VATSIM San Juan CERAP Academy Terminal Controller (S3) Training Syllabus

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Document Information

Purpose

This document provides an outline of the Terminal Controller (S3) training course at VATSIM San Juan CERAP to be used as a guideline for both controllers and their mentors. Download this document and save locally for easy access to information. This information will also be discussed within the introduction module of the course.

Distribution

The San Juan CERAP Terminal Controller (S3) Training Syllabus is distributed to all members in training for the Terminal Controller rating (S3) at VATSIM San Juan CERAP.

Responsibility

The San Juan CERAP Air Traffic Manager (ATM) and Training Administrator (TA) are responsible for the maintenance of this document. Prior to public release this document requires the approval of the VATSIM Caribbean Division (VATCAR) Training Director.

Updates and changes

This version is the initial release of this document. Any updates to this document are noted in the Table of Revisions section of this document.

Cancellation

This document cancels any previous release version of Terminal Controller (S3) training syllabus at the San Juan CERAP.

Table of Revisions

Date (mm/dd/yyyy)	Revision	Editor
04/01/2025	v1.0 - Initial Release	Alfred Tang

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Preface

Welcome to the VATSIM San Juan CERAP Terminal Controller (S3) Course!

The San Juan CERAP (Combined Center Radar Approach Control) (ZSU) is part of the Caribbean Division of the VATSIM network, known as VATCAR. We are pleased you have chosen to join our team of controllers.

The following document is designed to provide you with an overview and details of the training course for Terminal Controller (S3) at ZSU. The course is designed in compliance with the VATSIM Global Controller Administration Policy (VATSIM-POL-GCAP) (also known as GCAP) and VATCAR Training Policies with additional materials to supplement controller learning. This syllabus provides students, mentors and instructors a guideline and flow to plan for each lesson and learning outcomes to accomplish.

We are here to ensure you succeed in your goal of becoming a VATSIM controller and look forward to working with you.

Francis Reilly
Air Traffic Manager – San Juan CERAP

Alfred Tang
Training Administrator – San Juan CERAP

General Course Information

Course Description

This course provides ZSU controllers the necessary theoretical and practical knowledge to perform tasks independently as a Local Controller (TWR) within the San Juan CERAP airspace on VATSIM.

Learning Outcomes

The learning outcomes of this course should be the competencies outlined in the VATSIM GCAP for Terminal Controller (S3):

a. General

i. Understands the role of the arrival and departure (terminal) controller.
ii. Shows proficiency using the approved ATC client to work the radar position.
iii. Understands horizontal and vertical airspace boundaries.
iv. Shows appropriate knowledge for radar identification.
v. Shows proper scan techniques.
vi. Adjusts aircraft speed, heading, and altitude as needed to achieve required separation.
vii. Issues alerts / traffic information to aircraft using prescribed phraseology as required.
viii. Ensures aircraft are properly transferred/handed-off to the next controller.
ix. Handles uncontrolled field operations in accordance with policy.

b. Approach Controller

i. Ensure that pilots have most recent weather information.
ii. Provides runway and approach information as soon as practical to pilots.
iii. Applies separation minima as required by airspace class.
iv. Demonstrates an understanding of different types of approaches.
v. Issues approach clearance using prescribed phraseology.
vi. Efficiently transfers radar identification and communications to the next controller.
vii. Issues holding instructions using prescribed phraseology.

c. Departure Controller

i. Ability to modify or cancel departure procedures and apply vectors or additional instructions, as necessary, to allow safe transition from the terminal to en-route environment.
ii. Efficiently transfers radar identification and communications to the next controller.

d. Coordination

i. Ability to coordinate with underlying and overlying controllers regarding missed approaches, runway changes, holds, non-standard operations.

Course Design

Lessons

Lessons for this course are divided into self-learning or trainer-led. Students are expected to complete the video lectures or Computer Based Training (CBT) on their own for the self-learning portion of the course but are strongly encouraged to ask questions to their assigned mentor or instructor ("assigned trainer" hereafter) of VATSIM San Juan CERAP.

