



ALBUQUERQUE ARTCC

S1- Clearance Delivery/Ground Controller TRAINING SYLLABUS

Course Description:

The purpose of the S1 Clearance Delivery and Ground Controller Training program is to equip new students to the basics of ATC and the National Airspace System as it applies to ZAB. All information contained in the course syllabus can be found at the VATUSA Training site, FAA Order 7110.65, and the files contained in the S1 Student Files download that will be given to each new student. Students should “self-study” the areas outlined in this syllabus using these materials.

Students shall review the materials contained within this syllabus and have easy access to the information they have been given to handle all aircraft correctly and expeditiously. Students shall pass the necessary written and practical exams with a passing grade of 80% prior to promotion and working live traffic on the VATSIM network.

The S1 level of training can be one of the hardest to learn, and students are encouraged to study and have a good understanding of all material covered in this syllabus prior to requesting a training session with an instructor. Students should keep record of any questions they have regarding this material for the instructor to answer. All training for this level will take place in a private server setting called “Sweatbox” where an instructor will control aircraft and teach you how to work various features of VRC while putting the information contained in this syllabus to practical use.

Training Outline:

- I. Download S1 Student Files
- II. VRC Installation and Configuration
 - A) Download and Installation
 - B) Review of VRC Command Documentation
 - C) Configuration of VRC for use with ZAB
 1. Opening Sector File
 2. General Settings

- a. Loading Alias and POF files
- b. Airspace
- c. Flight Strips
- 3. View Menu and Diagrams
 - a. Loading P50 Airports and Airspace diagrams
 - b. Other View Items
- 4. ATISMaker Settings for Controller Info Template
- 5. Radar Modes
- 6. Tools
 - a. Flight Strip Bay
 - b. Controller List
 - c. Aircraft List
 - d. Comms Panel
 - i. Set Up of most commonly used frequencies
 - e. Weather panel
 - i. Set Up Weather Panels for airports
- 7. Connecting to the network
 - a. Observer (OBS)
 - b. Sweatbox Server
- 8. Saving Session Profiles

III. Standard Operating Procedures (SOP) and Letters of Agreement (LOA)

- A) Phoenix Tower LOA
- B) Phoenix Tower SOP
- C) ZLA LOA

IV. National Airspace System

- A) Airspace Classes within ZAB
- B) Altitude Assignments
 - 1. NEODD/SWEVEN
 - 2. RVSM
 - 3. VFR

- C) Navigational Aids
- D) Airways
- E) Charts

V. Weather

- A) METARS
- B) TAFS
- C) VFR Minimums
- D) Lowest Useable Flight Level

VI. Aircraft and Equipment

- A) Aircraft Type and Grouping
- B) Equipment Prefix/Suffix Codes
- C) Heavy Classification

VII. Runway Assignment

VIII. Issuing Clearances

- A) Clearance Limits
- B) Initial Altitudes
 - 1. KPHX
 - a. VFR/TurboProp/TurboJet
 - 2. P50 Satellites
 - 3. Other ZAB Airports
- C) VFR
- D) IFR
- E) Amendments (see Appendix A)
 - 1. Phoenix RNAV Departures
 - 2. Preferred Routing and LOAs
 - 3. Altitude

VIII. Ground Control

- A) Responsibilities
- B) Coordination of Control
- C) Taxi Instructions
 - 1. Hold Short Instructions
 - 2. Cautionary Information
- D) Helicopter Taxi Operations

Appendix A - Amendments

(REMEMBER – It is not your responsibility to ensure the entire route is correct. Only to make sure the routing follows the rules of any LOA in place and reaches the en-route phase of flight correctly.)

