Operations Manual Part D
Appendix D – AFT

Revision 3
September 2019

0 Record of Amendments

Rev. No	Date Entered	Amended By
2	June 2019	Simon Kelsey
3	September 2019	Simon Kelsey

0.1 Revision Highlights

0.1.1 Revision 3, September 2019

Added details of FI courses

0.1.2 Revision 2, June 2019

Revised format to consolidate student & instructor manuals

Instructor information highlighted with sidebars

Added copyright statement on front cover

Contents

1 Advanced Flying Training Course

1.1 Introduction

The Advanced Flying Training Course is designed to train and assess the trainee in all items required for the issue of a VATSIM P5 rating.

Throughout the course the trainee is expected to self-study through the use of e-learning material, supplied BAVirtual training manuals and documentation and the supplied Baron 58 POH. The trainee will in this way gain the technical knowledge and understanding necessary to pass the theory examinations. Upon successful completion of the Ground School course the trainee may then progress to the Multi-Engine Conversion phase where handling techniques and operational skills will be developed in the Beech Baron 58 aircraft.

This phase will culminate in a short practical and written assessment. Thereafter the trainee will progress to the Instrument Flying phase, culminating in a final practical assessment.

The P5 rating will be issued upon successful completion of the Instrument Flying phase provided all elements of training (including requisite cross-country flying) have been identified as completed in the e-Learning Centre.

To be accepted for the Advanced Flying Training Course the trainee must:

- Be a BAVirtual member
- Hold VATSIM P1, P2 and P3 ratings
- Any other conditions required by the Flight Training Manager Advanced Flying Training

Course Overview

Ground Phase	
Section	**Subject**
Aircraft General Knowledge: Airframe & Systems, Electrics, Powerplant & Emergency Equipment	Powerplant (Piston)
Principles of Flight: Aeroplane	Stability, Controllability & Manoeuvrability Flight Control Systems
Meteorology	Mist & Fog Cold Weather Operations
Air Law & ATC Procedures	International Law: Conventions, Agreements & Organisations Rules of the Air Aeronautical Information Service
Aircraft General Knowledge: Instrumentation	Instrumentation: Introduction Pressure-Operated Instruments Gyroscopic Instruments Magnetic Compass

Ground Phase	
Radio Navigation	Radio Propagation Theory & Radar Distance Measuring Equipment (DME) Non-Directional Beacons (NDBs) & the Automatic Direction Finder (ADF) Very High Frequency Omnidirectional Range (VOR) Instrument Landing System (ILS) Area Navigation (RNAV) & Global Positioning System (GPS)
Human Performance	Human Factors Introduction Aviation Visual Illusions Situational Awareness & Attention
Flight Performance & Planning	IFR Flight Planning
Instrument Procedures	Instrument Departures Holding & Manoeuvring Instrument Approaches Instrument Approach Charts Instrument Minima Visual Manoeuvring (Circling)

Multi-Engine Conversion Phase	
Section	**Subject**
1	Aeroplane Systems & Engine Systems
2	Constant Speed Propellers & Feathering
3	Multi-Engine Flight Principles
4	Minimum Control & Safety Speeds
5	Mass & Balance, Performance & Limitations
6	Effects of Engine Failure on Systems & Performance
7	MEP Class Rating Check

Instrument Flying Phase	
Section	**Subject**
1	Instrument Flying Introduction
2	NDB Tracking
3	VOR Tracking
4	Instrument Circuits
5	Instrument Stalling & Unusual Attitudes
6	Asymmetric Instrument Circuits
7	IFR Route Flight
8	IR Skill Test

Assessment is continuous throughout the course. Each flying detail sets out the objectives and the standard of knowledge and skill required to be demonstrated during the session. Instructors will be making this assessment during the sessions. VATSIM also requires specific assessment of competencies for issue of the rating to comply with VATSIM PTD requirements. These events are set out below:

Phase	Event	Time
Ground School Phase	Technical Examination	All subjects complete
Multi-Engine Conversion Phase	Technical Examination, MEP Class Rating Check	After Lesson 6
Instrument Flying Phase	Skill Test	End

The trainee is responsible for his/her own learning. Various training aids are available and Instructors will be available during the Ground School phase to answer questions. The trainee is responsible for allocating time to study the training material.

The continuous assessment process will identify training effectiveness and highlight areas for trainee development. These will be noted by the Instructors as the course progresses. Trainees will be made aware of these development areas and they will be recorded in the trainee's Moodle file. This will assist the trainee in targeting specific areas of self-study and preparation. If a lack of progression in key areas of skill, knowledge or handling is identified the Instructor will make the trainee aware of this informally during the de-brief.

All trainees need to achieve the standards defined in the VATSIM PTD P5 syllabus. In addition, they must achieve at least Satisfactory standard in all elements and phases of the course.

1.1.1 Additional Notes Specific to the BAVirtual Advanced Flying Training Course

1.1.1.1 Aims

1. To create a course of 22 flying details which is fully compliant with VATSIM, EASA, CAA and BAVirtual policies.

2. To use interactive training aids and video presentations in the briefings and theory modules to improve the trainees' learning.

3. To create skill checks at regular points in the course in order to ensure that trainees have attained the skills required to move on to the next stage of the course. These are listed under Session Proficiency Criteria for each detail.

4. To avoid repeating unnecessarily the knowledge and skills gained in the Ground School phase

5. To make the course a practical preparation for Jet Orientation training.

1.1.1.2 Trainee Starting Point

- The course is based on the assumption that all trainees starting the course have completed VATSIM ratings P1, P2 and P3 and are proficient in visual navigation and light SEP aircraft handling. It is designed to apply this proficiency to multi-engine aircraft handling and instrument flying, as well as training non-technical skills for normal and abnormal situations.

- It is assumed that trainees commence the Flight Training phase having completed the Ground School course, after which they are proficient in terms of IFR procedural knowledge, IFR aircraft equipment, general advanced-level aviation technical knowledge and rules and procedures pertaining to IFR flight.

1.1.1.3 Course Structure

The course consists of 22 flying details:

- Details 1 and 2 – Normal Handling and type familiarisation
- Details 3 to 6 – Asymmetric Handling
- Detail 7 – MEP Class Rating check
- Details 8 and 9 – Basic Instrument Flying
- Details 10 to 13 – Raw Data Tracking and Holding
- Details 14 and 15 – Instrument Approach Procedures
- Details 16 and 17 – Upset Prevention & Recovery
- Details 18 and 19 – Asymmetric Instrument Flight
- Details 20 and 21 – IFR Route Flying
- Detail 22 – IR Skill Test

Long briefings for each flying detail are provided via the E-Learning Centre and trainees are expected to prepare for each detail by completing this material. As such, the pre-flight briefing will normally take the form of confirmation and clarification of technical knowledge and discussion of effective techniques and non-technical skills. Teamviewer/Powerpoint and Cosketch may be used to study the various items in the details.

Each session typically will be in the region of 1½ hours duration, allowing for approximately 10-15 minutes briefing, 1 hour flying and 10-15 minutes debriefing.

1.1.1.4 Detail Format

The details are written so as to allow a natural progression for an average trainee. However, a degree of flexibility is required for the trainee to achieve the most out of the detail and to achieve this the instructor may vary the running order as required.

For very able trainees it may be possible to combine multiple details in to a single session. This is perfectly acceptable provided the instructor is satisfied the trainee meets or exceeds the Proficiency Criteria for each such detail. Where multiple details are combined in to a single session, the instructor must record a grade and any relevant notes for each such detail in Moodle.

1.1.1.5 Format of the Instructor Session Notes

For each detail there is an overview of the contents for the detail and briefing material. Some Instructor Notes are found in the Session Guide in this manual and more in-depth guidance on the “how to” is found in the POH. You will find for each detail:

- Objective
- Training topics
- Basic running order
- Briefing material available
- Proficiency Criteria

- Instructor notes (session guide) (only available to the Instructor)
- Additional information

1.1.1.6 Moodle Grading

All reports must be entered in to Moodle. A Satisfactory score is to be used when the Proficiency Criteria for the detail have been satisfied. If the detail was not completed or PC have not been met, a grade of “Progressing” should be awarded. “Unsatisfactory” should only be used where the trainee’s performance is well below the required standard, no progress at all is being made and/or the trainee’s attitude raises cause for concern. Any Instructor awarding an “Unsatisfactory” grade for any detail must also forward details to the FTM Advanced Flying Training.

If a detail requiring further practice is revisited, it must be re-graded as appropriate and notes added below the original comments after a suitable break marker (e.g. a line of dashes).

1.1.1.7 Briefing Material

Trainee briefing material may be found in the Course Documents and Resources folder at the top of the course. Instructor briefing material may be found in the Instructor Resources folder.

1.2 Ground School Phase

1.2.1 Policy

1.2.1.1 Objectives

The aim of the Ground School phase is to:

- Acquire appropriate levels of technical and procedural knowledge
- Gain familiarity with instrument flight procedures and regulations

1.2.1.2 Standard Required on Completion

On completion of the Ground School phase, the trainee should have:

- Achieved a pass in the Theoretical Knowledge examination
- Successfully completed all e-Learning modules

1.2.2 Course Description

The course and examination is conducted via the BAVirtual e-Learning "Moodle" system. Study is conducted via a series of interactive lesson modules which incorporate graphical, textual and audiovisual content. This allows the trainee to work at his/her own pace. Instructor assistance is available where required via Teamspeak and e-mail, as well as the BAVirtual forums.

All of the material required is available within the course on the e-learning system. Trainees should download manuals and other documentation in accordance with the course joining instructions.

Each lesson module contains questions designed to check progress and understanding of the content. There is a final multiple-choice examination, for which the pass mark is 80%. All examination questions are drawn from information contained within the course, the UK AIP, SERA, the UK ANO and VATSIM Code of Conduct.

1.2.3 Approved Course Examination Procedure

VATSIM courses for which approval has been granted by the VATSIM PTD have the following programme of BAVirtual examinations implemented by BAVirtual Flight Training.

1.2.3.1 Progress Tests

Progress questions are contained within each e-learning module. The purpose of the progress questions is to assess a candidate's understanding of the content within the module and ability to progress to each subsequent stage. The Progress Questions will generally, but not always, be multiple-choice. No record is kept of the candidate's answers and there is no limit on the number of attempts a candidate may make at a question, although the candidate must answer all questions within each module correctly in order for the module to be marked as complete within the e-learning system.

1.2.3.2 Qualifying Examination

On completion of the Ground School modules, each candidate will sit a Qualifying Examination. This will contain 40 multiple-choice questions. The examination questions will be distributed over the nine main subjects of the syllabus. The time allowed for completion is 45 minutes.

The questions for the examination will be drawn automatically from a question bank.

A record will be kept of results achieved on the Qualifying Examination. The pass mark for the Qualifying Examination is 80%, with no penalty marking.

1.2.3.3 Re-Sits

Where a candidate achieves less than 80% in the Qualifying Examination he/she shall re-sit the examination. Fresh questions shall be drawn for the re-sit.

One re-sit will be available automatically 7 days after the first attempt. If the candidate fails to achieve 80% or more at this second attempt, he/she will be debriefed by a BAVirtual instructor in order to establish an understanding of the material before further attempts will be unlocked.

1.2.3.4 Marking of Qualifying Examination

The Qualifying Examination will be marked automatically by the Moodle software. On successful completion of the Examination, the candidate will have the opportunity to review the incorrect answers and a debrief session with an Instructor will be offered. During this debrief all questions answered incorrectly will be reviewed to establish an understanding of the correct answer.

Where a question references a particular document (e.g. the UK AIP), candidates are permitted to refer to the document in question during the examination.

