

ATC Training Guide

A guide detailing the steps from OBS to C3

Revision 4 - Effective 22nd December 2009 – NOT FOR REAL WORLD USE

Introduction

This is a guide to the subjects that will be learned and discussed during training sessions as well as requirements for the various controller levels at VATSIM-UK.

The practical exams for the various ratings are requested by the appropriate RTSM once a trainee is considered to be at an appropriate standard.

Theory Exams

In order to progress through the ratings in VATSIM-UK, you will usually need to take a theory exam as well as a practical exam. The following information is standard across all theory exams:

- The exam will consist of twenty multiple choice questions selected at random from the database
- The pass mark for all on-line "written" exams is 80%
- You will be advised of the result of your exam immediately upon completion, together with a list of the questions which you failed (whether or not you passed the exam)
- You have twenty minutes to complete the exam, if your web browser supports Javascript then you will see a countdown timer showing the time remaining
- Ensure you answer all of the questions; unanswered questions will score as incorrect answers but this will not be deducted from the number of correct answers (i.e. if you correctly answer 16 questions and fail to answer, or answer incorrectly 4 questions you will pass)
- If you failed the exam you must wait seven days before you can try again
- It is only possible to attempt the theory exam for one level above your current rating i.e. a STU2 can ONLY attempt the STU3 exam
- You must register a pass in the theory exam before you can be submitted for the practical exam

Rating Levels

VATSIM ATC rating levels discussed in this manual are:

- Pilot/Observer
- S1
- S2
- S3
- C1
- C3

Observer (OBS) - Ground (S1)

Part 1 - Theory

Before you start your training at VATSIM-UK you must have joined VATSIM and have a Certificate ID number (CID) issued by them. You will then need to join the Europe Region. Once you are a member of the Europe region, you will need to join the UK Division. All of the above can be completed on the following web page; <http://vatsim.net/cert.html>

At this stage you will still be an Observer- you can log onto the network as a pilot or an observer to watch other controllers. To observe you should use a callsign such as your initials followed by _OBS. For example, if you were "Joe Bloggs" you would log in as JB_OBS.

Make sure that you read the manual for the ATC client you are using and try and become familiar with most of its functions. If you have any questions about the client, ASK; the forums are usually teeming with people eager to help.

Also read the Basic and General sections of the VATSIM-UK ATC manual. Again, if you have any queries, ask on the forums or teamspeak. Once you have read and inwardly digested this information, you can move onto the next step- becoming a controller.

Decide which RTS you wish to join. Information on each RTS can be found on the "Join RTS" page on the RTS system. **Do not join an RTS with this page if you are a new controller.**

When you are ready to take the theory test and know which RTS you will join select the "OBS>STU Exam Part 1" in the RTS system.

The Observer to Student theory exam covers the following subjects:

- How to log in and start up an ATC position
- What the ATC positions are and their responsibilities
- How to communicate on an ATC channel
- Know who is on-line and what frequency other controllers are using
- General Tower and Ground Procedures
- Understanding basic weather (METAR) information
- How to get weather information for different airports
- Knowledge of major and neighbouring ICAO airport codes
- Knowledge of aircraft limitations (i.e. approach speeds / wake turbulence)
- Difference between height, altitude and flight levels

If you complete the exam successfully, you will be asked which RTS you wish to join. Once you have joined an RTS, you will receive an e-mail from the RTSM detailing any specific actions you need to take. In general the next step will be the Part 2.

Part 2 - Practical

The Observer part 2 is conducted by the RTSM, RTSI or an approved mentor. You are not expected to be perfect at all aspects, and assistance will be provided in the assessment. You are expected to demonstrate that you have some understanding, and capability to improve with practice, on the following points;

- Situational awareness.
- Evaluating traffic.
- Monitoring and maintaining separation.
- Recognising potential conflict.
- Planning and prioritising.
- Issuing instructions using proper RT.

The RTSM, RTSI or mentor will go through each point helping you to understand what is required and testing your knowledge. If you are capable with each point, and the RTSM, RTSI or mentor feels that you are capable to control a ground position solo, you will pass the Part 2. This will give you an upgrade to the rating of S1*. This process is manual and may take up to 48 hours from the pass being submitted. You will receive an e-mail when the database has been updated, allowing you to log in as an S1.

As an S1 you may control any DEL or GND positions within your RTS. If you wish to control a GND or DEL position not covered in your Part 2, it is recommended that you seek mentoring on the position before controlling solo to ensure that you are familiar with the position.