It is sometimes necessary to make amendments to the flight plans that pilots have filed based on preferred routing, NOTAMs, incorrect altitudes, and LOAs with other controlling units. As a controller, you will need to recognize when a pilot has incorrectly filed such errors. When making an amendment to a pilot, it is important to realize that most pilots on the VATSIM network are aviation enthusiasts and not real pilots. Many of the virtual airline communities post routing for their pilots that are out of date, incorrect or do not meet the criteria of our LOAs, and other sites such as www.simroutes.com are not always correct and up to date. Real world IFR routes are available through www.flightaware.com and others, but even then there may be errors you must still catch based on the direction of flow in use on the runways. Keep in mind that many of the pilots spend time programming their plane's FMC, and making amendments may require additional time, in some cases making them start all over.

Thus, with the commitment of VATSIM to provide fun, enjoyment and realism for all pilots regardless of skill, we have provided a way for you to make minor amendments that may not require any change by the pilots in most cases. The following flight strips and checklist will help you learn to identify the areas that should be checked and corrected:

IFR Flight Strip

| | | | | | | |
|---------|------|-----------|----------|--|--|--|
| SWA1204 | 0000 | KPHX | SJN3 ABQ | | | |
| B737/J | 330 | KMCI | | | | |
| 972 | 330 | /R/CHARTS | | | | |

VFR Flight Strip

| | | | | | | |
|---------|------|------|--|--|--|--|
| N8743PB | 0000 | NONE | | | | |
| ZZZZ | 000 | NONE | | | | |
| 922 | 000 | /T/ | | | | |

1. 3. 2. 4.

Edit Flight Strip Window

Flight Plan - SWA1204 (Name unknown)

| | | | |
|--------------------|------------------|-------------------|---------------|
| Callsign: SWA1204 | A/C Type: B737/J | Flight Rules: IFR | Amend Plan |
| Depart: KPHX | Arrive: KMCI | Alternate: | Refresh Plan |
| Cruise Alt: 33000 | Scratchpad: | Squawk: 0000 | Assign Squawk |
| Route: SJN3.ABQ | Plot | | |
| Remarks: /R/CHARTS | | | |

1. Aircraft/Equipment Type – As a general rule, this information is automatically filled out for the pilot when they connect to the network. Although an equipment suffix is not absolutely necessary on VATSIM, you should make sure that if there is one, it is correct. Aircraft filing for FL290 and above should have an RVSM suffix (/J/K/L/Q/W).

VFR aircraft are not required to have any information in their flight plans. However, upon entering controlled airspace, a controller should identify the aircraft type on initial contact and make the change in the flight strip for other controllers. A list of aircraft types and codes can be found in the FAA 7110.65 appendices.

2. Departure/Destination – If you are unsure of an aircraft's destination, look it up! You can find most information you need about any U.S. airport at www.airnav.com. Be sure the pilot has entered correct codes for both of these. If a 3rd is listed, it represents the pilot's alternate landing destination if necessary. Any information shown below this is a "scratchpad" entry. This should be blank for a new clearance and erased by you through VRC.

3. Cruise Altitude – Be sure the altitude filed meets the criteria for the NEODD/SWEVEN rules up to FL410. Above FL410, even altitudes are no longer assigned:

WEST – FL430, 470, 510, 550, 590.

EAST – FL410, 450, 490, 530, 570.

In addition, these altitudes should match. If they do not, you need to clear any temporary altitude that may have been assigned by a previous controller.

4. Routing – It is important to analyze the filed routing based on two factors:

1. – The ZLA LOA routing and altitudes. (see ZLA LOA Cheat Sheet)

2.- If the routing includes a SID, is it a valid departure? All RNAV departures out of Phoenix are not valid when the airport is in West operations. The only RNAV departure ever used is the CHEZZ2, but only when Phoenix is operating in East Flow. Below is a list of the only SIDs allowed to be filed out of Phoenix.

BXK2

CHEZZ2 RNAV (East flow only)

CHILY1

MAXX01

MOBIE2

SILOW1

SJN5

TFD2

Do not use these RNAV Departures: BRGN1, DSERT1, RIMMM1, SMALL1 or VANZZ1.

These have been NOTAM out of service. Therefore, it will be your job to issue an amendment to a pilot who has filed an RNAV departure that is not available. In your S1 Student files you will find the "RNAV Substitute Routing" cheat sheet. Using one of the following two procedures, you can quickly and efficiently amend a flight plan.

RNAV Amendment Procedure #1

Obviously, using the “RNAV Substitute Routing” cheat sheet, if a pilot can accept the substitute routing, your job is made easy. Here is an example:

Let’s say SWA1204 has filed an IFR flight plan to Denver Int’l Airport using the VANZZ1 departure, Rattlesnake (RSK) transition:

| | | | | | | |
|---------|------|------|-----------------------|--|--|--|
| SWA1204 | 0000 | KPHX | VANZZ1 RSK HBU POWDR7 | | | |
| B737/J | 330 | KDEN | | | | |
| 972 I | 330 | NONE | /R/CHARTS | | | |

Using the “RNAV Substitute Routing” cheat sheet, we look up the VANZZ1 departure, with the RSK transition:

| | | |
|-----------------------|------------|--|
| | MOSBI | SILOW1 BCE MOSBI |
| | RSK | SILOW1 RSK |
| SMALL1 | EED | CHILY1 EED |
| <i>West Flow Only</i> | LYNSY | CHILY1 IGM LYNSY (For LAS area, eliminate LYNSY) |
| | OAL | CHILY1 BTY OAL |
| VANZZ1 | DVC | SILOW1 DVC |
| <i>East Flow Only</i> | FLG | SILOW1 FLG |
| | MOSBI | SILOW1 BCE MOSBI |
| | RSK | SILOW1 RSK |

You would then contact the pilot and ask if he can accept the amendment as follows:

“SOUTHWEST 1204, THE VANZZ1 DEPARTURE IS NO LONGER IN USE. CAN YOU ACCEPT THE SILOW1 DEPARTURE, RATTLESNAKE TRANSITION TODAY?”

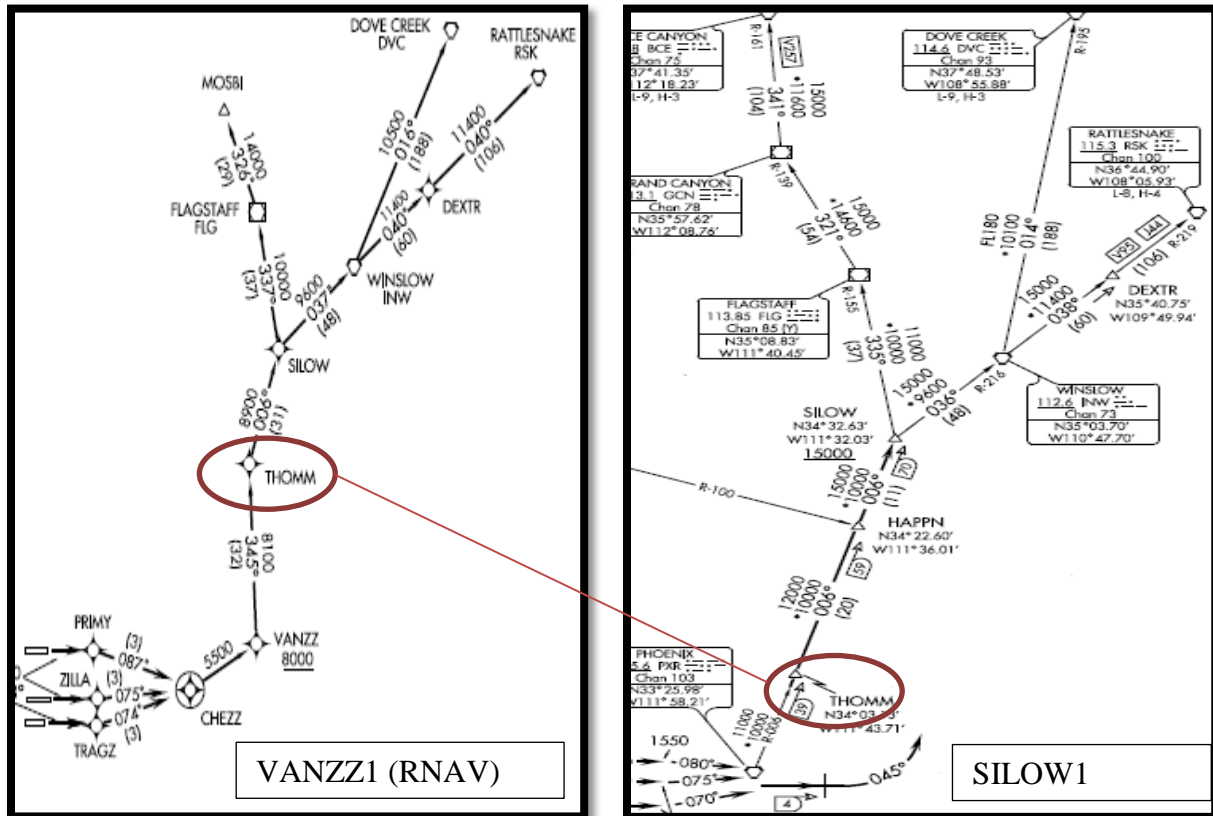
If the pilot confirms that he can take the alternate routing, then all you have to do is remove VANZZ1 from his flight plan, insert SILOW1, and readback his amended clearance.

| | | | | | | |
|---------|------|------|------------------------------|--|--|--|
| SWA1204 | 0000 | KPHX | SILOW1 RSK HBU POWDR7 | | | |
| B737/J | 330 | KDEN | | | | |
| 972 I | 330 | NONE | /R/CHARTS | | | |

If the pilot is unable to accept the amendment because he either does not have the SILOW1 chart, states he would need time to reset his FMC, or just plain sounds disagreeable to the idea, then use RNAV Amendment Procedure #2.

RNAV Amendment Procedure #2

In this procedure, it will be necessary to use both of the departure charts from the example in Procedure #1, the VANZZ1 and the SILOW1. If you notice, the only real difference between the two departures are the initial FIXES/INTERSECTIONS after takeoff. Once the aircraft reaches THOMM, the routing for both departures remains the same.



(FIND THE FIRST INTERSECTION OR POINT THAT BOTH DEPARTURES HAVE IN COMMON.)

Then issue the following amended clearance:

“SOUTHWEST 1204, CLEAR TO DENVER INT’L AIRPORT AS AMENDED : **VIA RADAR VECTORS THOMM**, THEN AS FILED.....”

The pilot need not make any changes to his FMC or navigation system, only fly direct THOMM, which should already be in his FMC. The rest of the route stays unchanged. You would add THOMM before the VANZZ1 in his flight plan as follows:

| | | | | | |
|---------|------|------|-----------------------------|--|--|
| SWA1204 | 0000 | KPHX | THOMM VANZZ1 RSK HBU POWDR7 | | |
| B737/J | 330 | KDEN | | | |
| 972 I | 330 | NONE | /R/CHARTS | | |

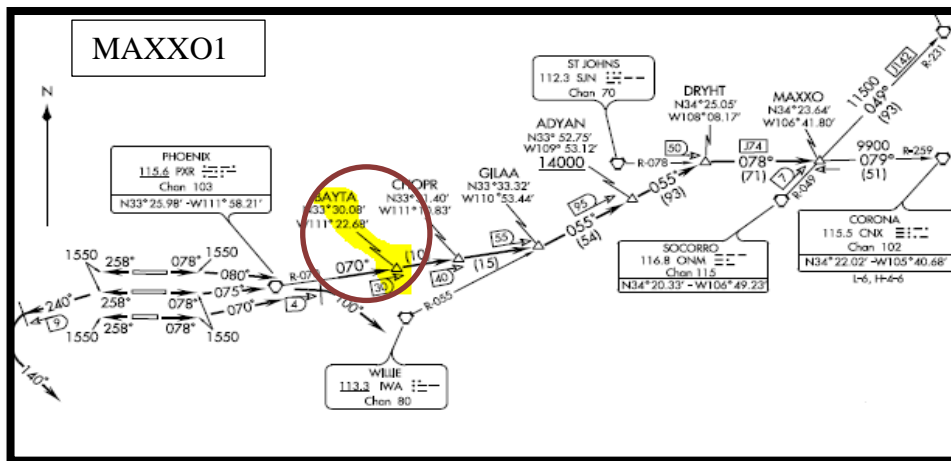
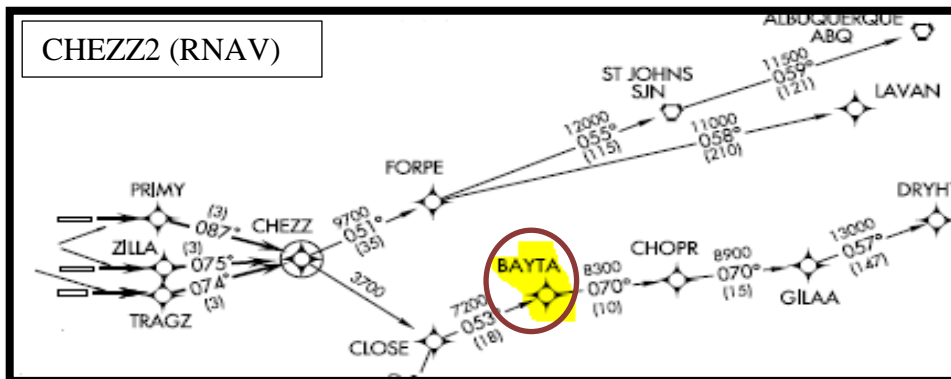
Here is one more example to help understand this procedure:

AWE9431 has just called and requested IFR clearance to the Dallas/Ft. Worth Int'l Airport, and you are currently in West operations at Sky Harbor.

| | | | | | | |
|---------|------|------|-------------------------------|--|--|--|
| AWE9431 | 0000 | KPHX | CHEZZ2 DRYHT CNX J74 TXO UKW1 | | | |
| B733/L | 350 | KDFW | | | | |
| 197 I | 350 | NONE | /V/CHARTS | | | |

| | | |
|-----------------------|--------------|---|
| | OAL | CHILY1 BTY OAL |
| CHEZZ2 | ABQ | SJN5 ABQ |
| <i>East Flow Only</i> | BLH | BXK2 BLH |
| | CIE | TFD2 CIE |
| | DRYHT | MAXXO1 MAXXO (Then ACH or CNX if next) |
| | ELP | TFD2 CIE ELP |
| | EWM | TFD2 CIE EWM |
| | GBN | MOBIE2 GBN |
| | LAVAN | SJN5 SJN LAVAN (or FORPE, LAVAN...) |
| | PMD | BXK2 PMD |

After calling and asking the pilot if he can accept the MAXXO1 departure, he tells you that he just pulled this flight plan from FlightAware.com and already set everything in his FMC, and he seems irritated that you want to change it. After telling the pilot to standby, you look at the CHEZZ2 RNAV and the MAXXO1 departures:



Since the first point that we see both departures have in common is BAYTA, we would amend the flight strip as shown:

| | | | | | | |
|---------|------|------|-------------------------------------|--|--|--|
| AWE9431 | 0000 | KPHX | BAYTA CHEZZ2 DRYHT CNX J74 TXO UKW1 | | | |
| B733/L | 350 | KDFW | | | | |
| 197 I | 350 | NONE | /V/CHARTS | | | |

“CACTUS 9431, CLEAR TO THE DALLAS/FT WORTH AIRPORT AS AMENDED:
RADAR VECTORS BAYTA, THEN AS FILED.....”

If the pilot questions “BAYTA”, just inform him that it is the 3rd intersection on the departure he already filed.