Note:

1. *UND ATCast is a free educational video series produced by the John D. Odegard School of Aerospace Sciences at The University of North Dakota, available through their website (Link). The videos are also available through YouTube in the links listed.*
2. *In any part of this training, students are welcome to accelerate or skip ahead as needed if he/she possesses past experience and knowledge in a particular topic from the real world or other simulation networks.*
3. *Suggested maximum length of each trainer-led session is two hours. Mentor-led lessons can be combined into one lesson at the discretion of the assigned trainer provided that good progress is made.*
4. *Modules in trainer-led sessions are to be repeated until the assigned trainer deems the student to have possession of adequate proficiency prior to moving to the next module.*

Lesson	Self-learning or Trainer-led	Module # and title	Lesson Content or Lesson Plan
	Self-learning	301 – Minimum Altitudes	CBT Presentation
	Self-learning	302 – Separation in the Terminal Radar Environment	CBT Presentation UND ATCast: 16 – Maintaining Separation in the Terminal Radar Environment (Link)
	Self-learning	303 – Vertical Separation in the Terminal Radar Environment	CBT Presentation UND ATCast: 15 – Vertical Separation in the Terminal Radar Environment (Link)
	Self-learning	304 – Using Speed Adjustments	CBT Presentation UND ATCast: 17 - Using Speed Adjustments (Link)
	Self-learning	305 – Merging Target Procedures	CBT Presentation UND ATCast: 04 – Merging Target Procedures (Link)
	Self-learning	306 – Safety Alerts	CBT Presentation UND ATCast: 14 – Safe Alerts (Link)
	Self-learning	307 – Holding	CBT Presentation UND ATCast: 22 – Holding (Link)
	Self-learning	308 – ODP, SID & STAR	CBT Presentation
	Self-learning	309 – Instrument Approach	CBT Presentation UND ATCast: 15 – ILS Approaches and Clearances (Link)
	Self-learning	310 – Instrument Approach Rules and Clearance	CBT Presentation
	Self-learning	311 – Visual Approach	CBT Presentation

	Self-learning	312 – Circling and Side Step Approach	CBT Presentation
	Self-learning	313 – Pop-up IFR Clearance	CBT Presentation
	Self-learning	314 – Non-towered Airport Operations	CBT Presentation
	Self-learning	315 – Basic Radar Service and Practice Approaches	CBT Presentation
1	Trainer-led	316 – ZSU Procedures for Local Controllers	Trainer should review knowledge from Modules 301 to 315 with the students. If the trainer finds any area of deficiency, the trainer shall either provide remedial training during this session or ask the student to review the appropriate materials on their own. Once the trainer has verified that the student is proficient with the previous modules, the trainer will spend the rest of the session presenting terminal control procedures for terminal control (APP) positions within ZSU. The trainer will also introduce all relevant charts and documents. This module is to be repeated until the student is deemed proficient in all local procedures related to local control and all of the previous modules.
Theory Exam (S3 GCAP and ZSU S3 Facility)			Once Module 316 is completed, the assigned trainer will request the S3 GCAP exam and S3 ZSU facility exam from the TA. Complete the exams on the VATCAR Exam Portal after the assigned trainer deemed the student to possess the knowledge to pass the exams. The TA will review and approve the request. In the absence of the TA, the Air Traffic Manager (ATM) may respond to the request. In case the student fails either or both of the exams, the assigned trainer should schedule a special lesson with the students to review questions that were answered incorrectly on the exam, unless the student has indicated that he/she has reviewed the exam on their own, and he/she understands why the answers they provided were incorrect. The failed exam will be reassigned according to the GCAP document, Section 8.5(f)(ii): *“Should a candidate fail a written examination, that candidate may be subject to a “cooling off” period. If such a period is imposed, it must not exceed 72 hours from the scoring of the exam. Following a second failure of the same written exam by the candidate then a Division may extend the cooling off period to enable further study.”*
2	Trainer-led	317 – SJU_APP Sweatbox 1	Scenario: “S3 Training (Radar Identification & IFR Departures)” and/or equivalent Topics: - Review primary and secondary radar identification methods - STARS Data Blocks - Create VFR flight plan using STARS - VFR Flight Following - IFR departures (from SJU) - Pop-up IFR clearance

			- Radar handoff to Enroute control - Radar handoff to local control - Non-radar handoff to local control
3	Trainer-led	318 – SJU_APP Sweatbox 2	Scenario: “SJU_APP (Full Easy)” and/or equivalent Topics: - IFR arrival sequencing (SJU, STT, STX) - IFR departures (review) - Separation (radar and vertical) - Speed assignment - Instrument approach clearance (PTAC) - Basic radar vectoring - Traffic advisory - Use of scratch pad and assigned (temporary) assignment - Missed Approach procedures
4	Trainer-led	319 – SJU_APP Sweatbox 3	Scenario: “SJU_APP Sequencing 2”, “SJU_APP Sequencing 3”,“SJU_APP SJU Sequencing”, “SJU_APP Sequencing 4” and/or equivalent Topics: - Arrival Sequencing - Visual Approach - Circling/Sidestep Approach - Merge Target Procedures - Safety Alerts - Holding (published holds and non-published holds) VFR-on-top
5	Trainer-led	320 – SJU_APP Sweatbox 4	Scenario: “SJU_APP VFR Traffic” Topics: - VFR Flight following - VFR Practice Approach (Class C & Class D) - STARS Terminal Proximity Alert (TPA) J-Rings and Cones - Pop-up IFR clearance (review) - Non-towered airport operations
		321 – Military Operations for Terminal Controllers	Assigned trainer will present CBT materials or vUSAF training materials on military operation for terminal control. No sweatbox session required.
6	Trainer-led	322 – Terminal Pre-solo Evaluation	Scenario: Any of the scenario used previously or at assigned trainer’s discretion Assigned trainer shall spend at least 30 min to log onto the network Live with the student to ensure that the student is ready for logging online as terminal controller alone.
Solo Endorsement			When the mentor determines that the student can perform the tasks required of clearance delivery and ground control independently without supervision, the mentor may submit a request for solo endorsement for a period of 7 to 30 days to the Training Administrator (TA)

	of ZSU. **The student must have passed both GCAP S3 exam and the ZSU S3 facility exam at this point.** The TA will review and approve the request. In the absence of the TA, the Air Traffic Manager (ATM) may respond to the request. Once approved, the solo validation is valid for a period of 7 to 30 days. During this period, the student shall make the best endeavor to practice their skills from this course thus far while following all GCAP Solo Endorsement requirements and VATCAR solo endorsement protocols. The student shall schedule the practical exam with a certified instructor (I1/I3)) at ZSU other than the assigned trainer of the S3 training near the end of the solo endorsement period, although the student may choose to do complete the practical exam prior to the end of the solo endorsement period. The 30-day solo endorsement period may only be extended under exceptional circumstances by the TA (or the ATM in the absence of the TA) and may not exceed 90 days without the approval of the Region Vice President of VATSIM.
Over-the-Shoulder (OTS) Practical Exam	A certified instructor (I1/I3) of ZSU will conduct the practical exam with the student under an online session or a simulated lab session using Sweatbox. The practical exam will be evaluated using VATCAR score sheet and VATCAR practical exam criteria. Following the GCAP, the instructor shall inform the student about which of the specific criteria are deemed to be deficient and inform the Training Administrator of ZSU to schedule another practical exam. After a passed exam, the instructor shall submit the score sheet to the VATCAR Academy and Director of Training at VATCAR (VC3) for rating upgrade.

Text, Materials, Required Reading and References

Required Reading

San Juan CERAP Phraseology Manual (ZSU-TRG-900) **(PM)**

San Juan CERAP Phraseology Manual (ZSU-TRG-902) **(RM)**

ZSU-SOP-ZSU – San Juan CERAP

ZSU-REF-903 - Facility Reference Sheet

FAA Order JO 7110.65AA - Air Traffic Control **(7110.65)**
(https://www.faa.gov/air_traffic/publications/atpubs/atc_html/)

CRC STARS Manual (https://crc.virtualnas.net/docs/#/stars)

FAA Chart Supplement South East (https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/dafd/)

FAA Caribbean VFR Aeronautical Chart 2 (Caribbean 2)
(https://www.faa.gov/air_traffic/flight_info/aeronav/productcatalog/vfrcharts/caribbean/)

FAA Puerto Rico-Virgin Islands Terminal Area Chart (PR-VI TAC)
(https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/vfr/)

Optional Reading

Code of Federal Regulations, Title 14, Part 91— General Operating and Flight Rules (**14 CFR 91 or Part 91**)
(https://www.ecfr.gov/current/title-14/part-91)

Instrument Flying Handbook, FAA-H-8083-15B (**IFH**)
(https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/helicopter_flying_handbook)

Instrument Procedures Handbook, FAA-H-8083-16B (IPH)
(https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/instrument_procedures_handbook)

Other Useful References

Pilot/Controller Glossary (**PCG**) (https://www.faa.gov/air_traffic/publications/atpubs/pcg_html/)

Aeronautical Information Manual (**AIM**)
(https://www.faa.gov/air_traffic/publications/atpubs/aim_html/)

Reading Assignments by Lesson & Module

Students are responsible for self-study of these materials (ideally prior to) taking the Lesson they are assigned.
** indicates the reading assignment is optional and for educational purposes.*
*** VFR TAC, VFR Sectional Chart, and Chart Supplements are digitally available for free on the FAA website. No purchase of hard copy is necessary.*

Lesson	Module	7110.65	PM	RM	IFH*	IPH*	Others
	301 – Minimum Altitudes			Pg. 12		2-35 to 2-41	
	302 – Separation in the Terminal Radar Environment	5-5, 7-3	8	Pg. 13-16		1-42	
	303 – Vertical Separation in the Terminal Radar Environment	4-5, 5-2, 5-5, 7-3	7	Pg. 13, 25			
	304 – Using Speed Adjustments	5-7	9	Pg. 15			
	305 – Merging Target Procedures	5-1-8					
	306 – Safety Alerts	2-1					
	307 – Holding	4-6	11	Pg. 16-17	10-10 to 10-13	2-51, 3-21	
	308 – ODP, SID & STAR	4-3, 4-7		Pg. 17-19	10-5	1-23 to 1-42 3-10 to 3-16	
	309 – Instrument Approach			Pg. 20-21	10-13 to 10-22	3-16 to 3-24 4-9 to 4-11 4-17 to 4-43 4-37 to 4-54 4-57 to 4-78	
	310 – Instrument Approach Rules and Clearance	4-8, 5-9	10	Pg. 22			
	311 – Visual Approach	7-4	10-5, 10-6	Pg. 23		4-54 to 4-57	

	312 – Circling and Side Step Approach	4-8-6, 4-8-7			10-20	4-11	
	313 – Pop-up IFR Clearance	4-2	6	Pg. 26			
	314 – Non-towered Airport Operations	4-2	6, 12	Pg. 23-24	10-3, 10-7	1-43	
	315 – Basic Radar Service and Practice Approaches	4-8-11, 7-6		Pg. 24-25		1-44	
1	316 – ZSU Procedures for Local Controllers						ZSU-SOP-ZSU - San Juan CERAP PR-VI TAC Caribbean 2 VFR Sectional FAA Chart Supplement South East ZSU-REF-903 - Facility Reference Sheet
2	317 – SJU_APP Sweatbox 1						CRC STARS Manual ZSU-SOP-ZSU - San Juan CERAP PR-VI TAC Caribbean 2 VFR Sectional FAA Chart Supplement South East ZSU-REF-903 - Facility Reference Sheet
3	318 – SJU_APP Sweatbox 2						
4	319 – SJU_APP Sweatbox 3						
5	320 – SJU_APP Sweatbox 4						
	321 – Military Operations for Terminal Controllers						vUSAF Training Materials

6	322 – Terminal Pre-solo Evaluation						CRC STARS Manual ZSU-SOP-ZSU - San Juan CERAP PR-VI TAC Caribbean 2 VFR Sectional FAA Chart Supplement South East ZSU-REF-903 - Facility Reference Sheet