

SAN JUAN CERAP (ZSU)

SUBJ: San Juan CERAP Standard Operating Procedures

1. Purpose. This document serves as the primary source of information related to the Standard Operating Procedures (SOPs) for terminal and enroute controllers of the San Juan CERAP (ZSU).
2. Cancellation. This document supersedes any other previous SOPs available prior to the publication of this version effective on 06/30/2024.

VATSIM Caribbean Division

**ZSU 7110.1b
Initial Publication**

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SAN JUAN CERAP (ZSU)

SUBJ: San Juan CERAP Standard Operating Procedures

This order prescribes standard operating procedures for use by San Juan CERAP controllers providing air traffic control services. This document is supplemental to FAAO 7110.65 and Letters of Agreement (LOA) with other facilities.

All controllers are required to be familiar with the provisions of this document. Neither the FAAO 7110.65 or this publication will cover all situations. With the knowledge from the material contained within this document as well as the 7110.65 controllers are expected to exercise their best judgement in handling those situations that are not covered.

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San Juan CERAP

**THIS DOCUMENT IS FOR FLIGHT SIMULATOR PURPOSES
IT IS NOT INTENDED FOR REAL WORLD USE**

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CHAPTER 1. INTRODUCTION

GENERAL

1-1-1. Purpose of this order.

This order establishes standard operating procedures to be utilized by San Juan CERAP air traffic personnel.

1-1-2. Where can I find this order?

This order can be found on the San Juan CERAP website: sanjuan.vatcar.net and on the San Juan CERAP Discord server.

1-1-3. Acronyms

The following is a list of acronyms/contractions used throughout this document.

APCON – Approach Control

BQNT – Borinquen ATCT

DP – Instrument Departure Procedures

EF – Entry Facility

EIST – Beef Island ATCT

FDB – Full Data Block

JAZ – Juliana Arrival Zone

MDCS – Santo Domingo ACC

ODO – Opposite Direction Operations

SIGT – Isla Grande ATCT

SJUT – San Juan ATCT

STTT – St. Thomas ATCT

STXT – St. Croix ATCT

SVZM – Maiquetia ACC

TNCF – Curaçao ACC

TNCM TCA – Juliana Terminal Control Area

TTZP – Piarco ACC

XF – Exit Facility

ZSU – San Juan CERAP

Area 1 – San Juan CERAP Enroute (R2, R4, R6, R8)

Area 2 – San Juan CERAP Approach (R1, R3, R5, R7, R9)

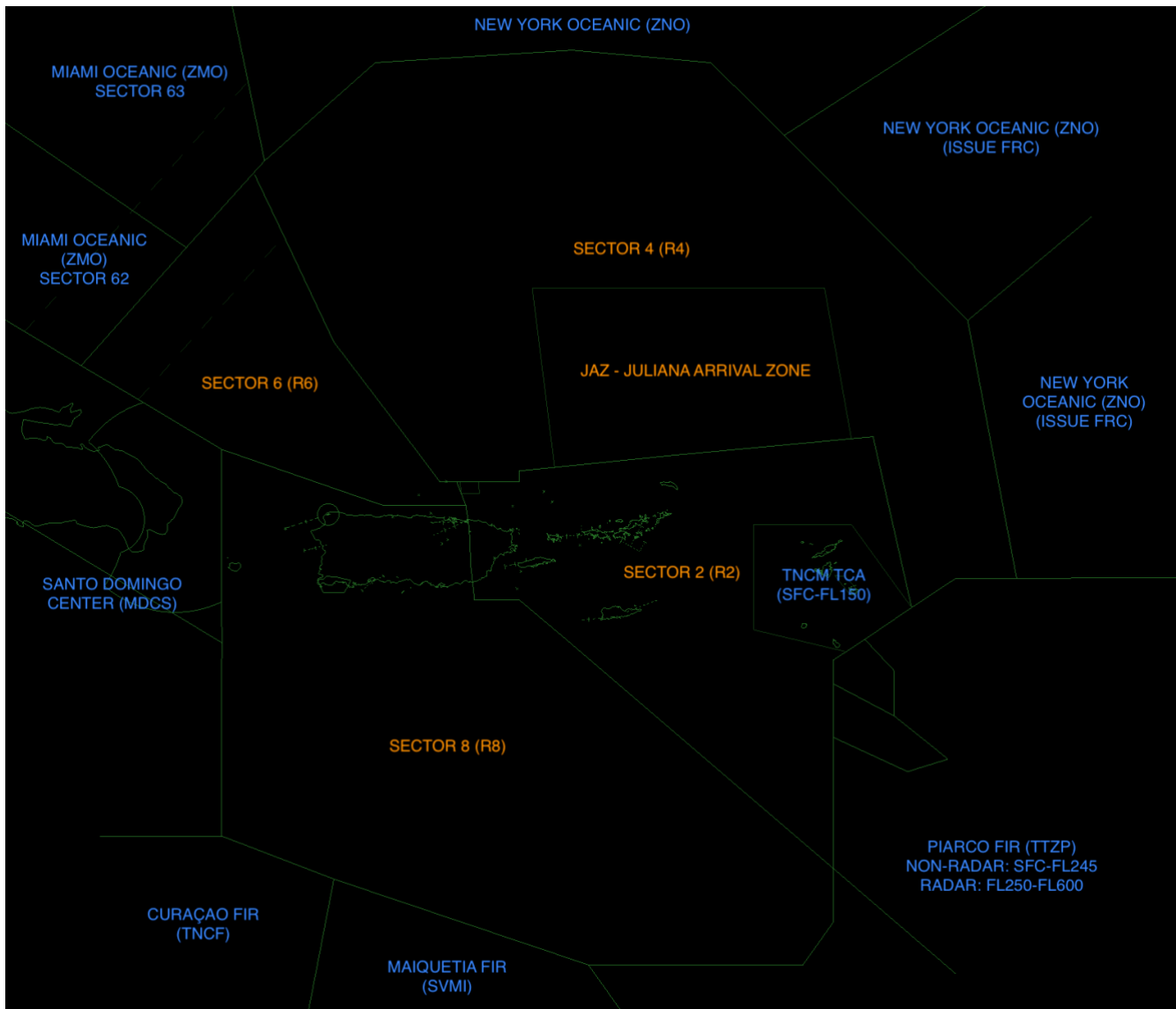
1-1-4. Airspace Guide

The San Juan CERAP (ZSU) is divided into two areas of specialization: Area 1 and Area 2. The airspace allocated to each area is divided in several sectors as follows:

