VIRTUAL
ROYAL AIR FORCE
RISE ABOVE THE REST

OPERATIONS MANUAL

(PART A)

Revision 1.1 – Effective 1st February 2021

CONTENTS

Record of Revisions

Date	Section	Summary
01/05/2020	All	Document reissue
01/02/2021	All	Document re-formatted and re-numbered
	All	Grammatical changes throughout (not tracked, meanings unchanged)
	All	Removed references to Slack
	All	Renamed “Remedial Training” to “Refresher Training”
	1.1.2	Added use of software manufacturer documents
	2	Restructured membership section
	2.1	2.1 Added VATSIM Code of Conduct and defined order of precedence
	2.2	Added requirement to maintain CR on one type
	2.4	Added X-Plane
	2.4.1	Renamed “Joining Quiz” to “Entrance Exam”
	2.5.2	Changed “Group AOC” to “Air Command”
	2.8	Added Data Handling
	4	Restructured and changed naming convention
	4	Moved “Activity Requirements During Training” to Section 2
	5.2.2	Added carrier operations
	5.2.2.1	Changed Company frequency allocation and removed discrete carrier operations frequency (now Vulcan Ops)
	5.3	Amended online requirements
	7	Added Founders Section
	8	Renamed section to “Glossary”
	8	Added “Shall”

SECTION 1 | **OPERATIONS MANUAL PHILOSOPHY**

The vRAF Operations Manuals are split into several 'parts';

1.1.1 Operations Manual Part A (OMA)

A singular document that contains rules and regulations applicable to all vRAF operations.

1.1.2 Operations Manual Part B (OMB)

Each fleet shall have a specific Part B. These documents describe aircraft operating procedures in normal and non-normal scenarios, aircraft specific rules and requirements. Rules in OMB may be more limiting than OMA. Where vRAF has not yet produced an OMB for a certain aircraft type, the aircraft manual issued by the software publisher shall be used instead.

1.1.3 Operations Manual Part C (OMC)

A singular document containing route and area specific information. This includes airfield briefs.

1.1.4 Operations Manual Part D (OMD)

Each aircraft/fleet shall have a specific Part D. These documents describe aircraft training procedures for all qualifications available on that aircraft type.

1.2 Review and Update

Air Command will review and update the Operations Manuals at regular intervals as necessary. The notice period between publishing a new Operations Manual version and it becoming effective will be no less than 1 week.

1.3 Common abbreviations for Aircraft Types

Rules specific to certain aircraft types will be denoted using a standard format as follows;

[ICAO AIRCRAFT TYPE]

e.g. for Eurofighter Typhoon (all variants) - [EUFI]

If a restriction is only applicable to a certain variant of an aircraft type this will be explicit in the relevant section. If the name of an aircraft is used instead of this convention, then it is assumed to include all variants of that aircraft type.

SECTION 2 | **MEMBERSHIP**

2.1 General Conduct

At all times, members must:

- Display a professional attitude to vRAF and VATSIM;
- Act fairly and honestly, with impartiality and integrity;
- Be respectful and courteous to others.

2.1.1 vRAF Policies

Application for and subsequent acceptance of membership indicates that you have read and agree to abide by the following policies (in order of precedence):

- vRAF NOTAMs
- vRAF Operations Manuals
- Letters of Agreement (LoA)
- Policy & Procedure Manual for VATSIM Virtual Airlines and VATSIM Special Operations (PPM)
- VATSIM Code of Conduct
- vRAF Letters of Agreement (LoA)
- Privacy Policy

2.1.2 Communications

vRAF provides the following communications services for use by its members;

- Teamspeak
- Discord
- Forum

Members must use their full real name when registering for these services. Shortening of names is permitted if the entire name is too long for the data entry box.

All messages transmitted through communication methods used or provided by vRAF:

- Must not to be used to post offensive, vulgar or obscene material;
- Must not include any material or links to materials which are unlawful. This includes, but is not limited to, software, material not suitable for minors and links to sites distributing payware illegally;
- Must not encourage the contravention of any vRAF Policy
- Must not be used for advertisement or promotion of any other organisations or products.

2.2 Activity Requirements

Members are required to log at least 1 flight in a rolling 60-day period and maintain combat-readiness on at least one aircraft type to remain active.

2.2.1 New Members

New members must request training within 14 days of their application being accepted and must inform Air Command should this not be possible.

2.2.2 Leave of Absence

Members may request a 'leave of absence' (LOA) from their Force Commander if they are aware that they will not be able to meet the activity requirements. A maximum period of 3 months may be granted by Force Commanders. Longer periods may be granted by Air Command.

2.2.3 Activity Requirements During Initial Training

After the initial training request, students are required to request a training sortie a minimum of once per 60 days.

2.3 Association with vRAF on VATSIM

Members of vRAF are identified on VATSIM by the use of vRAF 'tags' by adding 'OPR/VRAF.NET' to the remarks section of a flight plan and is restricted to members of vRAF. The purpose of tags is to associate the pilot with vRAF as a VATSIM Special Operations Administration (VSOA) partner.

Members are only authorised to file flight plans with vRAF tags once they have completed a training sortie with a QFI and have specifically been cleared to fly solo on VATSIM.

2.4 Application Process

Applicants must supply the following information;

- Full real name
- A valid email address
- VATSIM CID

Applicants must also meet the following minimum requirements;

- At least 18 years of age on date of application
- 25 hours of IFR flying on the VATSIM network
- Be able to create and file a valid flight plan
- Fly SIDs, STARs and approaches using raw data

- Adhere to airspace restrictions
- Communicate correctly with ATC
- Possess a good working knowledge of a supported simulator (FSX, FSX:SE, X-Plane or P3D)

Any applicant who provides false information will be rejected.

2.4.1 Entrance Exam

Applicants may be asked to complete an entrance exam as part of the application process. This exam is designed to test the pre-requisite theoretical knowledge required for membership. Applicants will have 7 days to complete the quiz from the time it is sent. The pass mark for the quiz is 80%. Applicants who fail may be given a second attempt.

2.4.2 Acceptance and rejection

Acceptance into vRAF is at the discretion of Air Command, who reserve the right to reject any application without disclosing their justification. Rejected applicants are prohibited from re-applying for a period of 6 months unless special dispensation from Air Command is granted.

2.5 Resignation, Retirement and Discharge

2.5.1 Lack of Activity

Members who fail to meet the activity requirements may have their membership terminated without prior notice.

2.5.2 Resignation of position

Members wishing to stand down from a command role should provide a minimum of 30 days written notice to Air Command.

Members standing down from a command role shall retain the rank of Squadron leader.

2.5.3 Retirement

Members wishing to leave vRAF should inform Air Command and will be honourably discharged, (provided there are no outstanding disciplinary proceedings). When an individual leaves vRAF they are no longer permitted to partake in vRAF operations and lose access to all online services and material.

2.5.4 Reapplication

If a former member reapplies for vRAF who was honourably discharged, their service history will be taken into account. Should they be accepted:

- Their previous account shall be reactivated.
- They shall undertake refresher training.
- They shall be assigned a rank appropriate to their service history, but no greater than Flying Officer.

2.5.5 Dishonourable Discharge

Members dishonourably discharged in accordance with Disciplinary Procedures shall have their account terminated immediately and lose access to all services and material. Members dishonourably discharged may not reapply to vRAF, unless significant and new evidence is presented to Air Command that would commute their dishonourable discharge to an honourable discharge.

2.6 Disciplinary Procedures

Any breach of vRAF Policies may result in referral for disciplinary procedures.

2.6.1 Reporting

If a breach of vRAF Policies occurs, members should report this as soon as possible to the next most senior member in the chain of command. Should this not be appropriate due to a conflict of interest, then members should contact Air Command directly.

2.6.2 Investigation

A member of the chain of command will be assigned to manage the investigation. Members involved in the incident may have temporary restrictions imposed.

Air Command reserves the right to inform external agencies should the incident warrant their involvement.

2.6.3 Squadron Commanders

Squadron Commanders are responsible for the conduct of pilots on their squadron. Should disciplinary action be required, the following options are available to Squadron Commanders:

- Verbal Warning;
- Written Warning;
- Squadron Commanders Report (Up to and including 7 days): All flying operations will need Squadron Commander's approval;
- Referral to Force Commander’s review.

2.6.4 Force Commanders Review

Should further disciplinary action be required, the following options are available to Force Commanders:

- Suspension from Flying Duties (Up to and including 14 Days): The pilot is suspended from flying duties and is grounded. Any flights conducted during this suspension will result in automatic referral for Court Martial;
- Referral for Court Martial.

2.6.5 Court Martial

Court Martials are conducted by the pilot's Group AOC. Court Martial is conducted in a closed room on Teamspeak and those required to attend should present themselves to the attending Group AOC. All Proceedings from a court martial will be recorded. The following options are available to Group AOCs following a Court Martial:

- Demotion of Rank (Associated role may also be revoked);
- Suspension (Up to and including 30 Days);
- Referral to Air Command Disciplinary.

2.6.6 Air Command Disciplinary

Air Command disciplinaries shall be conducted by CAS or DCOM OPS. They shall not be the same person who conducted the Court Martial and shall be selected to be as impartial as practicable. Air Command can take any action they deem necessary, examples of which include:

- Suspension of membership (for periods exceeding 30 days);
- Dishonourable Discharge (Details may be forwarded to VATSIM DCRM at Air Command's discretion).

2.6.7 Appeals

The following appeals are available to all members following disciplinary action:

- Appeals for sentences issued by a Force Commander is to Group AOC;
- Appeals for sentences issued by Group AOC is to Air Command.

Air Command decisions cannot be appealed against unless significant and new evidence (that was not originally considered), becomes available. In this instance a new Air Command disciplinary will be convened to assess the new evidence, conducted preferably by the same member who presided originally.

2.7 Intellectual Property

Access to, and use of vRAF owned materials including, but not limited to; software, scenery and repaints is available as a privilege and is contingent on continued membership of vRAF. For all materials, members must use the original access method provided by Air Command, thus ensuring that only those permitted to access this data will be able to view it. These materials must not be uploaded elsewhere, nor distributed outside of vRAF without the express written permission of Air Command.

vRAF owns the following (non-exhaustive):

- Virtual Air Planning Tasking And Management System (VAPTAMS) – *vRAF website*;
- Air Tasking And Management System (ATAMS) – *vRAF flight tracking software*;
- All materials uploaded to the "Air Command Drive" – *shared Google Drive folder*;
- All materials created by members in the course of their duties;
- All materials created by members bearing vRAF branding or insignia;

If a member leaves or is discharged, all vRAF materials must be removed from their system.

Members will not use any vRAF material information, names, images, branding, insignia or logos without the express written permission of Air Command.

2.8 Data Handling

Some members will have access to personal data as a result of the access granted to them in their roles. This is bound by the Privacy Policy. It is vital that access to information of this nature is limited to essential uses only. Members should only share personal data when there is a valid operational reason to do so, or with the consent of the member concerned.

If there becomes an operational requirement to discuss data of this nature, a private conversation with the appropriate member of the Chain of Command is the place in which to do it. Personal data must never be posted in public channels, or on non-vRAF services (e.g. Facebook, Snapchat etc.). Members should not copy or take screenshots of material containing personal data and should instead use the original access method provided by Air Command, thus ensuring that only those permitted to access this data will be able to view it.

Any breaches of this policy - accidental or otherwise - should be reported to Air Command as soon as possible.

SECTION 3 | **ORGANISATIONAL STRUCTURE**

3.1 Authority

Members are required to comply with legitimate instructions issued by a more senior member of the chain of command.

3.1.1 Centralisation of Authority

Authority granted to any member is automatically available to more senior members of the chain of command.

3.1.2 Chain of Command

The vRAF chain of command is as follows, from the most senior member descending;

1. Chief of the Air Staff (CAS)
2. Deputy Commander Operations (DCOM OPS)
3. Group Air Officer Commanding (Group AOC)
4. Air Command Advisors
5. Force Commanders
6. Squadron Commanders

The current command structure and assignment of roles can be found in VAPTAMs in the "Personnel" section.

3.2 Ranks and Promotion Criteria

Rank	Abbreviation	Responsibilities
Officer Cadet	Off Cdt	All New Pilots
Pilot Officer	Plt Off	Completion of Type Conversion (TC) training
Flying Officer	Fg Off	Completion of Advanced Phase (AP) training
Flight Lieutenant	Flt Lt	See Flight Lieutenant Promotion Criteria
Squadron Leader	Sqn Ldr	See Squadron Leader Promotion Criteria
Wing Commander	Wg Cdr	Squadron Commander
Group Captain	Gp Capt	Force Commander
Air Commodore	Air Cdre	Air Command Advisor
Air Vice Marshal	AVM	Group AOC
Air Marshal	AM	DCOM OPS
Air Chief Marshal	ACM	CAS

3.2.1 Flight Lieutenant Promotion Criteria

Promotion to Flt Lt may be considered upon completion of the following criteria:

- 25 hours flying time completed post OCU for fast jet and rotary aircraft types;
- 50 hours flying time completed post OCU for heavy aircraft types;
- 10 flights completed post OCU;
- All extra qualifications specific to that aircraft type completed (except QFI).

Members who believe they have completed the requirements should contact their Squadron Commander.

3.2.2 Squadron Leader Promotion Criteria

Promotion to Sqn Ldr (and above) is at the discretion of Air Command and is dependent on the availability of roles within the Chain of Command. Where more than one suitable candidate exists, Air Command may choose to invite applications for a vacant role.

3.3 Air Command

vRAF is governed by 'Air Command' which is a group of the most senior vRAF members. Members of Air Command can be identified on TeamSpeak by a fin flash denoting the Air Command server group.

Air Command normally govern by consensus, but where an agreement on an issue cannot be reached then a vote of Air Command staff will be used to settle debates. Where a tie of votes occurs, the Chief of the Air Staff shall have the deciding vote.

The members of Air Command are;

3.3.1 Chief of the Air Staff (CAS)

CAS is the most senior member in vRAF, responsible for liaising with the VSOA, VATSIM UK and other third parties. CAS holds the rank of Air Chief Marshal (ACM).

3.3.2 Deputy Commander Operations (DCOM OPS)

DCOM OPS is responsible for the day-to-day running of vRAF and assists CAS with external communications. DCOM OPS holds the rank of Air Marshal (AM).

3.3.3 Air Officer Commanding 1 Group (AOC 1)

AOC 1 Group is responsible for the management of all 1 Group activities and squadrons, including the BBMF. AOC 1 holds the rank of Air Vice Marshal (AVM).

3.3.4 Air Officer Commanding 2 Group (AOC 2)

AOC 2 Group is responsible for the management of all 2 Group activities and squadrons. AOC 2 holds the rank of Air Vice Marshal (AVM).

3.3.5 Air Command Advisors

The purpose of this role is to preserve the experience levels within the organisation. Air Command members retiring from their roles may be offered a position as an Advisor by Air Command. Air Command Advisors hold the rank of Air Commodore.

3.3.6 The Webmaster

The Webmaster is responsible for maintaining vRAF's online services including but not limited to; TeamSpeak, forum, VAPTAMS, ATAMS and the website. The Webmaster shall hold a suitable rank as determined by Air Command.

3.4 Force Commanders

Force Commanders are responsible for the squadrons under their command, their associated aircraft types and training activities on those aircraft. Force Commanders hold the rank of Group Captain (Gp Cpt).

There are 6 Force Commander roles as follows;

3.4.1 Typhoon Force Commander

The Typhoon Force Commander reports to AOC 1 Group and is responsible for all Typhoon squadrons.