Your initial mentoring sessions may begin on either Ground or Tower, depending upon your rate of progression. When your mentor(s) feel that you are comfortable on Ground, training will begin on Tower.

*Some positions may have a direct upgrade to S2. See the S1 to S2 rating section.

Ground (S1) - Tower (S2)

Initial Mentoring

Mentoring will continue on tower, and the skills required as a tower controller will be steadily introduced to you. Once your RTSM or RTSI feels that you are competent to control tower solo, an upgrade to controller rating S2 will occur*.

As an S2 you may control any aerodrome position within your RTS solo. If you wish to control a TWR, GND or DEL position not covered in your mentoring, it is recommended that you seek mentoring on the position before controlling solo to ensure that you are familiar with the position.

Mentoring will continue on Tower until you reach "Test Standard"

*Observer to S2 upgrades

At some areas where ground positions are not in use, the upgrade from Observer may be straight to S2. In this event, you are entitled to control any aerodrome position as detailed above.

Tower Exam

Your S2 training will culminate when you reach "Test Standard" are put forward for a Tower Exam. This is a test to ensure that a consistent level of S2 training is being maintained across VATSIM-UK, and that the examinee can apply the required skills and knowledge provided via training. The exam is conducted by a training department approved examiner. The tower exam can be conducted at any field which handles both VFR and IFR arrivals and departures. The exam will test the following areas;

- ATIS must comply with VATSIM-UK requirements
- Ability to decode METARS
- Understanding of local operating procedures for the airfield EXCLUDING dual runway operations
- Understanding of local handoff procedures for departing traffic
- Minimum of two aircraft in the circuit VFR (aircraft using daytime setting during a night time exam are acceptable)
- Satisfactory communication and coordination with adjacent controllers at all times
- Understanding of TWR area of responsibility both on the ground and in the air
- Safe separation on the ground and in the air
- Ability to apply reasonable expedition consistent with safety
- Understanding of the standard IFR missed approach procedure for the runway in use

- Willingness to issue go around instructions to both VFR and IFR aircraft when necessary
- Deal with at least one emergency aircraft
- Ability to issue clear progressive taxi instructions
- Ability to handle VFR aircraft joining and departing the airfield
- Issuing full IFR departure clearance complying with local SIDs and noise abatement procedures
- Standard Phraseology in accordance with CAP413 both on voice and text

You will be advised at the end of the exam what the result is. If you have passed then you will be able to progress further toward training for your S3.

After the exam you will receive an e-mail detailed the result of the exam, and areas that were not fully at the required standard. It *is* possible to pass an exam without being perfect!

If you are not successful in the exam, the examiner will advise you what further mentoring is required before attempting another exam. There may be a minimum time period before you can re-attempt the exam, if this is the case, you will be advised of it.

Tower (S2) - Approach (S3)

As an S2 controller that has passed their tower exam, your training will now concentrate on Approach Radar. You should still continue to hone your skills on Tower, as you will be required to provide top-down cover on approach in the absence of a separate tower controller.

Before you can take the practical part of the S2-S3 practical exam, you must take a theory exam. This is a similar process to your OBS theory exam, and will cover the following topics;

- Airspace classifications
- Air traffic services outside controlled airspace (ATSOCAS)
- Wake separation standards specific to the UK
- Aircraft limitations (speeds, altitudes, rates of climb and weight categories)
- Effects of weather on aircraft performance
- Simple stack management
- METAR knowledge

Information on all these sections is available on the VATSIM-UK website and via your mentor.

Your training on Approach will continue until you are test-standard. Once your RTSM or RTSI deems that you are competent for an exam, they will put you forward for an exam. Usually, an RTSM/RTSI will test for your competency using a pre-exam. This is simply a final mentoring session that is advertised to try and attain near exam-level traffic. Try and treat this like a normal session- everything will already have been covered, simply control to the best of your ability.

The practical exam will cover the following topics;

- ATIS must comply with VATSIM-UK requirements
- Understanding of the area of responsibility of the position being controlled
- Understanding of local routing procedures, including SID and STAR as appropriate
- Understanding of the difference between VFR, IFR and SVFR
- Comply with local handoff procedures
- Demonstrate knowledge of other control positions in the area
- Knowledge of aircraft types and performance
- Effect of adverse weather on operations and be able to decode advanced METARS
- Ability to use different forms of separation in appropriate circumstances
- Understand and interpret SID, STAR and IAP charts
- Clearly state the service being provided

- Proficiency in vectoring several aircraft for the appropriate instrument approach providing safe separation and appropriate Vortex Wake spacing
- Willingness to hold aircraft when necessary, giving clear accurate holding instructions
- Understanding of the vertical limits of the holding pattern(s)
- Competence in handling VFR/SVFR traffic, departing, arriving and overflying
- Correct phraseology and RTF procedures both on voice and text
- Successfully handle at least one emergency
- Satisfactory communication and coordination with adjacent controllers at all times, especially during an Emergency situation
- Standard Separation between appropriate aircraft at all times
- Ability to apply reasonable expedition consistent with safety
- Understanding of the standard IFR missed approach procedure for the runway in use

You will be advised at the end of the exam what the result is. If you have passed then you will be issued with an S3 rating upgrade.

After the exam you will receive an e-mail detailed the result of the exam, and areas that were not fully at the required standard. It *is* possible to pass an exam without being perfect!

If you are not successful in the exam, the examiner will advise you what further mentoring is required before attempting another exam. There may be a minimum time period before you can re-attempt the exam, if this is the case, you will be advised of it.

S3 Controlling

As an S3, you can control any approach position within your RTS. If you wish to control an Approach position not covered in your mentoring, it is recommended that you seek mentoring on the position before controlling solo to ensure that you are familiar with the position.

Approach (S3) to Area (C1)

Training Structure

Area positions are the most complex positions in the UK, and training is usually split into two sections- a less complex position to allow building of area skills followed by a more complex position. The most common (but not the only) combinations are (please take note that this list is only a small sub-set of potential training patterns if you wish to gain a TMA validation, see below for more information);

- SCO_CTR progressing to EGPX_CTR
- EGTN_CTR progressing to MAN_CTR
- EGTN_CTR progressing to LON_CTR

TMA Validations / Exams

To gain a C1 rating an exam must be conducted on an EGTN/EGPX sector, this exam can be split between an EGTN/EGPX sector and a TMA position (LTMA/MTMA). It is not a requirement to split the exam on TMA, however by doing so you gain a TMA validation whilst doing the exam (if a pass is the final result). The EGPX exam covers the SCO TMA in a top-down manner, and does not entail a split exam.

Training can occur on **any** combinations of positions, simply discuss with the relevant RTSM which path you wish to follow.

The more complex positions are usually more difficult as they provide top-down cover of the airfields below them if there is no local control. As such, if you are intending to control one of the TMA positions, it is highly recommended that you become familiar with the underlying airfields. This is facilitated by contacting the RTSM for the fields you need experience on and making individual arrangements.

eg. If you are in Northern RTS, but wish to control LON_CTR, you may request permission from the Essex RTSM to control and/or receive mentoring on an Essex field.

The above is only available to controllers actively seeking area mentoring, or C1 validated controllers.

Before you can take the S3-C1 practical test, you must take a theory exam. This is a similar process to your OBS theory exam, and will cover the following topics;

- UK Airspace and classification
- Interaction between groundspeed, airspeed, mach number and altitude
- Air traffic services outside controlled airspace (ATSOCAS)
- Aircraft limitations (speed, altitude, rate of climb, turn radius, navigation capability)
- Separation standards
- Cruise levels both inside and outside controlled airspace in the UK and neighbouring FIR/UIRs
- Effects of weather on aircraft performance
- METAR knowledge

Your training on Area will continue until you are test-standard. Once your RTSM or RTSI deems that you are competent for an exam, they will put you forward for an exam. Usually, an RTSM/RTSI will test for your competency using a pre-exam. This is simply a final mentoring session that is advertised to try and attain near exam-level traffic. Try and treat this like a normal session- everything will already have been covered, simply control to the best of your ability.

The practical exam will cover the following topics;

- Understanding of the area of responsibility of the position being controlled including standard routings through the sector
- Understanding of departure and arrival routing procedures, including SID and STAR as appropriate
- Knowledge of adjacent control positions and underlying airfields, complying with standard handoff procedures at all times
- Knowledge of aircraft types and performance
- Effect of adverse weather on operations and be able to decode advanced METARS
- Ability to use different forms of separation in appropriate circumstances
- Understand and interpret SID, STAR and IAP charts
- State the service being provided to relevant aircraft
- Proficiency in vectoring aircraft for an appropriate instrument approach using "top down" procedures
- Proficiency in dealing with departures from unmanned airfields, preferably demonstrating both SID and non SID clearances
- Willingness to hold aircraft when necessary, giving clear accurate holding instructions
- Understanding of the vertical limits of holding patterns
- Correct phraseology and RTF procedures both on voice and text

- Successfully handle at least one emergency
- Demonstrate satisfactory communication and coordination with adjacent controllers at all times, especially during an Emergency situation
- Maintain Standard Separation between appropriate aircraft at all times
- Demonstrate an ability to apply reasonable expedition consistent with safety
- Effectively deal with pop up traffic or traffic which enters the sector from adjacent unmanned airspace
- Demonstrate proficiency in issuing joining/crossing clearances

You will be advised at the end of the exam what the result is. If you have passed then you will be issued with a C1 rating upgrade.

After the exam you will receive an e-mail detailed the result of the exam, and areas that were not fully at the required standard. It *is* possible to pass an exam without being perfect!

If you are not successful in the exam, the examiner will advise you what further mentoring is required before attempting another exam. There may be a minimum time period before you can re-attempt the exam, if this is the case, you will be advised of it.

C1 Controlling

A C1 rating is the highest operational ATC rating at VATSIM-UK. As a C1 you can control any non-major position within the UK. If you wish to control a position not covered in your mentoring, it is recommended that you seek mentoring on the position before controlling solo to ensure that you are familiar with the position.

By this stage, you should be familiar with the structure of VATSIM-UK and be aware of how to get mentoring on positions outside your RTS.

Area (C1) – C3

Definition

The C3 rating is given as a reward to controllers (C1) for their experience within the division.

Minimum Requirements:

1. En-route controller (C1) rated
2. Controller must be in line with GRP 2.
3. Controller must be validated on at least 1 high level sector and 1 TMA within VATSIM-UK.
4. A member of the VATSIM-UK division for more than 6 months.
5. 125 hours of online controlling within VATSIM-UK on an en-route/area position (logged in as a controller (C1)).
6. Must have gained either an oceanic validation on EGGX_FSS **or** a TMA validation (LTMA/MTMA). If the individual gained 1 TMA validation through means of an exam (C1), **an additional one must be gained** (MTMA/LTMA).

Termination:

N/A

Application Process

Should an en-route controller deem themselves to fit the minimum requirements to be upgraded to senior controller (C3); the individual must contact the training department and supply them with the following

1. CID
2. Date joined VATSIM-UK (If unknown, leave)
3. Rating
4. RTS(s)
5. TMA and high level area sectors validations - Date achieved and assessor.
6. EGGX validation - Date achieved and assessor (if applicable).

A response will be received within 1 week, after verification that the minimum requirements have been met.

Major Positions and Other Restrictions

Major Positions in the UK are different to normal positions in that *any* controller of *any* rating wishing to control at them must first have a validation.

London Heathrow

London Heathrow is the flagship of VATUK. It is also in real world aviation the busiest international airport in the world and even in VATSIM is frequently the busiest airport. For this reason Heathrow is not for the feint hearted, and requires additional training and qualification prior to being permitted to operate "solo" on any Heathrow position. Anyone with a Tower exam pass may apply to the Heathrow AOM to commence training on Heathrow Delivery, Ground and Tower IN ADDITION to their current RTS, as can anyone with an Approach exam to commence training on Heathrow Approach. Specific qualification from Heathrow RTSM or specifically approved Instructor(s) is required before operating any Heathrow position unmentored.

London Gatwick

London Gatwick is another major airport in the UK. It can be extremely busy and to guarantee a consistent ATC service, controllers must get a validation from the SE RTSM before controlling unmentored.

Military Positions

Military ATC use different phraseology and procedures from their civil counterparts. For this reason a formal approval from the Military RTSM or his designated representative is required before operating any military position unmentored. If you are unsure whether a position is classed as military or not then email either the central training department or the Military RTSM for clarification.

Oceanic Control

Oceanic Control is different from any other form of control because there is no radar available. Separation is based upon position reports submitted by pilots and hence the spacing between aircraft is significantly increased. For this reason specific approval is required before operating any Oceanic position unmentored. Procedures are being drawn

up which would allow any Oceanic rated controller to open any of the North Atlantic Oceanic positions, details will be included as soon as they are finalised. In the meantime formal approval is required from the Oceanic RTSM or his designated representative prior to operating Shanwick Oceanic unmentored. Oceanic Control is also restricted to controllers rated CTR or above.

Appendix

Edition	Amendments	Amended Pages	Date
1	Initial Creation.	n/a	January 2005
1.1	Unknown.	Unknown	July 2008
1.2	GRP 2 / Overhaul.	All	November 2009
1.3	C3 Definition and minimum requirements added.	13	December 2009