1.2.4 Ground School Programme

Advanced Flying Training Ground School Phase Overview	
Section	**Subject**
Aircraft General Knowledge: Airframe & Systems, Electrics, Powerplant & Emergency Equipment	**Powerplant (Piston)**
	The Piston Aeroplane Engine The Four-Stroke Cycle Valves Ignition The Carburettor Mixture Control Abnormal Combustion Induction System Icing Engine Performance Power Augmentation Devices
Principles of Flight: Aeroplane	**Stability, Controllability & Manoeuvrability**
	Static Stability Dynamic Stability Axes of Stability Longitudinal Stability Lateral Stability Directional Stability Stability Interaction Dutch Roll
	Flight Control Systems
	Aerodynamically-balanced Controls Trim Power-Assisted Controls Power-Operated Controls Flutter Aileron Drag
Meteorology	**Mist & Fog**
	Radiation Fog Advection Fog Frontal and Hill Fog Steam Fog
	Cold Weather Operations
	Icing Clean Aircraft Policy Recognising Icing Conditions Aircraft De-Icing and Anti-Icing Systems Ground De-Icing and Anti-Icing

Advanced Flying Training Ground School Phase Overview	
Air Law & ATC Procedures	**International Law: Conventions, Agreements & Organisations**
	Air Law ICAO The JAA and EASA The Air Navigation Order
	Rules of the Air
	European Rules of the Air Aerodrome Markings and Signs VMC and VFR Visual Flight Rules Airspace Classification Altimeter Setting Procedures Air Traffic Services
	Aeronautical Information Service
	Aeronautical Information Services AIP NOTAMs Using the AIS
Aircraft General Knowledge: Instrumentation	**Instrumentation: Introduction**
	Range and Accuracy Readability Types of Instruments
	Pressure-Operated Instruments
	Pitot/Static Heads Temperature Measurement Airspeed Indictor The Barometric Altimeter The Vertical Speed Indicator
	Gyroscopic Instruments
	Gyroscopes Turn & Slip Indicator The Direction Indicator The Artificial Horizon
	The Magnetic Compass
	Construction Principles of Operation Magnetic Variation Deviation Magnetic Dip Compass Errors

Advanced Flying Training Ground School Phase Overview	
Radio Navigation	**Radio Propagation Theory & Radar**
	Electricity and Magnetism Radar Range of Radar Sets Primary Surveillance Radar (PSR) Secondary Surveillance Radar (SSR) Uses of Radar Radar Vectoring Surveillance Radar Approach (SRA)
	Distance Measuring Equipment (DME)
	Principles of Operation Cockpit Equipment Position Fixing with DME
	Non-Directional Beacons (NDBs) & the Automatic Direction Finder (ADF)
	Use in Flight The NDB The ADF ADF Cockpit Displays Relative Bearing Orientation using the RBI The Rotatable-Card ADF Radio Magnetic Indicator (RMI) Intercepting an Inbound Track Intercepting an Outbound Track Maintaining Track Tracking Overhead Tracking Outbound NDB Approaches
	Very High Frequency Omnidirectional Range (VOR)
	Principles of Operation VOR Radials VORs on Charts VOR Cockpit Equipment Orientation and Position Fixing VOR Tracking Different VOR Presentations VOR Approaches
	Instrument Landing System (ILS)
	The Localizer The Glide Slope Marker Beacons Flying an ILS Approach Planning and Charts Decision Height
	Area Navigation (RNAV) & Global Positioning System (GPS)
	RNAV Requirements RNAV Waypoints GPS Fundamentals GPS Principles of Operation RAIM Augmentation Systems GPS Cockpit Equipment

Advanced Flying Training Ground School Phase Overview	
Human Performance	**Human Factors Introduction**
	Safety Culture Threat and Error Management Incident Reporting
	Aviation Visual Illusions
	Illusions whilst Taxiing Illusions on Takeoff Illusions in the Cruise Approach and Landing Scanning for Traffic Other Illusions Overcoming Illusions
	Situational Awareness & Attention
	Elements of Situational Awareness Levels of Situational Awareness Gathering Data Building Understanding Thinking Ahead Losing Situational Awareness Improving Situational Awareness
Flight Performance & Planning	**IFR Flight Planning**
	Weather & Minima NOTAMs & FCNs Routing Navigation Log Vertical Navigation Lateral Navigation Contingencies Fuel
Instrument Procedures	**Instrument Departures**
	Setting Course Standard Instrument Departures En-route Charts
	Holding & Manoeuvring
	Tracking in Holding Patterns Wind Corrections in Holding Patterns Joining a Holding Pattern Procedure Turns
	Instrument Approaches
	Vertical Navigation Segments of an Instrument Approach Precision & Non Precision Approaches Minima Missed Approach Segment
	Instrument Approach Charts
	Elements of IACs Plan View Profile View Obstacle Clearance Section

Advanced Flying Training Ground School Phase Overview	
Instrument Procedures	**Instrument Minima**
	En-route Minima Landing Minima Precision Approaches Non-Precision Approaches Obstacle Clearance Height System Minima Calculating DH/MDH Published Minima
	Visual Manoeuvring (Circling)
	The Visual Manoeuvring Area The Visual Circling Manoeuvre Descent below Visual Manoeuvring Height Missed Approach when Circling

1.3 Multi Engine Conversion Phase

1.3.1 Standard Multi-Engine Conversion Course Overview

Detail	Exercise	Time
F1	Initial Type Conversion	1:30
F2	General Handling and Circuits	1:30
F3	Introduction to Asymmetric Flight	1:30
F4	Critical and Safety Speeds	1:30
F5	Asymmetric Circuits	1:30
F6	Asymmetric Performance and Circuit	1:30
F7	MEP Class Rating Check	2:30

1.3.2 Introduction to Multi-Engine Conversion Course

The Multi-Engine Conversion Course has been designed with seven flight training details of 1:30 hours. The course is based on the CAA recommended MEP course.

1.3.2.1 Philosophy of the Course

The course contains all the elements of the CAA MEP course and is designed to ensure the trainee has the proficiency in operating and handling the Beech Baron 58 in both normal and asymmetric flight required in order to progress to the Instrument Flying phase of the course.

The details start with basic handling skills and then use building blocks to train and assess those new skills necessary to transition to a multi-engine aircraft. Asymmetric handling commences in detail 3 where basic handling skills are taught and continues throughout the remaining details.

Documentation is provided to aid self-study throughout the course, and if clarification is required this should be raised with the instructor. All manuals including the POH, Weight and Balance sheet and other course documentation is provided within the Course Documents and Resources folder, or linked from the relevant location within the lesson module. Other BAV documentation such as the Flying Order Book and SOPs are available from the main BAV website.

For the initial details the instructor will provide briefing material such as NOTAMs, weather and relevant performance information. As the details progress the trainee will be expected to gather this information, make any relevant calculations and make go/no go decisions where applicable. Having made such a decision based on the actual weather, the instructor may elect to adjust the in-sim weather in order to allow a detail to go ahead.

The intention is to conduct details online on VATSIM, treating the aircraft as ‘real’.

1.3.2.2 Notes for the Instructor

Each detail includes a lesson plan with general instructions and guidance about the items to be covered. In responding to trainees’ needs the instructor should manage the detail so as to maximise training value. Each trainee will approach the course from a different starting point dependent upon their FS and real-world experience, if any, and this must be

taken in to account. It is acceptable to combine multiple details in to a single session if the trainee is very able, however this must not be at the expense of standardisation or trainee understanding. Particular care should be taken during this phase of training as if the trainee's handling and aircraft management skills are not up to standard or concepts are poorly understood they will struggle when faced with the additional workload and complexity of the Instrument Flying phase.

After detail 3, instructors may introduce various simulated failures in accordance with the provided non-normal checklist. Failure management and handling should be assessed and input provided initially with the aim of improving the trainee's non-technical skills and single-pilot CRM. However, it should be noted that the AFT course is primarily a handling-focussed course and therefore the aim is simply to provide an introduction to such non-technical skills in preparation for jet orientation and type rating training which will follow.

It is vital that the instructor prepares for a detail by reading the previous Moodle report, talking to the previous trainer and establishing from the trainee him/herself how things are progressing and any areas of concern. The trainer should alert FTM whenever there is a concern over the motivation or progression of a trainee, for example if the trainee has 'no-showed' or cancelled a number of sessions at very short notice or if the trainee's handling skills are well below standard. With a trainee who has not graduated from the BAVirtual AFT course this could be a possibility and there is scope to arrange remedial details to resolve this.

Approaching details 5 and 6 the instructor should be considering the trainee's ability to successfully pass the MEP Check. Standard BAV Flight Training policy to only recommend trainees who are fully prepared for test applies. When all six training details and the MEP Theory Examination have been completed, and the instructor considers the trainee ready for the MEP Check, the instructor should notify FTM AFT in order to arrange the test.

1.3.3 Multi-Engine Conversion Flying Course

1.3.3.1 MEP Detail F1

1.3.3.1.1 Summary

Detail F1 Initial Type Conversion	
	Exercise
F1	Establish shared cockpit connection
	Aircraft familiarisation & pre-flight checks
	Taxi out
	Take off and route to training area
	Straight and level with speed changes
	Medium level, climbing and descending turns
	Slow flight
	Visual circuit join
	Landing
	Taxi in
	Post-flight action

1.3.3.1.2 Objectives

- Establish a successful shared cockpit connection
- Introduction of the Beech Baron 58 & complex aircraft
- Basic handling and characteristics
- Taxiing and takeoff
- Slow flight

1.3.3.1.3 Session Proficiency Criteria

- Safe & controlled taxiing
- Correct takeoff technique
- General handling adequate

1.3.3.1.4 Preview Item

None

1.3.3.2 MEP Detail F2

1.3.3.2.1 Summary

Detail F2 General Handling & Circuits	
	Exercise
F2	Establish shared cockpit connection
	Pre-flight checks
	Taxi out
	Take off and route to training area
	Power handling
	General handling revision
	Visual circuit join
	Visual circuits
	Landing
	Taxi in
	Post-flight action

1.3.3.2.2 Objectives

- Introduction of correct power handling techniques
- Carry out circuit flying in a complex, retractable-gear aircraft

1.3.3.2.3 Session Proficiency Criteria

- Uses correct techniques for increasing and decreasing power
- Can fly circuits including touch and go, go around from low height and full stop landing, using correct techniques and procedures per POH and BAV SOP

1.3.3.2.4 Preview Item

None

1.3.3.3 MEP Detail F3

1.3.3.3.1 Summary

Detail F3 Introduction to Asymmetric Flight	
	Exercise
F3	Establish shared cockpit connection
	Pre-flight checks
	Taxi out
	Take off and route to training area
	Simulated asymmetric power
	Asymmetric handling
	Visual circuit join
	Landing (AEO)
	Taxi in
	Post-flight action

1.3.3.3.2 Objectives

- Introduce zero thrust
- Introduce asymmetric handling and engine failure recognition
- Practice engine failure drills

1.3.3.3.3 Session Proficiency Criteria

- Uses rudder correctly to counter effects of engine failure
- Carries out controlled turns, climbs, descents and combinations thereof in an asymmetric condition
- Knows the values of V_{XSE}, V_{YSE}, en-route single-engine climb speed, single-engine manoeuvring to final approach speed and single-engine final approach speed

1.3.3.3.4 Preview Item

1.3.3.4 MEP Detail F4

1.3.3.4.1 Summary

Detail F4 Critical and Safety Speeds	
	Exercise
F4	Establish shared cockpit connection
	Pre-flight checks
	Taxi out
	Take off and route to training area
	Revise engine failure
	V_{MCA} Demonstration
	Engine failure in cruise
	Single-engine handling
	Visual circuit join
	Asymmetric circuit, go around & landing
	Taxi in
	Post-flight action
	Disconnect VATSIM
	Engine failure & RTO
	Full EFATO drill

1.3.3.4.2 Objectives

- Investigate the significance of critical speeds and takeoff safety speed
- Practice handling engine failures in-flight and during takeoff

1.3.3.4.3 Session Proficiency Criteria

- Correctly handles engine failures in flight and during takeoff
- Carries out correct feathering and unfeathering drills independently
- Can safely perform V_{MCA} demonstration and recover

1.3.3.4.4 Preview Item

Asymmetric circuit, go-around and landing (demonstrated by instructor)

1.3.3.5 MEP Detail F5

1.3.3.5.1 Summary

Detail F5 Asymmetric Circuits	
	Exercise
F5	Establish shared cockpit connection
	Pre-flight checks
	Taxi out
	Engine failure after takeoff
	Asymmetric circuit
	Go around
	Asymmetric circuit
	Landing
	Taxi in
	Post-flight action

1.3.3.5.2 Objectives

- Complete EFATO drills
- Carry out an asymmetric circuit, go-around and landing
- Explore the concept of Asymmetric Committal Height

1.3.3.5.3 Session Proficiency Criteria

- Can correctly handle an engine failure of the critical engine after takeoff
- Correctly completes EFATO & feathering drills
- Safely completes an asymmetric circuit, approach, go-around and landing within the flight test tolerances

1.3.3.5.4 Preview Item

None

1.3.3.6 MEP Detail F6

1.3.3.6.1 Summary

Detail F6 Asymmetric Performance and Circuit	
	Exercise
F6	Establish shared cockpit connection
	Pre-flight checks
	Taxi out
	Take off and route to training area
	Engine failure
	Explore effect on systems
	Explore effect on performance
	Visual circuit join
	Asymmetric circuits
	Landing
	Taxi in
	Post-flight action

1.3.3.6.2 Objectives

- Explore the effects of engine failure on in-flight performance
- Explore the effects of engine failure on aircraft systems
- Practice asymmetric circuits

1.3.3.6.3 Session Proficiency Criteria

- Can state the effect of asymmetric operation on aircraft systems and performance
- Can consistently complete asymmetric circuits within the flight test tolerances

1.3.3.6.4 Preview Item

None

1.3.3.7 MEP Class Rating Check

1.3.3.7.1 Summary

MEP Class Rating Check	
	Exercise
MEP	Establish shared cockpit connection
	MEP Class Rating Check

1.3.3.7.2 Objectives

- Check the candidate's proficiency in operating a multi-engine piston aircraft

1.3.3.7.3 Session Proficiency Criteria

- Completes all sections of the MEP Class Rating Check to a satisfactory standard and within flight test limits

1.4 Instrument Flying Phase

1.4.1 Standard Instrument Flying Course Overview

Detail	Exercise	Time
F7	Instrument Flying Introduction	1:30
F8	Limited Panel Introduction	1:30
F9	NDB Tracking	1:30
F10	NDB Holds	1:30
F11	VOR Tracking	1:30
F12	VOR Holds	1:30
F13	Radar Circuits	1:30
F14	Procedural Approaches	1:30
F15	Unusual Attitudes	1:30
F16	Instrument Stalling	1:30
F17	Asymmetric Radar Circuits	1:30
F18	Asymmetric Procedural Approaches	1:30
F19	IFR Cross Country 1	2:45
F20	IFR Cross Country 2	2:45
F21	IR Skill Test	2:30

1.4.2 Introduction to Instrument Flying Course

The Instrument Flying Course is designed with 14 Flight Training details of 1:30 hours, including approximately 10-15 minutes briefing, 1 hour flight time and 10-15 minutes debriefing. Detail 15 is the IR Skill Test and 2:30 hours is allocated for this, including 10-15 minutes briefing and 10-15 minutes debriefing.

1.4.2.1 Philosophy of the Course

The course contains all elements of the VATSIM P5 rating syllabus. These are the skills and knowledge items which the trainee needs to demonstrate having achieved at a satisfactory standard for the issue of the VATSIM P5 rating.

The details start with an introduction to basic instrument flying theory and the concept of limited panel operations. These concepts are then put in to practice as the course progresses with further details introducing beacon tracking, holding and instrument approach procedures. Each skill will be practiced on both the full and limited panel. Upset prevention and recovery is introduced in detail 16, and asymmetric work will feature regularly also.

Documentation including the POH, Weight and Balance form, checklists and reference study material is made available via the E-Learning Centre in the Course Documents and Resources folder, or linked within the Long Briefing e-learning modules. Trainees should also ensure they have the latest version of the BAVirtual Flying Club Flying Orders and BAVirtual SOPs from the main BAVirtual website.

Charts from the UK AIP will be used and trainees must ensure they can access the UK AIP website. Retrieving the relevant charts should form part of the trainee's preparation for each detail. SkyVector enroute charts will be used and trainees should familiarise themselves with how to operate the SkyVector website.

For local flying no formal navigation log or weight and balance form will normally be necessary as at typical training weights and loads the aircraft will comfortably meet all performance requirements ex-LPL. However, trainees are expected to retrieve weather and NOTAM information and brief as appropriate. For the IFR route flights trainees will be required to prepare a navigation log, weight and balance and performance calculation and make an appropriate go/no go decision based on the current and forecast actual weather. Instructors may subsequently elect to modify the in-sim weather in order to enable the detail to go ahead. Blank weight and balance forms and navigation logs are available from the Course Documents and Resources folder.

1.4.2.2 Notes for the Instructor

The lesson plans provided give general instructions and guidance about the items required to be covered in the detail. However, instructors will need to manage the detail in order to respond to trainees' needs and maximise training value.

Each trainee will have varying levels of FS and perhaps real-world experience and therefore it will be necessary to adapt as appropriate. It is acceptable to combine multiple details in to a single session if a trainee is making good progress, but this must not be done at the expense of standardisation or understanding of the content.

With the exception of asymmetric handling, failure management other than instrument failure (limited panel) is not a primary aim of the course and therefore instructors should not introduce simulated failures outside of those contained within the lesson plan.

It is vital that the instructor prepares for a detail by reading the previous Moodle report, talking to the previous trainer and establishing from the trainee him/herself how things are progressing and any areas of concern. The trainer should alert FTM whenever there is a concern over the motivation or progression of a trainee, for example if the trainee has 'no-showed' or cancelled a number of sessions at very short notice or if the trainee's handling skills are well below standard. Although all trainees commencing the Instrument Flying phase should have already passed the MEP check, it is possible trainees with weaker handling skills will struggle with the additional workload of instrument flying and remedial details will be arranged if necessary.

Approaching details 13 and 14 the instructor should be considering the trainee's ability to successfully pass the IR Skill Test. Standard BAV Flight Training policy to only recommend trainees who are fully prepared for test applies. When all 14 training details have been completed and the instructor considers the trainee ready for the IR Skill Test, the instructor should notify FTM AFT in order to arrange the test.

1.4.3 Instrument Flying Course

1.4.3.1 IF Detail F7

1.4.3.1.1 Summary

Detail F7 Instrument Flying Introduction	
	Exercise
F7	Establish Shared Cockpit Connection
	Pre-flight Checks
	Taxi Out
	Take Off and Route to Training Area
	General Instrument Handling
	Return for visual circuit join and landing
	Taxi In
	Parking

1.4.3.1.2 Objectives

- Introduce flight without external visual references
- Introduce basic instrument scanning technique
- Conduct basic flight manoeuvres by sole reference to the instruments

1.4.3.1.3 Session Proficiency Criteria

- Can fly straight and level by sole reference to the instruments
- Can conduct straight climbs and descents by sole reference to the instruments
- Can fly medium level, climbing and descending turns by sole reference to the instruments

1.4.3.1.4 Preview Item

None

1.4.3.2 IF Detail F8

1.4.3.2.1 Summary

Detail F8 Limited Panel Introduction	
	Exercise
F8	Establish Shared Cockpit Connection
	Pre-flight Checks
	Taxi Out
	Take Off and Route to Training Area
	General Instrument Handling – Limited Panel
	Return for visual circuit join and landing
	Taxi In
	Parking

1.4.3.2.2 Objectives

- To introduce flight on the limited panel
- Carry out basic flying manoeuvres following the simulated failure of the vacuum system (loss of ADI and HSI)
- Introduce techniques for recognising instrument failure

1.4.3.2.3 Session Proficiency Criteria

- Can fly straight and level and carry out turns, climbs and descents by sole reference to the limited panel
- Knows how to recognise a failure of the main flight instruments and respond appropriately

1.4.3.2.4 Preview Item

None

1.4.3.3 IF Detail F9

1.4.3.3.1 Summary

Detail F9 NDB Tracking	
	Exercise
F9	Establish Shared Cockpit Connection
	Pre-flight Checks
	Taxi Out
	Take Off and Route to Training Area
	NDB Tracking
	Return for visual circuit join and landing
	Taxi In
	Parking

1.4.3.3.2 Objectives

- Introduce use of the NDB and ADF
- Introduce techniques for identifying a radio navigation aid
- Practice intercepting and tracking inbound and outbound from an NDB

1.4.3.3.3 Session Proficiency Criteria

- To correctly identify an NDB using the tune – identify - test technique
- To intercept and maintain a track to or from an NDB within ±5°

1.4.3.3.4 Preview Item

NDB Approach – look at how tracking to/from an NDB is used to perform an instrument approach

1.4.3.4 IF Detail F10

1.4.3.4.1 Summary

Detail F10 NDB Holds	
	Exercise
F10	Establish Shared Cockpit Connection
	Pre-flight Checks
	Taxi Out
	Take Off and Route to Training Area
	Practice NDB tracking
	Hold entry procedures
	NDB holds
	Return for engine-out approach and landing
	Taxi In
	Parking

1.4.3.4.2 Objectives

- Introduce practical application of holding procedures using the NDB
- Hold entry, maintaining and exiting
- Explore the effects of wind on holding patterns

1.4.3.4.3 Session Proficiency Criteria

- Can enter an NDB holding pattern using the correct sector entry procedure
- Can use the ADF to maintain a hold applying appropriate wind corrections

1.4.3.4.4 Preview Item

NDB approach

1.4.3.5 IF Detail F11

1.4.3.5.1 Summary

Detail F11 VOR Tracking	
	Exercise
F11	Establish Shared Cockpit Connection
	Pre-flight Checks
	Taxi Out
	Take Off and Route to Training Area
	General handling practice including Limited Panel
	VOR intercept & tracking using HSI
	VOR intercept & tracking using RMI
	Return for visual circuit, go-around and landing
	Taxi In
	Parking

1.4.3.5.2 Objectives

- Introduce use of the VOR
- Reinforce techniques for identifying a radio navigation aid
- Practice intercepting and tracking inbound and outbound from a VOR

1.4.3.5.3 Session Proficiency Criteria

- To correctly identify a VOR using the tune – identify - test - set technique
- To intercept and maintain a track to or from a VOR using the HSI within half scale CDI deflection

1.4.3.5.4 Preview Item

Holding if time available

1.4.3.6 IF Detail F12

1.4.3.6.1 Summary

Detail F12 VOR Holds	
	Exercise
F12	Establish Shared Cockpit Connection
	Pre-flight Checks
	Taxi Out
	Take Off and Route to Training Area
	Practice VOR tracking
	Hold entry procedures
	VOR holds
	Return for visual circuit join and landing
	Taxi In
	Parking

1.4.3.6.2 Objectives

- Introduce practical application of holding procedures using the VOR and HSI
- Hold entry, maintaining and exiting
- Explore the effects of wind on holding patterns

1.4.3.6.3 Session Proficiency Criteria

- Can enter an NDB holding pattern using the correct sector entry procedure
- Can use the ADF to maintain a hold applying appropriate wind corrections

1.4.3.6.4 Preview Item

ILS approach

1.4.3.7 IF Detail F13

1.4.3.7.1 Summary

Detail F13 Radar Circuits	
	Exercise
F13	Establish Shared Cockpit Connection
	Pre-flight Checks
	Taxi Out
	Take Off to radar vectored ILS
	Go around
	Radar circuits to include SRA
	Taxi In
	Parking

1.4.3.7.2 Objectives

- Introduce use of ILS
- Introduce approach briefing and planning
- Aeroplane management

1.4.3.7.3 Session Proficiency Criteria

- Track horizontal and vertical profiles within half scale deflection CDI and 1 dot GS down to DA(H)
- Can fly a go-around from DA(H) on instruments

1.4.3.7.4 Preview Item

Procedural approaches (when no radar available)

1.4.3.8 IF Detail F14

1.4.3.8.1 Summary

Detail F14 Procedural Approaches	
	Exercise
F14	Establish Shared Cockpit Connection
	Pre-flight Checks
	Taxi Out
	Take Off and Route to Training Area
	General handling practice
	Return for procedural NDB approach
	Go around
	Procedural ILS
	Land
	Taxi In
	Parking

1.4.3.8.2 Objectives

- Introduce NDB and ILS procedural approaches
- Highlight restricted landing rate

1.4.3.8.3 Session Proficiency Criteria

- Can fly a full procedural NDB or ILS approach to DA(H)/MDA(H)

1.4.3.8.4 Preview Item

None

1.4.3.9 IF Detail F15

1.4.3.9.1 Summary

Detail F15 Unusual Attitudes	
	Exercise
F15	Establish Shared Cockpit Connection
	Pre-flight Checks
	Taxi Out
	Take Off and Route to Training Area
	Unusual attitude recognition and recovery – full and limited panel
	Return for radar vectored ILS and landing
	Taxi In
	Parking

1.4.3.9.2 Objectives

- Recognise an unusual attitude in IMC
- Practice upset recovery techniques on both full and limited panel

1.4.3.9.3 Session Proficiency Criteria

- Can recognise an unusual attitude by reference to both full and limited panel
- Applies correct recovery techniques

1.4.3.9.4 Preview Item

Demonstrate stall and recovery

1.4.3.10 IF Detail F16

1.4.3.10.1 Summary

Detail F16 Instrument Stalling	
	Exercise
F16	Establish Shared Cockpit Connection
	Pre-flight Checks
	Taxi Out
	Take Off and Route to Training Area
	Stall recognition and recovery – full and limited panel
	Return for visual circuit join and landing
	Taxi In
	Parking

1.4.3.10.2 Objectives

- Recognise pre-stall and stall condition on instruments
- Practice stall recovery procedures on both full and limited panel

1.4.3.10.3 Session Proficiency Criteria

- Can recognise pre-stall and stall conditions by reference to full and limited panel
- Applies correct recovery technique

1.4.3.10.4 Preview Item

None

1.4.3.11 IF Detail F17

1.4.3.11.1 Summary

Detail F17 Asymmetric Radar Circuits	
	Exercise
F17	Establish Shared Cockpit Connection
	Pre-flight Checks
	Taxi Out
	Take Off with EFATO
	Asymmetric radar vectored circuit to ILS
	Go around
	Asymmetric radar circuits to include SRA
	Taxi In
	Parking

1.4.3.11.2 Objectives

- Consolidate asymmetric flying and approaches
- Practice EFATO and RTO drills

1.4.3.11.3 Session Proficiency Criteria

- Can consistently fly asymmetric instrument circuits within flight test limits
- Correctly identifies and handles a failed engine in accordance with standard procedures

1.4.3.11.4 Preview Item

Asymmetric procedural approaches

1.4.3.12 IF Detail F18

1.4.3.12.1 Summary

Detail F18 Asymmetric Procedural Approaches	
	Exercise
F18	Establish Shared Cockpit Connection
	Pre-flight Checks
	Taxi Out
	Take Off and Route to Training Area
	General instrument handling practice
	Engine failure in cruise
	Asymmetric full procedural non-precision approach
	Go around
	Asymmetric procedural approaches
	Taxi In
	Parking

1.4.3.12.2 Objectives

- Consolidate asymmetric flying and approaches
- Practice engine failure drills

1.4.3.12.3 Session Proficiency Criteria

- Can consistently fly asymmetric procedural approaches within flight test limits
- Correctly identifies and handles a failed engine in accordance with standard procedures

1.4.3.12.4 Preview Item

None

1.4.3.13 IF Detail F19

1.4.3.13.1 Summary

Detail F19 IFR Cross Country 1	
	Exercise
F19	Establish Shared Cockpit Connection
	Pre-flight Checks
	Taxi Out
	Take Off and fly SID
	Route flight
	STAR
	Holding
	Full procedural approach
	Taxi in
	Parking

1.4.3.13.2 Objectives

- Plan and execute a commercial IFR flight from Liverpool to Glasgow

1.4.3.13.3 Session Proficiency Criteria

- Perform all aspects of flight to flight test standards
- Demonstrates and applies knowledge of practical flight planning
- Demonstrates a good standard of aeronautical decision making and non-technical skills

1.4.3.13.4 Preview Item

None

1.4.3.14 IF Detail F20

1.4.3.14.1 Summary

Detail F20 IFR Cross Country 2	
	Exercise
F20	Establish Shared Cockpit Connection
	Pre-flight Checks
	Taxi Out
	Take Off and fly SID
	Route flight
	STAR
	Holding
	Full procedural approach
	Taxi in
	Parking

1.4.3.14.2 Objectives

- Plan and execute a commercial IFR flight from Glasgow to Liverpool

1.4.3.14.3 Session Proficiency Criteria

- Perform all aspects of flight to flight test standards
- Demonstrates and applies knowledge of practical flight planning
- Demonstrates a good standard of aeronautical decision making and non-technical skills

1.4.3.14.4 Preview Item

None

1.4.3.15 IF Detail F21

1.4.3.15.1 Summary

Detail F21 Instrument Rating Skill Test	
	Exercise
F21	Establish Shared Cockpit Connection
	Instrument Rating Skill Test

1.4.3.15.2 Objectives

- Plan and execute a commercial, passenger-carrying IFR flight whilst acting as pilot-in-command and operating as a single crewmember

1.4.3.15.3 Session Proficiency Criteria

- Complete all sections of the AFT Skill Test to Flight Test Standard

1.4.3.15.4 Detail F21 Session Guide

The purpose of the flight is for the candidate to demonstrate his ability to plan and conduct a Commercial Air Transport flight whilst acting as pilot-in-command and operating as a single crewmember. The briefed profile will be conducted in simulated IMC and the flight will include simulated abnormal or emergency procedures and general instrument flying manoeuvres.

Passenger safety, comfort and reassurance must be considered throughout the flight. The candidate is to assume that the Examiner is a passenger who will act as Safety Pilot when the candidate is flying by sole reference to instruments. The candidate is not to expect any assistance from the Examiner.

The aeroplane must be operated throughout in accordance with the POH and BAVirtual Operations Manual/Flying Order Book. The Examiner will require confirmation of the various speeds and configurations to be used at each phase of flight.

Pre-Flight Operations and Departure (Section 1)

The candidate will be expected to carry out a safe and practical inspection of the aeroplane prior to flight. This should include functional checks of the radio, navigation equipment, autopilot and any other of the installed equipment that the candidate proposes to use during the flight. The Examiner must be briefed, as a passenger, on the position and method of use of emergency exits, safety belts, life jackets and all other devices required by the ANO and intended for use by passengers in the case of emergency. The candidate must instruct the Examiner in the action he must take in the event of an emergency.

The candidate must be prepared to deal with simulated abnormal or emergency operations at any stage.

When ready for departure, the candidate should assess the crosswind component and confirm this to the Examiner. The departure should comply with any instructions given by ATC and/or published procedures.

En-route Procedures (Section 3)

Section 3 is usually flown after departure to ensure an efficient flow to the flight. The planned route should be accomplished in a practical manner utilising RNAV, VOR and/or NDB tracking as appropriate to the classification of airspace. ATC units endeavour to integrate test aircraft into the traffic flow and on occasion offer them some priority, but candidates must be prepared to accept re-routings, radar vectoring or holding during busy periods. ATC instructions and clearances must be complied with at all times and the candidate will be expected to negotiate for revised clearances if appropriate to achieve the planned routing and profile. The examiner will not normally interfere with imposed changes to the briefed exercise unless these will compromise the requirements of the test.

Radio navigation aids must be tuned and identified before use in accordance with normal operating practice. The examiner will not interfere with any radio or navigation equipment except where it is necessary to 'de-tune' an aid that is not required for that procedure, e.g. ILS de-tuned during the non-precision approach or during the holding pattern. Any radio navigation aid de-tuned by the examiner will be restored to their original state at an appropriate time.

The IFR route and profile will be selected by the examiner so that he can see and assess a mixture of RNAV, VOR and/or ADF tracking, to and from facilities, and using beam bar (HSI/CDI) and single needle (RMI/RBI) displays. Unless turning at a defined fly-over waypoint, anticipation of the next track by turning at a reasonable distance/radius from the facility is expected.

IFR approved RNAV equipment is now a requirement in UK Class “A” airspace and must be used accordingly. The equipment and installation must be 'approved' for en-route IFR operations and meet the required navigation performance criteria (generally RNP 5) before being used as the primary source of data for aircraft tracking. FM immunity requirements must be complied with. GNSS equipment must have a current database. Waypoints and flight plan routing may be inserted prior to or during flight. The candidate remains entirely responsible for checking data entries and particular care should be taken if using user defined waypoints.

Execution of an en-route Hold, if required by ATC, will be assessed but does not satisfy the requirement for a terminal Hold in sections 4 or 5.

Where aircraft are fitted with a flight director and/or autopilot and the equipment is intended to be used during the flight, the candidate will be expected to carry out the necessary pre-flight checks to establish serviceability. The equipment must be operated in accordance with any limitations in the AFM/POH. Electric trim system may be used as prescribed by the AFM/POH and should also be tested. Altitude alerting systems and speed bugs are permitted. Use of autopilot and flight director is permitted after departure and after achieving straight and level, trimmed, cruise flight en-route at the planned or assigned cruising level to the next waypoint. Permitted modes are Roll, Heading, Altitude and Vertical Speed. Tracking by using a NAV mode is not permitted. The examiner will indicate when autopilot and FD use is permitted and when it must be discontinued.

Terminal Hold (Section 4 and/or Section 5)

A holding pattern will be required in either normal or asymmetric aeroplane configuration. The holding pattern should normally be conducted using a 'single needle' instrument presentation from either an NDB, VOR or GNSS facility or fix. If a needle presentation is not available a beam bar (HSI/CDI) presentation is permitted. The hold shall be based on a

published procedure and using a terminal facility; it may be offset from the overhead if so prescribed. Any moving map display will be obscured or removed during the hold and procedural approach, or the range adjusted so that the display provides no useful information. The hold may be executed before the approach or following a Missed Approach.

Precision Approach (Section 4) & Non-Precision Approach (Section 5)

Prior to flying an instrument approach, the candidate is expected to confirm that the weather conditions are suitable for commencing and continuing the approach. Procedures must be "notified" procedures i.e. published in the iAIP; it is not acceptable under any circumstances for an examiner to brief a candidate to fly a locally produced or designed procedure. The arrival and approach must be flown in accordance with the published procedure or as otherwise directed by ATC. When flying a procedural approach based on VOR or NDB, the examiner will obscure or remove a moving map display, or change the range scale, such that tracking during the procedure is accomplished by reference to the flight navigation instruments. Similarly, the examiner may require that wind vectors and predictive or track-made-good indications are removed from the display. The non-precision approach requirement may be met by NDB, VOR, RNAV or Localiser only procedures as briefed by the examiner. A RAIM check must be completed prior to any RNAV GNSS approach (before or during flight). Any published RNAV approach will be treated as a procedural approach for test purposes and all information required to fly the procedure, including moving map displays, may be used. However, where a moving map is available for a GNSS approach, the examiner should assess the candidate's situational awareness and tracking by using "conventional" instruments at some other stage of the flight. This might be achieved, for example, by briefing the candidate to fly the precision approach (ILS) also as a procedural approach but with the moving map display inhibited. At the time of drafting this document, a GNSS approach that provides scaled lateral and vertical guidance (i.e. LPV approach) is not currently accepted as a precision approach and will not substitute for the ILS approach. Similarly, a GNSS approach that provides vertical guidance (e.g. LNAV+V) will not be accepted for the purposes of assessing Section 5, the non-precision approach unless the vertical guidance is inhibited.

Each approach is to be flown with the aeroplane correctly configured and in trim such that a stable approach path is maintained to DA/H or MDA/H as declared. The examiner will expect the candidate to brief ATC on the intentions after the approach and subsequent manoeuvres. The requirement from the approach may be to land, go-around, depart under IFR or manoeuvre visually to the appropriate runway. A non-aligned approach (not within 30°) will terminate at the MDA/H, DA/H, or circling minima, whichever is the higher. A go-around may then be required after visually manoeuvring to the landing runway. Irrespective of whether the intention is to land or go-around, the candidate will be expected to arrive at DA/H or MDA/H with the aircraft configured and at a speed from which a successful landing could be made at the designated touchdown point without excessive manoeuvring or speed/power/configuration changes. The examiner may ask to the candidate to land from any approach.

ATC may ask for higher or lower than normal pattern speeds and candidates will be expected to demonstrate flexibility to assist with traffic separation if aircraft performance permits. Any deviation from standard approach speed and configuration is expected to be "normalised" by 3nm or 1000' AAL so that a normal landing can be made at the designated touchdown point.

The examiner may intervene in the interest of the candidate if compliance with ATC would compromise the assessment of the test.

Simulated Asymmetric Flight (Section 6)

The EFATO may be combined with Sections 4 or 5. Correct touch drills are to be used where appropriate during any simulated emergency and the overall safety of the aeroplane and occupants must be maintained throughout.

At a safe height after take-off or go-around the examiner will simulate an engine failure by closing one of the throttles/power levers. The candidate will be expected to retain control of the aeroplane, identify the 'failed' engine and carry out the appropriate engine shut down and propeller feathering procedures using touch drills where necessary, the examiner will be responsible for setting zero thrust and for the management of the (simulated) failed engine.

Emergency radio calls should be made aloud to the examiner but not transmitted. If climb performance or the ability to manoeuvre is restricted, it may be prudent to advise ATC before the approach as this may affect traffic departing behind. Candidates should not assume that any practice emergency is complete until told so by the examiner. On completion of the drills and when asymmetric handling has been assessed, the examiner will be responsible for restoring power as appropriate.

The candidate will be required to carry out an approach to go-around under asymmetric power and an asymmetric approach to land. The go-around should be flown by reference to instruments but where the DA/H or MDA/H is higher than ACA/H examiners may, at their discretion, simulate cloud break and the acquisition of visual references by removing view limiting devices at or just before DA/H or MDA/H. In this case, the candidate will be expected to continue the approach visually as if to land but then initiate a go-around at ACA/H simulating for example, that the runway was blocked.

General Handling (Section 2)

The examiner will brief his intentions to either complete this section after flying all of the other sections or at a convenient time during transit between airfields. With the instrument screening/devices in place, the examiner will be responsible for navigation, location, look out and ATC liaison. The candidate will be responsible for internal security, configuration changes and observance of limitations, etc. On completion of the section the examiner will ensure that the candidate is aware of his location, the level of ATC service and his next task, before handing back control.

Full Panel: Flight by reference to full panel instruments will include:

- Level flight at various speeds, trim.
- Level turns at rate one.
- Climbing and descending turns at rate 1.

Note: Most of the items above will usually be assessed during the departure, en-route and approach sections of the flight.

- Recoveries from unusual attitudes, including sustained 45° bank turns and steep descending turns.
- Recovery from incipient stalls in level flight, climbing/descending turns and in the landing configuration, with minimum height lost, using the Standard Stall Recovery, recovering to the best rate of climb (Vy) and back to any heading designated by the examiner when appropriate.

Limited Panel: Flight by reference to limited panel will include:

- Straight and level flight and stabilised climb or descent at a given speed in straight flight.
- Level turns onto given headings at rate one using timed or compass turn methods.
- Recovery from unusual attitudes, including climbing, descending and level steep turns.. Recovery should be made in reasonable time to trimmed straight and level flight at the nominated speed with minimum loss of height.

At the conclusion of the flight the examiner may ask questions in order to clarify certain items or actions. The candidate will then be informed of the result and will be given a brief reason for any failed item. The examiner will state the requirements for any retest and indicate any mandatory or recommended retraining. Written notification of the result and any retraining will be given on the test report form and notice of failure (if required). Copies of the form will be distributed to the candidate and to FTM. The Examiner will be responsible for updating the candidate's VATSIM CERT record as appropriate.

Should any test item not have been completed or deemed not assessable by the examiner, then that item will need to be completed on a subsequent flight before the overall test result can be determined.

Should the result be a Partial Pass or Fail, the examiner will offer to debrief the candidate more fully and give advice on any aspect of the test which the candidate may find useful during any subsequent attempt.

Assessment Criteria

The flight will be assessed as if the candidate was operating under IFR with a passenger. The safety, comfort and briefing of passengers must be considered. The candidate shall demonstrate ability to:

- Operate the aeroplane within its limitations
- Complete all manoeuvres with smoothness and accuracy
- Exercise good judgement and airmanship
- Apply aeronautical knowledge of procedures and regulations as currently apply
- Maintain control of the aeroplane at all times in such a manner that the successful outcome of a procedure or manoeuvre is never in doubt.

Throughout the flight the aeroplane should be flown as accurately as possible but not at the expense of smooth, co-ordinated control inputs and correct technique. The limits or tolerances specified in the VATSIM PTD P5 Standards are reproduced below. They are for guidance and candidates should strive to achieve these throughout the flight, but momentary excursions do not necessarily indicate that a 'failure' will result. The examiner will be looking for the candidate to recognise the error promptly and make smooth and timely corrections.

The examiner will make allowance for adverse weather conditions such as turbulence and the handling qualities and performance of the aeroplane used.

2 FI Training

2.1 Introduction

2.1.1 Aims

The objective of the AFI course is to train to the level of proficiency necessary for the issue of a Flying Instructor (Virtual) certificate with Multi Engine Piston and Instrument Rating Instructor privileges. The course is designed to give training to the applicant in theoretical knowledge instruction and in-flight instruction in order to instruct on the Advanced Flying Training course.

2.1.2 Pre-entry Requirements

In order to be accepted on to the AFI course, the candidate must:

- Hold a VATSIM P5 rating
- Meet the general requirements outlined in OM-D (General)

2.1.3 Objectives

The aim is for candidates to:

- Learn how to use JoinFS as an instructor
- Develop the instructional skills acquired during the Initial Instructor Training course
- Learn to train and assess pilots using the BAVirtual Pilot Competencies
- Gain familiarity with the Advanced Flying Training Course exercises
- Learn to assess when a trainee has achieved the General Skills Test (GST) standard
- Reach a satisfactory standard for a final Assessment of Competence
- Achieve FI(V) certification

2.1.4 Training Methodology

During the course the Trainee Instructor will:

- Operate JoinFS and vPilot as an instructor
- Develop his/her instructional technique
- Give briefings on Advanced Flying Training Course details
- Demonstrate aircraft handling and instructional patter
- Identify and correct errors
- Give and receive feedback and tutoring

2.1.5 Terminology

- **TRAINEE INSTRUCTOR (TI):** The candidate
- **SENIOR INSTRUCTOR (SI):** The Instructor Tutor who will conduct the Familiarisation phase, acting as the trainee instructor's student when necessary
- **MENTOR:** A fully-qualified Flying Instructor (Virtual) who will supervise and assist the trainee instructor during the Consolidation phase
- **EXAMINER:** The Senior Instructor conducting the final Assessment of Competence

2.1.6 Course Overview

Phase	Duration
Initial Instructor Training	4 sessions
AFI Familiarisation	4 sessions planned; minimum of 1 session
Consolidation	Minimum of 16 details: candidate must teach every detail in the syllabus at least once
Final Check	1 session observation

After successful completion of the Initial Instructor Training course, the trainee instructor will complete a period of familiarisation on the Beech Baron 58 aircraft and the specifics of instructing on the Advanced Flying Training course with a course Senior Instructor. The length of this familiarisation will vary depending on the candidate's background and experience but should be largely candidate-driven – the aim is to ensure that the candidate is both competent and, most importantly, confident and comfortable to begin operating as an instructor. Four sessions are planned for reference but the minimum requirement is for one session. Some candidates with relevant real-world/FS experience may only require a single session, whereas less confident candidates may require more than the planned four sessions. The objective of this familiarisation phase is to provide the candidate with the necessary support to enable them to operate the required equipment (e.g. JoinFS, Moodle etc) and teach the AFT syllabus independently.

In all cases, the Senior Instructor will work with the candidate to reach a position where both parties are mutually happy that the candidate is comfortable conducting AFT sessions independently, including both administration (e.g. processes for filing reports/picking up sessions etc) and practical matters (e.g. JoinFS setup & troubleshooting etc).

Once the candidate has met the required standard (see 2.1.7 Standard Required) and is confident to continue unsupervised they will be issued the **Assistant Flying Instructor (Virtual) (AFI(V))** rating and 'released' to conduct sessions independently.

This marks the commencement of the second phase. In this phase the newly-qualified Assistant Flying Instructor is assigned a mentor, who will be a 'fully qualified' Flying Instructor (Virtual).

The mentor is expected to work with the candidate throughout the 'consolidation' phase in order to provide support, feedback and answer any questions the candidate may have as they build their instructional experience. The exact form the mentoring will take is not strictly prescribed but mentors and Trainee Instructors should come to an arrangement which best fits the needs of the Trainee Instructor. As a suggestion, this phase could (and almost certainly will) include a combination of 'remote' support via e-mail/forum PM, informal observations by the mentor of sessions conducted by the Trainee Instructor from time to time, observations by the Trainee Instructor of sessions conducted by the mentor, Discord chats and so on.

The mentor is not required or expected to formally record the results of any session observations, however it will likely be useful for the mentor to make use of the Instructor Competencies and the Examiner's Report Form for the FI(V) check as a framework for debriefing and measuring the student's progress.

To progress to the final check, the student must:

- Have taught every lesson in the AFT syllabus at least once
- Have recorded a minimum of 25 hours of Flight Instruction time (requirement for issue of an FI(V) rating)
- Be recommended by their mentor

The final check will be conducted by a Senior Instructor in the form of a session observation with a 'live' student. If the candidate meets the required standard (see 2.1.7 Standard Required) they will be issued with the full **Flying Instructor (Virtual) (FI(V))** rating.

2.1.7 Standard Required

2.1.7.1 Progression from Familiarisation phase to Consolidation Phase (AFI(V) rating issue)

The minimum standard required for issue of the AFI(V) rating is at least Grade 4 in all Instructor Competencies (see OM-D Appendix G).

2.1.7.2 Completion of Consolidation Phase (full FI(V) rating issue)

The minimum standard required for issue of the Flying Instructor (Virtual) rating is at least Grade 3 in all Instructor Competencies (see OM-D Appendix G).

2.1.8 Pre-Course Preparation

Trainee Instructors should obtain the following:

- Instructor access to Moodle
- JoinFS Guide
- Revise the Baron 58 and BAVirtual Flying Club documentation paying particular attention to the Flying Orders, checklists, limitations, standard operating procedures etc.
- Gain familiarity with the Operations Manual Part D (General) and Appendix C (Initial Flying Training), noting in particular the BAVirtual Pilot Competencies and the Behavioural Markers
- Review Initial Instructor Training course notes and consider practical application of core skills
- Preview the Advanced Flying Training Course in Moodle
- Revise ATC phraseology (CAP 413)
- Revise relevant VATSIM regulations (ATO Policies and Procedures and Code of Conduct).

2.1.9 Instructional Techniques

The techniques required include briefing, demonstration, observation, objective analysis, correction, feedback and report writing. These are the six primary training skills learnt on the Core Course and these will be reinforced and developed throughout the course. *The SI and Mentor will also develop the Trainee Instructor with reference to the Instructor Competencies as defined in OM-D Appendix G.*

2.1.9.1 Briefing

During the Initial Instructor Training course the SI will give at least one example of a pre-flight briefing upon which the TI can model their briefings. In addition there will be opportunities during the Familiarisation Phase for the TI to observe the SI giving briefings, and during the Consolidation Phase for the TI to observe their mentor giving briefings.

A 'textbook' briefing will:

- Start from where the trainee is
- Be clear and contain all the necessary technical information required
- Include the necessary 'how' as well as the 'when and where'
- Include visual aids where appropriate
- Contain a bullet point summary in conclusion
- Contain questions to check a satisfactory level of transfer of information and understanding

It is vitally important that the TI understands that the purpose of the briefing is to prepare for the flying session; to provide the 'how to' knowledge such that the trainee will know, before commencing the flying detail, what techniques and skills will achieve a successful outcome to the exercise. The purpose is not to just repeat information/diagrams which the trainee should already have read in Moodle. This knowledge should be checked by appropriate facilitation.

- The TI should establish the background and previous experience of the trainee
- Consider any personal factors: is he/she hungry, tired or otherwise distressed?
- Use facilitation to check that the trainee has prepared thoroughly and understands the subject matter. Use instruction to eliminate points of confusion.
- Concentrate on the practical aspects, pass on tips and hints, and try to raise (or maintain) the trainee's confidence
- Try to engage and motivate the trainee with suitable 'WIIFM' (What's In It For Me?)
- Give context to the exercise such as airfield, weather conditions etc
- Explain **how to** rather than simply **what** they will do
- Guard against any tendency to intimidate or impress the trainee with superior knowledge
- Remember, the purpose of the briefing is not simply to repeat information which has already been studied through Moodle
- Keep it simple

2.1.9.2 Demonstration

During the Initial Instructor Training course the example of a 'textbook' pattered demonstration are provided. During the Familiarisation Phase the SI will ask the TI to demonstrate particular exercises.

It is important as the TI gains confidence and experience in the Consolidation Phase to be able to recognise when a demonstration is appropriate and intervene accordingly.

The ideal pattered demonstration will consist of:

- The setting of the scene
- Pre-emptive patter which describes in advance the technique to be used
- The accurate reproduction of the pattered technique
- Bullet point summary of the highlights after the demonstration is complete

It is absolutely vital that the demonstration is not allowed to become a 'running commentary' as the trainee will have little capacity left to assimilate the important features of the demonstration.

2.1.9.3 Observation

The analysis of ‘why’ a manoeuvre was incorrectly flown or conducted is of significant importance. The TI must be encouraged to look for the ‘root cause’ of inconsistency or difficulty with a manoeuvre.

2.1.9.4 Correction

The TI must be able to correct with appropriate use of the ‘how’ factor. This will necessitate a level of empathy with the trainee and an understanding of ‘what’ particular aspect of the technique the trainee is likely to find difficult. A key skill for the TI is to be able to identify the skills and behaviours that constitute a successful execution of the manoeuvre as this will assist them in being proactive in identifying and correcting trainee difficulties.

2.1.9.5 Debrief

A ‘textbook’ debrief is clear, concise, objective and of appropriate length. It will focus on both technical and non-technical issues, in relation to the BAV Pilot Competency Behavioural Markers and contain elements of praise and criticism where necessary. Feedback is wasted and the learning value will be diminished if there is any element of disagreement between the instructor and the trainee as to what happened. The imperative is to seek agreement on what happened, why it happened and how the trainee will proceed to correct the technique.

2.2 Initial Instructor Training Course

See OM-D Appendix G Initial Instructor Training for more information on IIT.

2.3 Familiarisation Phase

2.3.1 AFI 1

2.3.1.1 Overview

AFI 1 is led by a Senior Instructor. The primary aim is for the Trainee Instructor to familiarise themselves with operating JoinFS and vPilot as an instructor, the process for entering reports in to the Moodle system, and practice demonstration and observation skills.

2.3.1.2 Briefing

SI Brief:

- JoinFS setup and instructor operation
- vPilot shared cockpit operation and quirks
- Level turns
- Landing

TI Brief:

- None

2.3.1.3 Air Exercise

SI:

- Transfer of controls using JoinFS
- Teaching level turns
- Teaching landings

TI:

- Practice JoinFS operation
- Practice demonstration & observation skills (level turns & landing)

2.3.1.4 Debrief

- Summarise lessons learned
- Point toward AFI 2
- Allocate briefing topic for AFI 2 – Engine Failure After Takeoff

2.3.2 AFI 2

2.3.2.1 Overview

AFI 2 is a joint SI/TI exercise where the TI starts to take responsibility for setting up, briefing and conducting a basic handling detail from the AFT course. The aim is to prepare the TI for the AFI(V) AoC that follows.

2.3.2.2 Briefing

SI Brief:

- Overview

- Briefing and demonstration skills

TI Brief:

- JoinFS/vPilot session setup
- Brief SI for Engine Failure After Takeoff (inexperienced trainee)

SI:

- Provide feedback on TI brief

2.3.2.3 Air Exercise

TI:

- Run EFATO exercise

SI:

- Act as 'dummy' trainee
- Introduce 'common errors' as appropriate to develop TI's observation/correction skills
- Provide feedback on TI's performance as appropriate

2.3.2.4 Debrief

TI:

- Debrief SI on performance as a 'trainee'

SI:

- Provide feedback on TI's debrief
- Provide feedback on TI's performance during the Air Exercise with respect to the Instructor Competencies
- Point toward next session – AFI 3
- Subject allocation for next session – exercise from Instrument Flying phase at SI's discretion

2.3.3 AFI 3

2.3.3.1 Overview

AFI 3 is led by the TI and sets the scene for the AoC which is to follow. The TI will be responsible for setting up, briefing for and running the assigned exercise from start to finish.

2.3.3.2 Briefing

SI Brief:

- None

TI Brief:

- Set up JoinFS
- Brief SI for allocated exercise (experienced simmer)

2.3.3.3 Air Exercise

TI:

- Run allocated exercise

SI:

- Act as 'dummy' trainee (experienced simmer)
- Introduce 'common errors' as appropriate

2.3.3.4 Debrief

TI:

- Debrief SI on performance as a 'trainee'

SI:

- Provide feedback on TI's overall performance during the session
- Point toward next session – AFI 4 – AFI AoC
- Subject allocation for AoC – exercise from either Multi Engine Conversion or Instrument Flying phase at SI's discretion

2.3.4 AFI 4

2.3.4.1 Overview

AFI 4 is the AFI(V) Assessment of Competence. Training administration processes (i.e. Moodle) will also be covered.

2.3.4.2 Briefing

SI:

- Training Admin – checking trainee progress
- Invite TI to ask questions during the briefing
- Purpose of the AoC
- Explain the the assessment is based on overall performance in the Instructor Competencies – the SI will therefore not debrief each phase separately but the whole exercise on completion.
- Remind the TI that part of the assessment is the efficient use of time, both in briefing and the exercise itself
- Explain that the SI, whilst playing the role of student, should be treated as such and all aspects of his performance should be regarded in context. If it is considered that the student would benefit from a demonstration, the TI should give one.
- In the air exercise the TI should proceed with the student's training until a satisfactory standard is achieved or it is judged that the student will not benefit from continuing, or the SI asks him to move on. As with any training detail, the student's needs may preclude completion of the lesson plan.
- Should there be a fault with JoinFS, Merlin or FS at either end the TI is responsible for leading the process of resolving (e.g. common fault finding, attempting to contact the JoinFS server admin/BAV Technical Team etc). If the fault cannot be rectified the TI must decide whether to continue.

- Ask the TI if he has all the briefing aids required
- At the end of the briefing, ask the TI if he fully understands the briefing

TI:

- Session setup (JoinFS, vPilot, Discord etc)
- Brief SI for allocated exercise

2.3.4.3 Conduct of the AoC

The AoC must be an assessment of the applicant's skills as an instructor, not as an examiner.

On initial AoCs, the examiner must take into account that a newly trained instructor's ability can reflect only unconsolidated skills which have been acquired during the instructor course and cannot, for obvious reasons, draw on expertise gained from instructional experience.

The applicant should demonstrate his ability to devise a lesson plan for the allocated exercises, and manage time efficiently with the intention of completing this lesson plan. However, the test should be based on a principle of quality rather than quantity, and kept as straightforward as possible.

Instructional exercises do not need to be complex or advanced. Basic exercises (e.g. turning, stalling, visual approach and landing etc) can reveal a great deal about instructional skills.

Student role play should be aeroplane-related rather than personality based. Errors made should be typical technical and non-technical student errors for the type and exercise (e.g. not trimming, inadequate knowledge of procedures etc.) and kept to a relatively small number. The student's performance should reflect the quality and content of the instruction given.

After the AoC has been completed, the examiner should complete the instructor test report and enter the details and completed form in to Moodle, retaining a copy for his own records.

Examiners should advise successful applicants to maintain a personal record of their instructor activity. This record will be required for the upgrade to FI(V) at the end of the Consolidation Phase.

2.3.4.4 Air Exercise

TI:

- Run briefed air exercise with SI as 'dummy' trainee

SI:

- Act as 'dummy' trainee
- Introduce 'common errors' as appropriate

2.3.4.5 Debrief

TI:

- Debrief SI on performance as a 'trainee'

SI:

- Provide feedback on TI's performance with respect to the Instructor Competencies
- Training Admin – entering reports
- Point toward the Consolidation Phase
- Complete associated admin (AoC report, VATSIM rating upgrade etc)

2.3.4.6 Instructor Competencies

Refer to OM-D Appendix G (Initial Instructor Training) for information on Instructor Competencies.

2.4 Consolidation Phase

2.4.1 Overview

The Consolidation Phase is a period where the newly-qualified Assistant Flying Instructor is 'released' to practice and develop their instructional skills in a 'live' environment with real trainees.

During this period the AFI will build the experience and competence required to pass the Flying Instructor (Virtual) AoC and obtain the full FI(V) rating.

2.4.2 Mentoring

In the Consolidation Phase the newly-qualified Assistant Flying Instructor is assigned a mentor, who will be a 'fully qualified' Flying Instructor (Virtual).

The mentor is expected to work with the candidate throughout the 'consolidation' phase in order to provide support, feedback and answer any questions the candidate may have as they build their instructional experience. The exact form the mentoring will take is not strictly prescribed but mentors and Trainee Instructors should come to an arrangement which best fits the needs of the Trainee Instructor. As a suggestion, this phase could (and almost certainly will) include a combination of 'remote' support via e-mail/forum PM, informal observations by the mentor of sessions conducted by the Trainee Instructor from time to time, observations by the Trainee Instructor of sessions conducted by the mentor, Discord chats and so on.

The mentor is not required or expected to formally record the results of any session observations, however it will likely be useful for the mentor to make use of the Instructor Competencies and the Examiner's Report Form for the FI(V) check as a framework for debriefing and measuring the student's progress.

2.4.3 Final Assessment of Competence

To progress to the final check, the student must:

- Have taught every lesson in the AFT syllabus at least once
- Have recorded a minimum of 25 hours of Flight Instruction time (requirement for issue of an FI(V) rating)
- Be recommended by their mentor

The final check will be conducted by a Senior Instructor in the form of a session observation with a 'live' student. If the candidate meets the required standard (see 2.1.7 Standard Required) they will be issued with the full **Flying Instructor (Virtual) (FI(V))** rating.

2.4.3.1 Conduct of the FI(V) AoC

The AoC must be an assessment of the candidate's skills as an instructor, not as an examiner.

The AoC is in the form of an observation of the candidate conducting a standard IFT training session by a nominated Senior Instructor. The candidate should conduct the session normally in every respect – for instance, if the student's needs preclude completion

of the lesson plan then so be it. Likewise simulator/JoinFS technical faults should be dealt with by the candidate in the normal manner.

No role play is expected of the student who should simply act normally throughout.

After the AoC has been completed, the examiner should complete the instructor test report and enter the details and completed form in to Moodle, retaining a copy for his own records.

2.4.3.2 Examiner Briefing Prior to the FI(V) AoC

- Invite the candidate to ask questions during the briefing
- Purpose of the AoC
- Explain to the candidate that the assessment is based on overall performance in the Instructor Competencies – the examiner will therefore not debrief each phase separately but the whole exercise on completion.
- Remind the candidate that part of the assessment is the efficient use of time, both in briefing and the exercise itself
- Remind the candidate that the examiner's role is simply to observe and not to play an active part in the session in any respect
- At least one demonstration must be seen in order for this aspect of the Instructor Competencies to be assessed. The examiner will normally select an exercise to observe where a demonstration forms part of the standard lesson plan.
- Explain that all aspects of the session should be conducted normally as if the examiner were not present. If it is considered that the student would benefit from an additional demonstration, the candidate should give one.
- In the air exercise the candidate should proceed with the student's training until a satisfactory standard is achieved or it is judged that the student will not benefit from continuing. As with any training detail, the student's needs may preclude completion of the lesson plan.
- Should there be a fault with JoinFS, Merlin or FS at either end the candidaet is responsible for leading the process of resolving (e.g. common fault finding, attempting to contact the JoinFS server admin/BAV Technical Team etc). If the fault cannot be rectified the candidate must decide whether to continue.
- Ask the candidate if he has all the briefing aids required
- At the end of the briefing, ask the candidate if he fully understands the briefing

The examiner should also separately brief the student:

- Remind the student that no role-play is required or expected
- Remind the student to simply act normally and ignore the presence of the examiner

2.4.3.3 Debrief

The debrief should take the form of all other assessment of competence de-briefs. It should focus on the positives, avoid being chronological or nit-picking and highlight areas for development and improvement. Assessment of the whole session should be measured against the behavioural markers of the BAV Pilot Competencies making use of the language of the BAV Pilot Competency Behavioural Markers as an integral part of the de-brief and assessment criteria.

2.4.4 Instructor Competencies

Refer to OM-D Appendix G (Initial Instructor Training) for information on Instructor Competencies.

2.5 Converting FI (Course to Extend the Privileges of an FI to a New Type)

2.5.1 Introduction

This course is for the purposes of extending the privileges of an existing FI(V) rating and will be referred to as the Short AFI Course.

The objective of the Short AFI Course is to train to the level of proficiency necessary for the issue of the Multi-Engine Piston and Instrument Rating Instructor ratings. The course is designed to give training to the applicant in theoretical knowledge instruction and in-flight instruction in order to instruct on the Advanced Flying Training Course.

2.5.2 Pre-Entry Requirements

In order to be accepted on to the Short AFI course, the candidate must:

- Hold a VATSIM P5 rating
- Hold a full FI(V) rating

2.5.3 Objectives

The aim is to:

- Introduce the converting FI to the AFT course
- Discuss training philosophy in multi-engine aircraft and in the instrument training environment
- Familiarise the Trainee Instructor with all aspects of operating JoinFS in the AFT environment
- To allow the Trainee Instructor to practice demonstrating, fault analysis and fault correction
- To allow the Trainee Instructor to give and receive feedback
- To refresh Instructor Competencies as set out in OM-D Appendix G
- Learn to assess when a trainee has achieved the MEP Check and IR Skill Test standard
- Reach a satisfactory standard for a final Assessment of Competence
- Achieve MEI and IRI certification

2.5.4 Training Methodology

During the course the Trainee Instructor will:

- Operate JoinFS and vPilot as an instructor
- Develop his/her instructional technique
- Give briefings on Advanced Flying Training Course details
- Demonstrate aircraft handling and instructional patter
- Identify and correct errors
- Give and receive feedback and tutoring

2.5.5 Terminology

- **TRAINEE INSTRUCTOR (TI):** The candidate
- **SENIOR INSTRUCTOR (SI):** The Instructor Tutor who will conduct the Familiarisation phase, acting as the trainee instructor's student when necessary
- **MENTOR:** A fully-qualified Flying Instructor (Virtual) who will supervise and assist the trainee instructor during the Consolidation phase
- **EXAMINER:** The Senior Instructor conducting the final Assessment of Competence

2.5.6 Course Overview

Phase	Duration
Observations	Recommended*
Familiarisation	3 sessions planned; minimum of 1 session
Final Check	1 session observation

*Observations are recommended for the TI to gain familiarisation with JoinFS in the AFT environment. The Short AFI course assumes that the TI has a good knowledge of the operation of JoinFS.

3 FE Training

3.1 Introduction

Examiners shall not conduct:

- Skill tests or assessments of competence of applicants for the issue of a licence, rating or certificate:
    - To whom they have provided more than 25% of the flight instruction for the licence, rating or certificate for which the skill test or assessment of competence is being taken; or
    - When they have been responsible for the recommendation for the skill test

- Skill tests, proficiency checks or assessments of competence whenever they feel that their objectivity may be affected. (Examples of a situation where the examiner should consider if his/her objectivity is affected are when the applicant is a relative or a friend of the examiner, or when they are linked by economic interests or political affiliations, etc.)

3.1.1 Pre-Entry Requirements

Applicants for a TRE(V)/FE(V) certificate shall:

- Hold the relevant VATSIM Pilot ratings
- Hold a BAVirtual Instructor rating
- For the initial issue of a TRE(V)/FE(V) certificate, have completed at least 25 hours of flight instruction in the applicable type (this requirement is not applicable for an Examiner extending their privileges to a new type)

3.2 Examiner Standardisation Course

3.2.1 Introduction

BAVirtual will strive to provide an outstanding course through appropriately qualified staff, suitable facilities and a relevant training syllabus. The Chief Tutor will be prepared to provide a practical demonstration of the course, as required, to the satisfaction of a Primary Operations Inspector or other representative of the VATSIM Pilot Training Department.

The course is a generic course for all fleets and must be attended by all suitably qualified Type Rating Instructors (Virtual) (TRI(V))/Flying Instructors (Virtual) (FI(V)) prior to the initial issue of an Examiner's Certificate.

Following successful completion of the Examiner Standardisation Course, the trainee examiner will practice conducting checks under the supervision of an experienced examiner and then complete an Examiner Assessment of Competence (EAoC) on a 'live' crew observed by a Senior Examiner. BAV require a minimum of 2 'observation' details prior to the EAoC which is conducted by a Senior Examiner (SE).

Prior to the initial issue of a TRE(V)/FE(V) Certificate candidates shall have logged at least at least 500 hours flight time on the VATSIM network including at least 500 BAVirtual hours, and 25 hours of flight instruction as a TRI(V) or FI(V) in the applicable type/class. Waivers may be granted by the Training Department to suitably qualified and experienced candidates if deemed necessary.

When an examiner adds or transfers to a different aircraft type/class he will qualify on that type/class as an examiner using the EAoC format. There is no need to complete a further Examiner Standardisation Course.

3.2.2 Objectives

The aim of the BAVirtual TRE(V) Standards Course is to provide candidates with the basic skills necessary to become an examiner. By the end of the course the candidate should be able to conduct a VATSIM Pilot Rating Examination and BAVirtual Proficiency Check, including the briefing, assessment and debriefing, to the standard required by the VATSIM PTD.

3.2.3 Training Methodology

TBC

3.2.4 Course Overview

TBC

3.2.5 Course Material

TBC

3.2.6 Assessment

TBC

3.2.7 FE(V) Standardisation Course Tutors

- John Pettit
- Simon Kelsey

3.3 Observations

Newly appointed FE(V)'s who will conduct Ratings Examinations, Proficiency Checks and Assessments of Competence on behalf of BAVirtual are required to complete 2 observations. These will be undertaken under the supervision of a qualified FE(V).

3.4 Examiner Assessment of Competence

The EAoC is conducted by a Senior Examiner. The trainee will conduct a Rating Examination in accordance with the VATSIM PTD standards and BAVirtual Training Manuals as approved by the VATSIM PTD on a 'Live Candidate'.

4 Appendix 1: MEP Skill Test Schedule & Standard

Section 1 - Departure

Pre-flight

- Check aeroplane serviceability
- Check that all documents required for the flight are carried and correct
- Obtain and assess all elements of the prevailing and forecast weather conditions
- Complete mass and balance schedule and establish performance criteria
- Check NOTAM for factors likely to affect conduct of flight
- Complete an appropriate flight navigation log, chart and flight plan
- Complete fuel plan and determine that the aeroplane is correctly fuelled for the flight

Pre-Start Checks

- Complete all elements of the aeroplane and equipment pre-flight inspections as detailed in checklist, operating handbook or flight manual
- Complete an appropriate passenger emergency procedure briefing

Engine Starting

- Complete engine starting procedures in accordance with the approved checklist, operating handbook or flight manual

Taxiing

- Complete all recommended taxying checks and procedures
- Comply with ATC instructions, airport markings and signals
- Maintain control and proper spacing from other aircraft and obstacles

Pre-Departure Checks

- Ensure all systems are operating normally or, if not, that the aircraft is fit for departure in accordance with a minimum equipment list or an equivalent
- Ensure the aircraft is correctly configured for departure
- Complete all departure checks and drills including engine operation
- Obtain and comply with ATC departure clearance

Take-off Procedure

- Confirm any aeroplane performance criteria including crosswind condition
- Position the aeroplane correctly for take-off and advance the throttle(s)/thrust lever(s) to take off power with appropriate checks
- Use the correct take-off technique using the recommended speeds for rotation/lift-off and initial climb
- Ensure a safe climb and departure adjusting power and aeroplane configuration as appropriate
- Complete all necessary after take-off checks
- Execute a safe departure in accordance with clearance and with due regard for other air traffic

Climbing

- Achieve target speeds and headings
- Comply with ATC instructions
- Use correct and effective lookout techniques
- Complete all necessary climb checks

ATC Liaison - compliance RTF procedures, Airmanship

- Demonstrate standard RTF procedures and phraseology
- Demonstrate compliance with ATC instructions
- Operate on the ground and in the air with particular regard for passenger safety and comfort

Section 2 – Airwork (VMC)

Straight and level flight

- Demonstrate control by visual attitude whilst maintaining a correct and effective lookout technique
- Demonstrate correct techniques for visual flight manoeuvring within the specified limits
- Maintain balance and trim

Slow Flight

- Consider all safety checks before the manoeuvres where necessary
- Select and stabilise the aeroplane at a nominated low airspeed above the stall speed whilst maintaining balance, trim and lookout. Maintain specified altitude/level, heading and speed as specified by the examiner
- Maintain safe bank angles, balance, speed, and altitude (if required) during turning and complete turns onto specified headings

Steep Turns (360° left and right - 45 °AOB)

- Ensure a thorough lookout to clear the airspace, before, during and after the turns
- Roll into a co-ordinated turn with a bank angle of not less than 45°; maintain a stable, balanced turn through at least 360°
- Establish and maintain bank angle, speed and height by using smooth, co-ordinated control inputs
- Roll out of the turn and stabilise straight and level flight on a specified heading

Stalls and Recovery

- Conduct appropriate safety checks before stalling
- Establish the required aeroplane configuration and stall entry as appropriate from straight & level or manoeuvring flight
- Maintain heading (or bank angle 10°-30° as required) to stall entry
- Recognise the symptoms of the stall or approaching stall and initiate the correct recovery action
- Recover, using the correct techniques and with minimum height loss to return to a clean configuration best rate climb, or as otherwise directed by the examiner
- Complete all necessary checks and drills
- Maintain effective lookout throughout

Handling using Autopilot & Flight Director (May be conducted in Section 3)

- Demonstrate correct procedure for pre-flight functional check of autopilot and/or flight director
- Demonstrate correct operating procedure for autopilot and/or flight director in all modes
- ATC Liaison
- Obtain and maintain suitable level of service from ATC
- Maintain listening watch and respond appropriately to messages/instructions/clearances from ATC

Section 3 - En-Route (VFR)

The exact content and duration of section 3 is at the discretion of the examiner. As a minimum it should comprise one route sector or navigation leg, sufficient for the applicant to demonstrate proficiency in en-route VFR procedures. Note that this is not intended to replicate the en-route section of an initial P3 skill test, thus a flight time in the cruise of approximately 15 - 30 minutes (not more than 45) is envisaged for this section.

Flight Plan

- If submitted, the flight plan and clearance is to be completed correctly and clearances complied with.

Maintenance of altitude, heading and speed

- Control aeroplane using visual attitude flying techniques
- Configure airframe and engine(s) for cruise or endurance performance in accordance with approved checklist and/or Flight or Operations Manual
- Maintain the heading, height and speed as computed in navigation log or advised to the examiner within the prescribed limits
- Adjust and monitor fuel consumption for range or endurance as appropriate

Orientation and timing, revision of ETAs

- Identify position visually by reference to ground features and map
- Navigate by means of calculated headings, ground speed and time
- Achieve destinations or turning points within 3 minutes of estimated time of arrival (ETA)
- Calculate heading, ground speed, ETA and fuel required during any unscheduled diversion
- Amend plan to avoid deteriorating weather and maintain VMC, or consider discontinuing navigation route if unable to maintain VMC

Use of radio aids and/or GPS

- Select, identify and interpret position/navigation information from appropriate ground based radio and navigation aids or from GPS information as required or nominated by examiner
- Navigate to designated waypoints (VFR) using the navigation aids nominated by the examiner
- Maintain the heading, height and speed within the prescribed limits

Flight Management

- Complete all elements of VFR planning for the route prescribed with particular reference to planned tracks, altitudes and safe levels of operation
- Maintain a navigation log and radio log by recording sufficient information such that the route may be reconstructed if necessary after flight
- Monitor the engine and aircraft systems throughout the flight
- Monitor fuel consumption versus fuel available and fuel required throughput the flight

ATC liaison/ compliance, R/T procedures, Airmanship

- Set and cross check altimeters to most appropriate pressure setting in accordance with national regulations or as required by checklist, operations manual or ATC
- Use correct and standard RTF phraseology throughout
- Where appropriate, obtain ATC clearances and appropriate level of service
- Where required, comply with ATC clearances and instructions
- Display sound airmanship, flight management and decision-making
- Complete all necessary checks and drills

Section 4 - Arrivals and Landing Procedures

Arrival procedures

- Carry out appropriate checks and drills
- Set altimeters and cross check in accordance with checklist, Operations Manual, or as required
- Comply with published arrival procedure or clearance
- Maintain adequate lookout and collision avoidance

Normal Landing

- Consider weather and wind conditions, landing surface and obstructions
- Plan and follow the circuit pattern and orientation with the landing area
- From the circuit pattern establish the recommended approach configuration and adjust speed and rate of descent to maintain a stabilised approach
- Select and achieve the appropriate touchdown area at the recommended speed
- Adjust descent and round out (flare) to achieve a safe landing with little or no float with appropriate drift and crosswind correction
- Maintain directional control after touchdown and apply brakes for a safe roll out
- Complete all necessary checks and drills

Flapless Landing

As for Normal landing plus:

- Consideration for changed aircraft performance
- Adjustment in final approach slope if appropriate for type for reduced drag
- Ascertain and achieve a planned landing position

Crosswind Landing

- As for normal landing plus:

- Utilises appropriate technique to minimise drift and excessive lateral loads on the undercarriage on landing

Go around from minimum height

- Execute a timely decision to go around, or when instructed by ATC or when instructed by the examiner (this may be at any height or time prior to touchdown)
- Apply appropriate power and control aeroplane attitude to initiate a safe climb maintaining balance and heading
- Adjust configuration and speed to achieve a positive climb at Vy or Vx as appropriate
- Maintain go-around power until a safe manoeuvring altitude is reached and then adjust to a normal climb configuration and speed
- Complete all necessary checks and drills

ATC liaison and compliance, RTF procedure, Airmanship

- Obtain and comply with ATC clearances using correct RTF phraseology
- Adjust circuit pattern/speed to maintain spacing with other traffic in the landing pattern
- Maintain awareness of other traffic through RTF and lookout

Section 5 - Abnormal and Emergency Procedures

Rejected take-off

- Recognise a situation where the safest course of action is to reject the take-off
- Take appropriate actions to stop safely within the remaining runway; inform ATC
- Consider and demonstrate/discuss appropriate actions following RTO (e.g. engine shut down, evacuation, precautions for hot brakes etc)

Simulated emergencies (any emergency, abnormal procedure or system failure that is appropriate to the aeroplane on which the test is conducted)

- Correctly diagnose the problem
- Consider options and decide upon a sound course of action
- With reference to checklist, execute appropriate abnormal or emergency procedures
- Review, plan and execute further actions as appropriate to ensure safe recovery of aeroplane, passengers and crew

Engine shutdown and restart

- With reference to checklist, execute correct procedures for pre-meditated engine shutdown and subsequent re-start
- Maintain control of aircraft throughout including heading, balance and trim
- Effect drills correctly and without assistance

ATC liaison: compliance, RTF procedures, Airmanship

- Make appropriate emergency RTF calls informing ATC of situation and assistance required (transmissions prefixed with “practise” or “simulated” or given to examiner but not transmitted)
- Analyse emergency or abnormal situation in calm, methodical fashion

- Make sound decisions regarding checks/procedures and formulate appropriate plan for subsequent conduct of flight
- Use checklist to confirm actions when time permits

Section 6 - Simulated Asymmetric Flight

Items from this section may be performed in Sections 1 to 5.

Simulated engine failure after take-off (at a safe speed and altitude)

Simulated engine failure in aeroplanes must only be simulated only after the aeroplane has achieved at least take-off safety speed and a safe altitude

- Maintain directional control following simulated engine failure
- Correctly identify failed engine; confirm failed engine and complete the published checks and drills
- Maintain the correct speed, configuration and trim for optimum performance
- Comply with ATC instructions

Asymmetric approach and go around

- Maintain a stable (trimmed) approach in the correct configuration
- Make a clear decision to land or go-around no later than the appropriate committal height
- Complete asymmetric approach and go-around into visual circuit, circling approach or further instrument approach, maintaining control and correct speeds
- Reconfigure and trim aircraft correctly
- Complete after take off/go around checks

Asymmetric approach and full stop landing

- Consider the actual weather and wind conditions, landing surface and obstructions
- Maintain a stable (trimmed) approach in the correct configuration
- Plan and follow suitable approach pattern and orientation with the landing runway
- Establish the correct approach configuration, adjusting speed and rate of descent to maintain a stabilised approach path
- Make a clear decision to land or go-around no later than the appropriate committal height
- Select and achieve the appropriate touchdown area at the required speed
- Adjust descent and round out (flare) to achieve a safe landing with little or no float with appropriate drift and crosswind correction
- Maintain control and apply aeroplane brakes for a safe roll out
- Complete necessary checks and drills

ATC Liaison, compliance, RTF procedures, Airmanship

- Inform ATC of abnormal flight condition and any assistance required
- Comply with ATC procedures and instructions
- Adjust traffic pattern with due regard to weather, surface conditions, obstructions and other air traffic
- Adjust configuration and circuit pattern with regard to aeroplane performance
- Complete necessary checks and drills

5 Appendix 2: Instrument Rating Skill Test Schedule & Standard

Section 1 - Departure

a. Use of Flight Manuals (or equivalent)

- Use of the Flight Manual and Operations Manual to determine aeroplane performance; mass and balance and aeroplane documents to determine acceptability for the flight.

b. Use of Air Traffic Services document and weather document

- Use of the correct documents, including maps; charts and approach procedure plates to prepare flight plan and flight log; collating and interpreting the weather documents to determine the route weather.

c. Preparation of ATC flight plan and IFR flight log

- Preparation of the ATC IFR flight plan for the route, including any off-airways sectors, and preparation of navigation flight log.
- Obtains and assesses all elements of the prevailing and forecast weather conditions for the route.
- Completes an appropriate flight navigation log.
- Completes the required ATC flight plan(s) and ensures that all required airfields are addressed.
- Determines that the aeroplane is correctly fuelled, loaded and legal for the flight.
- Confirms any aeroplane performance criteria and limitations applicable in relation to runway and weather conditions.
- Demonstrates sufficient knowledge of the regulatory requirements relating to instrument flight.
- Checks NOTAM and where applicable completes a RAIM check (AUGUR)

d. Pre-flight Inspection

Full initial pre-flight inspection in accordance with the approved check list assuming the risk of 'icing conditions'.

- Performs all elements of the aeroplane pre-flight inspections as detailed and applicable to the actual or simulated weather conditions.
- Confirms that the aeroplane is in a serviceable and safe condition for flight.
- Checks and completes all necessary documentation.
- Takes appropriate action with respect to any identified unsatisfactory conditions.
- Confirms that any planned RNAV routes are programmed and desired RNAV approaches are correctly installed.

e. Weather Minima

- An assessment of the weather affecting the departure, route, destination and alternate airfields.
- Determination of the expected instrument approach minimum heights/altitudes.

Candidates will be expected to operate to the minimum weather conditions stated in the BAV operations manual.

f. Taxiing

- Passenger briefing
- Correct taxiing technique, procedures and checks
- Compliance with aerodrome markings and indicators including marshalling instructions and signals

g. Pre take-off briefing

- Obtaining ATC departure clearance, flight deck preparation, confirmation of departure and passenger emergency briefing.
- Actions to be taken with regard to the aeroplane if an emergency occurs during departure should be covered in the pre-flight Main Briefing.
- Completes all recommended taxying checks and procedures.
- Complies with airport markings and signals.
- Completes all departure checks and drills including engine operations.
- Obtains ATC clearance.
- Completes an appropriate passenger briefing. (Emergency handling details should be discussed in the pre-flight brief).
- Confirms any performance criteria including crosswind condition.
- Actions any anti-icing procedures.
- Positions the aeroplane correctly for take-off and advances the throttles to take off power with appropriate checks.
- Conforms to the correct take off technique using the recommended speeds for rotation (Vr) and initial climb.
- Ensures a safe climb and departure adjusting power and aeroplane configuration as appropriate.
- Completes all necessary after take-off checks.

h. Transition to instrument flight

- Take-off in accordance with the performance calculations using the correct techniques.
- Establish the climb, complete a smooth transition to instrument flight
- Complete the after take-off checks and drills.

i. Instrument departure procedure

Complete the Standard Instrument Departure procedure (SID) or follow the ATC departure instructions to join controlled airspace; use of correct altimeter setting procedure; maintaining aeroplane control, speed, heading and level.

- Maintains directional control and drift corrections within acceptable limits of speed, heading, height and track.
- Identifies any navigation aids used.
- Follows any noise routing or departure procedures and ATC clearances.
- Completes all necessary climb checks including altimeter setting procedures and ice precautions.

Section 2 - General Handling

Control of the aeroplane by sole reference to instruments including:

a. Full Panel

- Straight and level flight at various speeds maintaining balance and trim.

b. Full Panel

- Climbing and descending turns at Rate 1.

c & d Full Panel

- Recoveries from the approach to the stall in level flight, climbing/descending turns and in the landing configuration.
- Recovers from unusual attitudes including sustained 45° bank turns and steep descending turns using the correct technique to minimise height lost.

e. Limited Panel

- Manoeuvres including straight and level flight and stabilised climbing and descending at a given speed.
- Level turns at Rate 1 onto given headings.
- Recoveries from unusual attitudes.
- Controls the aeroplane without use of gyro heading and attitude instruments within the nominated limits (due consideration will be given for turbulence).
- Completes flight in straight and level, and climbing and descending, at nominated speeds. Turns flown at Rate 1 onto nominated headings, using the correct technique and demonstrating correct instrument scan and interpretation.
- Recovers from unusual attitudes including sustained 45° bank turns and steep descending and climbing turns using the correct technique to minimise height lost.

Section 3 - En-Route IFR Procedures

a. Tracking

- Tracking, including interception, e.g. NDB, VOR, RNAV.
- Intercept and maintain the route or amended route including tracking to and from an NDB or VOR or RNAV derived position.

Note: RNAV equipment (at least RNP 5 or higher) is now mandatory for use in CAS in UK airspace.

b. Use of radio aids

- Correct use of radio aids with regard to promulgated range, identification and interpretation.
- Use of ATIS/VOLMET where available.

c. Level flight control

- Smooth control of heading, altitude, speed, power, trim and ancillary controls.
- Correct use of autopilot and flight director where appropriate and permitted by the examiner.

d. Altimeter settings

- Correct altimeter setting procedure and cross-checking, monitoring of en-route MSA.

e. Timing and ETAs

- Timing and revision of ETAs including en-route hold procedures if required.

f. Monitoring flight progress

- Completion of the flight log to monitor flight progress, provide position reports and manage the fuel system and usage
- Management of the other aeroplane systems
- Use of checklist.

g. Ice protection procedures

- Monitoring of OAT, icing risk and ice accretion rate (simulated if necessary);
- Correct use of anti-icing and de-icing procedures.

h. ATC Liaison

- Follows the flight planned route or complies with any other ATC route requirements within the operating limits specified.
- Uses the correct R/T procedures and phraseology.

Section 4 - Precision Approach

a. Navigation Aids

- Setting and checking of navigational aids, identification of facilities.
- Correct use of navigation aids with regard to promulgated range, identification procedures, failure monitoring and interpretation.

b. Arrival procedures

- Descent planning and consideration of MSA/SSA.
- Completion of the published arrival procedure or as instructed by ATC including altimeter setting,

c. Approach and Landing Briefing

- The approach briefing including weather and confirmation of instrument approach procedure minima
- All procedures, checks and drills in preparation for landing.

d*. Holding Procedure

- Complete appropriate entry procedure followed by a standard ICAO hold (or as published) using a needle pointer presentation (where available), making the appropriate corrections to heading and time for the known wind.

e. Published Approach Procedure

- Compliance with the published precision approach procedure
- Vertical and horizontal profile to the nominated minima.

f. Approach timing

- Monitor or control the approach procedure using timing as necessary.

g. Altitude, speed and heading control

- Establish a stabilised approach, in-trim for the aeroplane configuration and speed, using the correct techniques for attitude, heading and power control
- Correct assessment of drift and rate of descent.

h*. Go-around

- At the minima, or as directed by ATC, transition to a climb at the correct speed and complete the checks.

i*. Missed approach procedure/landing

- Follow the missed approach procedure or continue for visual landing or circle for landing. (If flown first, following the precision approach, a go-around and missed approach procedure will normally be required.)

j. ATC liaison

- ATC liaison using the correct RTF procedures and phraseology, and compliance with procedures and clearances.

Note: * items may be performed in Section 4 or 5

Hold and Instrument Approach

- Completes an approach briefing and the checks and drills for landing; sets and identifies any navigation aids; uses the appropriate altimeter setting and RTF procedures to liaise with ATC to prevent disruption to commercial traffic.
- Completes any holding procedure with appropriate corrections for tracking and timing to achieve a standard hold.
- Complies with the published arrival and approach procedures using timing corrected for wind when necessary.

Precision Approach

- Selects and complies with the appropriate ILS instrument approach procedure.
- Setting and checking of navigational aids, identification of facilities.
- Complies with all ATC instructions and clearances.
- Uses correct R/T procedures.
- Establishes the appropriate aeroplane configuration and airspeed for the phase of the approach.
- Completes the necessary aeroplane checks and drills.
- Completes the intermediate approach as required to establish the final approach segment within the specified flight tolerances.
- Establishes the final approach segment and maintains the approach path in horizontal and vertical profile (max 1/2 scale deflection) to Decision Height/Altitude.
- Controls the aircraft as necessary to make adjustment to and achieve a stable and trimmed final approach path.
- Initiates a missed approach at Decision Height/Altitude DH/A. (Transitions to land if so required.)

Missed Approach

- Demonstrates knowledge of missed approach procedure.
- Initiates the missed approach procedure upon reaching Decision Height/Altitude if required visual references for landing are not obtained.
- Establishes aeroplane in a safe climb out and initiates aeroplane configuration changes as required to achieve as least the performance climb segments.
- Follows designated missed approach procedure or as required by ATC.

Section 5 - Non-Precision Approach

a. Navigation Aids

- Correct use of navigation aids with regard to promulgated range, identification procedures, failure monitoring and interpretation.

b. Arrival Procedures

- Descent planning and consideration of MSA/SSA
- Completion of the published arrival procedure or as instructed by ATC including altimeter setting
- Conducts a RAIM check where applicable.

c. Approach and landing briefing

- The approach briefing including weather and consideration of instrument approach procedure minima
- All procedures, checks and drills in preparation for landing.

d*. Holding procedure

- Complete appropriate entry procedure followed by a standard ICAO hold/published hold using a needle pointer presentation, where available, making the appropriate corrections to heading and time for the known wind.

e. Published approach procedure

- Compliance with the published non-precision approach procedur
- Maintenance of the published vertical and horizontal profile to the nominated minima
- Maintenance of the correct CDFA profile if appropriate.

f. Approach timing

- Monitor or control the approach procedure using timing as necessary.

g. Control of the aeroplane

- Establish a stabilised approach, in-trim for the aircraft configuration and speed, using correct techniques for attitude, heading and power control
- Correct assessment of drift and rate of descent
- Maintain Ops Manual limits for a CDFA approach if appropriate.

h*. Go-around

- At the Missed Approach Point, or at the nominated DA/H if flying a CDFA technique, or as directed by the examiner/ATC, transition to a climb at the correct speed and complete the checks.

i* Missed approach procedure/landing

- Follow the missed approach procedure, or continue for visual landing, or circle for landing or appropriate manoeuvre to land.

j. ATC Liaison

- ATC liaison using the correct R/T procedures and phraseology, and compliance with procedures and clearances.

Note: * items may be performed in Section 4 or 5.

Non Precision Approach

- Selects and complies with the appropriate VOR/NDB/LOCALISER-Only/RNAV instrument approach procedure.
- Setting and checking of navigational aids, identification of facilities.
- Complies with all ATC instructions and clearances.
- Uses correct R/T.
- Establishes the appropriate aeroplane configuration and airspeed for all phases of the approach.
- Completes the necessary aeroplane checks and drills.
- Completes the intermediate approach to establish the final approach segment within the specified limits.
- Establishes the final approach segment and maintains the approach track and vertical profile to MDH/A or circling minima.
- If CDFA techniques are being used, executes the Missed Approach at the nominated DA/H if not visual, otherwise continues towards the Missed Approach Point until visual flight conditions are established so as to complete transition to a visual approach or manoeuvre for landing
- Execute the Missed Approach if not visual.

Missed Approach

- As for the precision approach.

Section 6 - Simulated Asymmetric Flight

a. Simulated Engine Failure After Take Off or on go around

- Following a simulated engine failure after take-off or on go around, maintaining control by sole reference to instruments and completing the emergency drills (correct touch drills where required).

Note: Engine failure will be simulated only after the aeroplane has achieved at least the take-off safety speed and at a safe altitude

b. Asymmetric approach and procedural go around

- One approach, normally the second, will be flown to a procedural missed approach or as directed by ATC whilst maintaining the climb schedule for the (simulated) asymmetric condition.
- When an asymmetric NPA is flown the examiner may require the candidate to make a visual transition to the landing runway prior to the asymmetric go around at ACA/H.

c. Asymmetric approach and full stop landing

- Following the asymmetric go around and, when the required visual references have been established, continue into the circling approach procedure or appropriate visual circuit to land.
- If weather conditions preclude a visual manoeuvre the final asymmetric approach to land may, if circumstances permit, be made from another instrument approach.

d. ATC Liaison

- Compliance – R/T Procedure, Airmanship

Simulated Asymmetric Flight

- Maintains control following a simulated engine failure after take-off; completes the necessary checks and drills: maintains the correct speed and continues to follow ATC instructions
- Trimming
- Completes an asymmetric go-around into a circling approach or other appropriate manoeuvre maintaining control at safe speeds
- Completes an asymmetric approach and landing; complies with ATC instructions and maintains satisfactory lookout to avoid other circuit traffic

Approach and Landing

- Considers the actual weather and wind conditions, landing surface and obstructions.
- Plans and follows the circling approach or circuit pattern and orientation with the landing runway.
- From the circling approach or visual circuit establishes the recommended aeroplane approach configuration, adjusting speed and rate of descent to maintain a stabilised approach pattern.
- Where necessary completes a further asymmetric instrument approach to land.
- Selects and achieves the appropriate touchdown area.
- Adjusts descent and roundout (flare) to achieve a safe landing with little or no float with appropriate drift and crosswind correction.
- Maintains control and applies aeroplane brakes for a safe roll out.
- Completes necessary checks and drills.
- Observes ACA/H and satisfies criteria for safe landing before committing below ACA/H.

5.1.1.1.1 Debrief

The Examiner will comprehensively debrief the candidate on their performance, highlighting areas of strength as well as weaknesses.

6 Appendix 3: Flight Test Tolerances

Although tests or checks may specify flight test tolerances, a candidate should not be expected to achieve these at the expense of smoothness or stable flight. An examiner should make due allowance for unavoidable deviations due to turbulence, ATC instructions and the handling qualities and performance of the type of aircraft used. Candidates may be advised that, during the flight, they should concern themselves only with flying and operating the aircraft to the best of their ability and not attempt to remain within the tolerances to the detriment of smooth handling. However, it is BAVirtual Flight Training policy to use these test tolerances when preparing candidates for test.

Profile	**Tolerance**
Normal Flight	±100ft
With simulated engine failure (ME)	±150ft
Limited or partial panel	*±200ft*
Starting go-around at decision alt/ht	+50ft/-0ft
Minimum descent altitude/height	+50ft/-0ft
'Not below' minima (from FAF altitude down to MDA/H)	*-0ft*
Circling minima	*+100ft/-0ft*
Asymmetric committal height/altitude	*-0ft*

At all times when using a single-needle display	±5°
At all times when using a deviation bar display	Half scale deflection azimuth and glidepath (precision approach)
DME arcing	*±1nm*

All engines operating	±5°
With simulated engine failure (ME)	±10°
Limited or partial panel	*±15°*

Take-off and approach	±5kt
All other flight regimes	±5kt
Limited or partial panel	*±10kt*
With simulated engine failure	+10/-5kt

Notes:

- Entries in italics are suggested tolerances
- Where a test is flown for more than one purpose, examiners should be mindful of the least stringent of the tolerances shown above