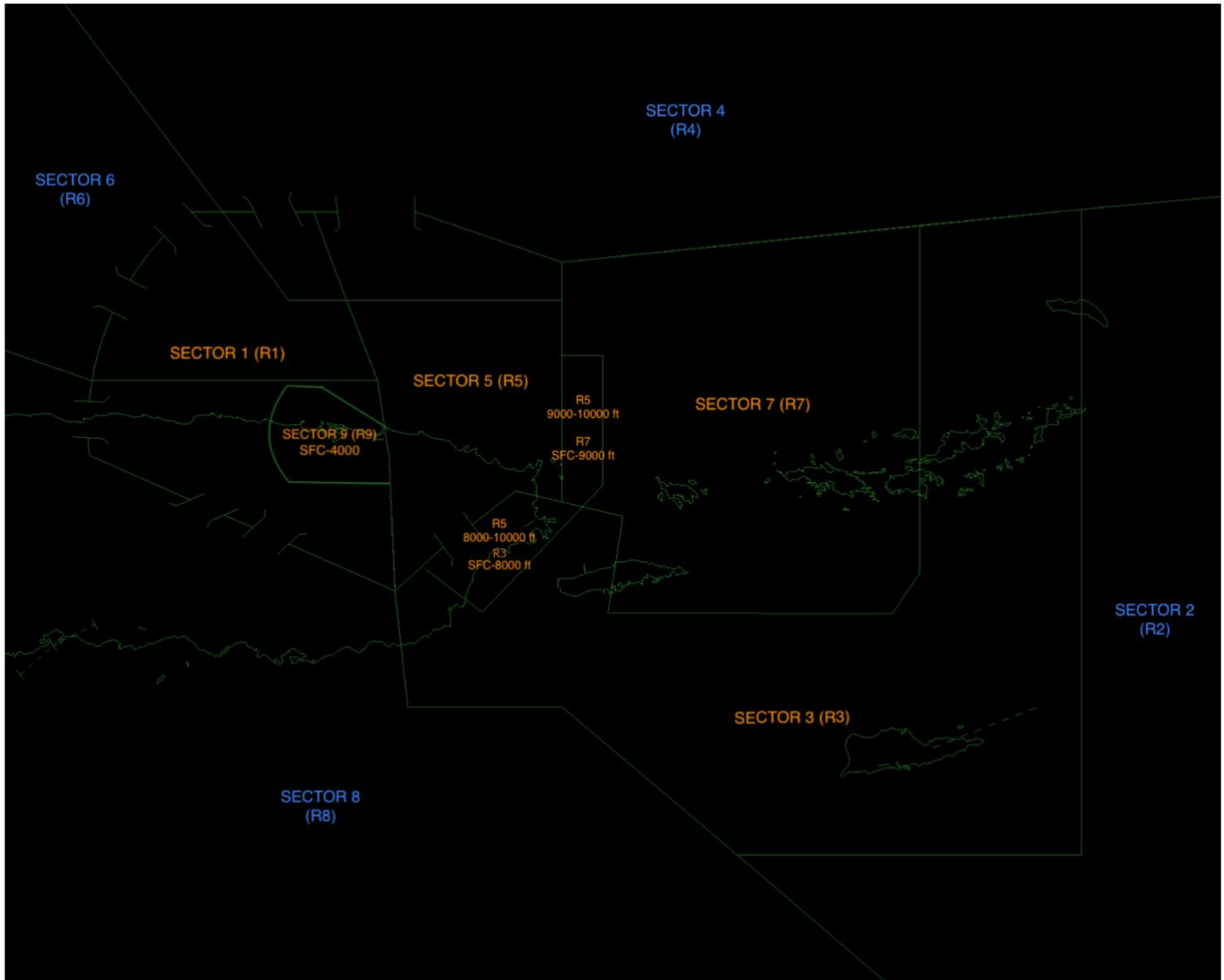
- (1) Area 1: consists of Sector 2 (R2), Sector 4 (R4), Sector 6 (R6) and Sector 8 (R8).
- (2) Area 2: consists of Sector 1 (R1), Sector 5 (R5), Sector 9 (R9), Sector 7 (R7) and Sector 9 (R9).

A description of each Area’s respective video map is provided below. The maps are for reference only and shall be assumed not to scale.

AREA 1:



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AREA 2:

| Sector | Airspace Vertical Limit | Facility ID | ERAM to STARS Handoff |
|--------|------------------------------------|-------------|-----------------------|
| R1 | SFC - 10,000 ft | W | S1W |
| R3 | SFC - 10,000 ft SFC - 8,000 ft* | U | S1U |
| R5 | SFC - 10,000 ft | F | S1F |
| R7 | SFC - 10,000 ft SFC - 9,000 ft* | G | S1G |
| R9 | SFC - 4,000 ft | N | S1N |

* Refer to Area 2 airspace diagram.

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CHAPTER 2. OPERATIONAL

GENERAL PROCEDURES

2-1-1. Transfer of Control Point (TCP)

The TCP is defined as the sector or position boundary unless otherwise specified.

2-1-2. Video Maps and Scope Alignment

- a. Video maps must be offset to display the sector's entire area of radar control jurisdiction and a reasonable distance outside that area.
- b. Radar controllers must select the appropriate radar video map(s) to display the appropriate active runways at SJU.

2-1-3. Class C Services

- a. Separation standards are in accordance with FAAO 7110.65.

2-1-4. Beacon Code Assignments

- a. Beacon codes 0130 – 0177 are delegated to Juliana APCON.
- b. All VFR aircraft receiving radar services (traffic advisories or flight following) must have 'VFR' in the scratchpad portion of the FDB.
- c. Non-NAS processed IFR flights (i.e. IFR departures from Beef Island) shall be assigned a squawk code from the 0300-0377 bank.

2-1-5. Altitude/Speed Assignments

- a. All aircraft must be at an altitude appropriate for the direction of flight unless the aircraft is operating on a

- preferential departure route for which a specific altitude is prescribed.
- b. Enroute sectors must display the actual assigned altitude on the FDB at all times.
- c. The assigned altitude is optional for approach control sectors, except for aircraft that are transiting into enroute sectors (i.e. climbing into San Juan Center sectors).
- d. All arrivals to TJSJ and TJIG from enroute sectors must be assigned speeds and altitudes indicated in **Appendix A**.
- e. All arrivals and overflights to R3 and R7 from enroute sectors must be assigned altitudes indicated in **Appendix B**.
- f. All departure from TJSJ and TJIG landing TJPS must be cleared and established on RTE9 at 6000 ft prior to entering R8 airspace.

2-1-6. Processing of VFR Flight Plans

- a) The command to create or amend a VFR flight plan consists of the <VFR PLAN> key (F9 on your keyboard) followed by the following fields:
 - 1) <AID> - Aircraft ID (Required)
 - 2) <DEP APT ID>* (Optional)
 - 3) <ARR APT ID> (Required)
 - 4) <TYPE/EQUIP> (Required)
 - 5) <###> - Requested Alt. (Optional)
- b) Example:
 - 1) <VFR PLAN> N806VL
SJU*VQS BN2P/G 055
 - 2) <VFR PLAN> N806VL VQS
BN2P/G

2-1-7. Preferred San Juan Non-Radar Routings

- a. Departure Routes from TJSJ
 - 1) Via Instrument Departure Procedures (DP) and airways, in accordance with **Appendix A**.
 - 2) Departures routed to TISX or over COY:
 - i. Jets – Depart via the JETSS DP, or RTE12 STT RTE2 COY flight plan route.
 - ii. Props – via RTE2 COY flight plan route.
 - 3) Departure to TIST or over STT must be routed via RTE2 STT, or JETSS DP, or RTE12 STT flight plan route.
 - 4) Departure to TUPJ – via SJU 097R to JANER direct EIS NDB.
- b. **Arrival Routes to TJSJ** – in accordance with **Appendix A**.

| | | |
|---------|---------|---------|
| B = BQN | C = CPX | H = HUM |
| M = MAZ | P = PSE | S = SJU |
| T = STT | V = VQS | X = STX |

- ii. IFR Arrivals:
Enter the type of approach being performed by the inbound aircraft.

| | |
|--------------------------------------|--|
| V## = Visual Approach Runway ## | |
| I## = ILS Approach Runway ## | |
| RN# = RNAV Approach Runway # | |
| VR# = VOR Approach Runway # | |
| ND# = NDB Approach Runway # | |
| OV# = Overhead Approach Runway # | |
| ----- | |
| SNY = Sunny Transition | |
| ECO = Echo Transition | |
| KMO = Kemmo Transition | |
| LOE = Low Offshore East | |
| LOS = Low Offshore West Landing TJIG | |
| LOW = Low Offshore West | |

2-1-8. Inter-/Intra- Facility Coordination

- a. FDB scratch pad coordination can be used between Area 1, Area 2, SJU ATCT and STT as indicated below, **Appendix D** or by LOA specifications. All other forms of coordination must be accomplished verbally.
- b. Area 2 (Approach) FDB scratch pad coordination:
 - i. VFR Flight-Following:
Enter the destination airport in the scratch pad area of the data block for Class C inbounds and departures, or as authorized by SJU ATCT or STT ATCT LOA.

- c. FDB scratch pad coordination must not be utilized for coordination from Area 1 to Area 2 (i.e. Center to Approach). FDB scratch pad coordination may be used for coordination from Area 2 to Area 1 as per **Appendix D**. Scratch pad coordination may be used within sectors of Area 1 and Area 2 respectively as follows:
 - i. The dash symbol must be utilized on ERAM to indicate aircraft given direct to a fix, LAT/LONG or NAVAID by stating the first three letters/numbers after the dash (i.e. -BQN, -20N, -SAP (SAPPO)). *Exceptions:* Use the

abbreviation -HBG for HARBG.
Do not use the dash symbol on STARS.

- ii. The letter “H” may be used to indicate assigned heading.
 - a. vSTARS: 130° = 13H
 - b. vERAM: 130° = 130H
- d. The receiving approach controller has control for descent and turns up to 30°, when at/or below 11,000 in the transferring controller’s airspace, on aircraft entering their sector. The receiving controller is responsible for all resulting point outs.
- e. For aircraft landing TNCM, TFFG, TFFJ, and TQPF, the receiving R2 controller has control for descent when the aircraft has entered the JAZ Area (**Appendix G**) in the transferring controller’s airspace. The receiving controller is responsible for all resulting coordination.

2-1-9. Oceanic Flights

- a. All aircraft departing from airports within San Juan CERAP, enroute to New York Oceanic with destinations beyond 60W longitude must receive a full route clearance.

2-1-10. Verification of Route of Flight

- a. The route of flight must be verified for all aircraft entering San Juan CERAP airspace from foreign facilities that will enter ZNO and meet the criteria in 2-1-8. Route verification by direct pilot/controller communication must extend to 60W longitude.
- b. Route verification and correction of NAS flight plans must be completed, and amendments coordinated prior to exiting San Juan CERAP airspace.

- i. The first controller to speak with the aircraft must complete the route verification.

2-1-11. Opposite Direction Operations

- a. The cut-off point for opposite direction operations (ODO) in TJIG and TISX is 10 nm for turbojets and turboprops and 7 nm for all other aircraft. The cut-off point for TJBQ is 15 nm for all aircraft.
- b. In TJSJ and TIST, the cutoff point is 10 nm for all aircraft. The enroute/approach controller must ensure the following:
 - i. Arrival and Departure: The departing aircraft must be airborne and turning to avoid conflict prior to the arrival aircraft reaching the cut-off point. ZSU is responsible for issuing the departure heading.
 - ii. Arrival and Arrival: The arriving aircraft must have crossed landing threshold prior to the opposite direction arrival reaching the cut-off point.
 - iii. Arrival and go-around/low approach/missed approach. The aircraft performing a go-around/low approach/missed approach must be issued a turn to avoid conflict prior to the arrival aircraft reaching the cut-off point.
 - iv. Visual separation is NOT authorized.
 - v. Traffic advisories must be issued to aircraft conducting ODO and must include aircraft type, location and the phrase “Opposite Direction”.

2-1-12. Procedures during Parachute Jumping Operations

When San Juan CERAP receives a parachute activity notification by the operator(s), the TFR PJA video map must be displayed by the Sector 1 and Sector 8 controllers. This airspace must be avoided, and non-participant aircraft will not be allowed until confirmation of parachute operations completed.

The primary parachute jump operations airport in CERAP airspace is located at the ABO airport.

- a. Once two way radio communications are established, the Sector 1 controller must update the data block with the requested altitude, place the word **“JUMP”** in the scratch pad and hand off the data block to the Sector 8 controller. After hand off is accepted, Sector 8 must hand off the data block back to Sector 1. This constitutes a point out approval to Sector 1.
- b. Sector 1 and Sector 8 must broadcast **“Attention all aircraft parachute jumping activity in the vicinity of Arecibo airport at (FDB altitude) for the next five minutes”** with a time check and provide traffic advisories to all affected aircraft.
- c. When the report of **“jumper(s) away”** is received, Sector 1 controller must place the word **“AWAY”** in the scratch pad for the data block and hand off to Sector 8. After the hand off is accepted, Sector 8 must hand off the data block back to Sector 1. This constitutes the notification for jumper(s) away to Sector 8.
- d. When ATC services are no longer provided for a specific jump, the data block will be dropped.

CHAPTER 3. APPROACH (TERMINAL)

SECTOR 1 (R1)

3-2-1. General

- a. Primary frequency: 119.4 MHz
 - b. Radar equipment:
 - i. Required method of operation is Fusion (FUS).
 - c. Responsibilities
 - i. In addition to the responsibilities described in FAAO 7110.65, Chapter 2, Section 10, as amended, the R1 controller must comply with the departure and arrival procedures stated in paragraphs 3-2-2 and 3-2-3 of this document.
 - ii. Ensure that all aircraft departing TJSJ/TJIG have been issued appropriate routings.
 - iii. When Sector 9 is open:
 - Coordinate for release of all TJIG departures.
 - Coordinate all IFR inbounds that arrive through R1 and/or R9 sectors to TJIG and forward aircraft position for aircraft on a Visual Approach (to TJIG) prior to transferring communications.
- a. During runway 8/10 operations at TJSJ (R9 closed)
 - i. Keep all left downwind traffic to TJSJ at/or above 6000 feet until clear of the TJSJ departures, unless otherwise coordinated with SJUT.
 - ii. Sequence all traffic to the runway in use for the approach(es) being advertised in the ATIS.
 - iii. Ensure that turbojet aircraft on right downwind to TJSJ maintain at/or above 4000 feet until crossing the SJU180R.
 - b. When R9 is open:
 - i. R1 should make handoffs to R9 one-at-a-time in the order of sequence.
 - ii. R1 shall release control for turns towards the airport and descent.
 - iii. R1 must sequence IFR traffic to RWY 10 LOC at/or descending to 4000 feet.
 - iv. R1 must coordinate with R9 for release of all TJIG departures. R1 will control all TJIG departures unless otherwise coordinated. R1 will coordinate all TJIG IFR arrivals that arrive through the R1 sector.

3-2-2. Arrival Procedures

- c. During RWY 26 operations at TJSJ:

- i. Sequence all IFR inbounds 5-miles in-trail.
 - o Propeller driven aircraft with true airspeed of 210 kts or less (C208, C402, DH6, SH36, etc.) at/or descending to 3000 ft.
 - o Turboprops and/or jets with true airspeed of 210 kts or more (i.e. DH8, AT76, etc.) at or descending to 4000 ft.
 - ii. The downwind must be no less than 3 nm, or more than 6 nm north of the airport. Aircraft must not exceed a speed of 180 kts, for props, and 210 knots for jets.
 - iii. R1 will meter the flow of VFR inbounds to R5 at such a rate that an extended downwind is avoided. VFR holding in R1 airspace may be the preferred procedures.
 - iv. Military – include in the FDB the number of aircraft when more than one, and advise the tower when recovery will be other than straight-in landing (i.e. overhead break).
- b. Departure from TJSJ while on RWY 26/28 configuration will be assigned the following headings:
 - i. All turbojets: 280°
 - ii. Non-turbojet:
 - o Initial routing from the 180R clockwise to 050R – 060°.
 - o Initial routing from the 051R clockwise to 179R:
 - Less than 210 kts – 220°
 - More than 210 kts – 200°
 - d. R1 must issue instructions to departing aircraft to join the preferential departure route.
 - e. R1 must ensure that separation of 5 miles constant or increasing exists between subsequent departures.
 - f. When on EAST operations, ensure that departing aircraft turn to the west prior to 5 nm from the departure end of RWY 8 and 10. If unable, initiate a traffic point out to R5 prior to the aircraft reaching 5 nm.

3-2-3. Departure Procedures

- a. Departures from TJSJ while on RWY 8/10 configuration will be assigned the following headings:
 - i. Initial routing 180R clockwise to 340R:
 - o Turbojets – 350°
 - o Non-turbojet – 330°

SECTOR 5 (R5)**3-3-1. General**

- a. Primary frequency: 120.900 MHz
 - b. Radar Equipment:
 - i. Required method of operation is Fusion (FUS)
 - c. Responsibilities
 - i. The R5 controller is responsible for the movement of IFR traffic in R5 airspace.
 - ii. The R5 controller must comply with the departure and arrival procedures stated in paragraphs 3-3-2 and 3-3-3 of this document.
 - iii. Coordinate inbounds to TJIG that enter R5 airspace.
 - iv. Ensure that all aircraft departing TJSJ have been issued appropriate routings.
- Propeller driven aircraft with true airspeed less than 210 kts (C208, C402, DH6, SH36, etc.) at or descending to 4000 ft.
 - Turboprops and/or jets with true airspeed greater than 210 kts (i.e. DH8, AT76, etc.) at or descending to 6000 ft.
 - RWY 8: all aircraft must be no less than 5 nm and no more than 8 nm south of the airport.
 - Propeller driven aircraft with true airspeed of 210 kts or less (C208, C402, DH6, SH36, etc.) at/or descending to 5000 ft.
 - Turboprops and/or jets with true airspeed greater than 210 kts (DH8, AT46, etc.) at or descending 6000 ft.

3-3-2. Arrival Procedures

- a. During RWY 8/10 operation:
 - i. Keep all left downwind traffic to TJSJ, no less than 3 nm and no more than 6 nm north of the airport, 5 nm in trail, constant or increasing at/above 6000 ft (unless otherwise coordinated with SJUT and R1). Speed assignment must be at or reducing to 180 kts.
 - ii. R5 must sequence IFR aircraft on a right downwind, no less than 3 nm and no more than 6 nm south of the airport, 5 nm in trail, constant or increasing separation at the same altitude. Speed assignment must be at or reducing to 180 kts.
 - RWY 10
- b. When on single runway operation:
 - i. R5 must meter the flow of aircraft to R1 at such a rate that extended down winds are avoided. Delay vectors of IFR aircraft and VFR holding in Sector 5 airspace, may be the preferred procedure.
- c. When R9 is open, R5 must release control for descent and turns of 30 degrees or less.
- d. During RWY 26/28 operations, R5 must sequence all arrivals to runway 26. Runway 28 is a noise-sensitive runway

and restricted to arrivals from 0100z to 1000z except for Category I and II aircraft. All other aircraft will utilize RWY 26. RWY 28 can be used for arrivals for Category III aircraft outside this timeframe during emergencies or when RWY 26 is closed.

3-3-3. Departure Procedures

- a. Departures from TJSJ while on RWY
- b. R5 must issue instructions to departing aircraft to join the preferential departure routes. R5 must ensure that separation of 5 nm constant or increasing exists between subsequent departures.
- c. 8/10 configuration will be assigned the following headings:
 - i. Initial routing 341R clockwise to 020R:
 - Turbojets – 020°
 - Non-turbojet – 040°
 - ii. Initial routing 021R clockwise to 179R:
 - Turbojets – 060°
 - Aircraft < 210 kts – 075°
 - Aircraft > 210 kts – 095°
- d. R5 must issue instructions to departing aircraft to join the preferential departure routes. R5 must ensure separation of 5 nm constant or increasing exists between subsequent departures.

SECTOR 9 (R9)**3-4-1. General**

- a. Primary frequency: 124.600 MHz
- b. Radar Equipment:
 - i. Required method of operation is Fusion (FUS).
- c. Responsibilities:
 - i. The R9 controller is responsible for the movement of IFR traffic in R9 airspace. The R9 controller must comply with the departure and arrival procedures stated in section 3-4-2 of this document.
 - ii. Approve releases of IFR aircraft from TJIG when requested by R1.
 - iii. Coordinate all IFR arrival inbounds that arrive through the R9 sector to SIGT and forward position reports for aircraft on a Visual Approach prior to transferring communications.

3-4-2. Responsibilities specific to R9

- a. During RWY 8/10 operation:
 - i. Ensure that all turbojet aircraft on right downwind to TJSJ maintain at/or above 4000 ft until crossing SJU 180R.
 - ii. R9 must approve releases of IFR aircraft from TJIG when requested by R1.
 - iii. R9 must descend traffic out of R1 airspace as soon as practical.

SECTOR 3 (R3)

3-5-1. General

- a. Primary frequency: 128.650 MHz
- b. Radar Equipment:
 - i. Required method of operation is Fusion (FUS).
- c. Responsibilities:
 - i. The R3 controller must comply with the departure and arrival procedures stated in paragraphs 3-5-2 and 3-5-3.
 - ii. Forward approach, sequence and position information for aircraft on a Visual Approach, on all IFR arrivals to STXT and EIST.
 - iii. Coordinate with R7 prior to releasing westbound IFR departure from EIST, due to the close proximity of the sectors.
 - iv. Issue clearances through EIST for IFR aircraft departing TUPJ and other adjacent BVI airports.
 - v. During RWY 26/28 operations at TJSJ, re-route all departing aircraft from STX and EIS filed RTE6 to SJU, via RTE2 to SJU.

- handoff to R5. Like type aircraft must be established in-trail prior to handoff.
- b. Clearance must be issued through EIST for IFR aircraft departing TUPJ and other adjacent BVI airports.
- c. EIS eastbound departures will be climbed to FL070, or requested altitude if lower, until in contact with the enroute controller. Enroute controller has control for climb on contact.
- d. R3 must issue instructions to departing aircraft to join the preferential departure routes.
- e. EIS north and northwest-bound departures must be cleared as per **Appendix D**.
- f. The following initial heading assignments are issued to:
 - i. Aircraft departing STX:

RWY 10

N-NE-NW-E 045° (PROP) 105° (JET)

S-SE-W-SW 105° (PROP and JET)

RWY 28

All traffic Runway Heading

- ii. Aircraft departing EIS:

RWY 7

N-NW-W 330° (PROP and JET)

E-SE-S-SW 180° (PROP and JET)

RWY 25

All traffic Runway Heading

3-5-2. Arrival Procedures

- a. Sequence IFR arrivals to TISX and forward the approach sequence STXT.
- b. Forward arrival estimates to EIST.
- c. Arrivals to EIS will not be descended below FL080 until in contact with R3.

3-5-3. Departure Procedures

- a. Establish aircraft on the preferred inbound routes or radials prior to

SECTOR 7 (R7)

3-6-1. General

- a. Primary frequency: 132.250 MHz
- b. Radar equipment:
 - i. Required method of operation is Fusion (FUS).
- c. Responsibilities:
 - i. The R7 controller must comply with the departure and arrival procedures stated in sections 3-6-2 and 3-6-3.
 - ii. During RWY 26/28 operations at TJSJ, re-route all aircraft .
 - iii. departing from STT filed RTE6 to SJU, via RTE2 to SJU.
 - iv. Approve releases for aircraft entering R7 airspace.
- iii. Turbojet aircraft at/or descending to 8000 ft (10000 ft when SJU is arriving RWY 8).
- iv. Standard Departure Headings:

| DIRECTION | HEADING | ALTITUDE |
|---|---------|----------|
| All Northbound, Westbound and PALCO SID | 250° | 3000 |
| Southbound, Eastbound and Filed over COY (Props and Turboprops) | 180° | 3000 |
| Eastbound (Prop) | 120° | 3000 |
| Jets on West operations | 280° | 3000 |
| Props and Turboprops on West operations | 260° | 3000 |

3-6-2. Departure Procedures

- a. Establish aircraft on the preferred inbound routes or radials to R5 prior to handoff. Like type aircraft must be established in-trail prior to handoff and the following must apply:
 - i. Propeller driven aircraft operating at speeds of less than 210 kts, at/or descending to 4000 ft (6000 ft when SJU is arriving in RWY 8).
 - ii. Propeller driven aircraft operating at speeds of 210 kts or greater, at/or descending to 6000 ft (8000 ft when SJU is arriving RWY 8).

CHAPTER 4. CENTER (ENROUTE)

SECTOR 2 (R2)

4-1-1. General

- a. Primary frequency: 118.150 MHz
- b. Radar Equipment:
 - i. The required method of operation is MOSAIC.
- c. Responsibilities:
 - i. The R2 controller is responsible for the movement of IFR traffic in R2 airspace.
 - ii. EIS eastbound departures will be cleared to FL70, or requested altitude if lower. Enroute controller has control for climb on contact for aircraft filed above FL70.
 - iii. Arrivals to EIS will be cleared to FL80 by the R2 controller. R3 has control on contact for descent.
 - iv. Ensure that non-radar separation exists and coordination is accomplished for aircraft that transition to and from non-radar airspace.
 - v. Issue clearances to aircraft departing within TNCM TCA when no Juliana controllers online. Verify aircraft callsign and beacon code are correct in the Flight Plan page.
 - vi. Issue full route clearances to aircraft departing airports within the sector, enroute to New York Oceanic airspace.

4-1-2. Coordination Requirements

- a. Flight plan information, estimate and altitude will normally be received and forwarded verbally or by text communication to/from the following adjacent ATC facilities as per respective LOA:
 - i. Piarco ACC (TTZP)
 - ii. V.C. Bird APCON (TAPA)
 - iii. Juliana APCON (TNCM)
 - iv. Le Raizet RAPCO (TFFR)
 - v. Bradshaw APCON (TKPK)

SECTOR 4 (R4)

4-2-1. General

- a. Primary frequency: 125.000 MHz
- b. Radar Equipment:
 - i. The required method of operation is MOSAIC.
- c. Responsibilities:
 - i. The R4 controller is responsible for the movement of IFR traffic in R4 airspace.
 - ii. Assign a Mach number to all turbojet aircraft operating at FL240 and above that will enter the New York Oceanic (ZWY).
 - iii. R4 must resolve all conflicts prior to transferring communications to R2 of aircraft landing within the TNCM TCA entering the JAZ area.
 - iv. Traffic landing TIST must cross 20 nm north of JETSS level at 9000 ft. R4 controller must provide an adequate sequence for TIST arrivals over JETSS including traffic on Y290.
 - v. Traffic landing TJBQ, entering the San Juan CERAP between OPAUL and DAWIN, must be sequenced to enter R6 via PANMO direct TJBQ level at FL200.
 - vi. Traffic landing TJBQ, entering the San Juan CERAP between KINCH and KEEKA, must be sequenced to enter R6 airspace via JANMA direct TJBQ level at FL260.
 - vii. Traffic landing MDPC, entering San Juan CERAP between KINCH and KEEKA, either on a random route or established on

M597, must be sequenced to enter R6 airspace via JANMA direct BETIR level at FL280.

4-2-2. Special Procedures

- a. Route of flight verification on aircraft entering MNPS airspace must be accomplished as per section 2-1-9 of this document.

4-2-3. Coordination Requirements

- a. Flight plan information, TCP estimate and altitude will normally be received and forwarded verbally or by text communication to/from the following adjacent facilities as per LOA:
 - i. Piarco ACC (TTZP)
 - ii. V.C. Bird APCON (TAPA)
 - iii. New York ARTCC (ZNY)

SECTOR 6 (R6)**4-3-1. General**

- a. Primary frequency: 135.700 MHz
- b. Radar Equipment:
 - a. The required method of operation is MOSAIC.
- c. Responsibilities:
 - a. The R6 controller is responsible for the movement of IFR traffic in R6 airspace.
 - b. Traffic landing TIST via Y290 must cross BEANO level at FL210.

4-3-2. Coordination Requirements

- a. Flight plan information, TCP estimate and altitude will normally be received and forwarded verbally or by text communication to/from the following adjacent facilities as per LOA:
 - i. Santo Domingo ACC (MDCS)
 - ii. Punta Cana APCON (PNA)

SECTOR 8 (R8)

4-4-1. General

- a. Primary frequency: 118.750 MHz
- b. Radar Equipment:
 - i. The required method of operation is MOSAIC.
- c. Responsibilities:
 - i. The R8 controller is responsible for the movement of IFR traffic in R8 airspace.
 - ii. Forward aircraft position for aircraft on a Visual Approach to BQN airport prior to transferring communications.
 - iii. Issue IFR clearances to aircraft departing TJMZ and TJPS.
 - iv. Traffic landing TIST and TUPJ, entering the San Juan CERAP between KATOK and ARMUR, must enter R3 airspace via TUUNA direct, level at 9000 ft. All other aircraft may be cleared direct destination descending as per **Appendix B**.
 - v. Traffic landing TISX, entering the San Juan CERAP between KATOK and NEGON, must enter R3 airspace via TUUNA direct level at 9000 ft. All other traffic may be cleared direct destination descending as per **Appendix B**.

- i. Santo Domingo FIR (MDCS)
- ii. Punta Cana APCON (PNA)
- iii. Curaçao FIR (TNCF)
- iv. Maiquetía FIR (SVZM)
- v. Piarco FIR (TTZP)
- vi. Borinquen FCT (BQNT)

4-4-3. Special Procedures

- a. The Puerto Rico Air National will always activate the Salinas One and Two MOAs simultaneously.
- b. The following control actions will be required for aircraft departing/arriving at the Mercedita Airport (TJPS) via RTE9 when the Salinas MOAs are active:
 - i. Departures from TJPS must be cleared to cross 6 nm northeast of the PSE VOR at/or above 3500 ft.
 - ii. Arrivals to TJPS must be cleared to maintain at/or above 3500 ft until past a point 6 nm Northeast of the PSE VOR.

4-4-2. Coordination Requirements

- a. Flight plan information, TCP estimate and altitude will normally be received and forwarded verbally or by text communication to/from the following adjacent facilities as per LOA:

Top-Down Operations at Juliana TMA

4-5-1. General

- a. The Juliana TMA falls under the operational jurisdiction of the Curaçao FIR (TNCS).
- b. Through a Divisional LOA, San Juan Center controllers will provide Top-Down service to aircraft operating within the Juliana TMA that are not receiving ATC services from a Juliana controller (i.e. TNCM_APP, TNCM_TWR, TQPF_TWR).
- c. San Juan Center controllers are encouraged to follow proper ICAO phraseology and procedures whenever controlling planes within the Juliana TMA.

successive arrivals into TNCM. This will allow for enough time for an aircraft to land and vacate the runway before the next arrival.

- b. Proactive speed management will greatly improve the handling of traffic into TNCM.
- c. The following crossing altitudes apply for aircraft entering Juliana TMA:

- Transition Level: FL65
- Transition Altitude: 5000'
- FL110:
ELOPO, ZPATA, DANDE,
SLUGO, TRNKY, and MNOLO

4-5-2. Equipment

- a. It is recommended that controllers using CRC set-up a dedicated display for visualizing the Juliana TMA.
- b. Display Set-Up:
 - i. Open New Tab
 - ii. ERAM display
 - iii. Set range to 80nm
 - iv. Display Juliana Video Maps with the following command:
MR Juliana

- FL70:
GOUDA
- d. JUICE intersection is considered as an outbound fix from the Juliana TMA.
 - Center controllers should verify that inbound aircraft to the Juliana TMA are re-routed if filed to enter via JUICE.s

4-5-3. Operational Considerations

- a. Many of the arrivals into Princess Juliana Intl. Airport (TNCM) will require a “backtrack” (ICAO phraseology) to vacate Runway 10. Given this operational constraint, we strongly suggest that controllers maintain 20 nm separation between

APPENDIX A. PREFERENTIAL ROUTES FOR TJSJ/TJIG AIRPORTS

Inbound Gates

Sectors 2/4/6/8 controllers must ensure that all inbound aircraft are established on the preferential routes prior to the respective inbound gates and issued the following crossing restrictions (all others must be verbally coordinated):

| GATE | PREFERENTIAL ROUTE | CROSSING FIX | CROSSING ALTITUDE | | SPEED (OR LESS) |
|----------------|--------------------|--------------|-------------------|----------|-----------------|
| | | | JETS | PROPS | |
| SAALR | ./ RTE7 SJU | SAALR | 110 | ↓ 090 | 250 KTS |
| BEANO | ./ RTE6 SJU | BEANO | 110 | ↓ 090 | 250 KTS |
| JOSHE | ./ RTE12 SJU | JOSHE | 070 | 070 | 210 KTS |
| VEDAS | ./ SJU154R SJU | VEDAS | 110 | 110 | 250 KTS |
| DDP | ./ RTE2 SJU | 40W / SJU | N/A | 070, 050 | 250 KTS |
| WEST OPS @ SJU | ./ STT RTE2 SJU | STT | 110 | 110 | 250 KTS |

Exceptions

Prop and turboprop aircraft inbound from Sector 8 operating at altitudes below the ones prescribed for the inbound gates, or aircraft that because of their route of flight will incur unnecessary delays due to a re-route to an inbound gate must be routed as follows:

- a. From MAZ:
 - (1) G633 DDP; altitude – level at 5000 ft or as coordinated.
- b. From KATOK:
 - (1) A636 BQN RTE2, cross 40 nm west of SJU at 7000 ft or 5000 ft.
 - (2) Radar vector RTE6, cross BEANO at/or below 9000 ft.

Departure Gates

R5 and R1 controllers must ensure that all departures are cleared via the respective departure gates, assigned 10000 ft, or requested altitude if lower.

| GATE | FILED ROUTE | ROUTE |
|-------------|--|--|
| VERMO | L455/L456/L459 or northbound | SJU VERMO DP or GLADA DP ./. |
| JAAWS | R507/G431/A555/Y185/Y280/Y308 or northwest bound | SJU JAAWS DP or ACONY DP ./. |
| BQN | B520/RTE2 westbound | SJU DDP B520 BQN ./. SJU RTE2 BQN ./. |
| MAZ | G633 westbound | SJU DDP G633 MAZ ./. |
| CRSTL | ** A300/G431/G432/L455/L458 southbound | SJU RTE9** or GANBO DP ./. |
| FAJAR/JETSS | *** G633/G449/A555/R888 or eastbound | * SJU RTE2 or JETSS DP or HAMAR DP ./. |

- (1) *Aircraft overflying TNCM airspace at or below FL150 must be routed via SJU RTE2 STT A638 PJM ./.
- (2) *Aircraft landing TNCM airspace must be routed via SJU RTE2 STT A638 PJM or SJU JETSS.DP SLUGO A638 PJM
- (3) **Aircraft flying A300 route via SJU RTE9 MIGHT A300 ./.
- (4) ***Aircraft flying G449 route via RTE2 COY ... ANADA ./.
- (5) ****Aircraft flying G633/A555/R888 route via SJU RTE2 COY ./ or SJU JETSS.DP COY ./.
- (6) During periods where TJSJ is on west operations:
 - a. Aircraft landing or flying over TIST must be cleared via SJU RTE6 STT then as filed.
 - b. Aircraft landing or overflying TNCM airspace must be cleared via SJU RTE6 STT A638/B520, as appropriate.
 - c. Aircraft filed over COY must be cleared via: SJU RTE7 TUUNA RTE4 COY then as filed.

APPENDIX B. PREFERENTIAL ALTITUDES FOR R3 AND R7 INBOUNDS

Enroute controllers must ensure that all arrivals and overflights to R3 and R7 proceeding via the routes indicated below must be assigned the following altitudes:

| DESTINATION AIRPORT | ARRIVAL ROUTE | ALTITUDE |
|----------------------------|---|---|
| EIS | From 010R clockwise to 179R | Descending to 8000 ft |
| | From 180R to 009R | Descending to 11000 ft |
| STT | Arriving from R4 via direct JETSS Arriving from R2 via Y290 JETSS Arriving from R8 via TUUNA Other arrivals via direct STT | Via R4 crossing 20 nm NW of JETSS at 9000 ft Via Y290 crossing JETSS 11000 ft Via R8 crossing TUUNA at 9000 ft Other arrivals descending to 11000 ft |
| | | Arrivals at 10000 ft or 8000 ft, coordination not required. |
| | | Arrivals at or below 6000 ft, coordination is required. |
| STX | Arriving from R8 via TUUNA Other arrivals via direct STX | Via R8 crossing TUUNA at 9000 ft As indicated below |
| | From 010R clockwise to 250R | Right altitude for direction of flight but not lower than 6000 ft |
| Overflights | | At 10000 ft or 8000 ft, coordination not required |
| | | At or below 6000 ft, coordination is required. |

APPENDIX C. REROUTES TO AVOID ACTIVE SPECIAL USE AIRSPACE

Reroute departures, as follows, to avoid active Special Use Airspace (SUA):

| ACTIVE SUA | FILED ROUTE | REROUTE |
|------------|-------------|--------------------------------|
| W-371 | G431 SCAPA | RTE9 CLAYO G432 CRSTL SCAPA |

| SUA | VERTICAL EXTENT (when active) |
|-----------|-------------------------------|
| R-7103 | SFC – 12000 MSL |
| R-7105 | SFC – 15000 MSL |
| W-371 | SFC – FL200 |
| Muñiz 1 | 1000 AGL – 8000 MSL |
| Muñiz 2 | 1000 AGL – 8000 MSL |
| Salinas 1 | 500 AGL – 15000 MSL |
| Salinas 2 | 500 AGL – 3000 MSL |

APPENDIX D. SCRATCH PAD COORDINATION

Scratch Pad Coordination for TJSJ/TJIG Departures

| FILED ROUTE | SCRATCH PAD COORDINATION | SCRATCH PAD ENTRY |
|--|---|-------------------|
| Destination: TNCM, TFFG, TFFJ, TQPF | RNAV: direct SLUGO | -SLU |
| Destination: TNCM, TFFG, TFFJ, TQPF | Non-RNAV: assign heading to join A638 northwest of SLUGO | ##H |
| B520/RTE2 westbound | Direct BQN VOR | -BQN |

Scratch Pad Coordination for TUPJ Departures

| FILED ROUTE | SCRATCH PAD COORDINATION | SCRATCH PAD ENTRY |
|--|---|-------------------|
| L455/L456/L458/L459/L461 Northbound | Heading 360° climbing to 10000. Handoff to R4, point out to R2 required if aircraft climbed out of 10000. | 36H |
| Northeast bound towards 060W | Heading 360° climbing to 10000 Handoff to R4, point out to R2 required if climbed out of 10000 | 36H |
| G633 Eastbound | RNAV direct DANDE climbing to 7000 | -DAN |
| G633 Eastbound | Non-RNAV: assign heading to join G633 at or prior to DANDE | ##H |
| R888/A555 | Direct COY | -COY |

TUPJ Departure Procedures

| | |
|--|---|
| B520/A636/G633 Westbound | Direct CWEJO, depart CWEJO heading 280° |
| A555/G431/L451/L454/R507/Y585/587 Northwest bound | Direct CWEJO, depart CWEJO heading 280° |

Scratch Pad Coordination for TIST Departures

| FILED ROUTE | SCRATCH PAD COORDINATION | SCRATCH PAD ENTRY |
|---------------------------------------|--|-------------------|
| L455/L458 | Direct MAWLY | -MAW |
| L459 | Direct ODUCA | -ODU |
| L456 | Direct VORCE | -VOR |
| Destination TNCM, TFFG, TFFJ, TQPF | RNAV: Direct SLUGO | -SLU |
| Destination TNCM, TFFG, TFFJ, TQPF | Non-RNAV: assign heading to join A638 Northwest of SLUGO | ###H |
| G633 Eastbound | RNAV: Direct DANDE | -DAN |
| G633 Eastbound | Non-RNAV: assign heading to join G633 at or prior to DANDE | ###H |
| R888 | Direct MODUX | -MOD |
| A555 | Direct ILURI | -ILU |
| Westbound and Northwest bound | Direct SJU | -SJU |