3.4.2 Lightning Force Commander

The Lightning Force Commander reports to AOC 1 Group and is responsible for all F35 Lightning squadrons.

3.4.3 Maritime and AEWC Force Commander

The Maritime and Airborne Early Warning and Control (AEWC) Force Commander is responsible for all squadrons of aircraft whose primary role is maritime patrol or AEWC and reports to AOC 1 Group.

3.4.4 Voyager Force Commander

The Voyager Force Commander reports to AOC 2 Group and is responsible for all Voyager squadrons and air-to-air refuelling operations.

3.4.5 Air Mobility Force Commander

The Air Mobility Force Commander reports to AOC 2 Group and is responsible for all squadrons of aircraft with a primary role of air transport.

3.4.6 Rotary Force Commander

The Rotary Force Commander reports to AOC 2 Group and is responsible for all rotary squadrons.

3.5 Squadron Commanders

Squadron Commanders report to their respective Force Commander. They are responsible for all squadron activities required to achieve/maintain combat readiness. Squadron commanders may plan overseas exercises and operations with the approval of their Force commander. Squadron Commanders hold the rank of Wing Commander (Wg Cdr).

SECTION 4 | **TRAINING AND QUALIFICATIONS**

All pilots must undergo training prior to commencing operational flying on any aircraft type. Training is divided into stages, which are laid out in this section. Utilisation of the various stages of training is at the discretion of Air Command - individual stages may be suspended at any time to cope with changes in training capacity. The current training process is detailed in the NOTAMs section of VAPTAMS. No specific time limit exists for any stage of training; however, a student must demonstrate regular commitment to completing the training process. Each module of training must be completed in its entirety before the next may be commenced.

4.1 Initial Training for New Pilots

4.1.1 Fast Track Training

New pilots who have real world experience may be allowed to fast track or skip certain stages of training. Evidence to support this must be submitted in writing to Air Command who will assess the student's training requirements on a case-by-case basis with the relevant Force Commander. Care must be taken to ensure mandatory VSOA training is completed.

4.1.2 Training on Other Aircraft Types

After completion of their first Advanced Phase, pilots may request training on another aircraft type. The training required will be proportionate to the differences and experience will be taken into account. The training required will be at the discretion of the Force Commander responsible for the new aircraft type. Significant reductions in OCU training for the new type may be permissible in coordination with the relevant Group AOC.

4.1.3 Basic Flying Training

4.1.3.1 Fast Jet

Students training streamed to multi engine aircraft must complete Basic Fast Jet Training (BFJT).

4.1.3.2 Multi Engine

Students training streamed to multi engine aircraft must complete Basic Multi-Engine Training (BMET).

4.1.3.3 Rotary

Students streamed to rotary aircraft must complete a basic helicopter flying course at the Defence Helicopter Flying School (DHFS).

4.2 Operational Conversion

In order to operate an aircraft type, pilots must complete training on an Operational Conversion Unit (OCU). OCU is divided into 2 stages, both of which are described the aircraft specific Operations Manual (Part D).

Note: *New pilots must complete both stages of OCU on their first aircraft type.*

4.2.1 Type Conversion (TC) Training

TC qualifies pilots to operate the aircraft in all normal and non-normal scenarios, but does not include role-specific tactical training. Following successful completion of TC, pilots may operate the aircraft in limited, non-tactical scenarios, including:

- Air Transport (AT) taskings;
- Air-to-Air Refuelling training (as receiver only);
- Carrier Operations.

4.2.1.1 Solo Clearances

Prior to completion of TC, QFIs may grant limited solo clearances to students. QFIs will ensure the limits of a solo clearance are clear to the student. Adherence to clearance limits will be closely monitored. Deviation from these clearances may result in disciplinary action.

4.2.2 Advanced Phase (AP) Training

Following successful completion of AP, pilots are considered to have achieved Combat Readiness (CR) and may operate the aircraft in tactical scenarios, including:

- ACM;
- Bombing;
- Search and Rescue;
- Air-to-Air Refuelling (operationally);
- Overseas deployments including multi-VSO exercises;
- Other tactical flying as described in the aircraft OM-B.

Note: *In order to meet the Activity Requirements, pilots must maintain Combat Readiness on at least one aircraft type, unless they are new pilots completing initial training or their first Operation Conversion.*

4.3 Continuation Training

Once a pilot has completed OCU, flying standards must be maintained. Continuation training is to be arranged and conducted by Squadron Commanders to ensure standards are maintained amongst line pilots.

4.3.1 Check Flights

Squadron Commanders may require QFIs to conduct check flights in order to establish or improve the standard of pilots who are suspected to have fallen below the standard required for vRAF/VSOA operations.

Pilots whose aircraft qualifications expire or those returning from long periods of absence or retirement will be required to complete a check flight.

4.3.2 Refresher Training

Pilots may request or Squadron Commanders may assign refresher training as required. This may involve re-assigning pilots to any stage of the flying training system or assigning a bespoke package as required.

4.4 Air-to-Air Refuelling (AAR) Training

AAR training is mandatory for all pilots before being authorised to conduct AAR operationally. Upon successful completion of this training an AAR qualification will be issued with limited validity;

- Receiver aircraft - 3 months;
- Tanker aircraft - 6 months.

4.4.1 Limitations

Pilots must have completed type conversion prior to AAR training.

If a pilot does not have a valid AAR qualification they shall not;

- Act as pilot flying of an aircraft engaged in AAR operations unless they are undergoing training in accordance with this section or;
- Undergo any AAR training outside of either the UK FIRs or the airspace of UK overseas territories. This limitation may be amended temporarily on a case-by-case basis by the Voyager Force Commander. Any such alleviation to this rule shall be specific and singular in nature.

AAR shall be conducted in accordance with the vRAF Air-to-Air Refuelling Guide.

4.4.2 Receiver AAR Qualifications

There are 3 categories of receiver AAR qualifications, based on aircraft type.

1. Fast Jets [EUFI/VF35]
2. Turboprop Aircraft [A400/C130]
3. Other heavy aircraft [E3D]

4.4.2.1 Initial Receiver AAR Qualification

Required if either:

- Pilot has not held that category of receiver AAR qualification previously or;
- More than 12 months has elapsed since that category of receiver AAR qualification was last valid.

Training and qualifying sorties:

- Conducted by an Air-to-air Refuelling Instructor (AARI). The AARI's tanker AAR qualification must be valid. The AARI must act as tanker captain;
- If the receiver has not held any category of AAR receiver qualification before, then the sortie must be supervised by a pilot with a valid AAR qualification and QFI rating on the same category of aircraft;
- Include multiple 'contacts' of sufficient duration to assess and ensure competency as determined by the AARI;
- Include emergency drills and contingencies.

4.4.2.2 Revalidation of Receiver AAR Qualification

The training required in section 3.7.2.1 may be shortened if:

- Pilot holds or has held that category of AAR qualification previously and;
- Less than 12 months has elapsed since that category of AAR receiver qualification was last valid.

Shortened training and qualifying sorties:

- Conducted by a tanker pilot with a valid AAR qualification. It is acceptable for the tanker pilot to also be revalidating their AAR qualification. The AAR qualified tanker pilot must act as tanker captain;
- Include multiple 'contacts' of sufficient duration to ensure competency as determined by both the tanker and receiver;
- Include emergency drills and contingencies.

4.4.3 Tanker AAR Qualifications

4.4.3.1 Initial Tanker AAR Qualification

Required if either:

- Pilot has not held a tanker AAR qualification previously or;
- More than 12 months has elapsed since their tanker AAR qualification was last valid.

Training and qualifying sorties must:

- Be conducted by an Air-to-air Refuelling Instructor (AARI). The AARI's tanker AAR qualification must be valid. The AARI may act as part of the crew of the tanker or as part of the crew of another aircraft operating within the near vicinity of the tanker within sufficient proximity to supervise refuelling operations;

- Be supervised by a pilot with a valid receiver AAR qualification and QFI rating on the same category of aircraft as all receivers. (This pilot may be the AARI if they are suitably qualified for both purposes);
- Include multiple 'contacts' of sufficient duration to assess and ensure competency as determined by the AARI;
- Include emergency drills and contingencies.

4.4.3.2 Revalidation of Tanker AAR Qualification:

The training required in section 3.7.3.1 may be shortened if:

- Pilot holds or has held a tanker AAR qualification previously and;
- Less than 12 months has elapsed since their tanker AAR qualification was last valid.

Shortened training and qualifying sorties must:

- Be conducted by a receiver pilot with a valid AAR qualification. It is acceptable for the receiver pilot to also be revalidating their AAR qualification. The AAR qualified tanker pilot must act as tanker captain;
- Include multiple 'contacts' of sufficient duration to ensure competency as determined by both the tanker and receiver;
- Include emergency drills and contingencies.

4.4.4 AARI Qualifications

(Re-)training and qualification process shall be determined by the Voyager Force Commander on a case-by-case basis.

4.4.5 Air-to-air Refuelling Matrix

This diagram is not intended as a replacement for a complete and proper understanding of the rules contained within this section. It is to be used as a guide only and is not controlling.

	AAR approved; normal restrictions apply.
	AAR not permitted, AAR Training possible, check restrictions.
	Not authorised.

	Tanker AAR Valid (AARI)	Tanker AAR Valid (NON-AARI)	Tanker AAR invalid (<12 months)	Tanker AAR invalid (>12 months)	Tanker AAR (never qualified)
Receiver AAR Valid (QFI)				AARI ALSO REQD	AARI ALSO REQD
Receiver AAR Valid (NON-QFI)					
Receiver AAR invalid (<12 months)					
Receiver AAR invalid (>12 months)	QFI REC'VR ALSO REQD				
Receiver AAR (never qualified in that category)	QFI REC'VR ALSO REQD				

4.5 Quick Reaction Alert Training (QRA)

QRA training is mandatory for all pilots before being authorised to conduct QRA sorties operationally.

- Training may not take place on 'live' QRA scrambles;
- QRAs shall be conducted in accordance with the vRAF Interceptions Standard Operating Procedure;
- QRA training (Typhoon) shall be conducted in accordance with the Typhoon FGR.4 OMB;
- QRA training (Voyager) shall be conducted in accordance with the Airbus Voyager KC.2/KC.3 OMB.

QRA qualified pilots can be identified on TeamSpeak by the QRA patch symbol denoting the QRA server group.

4.6 Qualified Flight Instructor Training (QFI)

Pilots applying for the role of QFI must meet the following minimum requirements:

- A minimum rank of Flt Lt;
- A good training record;
- A clean disciplinary record.

Pilots meeting the minimum requirements may apply to the relevant Force Commander, this should include a short explanation of why they want to become a QFI. Applications will be reviewed by the Force Commander in consultation with the relevant group AOC.

If successful, training required to achieve qualification as a QFI will be in accordance with the relevant OMB for the aircraft type. QFIs can be identified on TeamSpeak by the prop symbol denoting the QFI server group.

If the application is unsuccessful, feedback will be provided.

4.7 Fighter Control Training

Fighter Controller training must be completed before being authorised to conduct fighter control. The training requirements are not yet established.

4.8 Forward Air Control (FAC) Training

Forward Air Control training must be completed before being authorised to conduct Forward Air Control in accordance with 5.4. Training requirements are not yet established.

4.9 Aircraft Currency

vRAF operates a currency system to mitigate the potential threat of 'skill fade' due to a lack of recency. Pilots may only fly if they are 'current' or 'in the green' on the specific aircraft type operated.

The currency system is accessed through the Pilot Centre in VAPTAMS. Current aircraft qualifications are shown in green, qualifications expiring within 14 days are shown in amber and expired qualifications are shown in red.

In order to remain current, pilots are required to log a minimum of 1 hours flight time (cumulative) in the last 90 days.

4.9.1 Procedure for expiration/re-validation

If an aircraft qualification expires, pilots must complete a check flight.

Any flights flown whilst "in the red" (aircraft qualification invalid) will be rejected.

If a qualification remains expired for 1 year then it will be deemed null and void. In this instance the pilot must complete the relevant OCU syllabus again.

4.9.2 Exceptions

Qualifications for the following aircraft types remain valid indefinitely once awarded;

- All BBMF aircraft
- [FA20]
- [HAWK]
- [H135]
- [E50P]
- [TEX2]
- [G115]

4.10 Required Competency

vRAF requires a high level of competency and professionalism from its pilots. Those who demonstrate a frequent and regular commitment and dedication to training but fail to meet the required standards, may be offered redeployment or honourable discharge as appropriate.

4.10.1 Wilful Neglect

Pilots who repeatedly fall below the standard required for vRAF/VSOA operations due to negligence, wilful neglect or lack of engagement with training may be referred for disciplinary procedures.

SECTION 5 | **FLIGHT OPERATIONS**

5.1 Aircraft Types Operated

vRAF operates the aircraft types listed in the 'Squadrons' section of VAPTAMS.

5.1.1 Historical Aircraft

Normally vRAF only operates aircraft currently in service with the Royal Air Force, however members are permitted to fly a selection of airframes that do not meet this criterion, herein: historical aircraft. Flights on historical aircraft are subject to the following limitations:

- Flight time logged on historical aircraft shall not exceed 50% of a member's total flight time in a rolling 90-day period;
- Initial OCU must be complete;
- The historical aircraft being flown must be of similar type to a type the member is qualified on. e.g. completed a fast jet OCU to fly a historical fast jet;
- Historical aircraft are not to be used during training sorties, active operations or exercises;
- Historical aircraft are not to leave the UK FIRs without consent from Air Command;
- A list of current historical aircraft permitted and associated limitations is published in the NOTAMs section of VAPTAMS.

5.2 General Flight Procedures

5.2.1 Flight Preparation

A pilot will not commence a flight unless he is satisfied that:

- The flight has been authorised by the relevant personnel;
- They are suitably qualified and any required currencies will remain in date for the duration of the flight;
- The planned routing is compliant with any limitation (e.g. restricted FIRs) or solo clearance;
- The aircraft is able to comply with relevant minimum flight altitudes (MFAs) and required procedure climb gradients;
- Sufficient fuel and is loaded in accordance with 4.3;
- The aircraft is loaded in accordance with operating instructions;
- Operating weights and limits as specified in the relevant aircraft documentation will not be exceeded;
- Navigational equipment, charts and maps required for the flight are available and functional.

5.2.2 Standing Approval

All flight operations within the UK FIRs have standing approval and do not require the express permission of any member of the chain of command provided that the operation is consistent with the normal operation of that aircraft type.

5.2.2.1 Operations Outside of the United Kingdom FIRs

Operations outside the UK FIRs require the specific approval of the force commander responsible for the aircraft type operated. The following operations have standing approval unless otherwise notified:

- 2 Group aircraft completing a tasking from the tasking system in VAPTAMS;
- Aircraft permanently based outside of the UK operating within UK overseas territories and airspace;
- Aircraft operating from a carrier;
- Aircraft operating as part of a pre-briefed/arranged exercise e.g. VATMILEX.

5.2.3 Weapons of Mass Destruction

The carriage of weapons of mass destruction in any form is prohibited.

5.2.4 Multi-Crew Operations

Multi crew operations via a shared cockpit function are permitted:
Both pilots are allowed to log the hours for a flight undertaken;
One pilot must be designated as the pilot-in-command and should login to VATSIM normally. The second pilot should login in observer mode;
The pilot in command is ultimately responsible for the aircraft.

5.2.5 Aircraft Ratings

Pilots will be issued with aircraft ratings and qualifications in accordance with section 3. Pilots may only operate aircraft they have a rating for.

5.2.6 Separation

Appropriate separation shall be applied and maintained at all times. Exceptions:
Formation flying – All parties involved must agree before the formation begins and, where necessary, ATC must be informed that MARSA (Military Accepts Responsibility for Separation of Aircraft) rules apply;

- Operational Exercises – Predetermined operations;
- Air-to-Air Refuelling – Permission must be sought from the tanking aircraft to reduce separation;
- Interception and escort duties.

5.2.7 Interception

When intercepting aircraft not operated by a VSOA partner, permission to reduce separation below 10nm must be sought from the intercepted aircraft.

5.2.8 Visual Circuit Capacity

Utilisation of the visual circuit is at the discretion of the controlling agency. However, it is recommended that no more than 4 aircraft operate continuously and concurrently in the visual circuit.

5.3 Virtual Air Traffic Simulation Network (VATSIM)

All flights are to be conducted on the VATSIM Network for the entirety of the flight, with the following exceptions:

- For flights with an airborne time of greater than **3 hours**, pilots must be connected to the VATSIM network for a minimum of **66% of flight time or 5 hours** (whichever is less).

Greater periods of disconnection may be permissible following prior consultation with Air Command.

5.3.1 Flight Plans

Members are required to file flight plans on the VATSIM network. Every effort should be made to ensure they are accurate and professional in their appearance:

- Routings should be as detailed as possible;
- The remarks section of the flight plan should follow the format provided on the relevant squadron information page. If no examples are available you must include the following as a minimum. “OPR/ VRAF.NET”.

5.3.2 Offline flying

Exceptionally and only with the express permission of Air Command, flights may be conducted without connecting to the VATSIM network. Operations of this nature are to be minimised.

5.3.3 Restricted Operations

vRAF members are forbidden to simulate any operation which portrays a past or ongoing real-world conflict where loss of life or property has resulted from political, social or religious objectives.

Exceptionally and only with the express permission of Air Command, members may be permitted to simulate real world conflicts. In this case, members shall not connect to the VATSIM network.

5.4 Fuel Planning

Pilots must ensure that at all times:

- The aircraft carries at least the planned amount of usable fuel to complete the flight safely, taking into account the expected operating conditions and;
- Should any planned airborne fuel transfer not be successful, the ability to land at a suitable alternate with appropriate fuel reserves intact is assured. (Note: this second restriction may be suspended with the express permission of Air Command to facilitate operational requirements).

Factors that may influence fuel required on a particular flight in an unpredictable way include deviations of an individual aircraft from the expected fuel consumption data, deviations from forecast meteorological conditions and deviations from planned routings and/or cruising levels/altitudes.

For all flights, the required block fuel is the sum of;

5.4.1 Taxi Fuel

The amount of fuel, expected to be used prior to take-off. Local conditions at the departure aerodrome and auxiliary power unit (APU) consumption shall be taken into account.

5.4.2 Trip Fuel

The trip fuel includes:

- Fuel for take-off and climb from aerodrome elevation to initial cruising level/altitude, taking into account the expected departure routing;
- Fuel for cruise from top of climb to top of descent, including any step climb/descent and manoeuvring;
- Fuel for descent from top of descent to the point where the approach procedure is initiated, taking into account the expected arrival procedure;
- Fuel for an approach and landing at the destination aerodrome.

5.4.3 Contingency Fuel

Contingency fuel shall be the higher of:

- 5% of the planned trip fuel OR 3% of the planned trip fuel provided that a fuel enroute alternate (ERA) aerodrome is available;
- An amount to fly for 5 minutes at holding speed at 1500 ft, above the destination aerodrome in standard conditions.

5.4.4 Alternate Fuel

Alternate fuel shall include:

- Fuel for missed approach from the applicable minima at the destination aerodrome to missed approach altitude, taking into account the complete missed approach procedure;
- Fuel for climb from missed approach altitude to cruising level/altitude taking into account the expected routing;
- Fuel for cruise from top of climb to top of descent taking into account the expected routing;
- Fuel for descent from top of descent to the point where the approach is initiated, taking into account the expected arrival procedure;
- Fuel for executing an approach procedure and landing at the destination alternate aerodrome selected.

If the weather or serviceability of the destination aerodrome is below minima at the time of dispatch, then fuel for two destination alternate aerodromes is required. The fuel carried shall be sufficient to proceed to the destination alternate aerodrome that requires the greater amount of alternate fuel.

5.4.4.1 Isolated Aerodrome

An aerodrome shall be considered to be an isolated aerodrome if the flying time to the nearest adequate destination alternate aerodrome is more than 90 minutes. An isolated aerodrome is one for which the alternate and final fuel reserve required to the nearest adequate destination alternate aerodrome is more than fuel to fly for two hours at normal cruise consumption.

In this instance, the requirement to carry alternate fuel and final reserve fuel may be replaced by carrying:

- Fuel to fly for 2 hours at normal cruise consumption.

Use of the isolated aerodrome procedure requires the approval of the relevant Force Commander.

5.4.5 Final Reserve Fuel

Fuel to fly for 30 minutes at holding speed at 1500 ft above the destination alternate aerodrome elevation in standard conditions, calculated with the estimated weight on arrival at the destination alternate aerodrome.

5.4.6 Additional Fuel

Additional fuel on top of the planned block such that the aircraft can, from the most critical point, descend as necessary and proceed to an adequate alternate aerodrome in the event of:

- engine failure;
- loss of pressurization;
- failure to receive fuel whilst airborne via an inflight refuelling system;

whichever requires the greater amount of fuel, then:

- Hold there for 15 minutes at 1500 ft above aerodrome elevation in standard conditions;
- Make an approach and landing.

5.4.7 Airborne Fuelling

Fuel designated for airborne transfer to other aircraft via an inflight refuelling system.

5.4.8 Extra Fuel

Extra fuel is fuel taken at the discretion of the commander.

5.5 Stabilised Approach Criteria

Fixed wing aircraft shall be stabilised on final approach at latest:

- 1000 ft AGL in IMC or;
- 500 ft AGL in VMC.

An approach is considered stabilised when all of the following criteria are met:

1. Aircraft on the correct flight path, with only small changes in heading (wings level) and pitch required to maintain the correct flight path. During a visual or circling approach, this may be delayed to 300 ft AGL.
2. In the landing configuration
3. Between +10 kts and -5 kts of final approach speed
4. Rate of descent maximum 1000 ft/min unless previously briefed (e.g. steep approach)
5. Thrust setting appropriate for aircraft configuration
6. All checklists completed.

If the above criteria are not met and maintained, a go-around shall be performed. These criteria are hard limits, not targets.

5.6 Meteorological Operating Minima

Flights must be operated in accordance with either:

- Visual Flight Rules (VFR);
- Special Visual Flight Rules (SVFR);
- Instrument Flight Rules (IFR).

Meteorological minima vary based on local regulations and class of airspace.

Aircraft shall only be operated if the reported weather conditions are within the limits published in vRAF Operations Manuals.

The limits specified in this section are binding for all aircraft types but may be modified in accordance with Section 4.6 (Low Visibility Operations) for suitably qualified crews and certified aircraft only.

If reported, runway visual range (RVR) shall be controlling. If it is not reported then meteorological visibility (VIS) may be converted to RVR using the following table if required to determine minima.

Lighting System	**RVR = VIS x ___**	
	Day	Night
High-intensity approach and runway lighting system (HIALS)	1.5	2.0
Other lighting system	1.0	1.5
No lighting system	1.0	Not Authorised

5.6.1 Take-off Operations

A take-off shall only be commenced if the reported RVR/VIS is equal to or better than the required minima. The minimum RVR for takeoff shall be the greater of:

- the published take-off minima;
- 400m if the runway is lighted;
- 500m if the runway is not lighted (day only);
- the applicable landing minima where a takeoff alternate aerodrome is not available within one hour's flight time or ETOPS diversion range.

If the reported RVR/VIS is lower than the applicable minimum or none is reported, the takeoff may only be commenced if the commander can determine that the prevailing RVR/VIS is above the applicable minimum by visual assessment along the take-off runway.

5.6.2 Approach Operations

Without a current and valid LVO qualification on the aircraft operated, instrument approaches may be conducted to a lowest of category I (CAT I) minima.

An instrument approach may be commenced regardless of reported RVR/VIS.

If the reported RVR/VIS is below the published minima for the approach then the approach shall not be continued below the approach ban point which is defined as:

- 1000ft above the aerodrome;
- the outer marker (OM) or;
- the final approach fix where the DA/H or MDA/H is above 1000ft above the aerodrome.

If, after passing the approach ban point, the reported RVR/VIS falls below the applicable minimum then the approach may be continued to DA/H or MDA/H.

The approach may only be continued below DA/H or MDA/H if the visual reference required for the approach type is obtained by DA/H or MDA/H and can be maintained.

5.6.2.1 Visual References required for Non-Precision Approach (NPA) and CAT I Operations

At DA/H or MDA/H, at least one of the visual references specified below shall be distinctly visible and identifiable to the pilot:

- Elements of the approach lighting system;
- The threshold;
- The threshold markings;
- The threshold lights;
- The threshold identification lights;
- The visual glide slope indicator;
- The touchdown zone or touchdown zone markings;
- The touchdown zone lights;
- Runway edge lights.

5.6.2.2 Continuous Descent Final Approach Technique

The minimum descent altitude/height (MDA/H) published for a non-precision approach (NPA) may be flown using the continuous descent final approach (CDFA) technique without modification.

5.6.2.3 Visual Approach

A 'visual approach' is the termination of an IFR flight when either part or all of an instrument approach procedure is not completed and the approach is executed with visual reference to the terrain. The minimum meteorological requirements for a visual approach are:

- The cloud ceiling is 2000ft AGL or above;
- The visibility is 5000m or greater;
- The RVR is 800m or greater.

If an aircraft executing an instrument approach or under positive radar control in weather conditions less than those specified above, can obtain and maintain VMC consistent with either Visual Flight Rules (VFR) or Visual Circuit (Alternative Minima) then the approach may be continued visually and/or may join the visual circuit.

Go around during a visual approach: request an appropriate clearance/instruction from ATC as soon as practicable (preferably before executing the visual approach) as the instrument missed approach may not be appropriate.

During a visual approach at night, fewer visual references are available. Visual illusions and spatial disorientation may occur affecting the pilot's situational awareness.

The following shall be carefully considered:

- Weather requirements for a visual approach in 4.5.3 must be met;
- Route and altitude;
- Pertinent obstacles and hazards, their illumination and visibility;
- Availability of onboard electronic glidepath/slope information;
- Separation from other aircraft;
- Route and altitude that will be flown in case of missed approach and diversion, including the conditions in which IMC can be entered safely again.

5.6.3 Visual Circuit (Alternative Minima)

If the weather conditions required for VFR flight are not prevailing then an aircraft may join the visual circuit providing the following can be maintained:

- Clear of clouds;
- Cloud base greater of;
    - 1000ft AGL
    - circuit height plus 200ft
- Visibility 5000m or greater.

The use of the visual circuit is ultimately at the discretion of the controlling agency and may be refused for other operational reasons (i.e. integration with IFR traffic).

5.7 Low Visibility Operations (LVO)

This section describes procedures for LVO only and are supplementary to the procedures laid out in section 4.5. Low Visibility Operations are defined as any:

- Takeoff with an RVR below 400m;
- Precision approach below CAT I minima.

This section is only applicable to those aircraft certified for LVO which are;

- [A332];
- [P8];
- [E738].

Pilots may only conduct LVO if they have successfully completed an LVO qualification course on the specific aircraft type operated.

5.7.1 LVO Taxi

During LVO taxi, pilots shall:

- Limit taxi speeds to a maximum of 10kts;
- Not conduct any checklists whilst the aircraft is in motion;
- Not make any FMC entries whilst the aircraft is in motion;
- Observe local CAT II/III taxi procedures, e.g. holding points;
- Make use of aircraft headings, stand numbers, taxi signage and/or progressive taxi instructions to aid situational awareness.

5.7.2 LVO Takeoff (LVTO)

An LVTO shall only be commenced if;

- The reported RVR is greater than or equal to the published minimum;
- The RVR is greater than;
  - [A332/P8/E738] 125m
- The applicable aerodrome facilities are serviceable;
- Low Visibility Procedures (LVP) are in force when ATC is online.

5.7.3 LVO Approach

An LVO approach is any precision approach operated to lower than CAT I minima. All LVO landings must be an autoland.

An LVO approach shall only be commenced if:

- The reported RVR is greater than or equal to the published minimum;
- The RVR is greater than;
    - [A332] 75m
    - [P8/E738] 200m
- The applicable aerodrome facilities are serviceable;
- Low Visibility Procedures (LVP) are in force when ATC is online.

5.7.3.1 Required Visual Reference

At DA/H, all of visual references specified below shall be distinctly visible and identifiable to the pilot:

Approach	Required Visual Reference at DA/H
CAT I	As per 5.5.2.1
CAT I (LTS)/ CAT II/ CAT II (OTS)	A segment of 3 consecutive approach, centreline or edge lights and a lateral element such as a crossbar of the lighting system or runway markings.
CAT IIIA	A segment of 3 consecutive approach, centreline or edge lights.
CAT IIIB (with DH)	One light.
CAT IIIB (without DH)	No visual reference required.

5.7.3.2 Minimum DH/RVR

Approaches may be conducted to no less than the following minimum DH and minimum RVR:

Approach	Minimum DH	Minimum RVR
CAT I	200ft	550m
CAT I (LTS)	200ft	400m
CAT II	100ft	300m
CAT II (OTS)	100ft	350m
CAT IIIA	50ft	200m
CAT IIIB	No DH	75m

Note: Some national authorities do not recognise operations with no decision height. In this instance, the decision height shall be 10ft.

5.8 Long Range Operations in Oceanic Airspace and Extended Range Operations for Two-Engine Aeroplanes (ETOPS)

Oceanic airspace is procedurally controlled airspace outside of radar coverage. For vRAF operations, flight into oceanic airspace usually coincides with ETOPS flights.

ETOPS routes are flights conducted over a route that contains a point further than one hour flying time at the approved one-engine inoperative cruise speed (under standard conditions in still air) from an adequate aerodrome.

Generally, no vRAF aircraft may operate ETOPS routes with the following exceptions;

a. Aircraft with greater than two main engines are exempt from ETOPS restrictions:

- [A400]
- [C17]
- [C30J]
- [E3CF]

b. Aircraft approved for ETOPS:

- [A332]
- [E738]
- [P8]

c. Aircraft capable of air-to-air refuelling operating as part of a trail where;

- The trail is commanded by a tanker pilot with a current AAR qualification on the tanker before departure.
- Pilots of trail aircraft have a current AAR qualification on the trail aircraft before departure.
- The route does not exceed the ETOPS approved diversion time of the tanker aircraft.
- The tanker aircraft carries sufficient excess fuel for airborne refueling (4.3.7) such that the receiving aircraft can uplift sufficient fuel to comply with the minimum fuel requirements specified in 4.3.
- At all times, the trail aircraft hold fuel sufficient to descend as necessary and proceed to an adequate alternate aerodrome from the most critical point in the event of;
    - engine failure
    - loss of pressurisation
    - failure to receive fuel airborne via an inflight refueling system.

whichever requires the greater amount of fuel. Then;

- Hold there for 15 minutes at 1500 ft above aerodrome elevation in standard conditions
- Make an approach and landing.

5.8.1 Approved Diversion Time

The maximum range (in nautical miles) that an ETOPS approved aircraft can fly from a suitable enroute alternate is based on the one engine inoperative cruise speed which is different for each aircraft type. This speed is a nominated value that remains constant from flight to flight. This speed is also used to establish a single engine level off altitude and critical fuel scenarios.

Note: this planning range is a still air distance and may result in the aircraft being greater than the maximum approved diversion time away from a suitable alternate if the winds are unfavourable - this is acceptable.

The maximum approved diversion times for ETOPS approved vRAF aircraft are;

- [A332] - 180 minutes at 400kts TAS (1200nm);
- [P8/E738] - 120 minutes at 400kts TAS (800nm).

5.8.2 Qualifications

Before conducting unsupervised ETOPS/Oceanic flights, vRAF all pilots shall undergo training.

5.8.3 ETOPS Operating Procedures

All ETOPS/oceanic flights will be conducted in accordance with the vRAF Oceanic Airspace and ETOPS Guide.

5.8.4 Operation of Aircraft without HF/Multiple Long Range Navigation System (LRNS) without Tanker Support

Preferentially, a Voyager shall always accompany fast jet aircraft types transiting through the NAT HLA. However, this may not always be possible and this section contains provision for this.

vRAF permits the operation of the following aircraft types without tanker escort which do not have the standard equipment required for operation in the NAT HLA.

- [EUFI/VF35] Single LRNS and no HF radio.

5.8.4.1 Limitations

- Approval must be sought from Air Command.
- These aircraft may only be flown on the following “Blue Spruce” routes where VHF coverage is assured above FL300.

FROM EGQS TO/FROM BIKF/CYYR
PIPEM L613 BAMRA PEMOS G11 MY G3 KFV EPENI 63N030W 61N040W OZN 58N050W HOIST YYR
PIPEM L613 BAMRA UP61 RATSU ALDAN KFV EPENI 63N030W 61N040W OZN 58N050W HOIST YYR

Other routings may be possible if the destination is not BIKF/CYYR - contact operations.

5.9 Flight Recording

All flights must be recorded via a form 414 report (F414).

All flights should normally use a F414 generated by ATAMS flight tracking software. Any issues encountered whilst using ATAMS must be reported to the Webmaster via the helpdesk.

If submitting a F414 report via ATAMS is not possible then, exceptionally, F414s may be generated manually. If an F414 report is submitted manually, justification as to why ATAMS was not used must be included in the comments.

5.9.1 Review of F414 Reports

All F414 reports shall be reviewed for compliance with the vRAF Operations Manuals. Flights that show evidence of wilful non-compliance may be rejected. In this instance the flight time will not be credited.

5.10 Safety Reporting System

vRAF operates a safety reporting system in order to identify and minimise trends that would adversely affect flight safety. Safety incidents shall be reported using the Defence Aviation Safety Occurrence Report (DASOR) system in VAPTAMS.

5.10.1 Mandatory Reporting

The following incidents must be reported via DASOR:

- Exceedance of any aircraft limitation;
- Landing from an approach where the stabilised approach criteria was not met;
- Hard landing (as determined by VAPTAMS);
- Significant aircraft malfunction;
- Runway or taxiway excursion;
- Collision with any obstacle, aircraft or the ground;
- Landing below final reserve fuel;
- AIRPROX;
- Generation of an ACAS 'resolution advisory' (RA);
- Activation of GPWS warning;
- Non-compliance with ATC instructions;
- Known non-compliance with any vRAF Policy.

Failure to report any of the above incidents may lead to disciplinary action.

5.10.2 Investigation

Safety incidents will be reviewed by a member of Air Command when accepting the F414. If an incident warrants further investigation then a member of Air Command will be assigned to manage the investigation. They shall be responsible for liaising with any external agencies.

Serious incidents requiring immediate intervention shall be reported by the most expeditious means possible to a member of Air Command.

5.10.3 Just Culture

vRAF operates a "just culture" safety reporting system

No punitive action shall be taken as a result of any incident reported via DASOR that was not the result of a wilful violation of vRAF Operations Manuals.

Pilots responsible for delayed, unreported occurrences or incidents that occurred as a result of a wilful violation of vRAF Operations Manuals may be referred to disciplinary procedures.

5.11 Airframe Transit

Airframe transit is a method vRAF uses to simulate an aircraft being flown from one location to another without a pilot actually flying it. Therefore its use shall be limited;

- The use of airframe transit is at the discretion of Air Command, normally the relevant Group AOC. It shall only be used to transit aircraft required for overseas exercises outside of Europe.
- It may only be used for a maximum of 50% of transit flights required for any one exercise.
- It may only be used for Typhoon and helicopters.
- It may not be used for flights not specifically associated with an overseas exercise.

5.12 Carrier Operations

vRAF may conduct operations from/to a landable ship in accordance with the Lightning operations manual and the vRAF-VATSIM UK LoA.

SECTION 6 | **SPECIALIST SUPPORT FUNCTIONS**

The following functions are granted under the Letter of Agreement between vRAF and VATSIM UK. These are only to be used within the UK FIRs.

6.1 Company Frequencies for use on VATSIM

vRAF has been granted the use of several frequencies for use in the UK FIRs as detailed in the LoA with VATSIM UK. Use of any frequency listed below should not jeopardise proper communication with ATC and additional communications radios should be utilised as appropriate.

vRAF will allocate the frequencies as follows;

Frequency	**Purpose**	
126.600	Vulcan Ops	vRAF general operations
136.000	Air to Air 1	Discrete frequency for formations.
129.700	Air to Air 2	Discrete frequency for formations.
131.400	Blackdog(BLKDG) / AWACS	Only to be used by BLKDG/AWACS for the provision of fighter control
134.500	Hotspur(HTSPR) / AWACS	Only to be used by HTSPR/AWACS for the provision of fighter control
132.500	Air to Air Refuelling	for use as the AAR boom frequency

*These frequencies are not officially granted to vRAF. Caution should be used in case of overlap with other stations. Should this happen vRAF aircraft must cease use of that frequency.

6.1.1 Vulcan Ops

Vulcan Ops is the primary frequency all pilots must use to announce and coordinate their intentions with other vRAF pilots when:

- Departing an aerodrome
- Airborne and not utilising a different frequency
- On recovery to an aerodrome

This is to allow efficient and safe operations at critical stages of flight where the range of UNICOM (122.800) is insufficient to effectively communicate and sequence with other vRAF traffic.

6.1.2 Use of Discrete frequencies

Aircraft operating as part of a formation should use one of the discrete frequencies for inter-flight communications, the formation lead must select one of the discrete frequencies and ensure it is not already in use by other formations.

6.2 Fighter Control

Members who have completed Fighter Controller training are permitted to conduct these duties either from an AWACS aircraft or as a controller logged into the VATSIM network as Blackdog or Hotspur as laid out on the vRAF and VATSIM UK LoA.

6.3 Forward Air Control

Members who have completed Forward Air Control training are permitted to conduct these duties in accordance with the vRAF and VATSIM UK LoA.

SECTION 7 | **FOUNDERS**

No part of this section of the vRAF Operations Manual (Part A), may be modified in any way by Air Command, without the prior written approval of the Founders. The Founders reserve the right to direct Air Command to amend any part of this section and Air Command is bound to make any and all such directed amendments.

7.1 Definition of a Founder

A "Founder" is an individual who, through the extensive donation of their time and expertise has helped to form and organise the Virtual Royal Air Force (vRAF). The Founders, as a result of their contributions to vRAF shall maintain special rights and privileges in vRAF as laid out in this section. All founders are considered to hold the ceremonial rank of Marshal of the Royal Air Force (MRAF).

7.2 List of Founding Members

The following individuals listed below, are designated as "Founders" of vRAF and are eligible for the special rights and privileges which are granted within this section:

- Scott Daniels – RFR1001
- Matthew Kingscott – RFR1002
- Ciaran Longmuir – RFR1098
- Jack Edwards – RFR1122
- Lee Roberts – RFR1205

7.2.1 Invitation to Join the Founders

Members of vRAF may be invited to take on founder status only with unanimous consent of all of the existing founders. Members may not request any such invitation but Air Command may nominate members for consideration by the Founders.

7.2.2 Expulsion from the Founders

Founder status may be revoked only with the unanimous consent of all of the other existing Founders. Individual Founders may also relinquish Founder status voluntarily.

7.3 Delegation of Authority

The responsibility for the management of the organisation is permanently delegated by the Founders to the incumbent Chief of the Air Staff (CAS). They shall form a governing body named "Air Command" and may delegate authority to other members of vRAF as described in the Organisational Structure. The Founders shall not routinely interfere with the day-to-day running of the organisation.

7.3.1 Authority to Overrule Air Command by Founders Vote

Whilst the Founders should not routinely interfere with the day-to-day running of the organisation, in exceptional circumstances, decisions made by Air Command may be overridden by the Founders:

- The definition of "exceptional circumstances is at the discretion of the Founders
- The Founders must notify Air Command in writing
- The use of this process must be authorised by a two-thirds majority vote of the Founders
    - Founders who do not vote within 72 hours shall forfeit their right to vote in the current ballot.

7.4 Founders' Rights

7.4.1 Ownership

The ownership of the organisation, currently named and known as "Virtual Royal Air Force (vRAF)" is retained by the Founders including all associated rights. This ownership includes domain names, servers, databases, all intellectual and physical property of the organisation and all materials created by members in the course of their duties.

7.4.2 Positions Founders May Serve in vRAF

Founders are permitted to serve in any position and at any level of vRAF, however, Founders shall be subject to the same rules and qualifications that any other member of vRAF is subject to for any particular position.

7.4.3 Meetings

Founders shall receive reasonable notice of all meetings held by Air Command and shall have the right to attend those meetings and/or receive copies of associated meeting agendas and minutes. Founders may contribute to discussion but may not vote on any issue in an Air Command meeting.

7.4.4 Access to vRAF Services and Resources

Founders shall always have full administrative access of the highest level to all services operated/used by vRAF. Founders may temporarily opt-out of this access as desired, but shall retain the right to this access.

SECTION 8 | **GLOSSARY**

Category I (CATI)	Means a precision instrument approach and landing using an instrument landing system (ILS), precision approach radar (PAR), with a decision height (DH) not lower than 200 ft and with a runway visual range (RVR) not less than 550 m for aeroplanes.
Category II (CATII)	Means a precision instrument approach and landing operation using ILS with a decision height (DH) below 200 ft but not lower than 100 ft and RVR of not less than 300 m.
Category IIIA (CAT IIIA)	Means a precision instrument approach and landing operation using ILS with a decision height (DH) lower than 100 ft and RVR not less than 200 m.
Category IIIB (CAT IIIB)	Means a precision instrument approach and landing operation using ILS with a decision height (DH) lower than 100 ft, or no DH and RVR lower than 200 m but not less than 75 m.
Circling Approach	A visual phase of an instrument approach to position an aircraft to land on a runway that is not suitable/authorised for a straight-in approach.
Cloud Base	The height of the base of the lowest cloud element in the vicinity of an aerodrome, normally measured above aerodrome elevation or, in the case of off-shore operations, above mean sea level.
Cloud Ceiling	The vertical distance from the elevation of the airport to the lowest part of any cloud visible from the airport, which is sufficient to obscure more than one half of the sky (BKN or OVC). For some approaches, a minimum cloud ceiling is a requirement.
Commander/ (Aircraft) Captain/ Pilot in Command (PIC)	The pilot who is in command of the aircraft and responsible for its safe operation. He will remain in sole command of the aircraft from the time the aircraft is booked out until it is released.
Continuous Descent Final Approach (CDFA)	A technique for flying the final-approach segment of a non-precision instrument approach procedure as a continuous descent, without level-off, from the final approach fix to touchdown.
Converted Meteorological Visibility	A value, equivalent to RVR, which is derived from the reported meteorological visibility.
Co-pilot	A pilot, who is not the commander.

Decision Altitude/Height (DA/H)	An altitude or height published for a precision approach at which a missed approach procedure must be executed if the required visual reference to continue the approach has not been established.
Dry Operating Weight (DOW)	The total weight of an aircraft excluding fuel and payload. It includes crew members.
ETOPS	Extended range operations for two engine aeroplanes. A Method of approval to certify two engine aeroplanes to operate beyond a certain threshold from an adequate aerodrome.
Final Approach	Segment of an instrument approach which commences beyond the final approach fix and terminates at touchdown or when a missed approach procedure is initiated.
Flight/Formation Lead	The pilot in command of a formation or flight of aircraft.
Forced Landing	An unavoidable landing or ditching off field or at an airfield.
Instrument Meteorological Conditions (IMC)	Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions.
Isolated Aerodrome	An aerodrome where the flying time to the nearest adequate destination alternate aerodrome is more than 90 minutes.
Landing Weight	The total weight of an aeroplane at the point of landing.
Low Visibility Operations	Procedures applied by the pilot for the purpose of performing an approach in lower than category I conditions.
Low Visibility Procedures (LVP)	Procedures applied by an aerodrome for the purpose of permitting Low Visibility Operations.
Lower Than Standard Category I (LTS CAT I)	A category I instrument approach operation using category I DA/H, with an RVR lower than would normally be approved but not lower than 550m.
May	Means that the application of a rule or procedure is optional.
Maximum Landing Weight (MLW)	The maximum permissible weight of an aircraft at landing under normal circumstances.
Maximum Takeoff Weight (MTOW)	The maximum permissible weight of an aircraft at the beginning of the take-off roll.

Maximum Zero Fuel Weight (MZFW)	The maximum permissible weight of an aircraft with no usable fuel onboard.
Member	A person who has been accepted into vRAF
Minimum Descent Altitude/Height	An altitude or height published for a non-precision or circling approach below which further descent may only be made if the required visual reference for the approach has been obtained and will be maintained.
Minimum Sector Altitude (MSA)	The lowest altitude, based on the aerodrome QNH, that will provide sufficient obstacle clearance within a sector of an area defined by a radius of 25nm centred on a nav-aid or aerodrome reference point.
Missed Approach Climb Gradient (MACG)	A specified climb gradient that an aircraft must achieve in the event of a missed approach. This is 2.5% unless otherwise specified.
Must	Means that compliance with a rule or procedure is mandatory.
Non-Precision Approach	An instrument approach with a minimum descent height (MDH), or DH when flying a CDFA technique, not lower than 250 ft and an RVR/CMV of not less than 750 m.
Other than Standard Category II (OTS CAT II)	A precision instrument approach and landing operation using ILS where some or all of the elements of the precision approach category II lighting system are not available, and with a decision height (DH) lower than 200 ft, but not lower than 100ft and RVR not less than 350m.
Pilot Flying (PF)	The pilot to whom handling responsibilities have been delegated.
Precision Approach	An instrument approach and landing system that includes guidance in both azimuth and elevation.
Procedure Minimum	A term used at British military airfields signifying DA/H or MDA/H for an instrument approach procedure.
QFE	An altimeter setting, that will cause the altimeter to read zero when parked on the aerodrome to which the QFE is applicable to.
QNH	An altimeter setting, that will cause the altimeter to read the airfield elevation above mean sea level when parked on the aerodrome to which the QNH is applicable to.

Runway Visual Range (RVR)	The range over which the pilot of an aircraft on the centreline of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line.
Shall	Means that compliance with a rule or procedure is mandatory.
Should	Means that the application of a rule or procedure is recommended but ultimately optional.
Standard Operating Procedure (SOP)	A generalised term used to describe compliance with procedures laid out in the vRAF Operations Manuals.
Takeoff Alternate Aerodrome	An aerodrome at which an aircraft can land directly after take-off should it not be possible to use the departure aerodrome.
Takeoff Weight (TOW)	The total weight of an aeroplane at the commencement of the takeoff roll.
Visual Meteorological Conditions (VMC)	Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima.