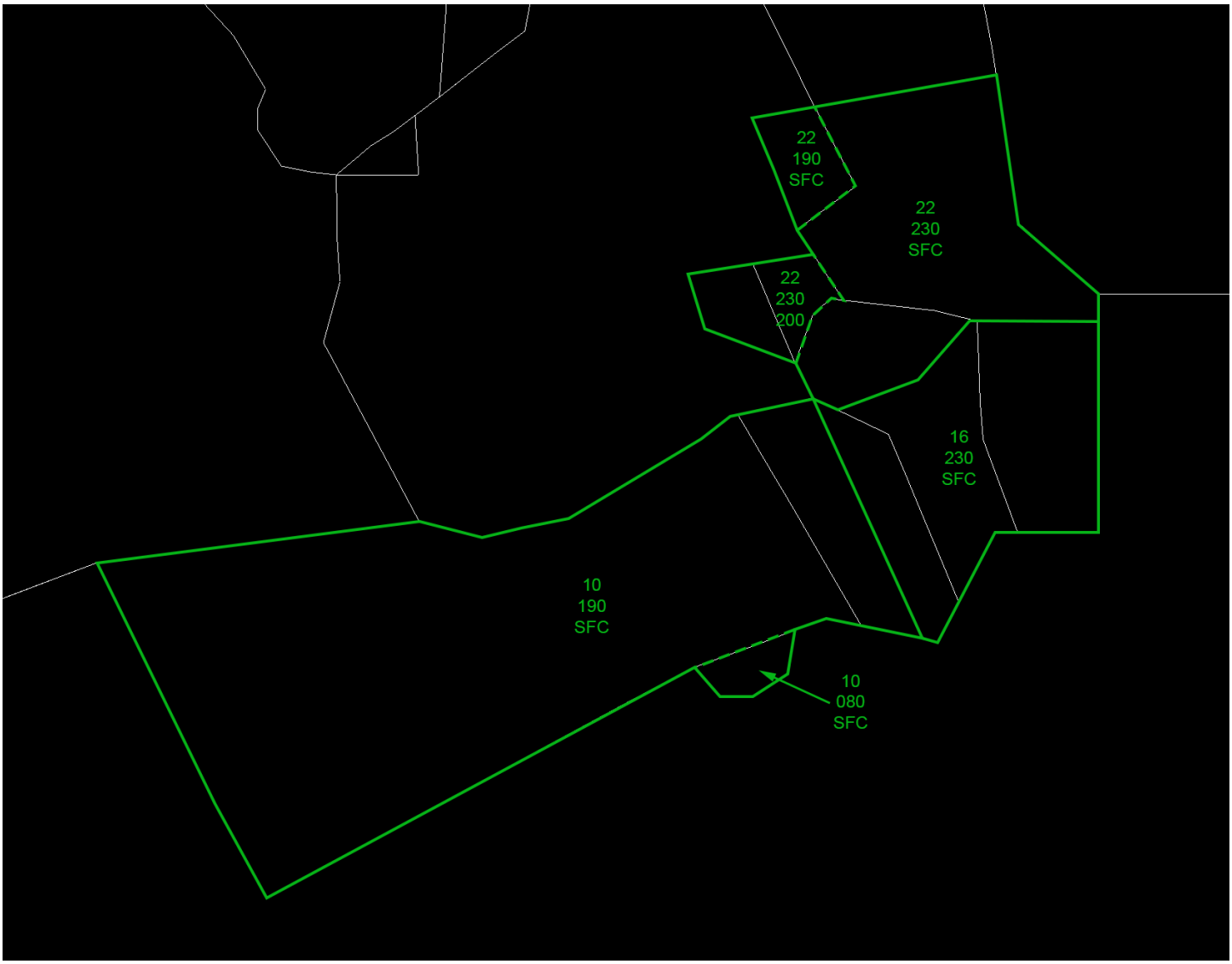
Area East Lows:

Area North Highs:

Area North Lows:

Area South Highs:

Area South Lows:



Pac North:

Pac South: