Training program for S3 (APP) rating

Introduction

This is the official Vatsim Scandinavia training program for students training for the TWR (S3) Rating. Each mentor is expected to take his student through the subjects described in these example sessions. This is to make sure all students have been through the same core content in their training. The training is now based on multiple simulator sessions before starting to control live. The program will have a steady increase of traffic and difficulty. This will make it easier for the student to monitor the progress of the student as it is not based on how many pilots are showing up for the training.

The approach controller

An approach controller is responsible for the intermediate airspace (TMA) above and around airports and also performs all the duties of the positions below (TWR/GND/DEL) when no such controllers are online. The controller is responsible for:
- Aircraft inbound until they are properly separated on final track or are entering the CTR for a visual approach.
- Aircraft outbound until they are clear of conflicts and climbing through the vertical or flying out of the lateral borders of the TMA.
- Aircraft transiting through the TMA.

At large airports the approach function can be split into several approach positions, e.g. approach east and west, departure and possibly final/director. Initial Approach controller training at VATSCA is performed at a sector over a regional airport.

The approach controller works in close collaboration with the Tower controller(s) below and the Enroute controller above, and it is important to coordinate inbound/outbound traffic with your adjacent controllers.

Qualifications required to start training

In order to start practical Tower Controller training in VATSCA, a student must meet the following requirements:
- VATSCA Tower Controller (S2) with at least 30 hours of controlling (TWR training hours not included)
- Approach Controller training request sent to and accepted by VATSCA training department
- Passed VATEUD theoretical ATSimTest at S3 level

Theoretical part

Intro session

A theoretical session covering the following:

1. Controller radar client software screen
   - Configure radar display to show:
     - Extended runway centerline/Final approach track.
     - Significant navigational points in the sector: VOR, NDB, FIX
     - Airport(s) under control
     - Sector boundary
   - Read out from aircraft label:
     - Heading
     - Speed
     - Scratchpad notes
2. Controller radar client software functions
   - Radar tracking:
     - Assume
     - Transfer label to next controller
     - Assume label transfer from previous controller
     - Drop track
   - Ruler function, distance- and separation-tool to measure distance, heading and discover potential conflicts
   - Use aircraft label to indicate assigned:
     - Temporary altitude
     - Heading
     - Speed
     - Direct routing
3. Position
   - Knowledge of your area of responsibility:
     - Horizontal border
     - Vertical limits to sector above and uncontrolled airspace below
     - Possible splitting into several sub sectors
     - Adjacent sectors
   - Airport(s) within sector
   - Navigation points: VORs, NDBs and waypoints within the sector
   - Layout of SIDs and STARs
   - Calculate transition level from transition altitude and present QNH
   - Determine runway in use at controlled airports.
   - Decode METAR:

- - Airport
    - Time
    - Wind
    - Visibility and RVR
    - Present weather
    - Temperature
    - Dew point
    - QNH
    - Trend
  - Cooperation and responsibilities regarding adjacent sectors
    - Transfer of control
    - Transfer of communication
    - Releases (for climb/descend/turn/full)

4. Standard IFR departure
   - Radar track
     - Confirm radar contact/identified and mode C altitude
     - Verify pilots altimeter setting
   - Climb clearance to coordinated altitude/flight level
   - Update assigned temporary altitude in label
   - Cancel SID and issue direct routing when traffic permits
   - Transfer of control to controller above/adjacent, in due time for continuous climb.

5. Non-standard IFR departure
   - Coordinate in cooperation with Tower Controller
   - Runway heading to given altitude
   - Give direct routing when traffic permits

6. IFR arrival
   - Accept transfer of control from controller above/adjacent
   - Descend and inbound routing clearance taking into account:
     - Other traffic
     - Uncontrolled airspace below
     - Terrain
     - Remaining distance (track miles) to final approach
     - Continuous descend
   - Descend through transition level:
     - Altitude
     - QNH
     - Transition level if not included in ATIS ("SAS123 descend 5000ft QNH 1013, Transition level 85")

- ○ Clear for approach via STAR or STAR Transition (where applicable)
- ○ Radar vector and clear aircraft for approach:
  - ■ Aircraft descended to ILS intercept altitude
  - ■ Intercept angle max 45 degrees (preferably 30) and 2nm level flight before intercepting glide path.
- ○ Visual Approach
  - ■ Vectoring until "field in sight"
  - ■ Traffic information if needed, clear for visual app.
- ○ Transfer to Tower when established or entering control zone on a visual approach
- ○ Handle go-around in cooperation with Tower
  - ■ Make sure aircraft is clear of terrain and obstacles before starting vectors back to approach.
  - ■ Give pilot time to execute missed approach.
- ○ Assume Tower controller duties for unmanned airports in own sector

7. Separation concepts - keep aircraft separated using
   - ○ Vertical separation:
     - ■ Aircraft descended or climbed to different altitudes or flight levels
   - ○ Lateral separation:
     - ■ Vectors to separate aircraft in conflict
     - ■ When aircraft is on own navigation: "fly heading" or "turn left/right by xx degrees"
     - ■ When aircraft is on a known heading: "turn left/right heading"
     - ■ When aircraft is going back to own navigation after being vectored: "Resume own navigation direct <waypoint>"
   - ○ Speed restrictions.
     - ■ Speed control is vital for a good traffic flow. And its really easy, get the speed of the first aircraft and then tell the second to reduce as necessary.
   - ○ Inform pilots about sequence, "SAS123, you are number two for approach".

8. Use of holding
   - ○ Use holdings in high traffic load situations, emergencies or other situations requiring the use of holdings.
   - ○ Request holding for inbound traffic from adjacent ACC sector
   - ○ Sending aircrafts into the holding pattern
   - ○ Keep pilots informed of their expected time to leave holding/start approach
   - ○ Taking aircrafts out of the holding pattern

9. VFR traffic in the TMA

10. Standard ICAO phraseology

○ Clearances
○ Level changes
○ Heading changes
○ Speed restrictions
○ Frequency change

The simulator training program

The first practical sessions will be in the simulator. The simulator will offer the student a steady increase of traffic level, to allow a steady learning-curve. All exercises have overlying/adjacent sectors online, and takes place on a single runway airport.

The 3 first exercises will be in a single airport TMA, and the three last will be in a multiple airport TMA

Simulator exercises

201 IFR DEPARTURES WITH VECTOR BACK FOR APPROACH

Session description:
● 5 departures.
● Radar contact: verify mode C (aircraft reported alt and alt in label is the same +/- 300ft)
● Vectors for approach to runway in use.
● Simulate TWR is online, exercise may be repeated without tower online.
● May be repeated for both runways-
● Aim for continuous climb – Transfer to controller above in time

202 IFR DEPARTURES AND ARRIVALS

● 2 Departures, 3 Arrivals
● No conflicts between arriving traffic
● Clear for approach both via STAR (if applicable)
● Vectors for approach
● Direct routing for departures when traffic permits.
● TWR Online

203 IFR DEPARTURES AND ARRIVALS

● 5 Departures, 5 Arrivals
● Two arrivals will reach final at the same time from opposite directions
● Clear for approach via STAR (if applicable)
● Vectors for approach
● Direct routing for departures when traffic permits.

- TWR NOT Online

204 Introduction to multiple airport TMAs (including AFIS)

- 6 Arrivals and 6 Departures
- Approaches to two airports simultaneously
- Approaches to AFIS airport.
- No towers online

205 IFR Departures/Arrivals + VFR Arrival (multiple airport TMA)

- 4 Departures, 4 Arrivals, 1 VFR Arrival
- Two arrivals in conflict with each other: use vectors/speed control as necessary.
- VFR entering TMA for landing: Clear to CTR entry point, give relevant traffic information.
- Towers Online (Not AFIS)

206 FINAL SESSION IFR/VFR (Multiple airport TMA)

- 5 Departures, 6 arrivals, 1 VFR inbound, 1 VFR outbound
- Combine all your skills in this busy simulator session.
- Multiple conflicts.
- TWR & AFIS Online

Online training program

After the simulator sessions, a minimum of three online sessions are required. At least one of the sessions should be without twr/gnd/del online. If the mentor thinks the student has reached the desired level, the training is finished and he will have his checkout as soon as possible.
If combined rating/major airport endorsement training is applied, and the mentor evaluates, that the student is able to handle one combined rating/MA CPT, the student can continue directly to an Major Airport endorsement training program with the same mentor.

Examination

Approach Controller (S3) check-out:
Approach position at regional airport
Time frame: 90 minutes
Supporting ATC: tower below, en-route sector above
Required performance to pass:

- Function as Approach Controller at a regional airport during normal traffic conditions
- Aircraft separated according to the applicable minima.
- Control at least 2 arriving IFR flights simultaneously
- Coordinate with Tower and En-route controller as needed
- Handle at least 1 IFR departure

- Handle at least 3 IFR arrivals
- In total, handle 8 movements during the examination.
- Use standard and understandable ICAO phraseology to issue ATC instructions

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