UK CAA - EASA APPROVED

A320 Family

COMBINED MCC AND AIRCRAFT TYPE RATING COURSE

AIRBUS SOP'S

ATO MANUAL APPENDIX D

MARCH 2016

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INDEX

SECTION 1

1.1 INTRODUCTION

This course is conducted in accordance with the requirements of Part ORA.

Course Content

The Course time-table is constructed in accordance with the following table

Course	**GROUND TRAINING**			**FLIGHT TRAINING**	
	Theoretical Knowledge	Procedures and Systems*	FMGS Training	STD	Flying Training
With MCC	15 days	20 hours	6 hrs	36 hours**	6 landings***
No MCC	12 days	20 hours	6 hrs	36 hours**	6 landings***
With AWOPs	12 days	20 hours	6 hrs	40 hours **	6 landings***
* MCC, Procedures & Systems training will be accomplished on a FSTD with Motion Off. (FSMO)					
** Per Crew.					
***A pilot with less than 500 hours flight time of similar types or less than 1500 hours total flight time, must complete at least 6 take-off and landings. ***A pilot with more than 500 hours flight time on similar types and more than 1500 hours flight time must complete at least 4 take offs and landings. Part-FCL-720.A					

1.2 TYPE RATING SYLLABUS

DAY	TIME	SCHEDULED EVENT(S)
MCC 1		MCC Groundschool Day 1
MCC 2		MCC Groundschool Day 2
MCC 3		MCC Groundschool Day 3
T1	6:45	**COURSE MEETING – INTRODUCTION – CBT LOGIN** **CBT** – **Aircraft General** - Overview – Dimensions – Flight Deck Layout – Water & Waste - Exterior Lighting – Flight Deck Lighting – Emergency Lighting – Doors & Exits. **Air Conditioning** – Air Conditioning Introduction – Avionics Ventilation – Air Conditioning Packs. **Pneumatic System** – Pneumatic System Introduction – Pneumatic System Controls & Indicators. **Pressurisation System** – Pressurisation System Introduction - Pressurisation Controls & Operations.
T2	6:30	**REVIEW OF DAY 1 SUBJECTS** **CBT** – **Autoflight** – Autoflight System Presentation – Autopilot & Flight Director - FCU – FMA – Autothrust. **Communication** – Communication Introduction – Audio Management – Interphone & PA – Call System – CVR & FDR – Emergency Evacuation. **Electrical System** – Electrical System Introduction – Electrical System Controls & Operations – Electrical System Emergency Power – Electrical System Abnormals.
T3	6:45	**REVIEW OF DAY 2 SUBJECTS** **CBT** - **Auxiliary Power Unit** – APU Introduction – APU Operations. **Fire Detection & Protection** – Fire Protection Introduction – Engine Fire Protection – APU Fire Protection – Cargo Compt. Smoke Detection & Fire Protection – Avionics Smoke Detection – Lavatory Smoke Detection & Fire Protection. **Flight Controls** – Flight Controls Introduction – Slats & Flaps – Flight Controls Normal Law – Reconfiguration Laws. **Oxygen System** – Oxygen System Introduction – Cabin Oxygen – Crew Oxygen
T4	7:15	**REVIEW OF DAY 3 SUBJECTS** **CBT** – **Instruments** – EIS Introduction – ADIRS – EFIS Control Panels – Primary Flight Display (PFD) – Navigation Display (ND) – Clock – Standby Instruments – ISIS - ECAM **CST 1**
T5	7:30	**REVIEW OF DAY 4 SUBJECTS** **PROGRESS TEST 1** **CBT** – **Hydraulic System** – Hydraulic System Introduction – Hydraulic System Controls & Indicators. **Landing Gear & Brakes** – Landing Gear & Brakes Introduction – Landing Gear Operations – Brakes – Nosewheel Steering. **FMGS 1** **CST 2**
T6	7:00	**REVIEW OF DAY 5 SUBJECTS** **CBT** – **Fuel System** – Fuel System Introduction – Fuel System Controls – Fuel System Recirculation – Fuel Tanks – Refuelling. **Ice & Rain Protection** – Ice & Rain Protection Introduction – Ice & Rain Controls & Indicators. **FMGS 2** **CST 3**
T7	7:00	**REVIEW OF DAY 6 SUBJECTS** **CBT** – **Navigation** – Navigation Introduction – ADIRS – Weather Radar – Global Positioning System – Radio Navigation – Predictive Windshear System – TCAS – EGPWS.

		FMGS 3
		CST 4
T8	7:15	**REVIEW OF DAY 7 SUBJECTS**
		CBT – **Power Plant** – Introduction – Thrust Levers – FADEC – Indications – Oil System – Fuel System – Ignition – Thrust Reverser – Autostart – Manual Start
		FMGS 4
		CST 5
T9	7:00	**REVIEW OF DAY 8 SUBJECTS**
		PROGRESS TEST 2
		CBT REVISION/LIMITATIONS/EMERGENCY PROCEDURES
		ECAM 1
		CST 6
T10	6:30	**REVIEW OF DAY 9 SUBJECTS**
		CBT REVISION/LIMITATIONS/EMERGENCY PROCEDURES
		ECAM 2
		FINAL EXAMINATION PART 1 – CLOSED BOOK
T11	6:30	**ECAM 3**
		FLIGHT PLANNING – PERFORMANCE
T12	6:00	**ECAM 4**
		LOAD & BALANCE – AWOPS
		COMPUTERISED FLIGHT PLAN
		JEPPESEN CHARTS
		FINAL EXAMINATION PART 2 – OPEN BOOK
T13		FSMO MCC only (if required) or CST
T14		FSMO 1 Procedures and Systems or CST
T15		FSMO 2 Procedures and Systems or CST
T16		FSMO 3 Procedures and Systems or CST
T17		FSMO 4 Procedures and Systems or CST
T18		FFS 1
T19		FFS 2
T20		FFS 3
T21		FFS 4
T22		FFS 5
T23		FFS 6
T24		FFS 7
T25		FFS 8
T26		FFS 8A (Only if required by NAA)
T26/27		FFS9

Note 1 System Reviews are provided to enable the instructor to ensure that students have a full grasp of all systems and to enable CBT reviews to take place.

Note 2 Days off will be allocated by scheduling to meet the course requirements and CAP 371.

1.3. MCC COURSE REQUIREMENTS - BRIEFING SHEET

Combined MCC Training

The combined MCC course merges the MCC training with the Type Rating Course and consists of an additional 25 hrs theoretical knowledge instruction followed by 20 hours of practical training on a FSTD. The practical training must be carried out on an FNPTII or higher flight simulator.

Practical MCC instruction will be given by any qualified SFI or TRI approved by Jet Flight and Instructor Training Ltd.

All applications for the grant of a first MPA will require evidence of MCC course completion. This will either be in the form of an MCC course completion certificate from a modular or integrated course, or evidence of completion of the required skill test at the conclusion of a combined course.

MCC training must have been completed before trainees commence any phase of a first MPA Type Rating Course, unless it is a combined TR/MCC course.

1.4 MULTI-CREW CO-OPERATION (MCC) TRAINING

For those students requiring MCC training, the course will be accomplished via a three-day course of academics as described below. Simulator sessions incorporate practical MCC training.

DAY MCC 1 PROGRAMME	
0800	Introduction and Administration
0830	Aims and Objectives • Accident Statistics • SHELL Concept • Definition of MCC
0930	Video "Wrong stuff" Discussion • Isolation • Team Skills
1030	Coffee Break
1045	Communication • Enquiry • Advocacy • Speaking Listening Questioning • Assertiveness
1200	Break
1300	Information Processing • Perception Feedback loop • Distractions
1345	Situational Awareness • Levels of Situational Awareness • Predictability • Breakdowns in Awareness
1430	Video • Personalities • The Captain • Discussion – Communication
1530	Break
1545	Stress and Fatigue • Causes • Recognition and Awareness • Management
1645	Summary of Day
1730	Finish.

DAY MCC 2 PROGRAMME	
0900	Review day one
0915	Video • Captain under Pressure • Discussion Stress
1000	Leadership and Teamwork • Team / Leader Definitions • Professionalism • Cultural Influence • Management Skills
1100	Break
1115	Attitude and Motivation • Critique • Teambuilding • Expectations
1200	Video Personalities • The First Officer • Discussion – Personality and Behaviour, Attitude
1245	Lunch Break
1345	Making Mistakes • Error Types • Error Chains • Trapping Errors
1430	Video Fatal error Kegworth Discussion - Error Chain, Personalities, Decisions.
1515	Break
1530	Decisions • G.R.A.D.E or D.O.D.A.R • MCC Loop • Captains Authority
1630	Summary of Day and Brief for Group Exercise
1730	Finish

DAY MCC 3 PROGRAMME	
0900	Review the course so far
0915	Automation and Workload management • The Computer Pilot Interface • Low Level Awareness • Management of Time
1000	Conflict Management • Managing Disagreement • Interactive Styles
1045	Break
1100	Checklists and SOPs • Use of Checklists • Philosophy of SOPs • Company Safety Culture
1200	Break
1300	Group Exercise - MCC in action (with video) Scenario : Flight STN – CDG with non-technical disruptions • Performance Discussion • Class Assessments and Feedback • Lessons learned • Reinforcement of Key MCC interfaces
1530	Break
1545	Video The Unflyable Plane Discussion - MCC at Work
1630	Course Summary and Further Discussion
1730	Finish

1.5 REFERENCE MATERIAL

1.5.1 STANDARD OPERATING PROCEDURES (SOPS)

A high level of preparation and standardisation will go a long way to ensuring a safe and efficient flight. Time should be built in for pre-flight self-briefs and team briefs.
The use of standard procedures and standard techniques reduces the preparation required, reduces the possibility of a crew member becoming overloaded, thus releasing them to deal with unexpected events.
The requirements of SOPs for single crew and multi crew aircraft are different. The single crewman needs to achieve an even workload throughout the flight without the potential for overload. The priority for the multi crew SOPs, is to avoid confusion and misunderstanding between crew members and also to remove the worst effects of human individuality in the aircraft operation (e.g. personal idiosyncrasies). SOPs are not the panacea for elimination of crew errors - you cannot write an SOP for every eventuality. The design of SOPs must therefore address the balance between strict adherence and flexibility in any aircraft operation. This will avoid the temptation to ignore procedures through familiarity and remove the desire to take short cuts.

1.5.2 CHECKLISTS

Checklists were introduced and developed as aircrew experienced more complex aircraft operation. Checklists can be in book/card format or displayed electronically on CWR or EFIS.

Checklists are effective in ensuring a safe and consistent operation and should be used where appropriate 'in every operation'.

Checklists are for checking that essential actions have been carried out. They should not be too complex and should never be a substitute for common sense or good airmanship. Neither shall they be used as a means of providing a sequence of actions to be carried out mechanically without thought.

Unfortunately, despite much research and investigation into the misuse of checklists by several Aviation Authorities, the following accident occurred:-.

An MD80 crashed after attempting to take off at Detroit without flaps and slats. Investigation revealed that the taxi checklist had not been carried out at all and none of the three other relevant checklists on the ground were done properly. 156 people died.

1.6 TYPES OF CHECKS

1.6.1 Routine

Initialised and carried out at periods of light work load e.g. Before-start, Push / Start, After Start, Before Take-off, After Take-off, Descent, Landing, After Landing, Shutdown, Secure.

1.6.2 Supplementary Procedure and Non Normal Checklists

Used for initial actions during non-routine and aircraft emergencies. The design of the checks must allow quick reference and ease of use particularly when under high levels of stress. On some occasions checks may be committed into and carried out from memory with later confirmation by checklist.

1.6.3 Use of Checklist

1.6.3.1 Below are some guidelines on the effective use of checks lists :-

1. Always read all items from checklist in correct order as printed displayed.
2. Appropriate checklist initiated in anticipation of event.
3. Also, initiate checklist where possible at times of low workload.
4. Pilot Flying (PF) should initiate checklist, Pilot Monitoring (PM) will read the checklist.
5. Checks to be called out loud to ensure response given correctly.
6. Aircraft operation has priority over checklist reading.
7. Checklist should be continued to the end.
8. Checklist can be interrupted by Pilot Flying (PF) with a “hold” call and re-initialised with a continue call.
9. All other minor interrupters (e.g. cabin crew) should be told to stand by.
10. If interruption requires action, checklist should be halted, the point noted and continued before any other major operation is carried out. If doubt exists the checklist should be restarted.
11. In a conflict of checklist (e.g. a routine check by an emergency check) ensure checklists are completed in order of priority.
12. For ‘as required' items quote the position or state/condition of the item.
13. When a shutdown of a major system is required, both pilots must confirm correct control is about to be operated.
14. It is the responsibility of the PM to ensure that checks are completed and to inform the PF accordingly.

1.7 DECISION MAKING

1.7.1 Introduction

Effective Crew Resource Management requires the appropriate use of all available resources, in other words, team working.

Decision making is an inherent part of MCC and effective decision making is essentially a team operation.
The area of decision making is very complex, because it involves intricate mental processes and is subject to many potentially error producing influences arising from the way in which we acquire and process information.

On the surface decision making may seem easy……..

1.7.2 MCC Loop

Whatever course of action is taken the decision making process will be affected by a number of factors including:-

- time available
- limitations of perception
- training, rules and experience
- personality and personal attitudes
- peer pressure
- stress
- perceived importance of information cues
- reluctance to change one's mind

A logical system must therefore be devised to ensure the process can take account of the above factors - THIS IS THE MCC LOOP. The loop has the following components.

- ENQUIRY
- ADVOCACY
- CONFLICT RESOLUTION
- DECISION MAKING
- FEEDBACK

1.7.3 Enquiry

The main elements in this first part of the decision making process are designed to ensure that there is a need for a decision, and if so what is the decision?

1. Firstly you collect information by several methods. One of the main methods is by asking questions of other resources inside and outside your Cockpit.

2. Once you have collected the information you must assess its quality. (e.g.: Information from a met broadcast giving clear weather for your route when you can see a line of CB's ahead.)

3. In a changing scenario the flow of information may be continuous. You need to update your information baseline as new data becomes available.

4. Finally review all information for accuracy and consistency.

1.7.4 Advocacy

Having received the information your Captain will need to gain support for whether a decision is required and what it should be. He/she needs the support of the crew and any outside agencies involved. There are three broad principles to consider.

Firstly ensure that all involved in the process express their opinions in a clear, direct and unambiguous manner.

Secondly if anyone voices any concerns about a decision, ensure this concern is acknowledged.
Thirdly, trying to seek and consider the views and the mental models (how they perceive the decision) of others.

In your position you may have information vital to the decision making process. You may also have a strong opinion as to the direction that the process should take.
It is your responsibility to advocate your viewpoint to assist the Captain in making the best decision in the circumstances.

1.7.5 Conflict Resolution

Everyone has something to offer to the process and it is most likely there will be different opinions as to what decision should be made. You need to confront these differences and resolve them by persuasion, acceptance or compromise.

It is most important that the discussion does not become personal ("you don't know what you are talking about"). Keep it objective under all circumstances.
From your studies you will recall the adult - adult level of discussion. Ensure that conflict resolution is conducted at that equal level.

1.7.6 Group Decisions

Again from your HPL studies you will recall some dangerous situations into which a group can decide to enter. Remember....

1. **RISKY SHIFT**
2. **COMPLIANCE**
3. **CONFORMITY**
4. **STATUS/ROLE**

1.7.7 Decision Making

Assuming that the team have been through the first three elements of the MCC Loop, a decision now has to be made.

1. **ENSURE THAT THE DECISIONS ARE CLEAR AND PURPOSEFUL**.

2. **BE PREPARED TO CHANGE A DECISION IF INFORMATION OR VIEWS FROM THE TEAM CONTRADICT THOSE ON WHICH THE ORIGINAL DECISION WAS BASED.**

3. **TELL THE TEAM THE REASONS FOR THE DISCUSSION AND ENSURE THAT THEY HAVE A COMMON MENTAL MODEL OF THE DECISION AND THE REASONS FOR THE DECISION.**

1.7.8 Feedback

Feedback 'is an essential item' of the MCC Loop as it allows a continuous process of examination to be maintained throughout the Loop and for the results of this examination to be fed straight back into the inquiry element.

Feedback even if highly critical should always be encouraged.

There is no point scoring or personal animosity involved. If one is proved incorrect, but is prepared to learn for future decision making, then the feedback process has worked.

1.7.9 Synergy

The MCC Loop process resulting in effective decision making within a team environment results in synergy.

Synergy in MCC is when two or more crew members are used to giving each other mutual reinforcement which results in a combined performance which is superior to that of two or more INDIVIDUAL performances.

1.7.10 Communication

A vital element in the management of our resources is being able to communicate. Communication is so much a part of our everyday world that familiarity, if it does not actually breed contempt, tends to encourage complacency about the process.

There are people we can readily identify as skilled communicators. What is it that they do which makes this possible?

Failure in face-to-face communication can have dire consequences for the safety of civil air transportation.

Professionalism in spoken communication follows exactly the same rules as technical professionalism. We can train people so they derive the maximum benefit from their communication in any circumstances.

Careful research has been carried out over the years to identify the elements of communication which are necessary for us to have the essential awareness of others and ourselves, and precise control over our communicative behaviour.

Good interpersonal communication skills are essential elements in all parts of the multi-crew operation.

Interpersonal communication is a two way process in which rapport is established by both the

Transmitter and the Receiver.

Poor rapport will result in poor communication and misunderstanding e.g. good rapport will result in an exchange of ideas, more comprehensive information and more effective decisions.

Interpersonal communication uses these techniques:

- Spoken language to send a message
- Choice, tone and inflexion of which words are spoken
- Behaviour and body language
- Listening
- Feedback.

Communicators must choose the style of interpersonal communication and behaviour that is conducive to achieving the optimum benefit in any given situation.

Under normal circumstances face to face communication falls into three parts:

1) The words used	7%
2) The tone used	38%
3) The body language displayed	55%

In the aircraft, and specifically on the flight deck, a lot of this facility is lost due to the limiting conditions prevailing.

1.17.11 Behaviour and Body Language

Behaviour and Body Language account for over half of our ability to communicate. Interpersonal relations start at the first meeting; remember, first impressions count.

Body Language consists of gesturing, stance and facial expression. It can be negative or positive.

The negative side is characterised by:

- head held low
- avoiding eye contact
- slouched posture
- arms and hands folded in front
- gazing elsewhere rather than looking at the speaker
- fidgeting

The positive side is characterised by:

- head held high but not so high as to appear aggressive or arrogant
- face relaxed
- eye contact
- a relaxed, pleasant expression or slight smile
- relaxed posture
- if standing, feet apart about shoulder width
- open gestures

1.7.12 Listening

As well as sending a message, listening is an essential part of the process of effective communication.

Listening is not just hearing. Hearing is a physical sense, listening requires mental effort combined with understanding.

Listening requires acknowledgement and active feedback such as agreement, disagreement, paraphrasing and summarising.

Listening is the receiving part of communication through which messages are conveyed and interpreted and includes:-

- listening to the words used
- listening to the tone and inflexion
- observing behaviour, gestures, facial expressions, etc. of the person transmitting

Listening is a basic requirement in enhancing communication, eliminating barriers and, as part of the MCC Loop lays the groundwork for sound decision making.

1.7.13 Some Barriers to Listening

Listening	**Attitudinal**
Other Peoples Conversations	Preconceived ideas
(it is impossible to listen to two messages at the same time unless you experience selective attention)	Wandering thoughts
	Boredom
	Prejudice
Time Constraints	Disagreeable moods
Peripheral noise	Unwillingness to listen
Physical discomfort	Assume understanding
Movement	

1.7.14 Tone and Inflexion

As an example, a short high pitch delivery will have a different meaning to the same words delivered in a slow, low, laconic tone. The secret is to make the tone and inflexion of the voice fit the message to be conveyed.

In crew operations abrasive tones or inflexion are conducive to poor communication leading to poor team work. Avoid cynicism, sarcasm and bullying tones.

Equally one should note the way in which a message is being delivered.

An abrupt and aggressive demand for a checklist will result in an abrupt and unhelpful delivery of the list in question.

1.8 THE AUTOMATIC AIRCRAFT

1.8.1 Communication and Automation

We have examined communications between crewmembers, but in modern aircraft there is now another area of communication that needs investigation, that between crewmembers and the automation systems of the aircraft. What are the Advantages and Disadvantages of Automation?

The new generation of Fly by Wire aircraft with completely automated flight controls introduces further problems. Several incidents and accidents with Airbus aircraft have highlighted the lack of communication between the system and the crews. The incident in Toulouse where an Airbus completed a low pass with automatic control set in an incorrect mode – resulted in a perfectly serviceable aircraft flying into the ground. The pilot was unable to override or disengage the automatics in time.

Like learning about a PC the user (the pilot) has to know the automatic aircraft system thoroughly so that he can communicate his requirements to the automatics. As automation becomes more complex and takes over almost all the functions previously performed by the crew, the disadvantages of automation shown in the previous paragraph are heightened because now automatics perform almost all the control tasks. We have to be able to speak the language of automatics, and we have to be trained to communicate using the same logic language that a computer uses. Not too easy for some of us!

Advantages of Automation

- Performs many of the control tasks allowing the pilot to perform other functions - notably decision making.
- Removes the human element (remember that 75% of accidents are caused by human error).
- Reduces the crew size, therefore reducing the cockpit size.
- Provides better aircraft performance.

Disadvantages of Automation

- Reduces the pilot to the status of 'button pusher'.
- Removes an intelligent human who has the intuition to resolve a particular problem.
- Increases mental workload and the need to monitor carefully - not a good task for aircrew.
- Skill degradation - handling skills are reduced.
- Complacency - when activities become routine we tend to 'switch off' and if not stimulated we rapidly become bored, leading in turn to experimenting harmfully with aircraft systems and equipment.

1.8.2 Situational Awareness

EXPERIENCE AND TRAINING. Being able to refer to experience derived from training, from practice or from observation of others; having a mental frame of reference to draw upon and then decide.

PHYSICAL FLYING SKILLS. Above average control skills. Hands on airmanship ability that allows the operator to focus concentration on the problem of a situation rather than basic manoeuvring of the aircraft.

SPATIAL ORIENTATION. The three dimensional appreciation of where the aircraft is in terms of altitude, attitude, terrain, speed and geographical position.

HEALTH AND ATTITUDE. Awareness of the effects of poor health on safety and flying. Accepting personal responsibility for recognising and correcting / reducing the effects of stress.

CREW MANAGEMENT. Developing an understanding of the human factor in flying. Learning to recognise and use all resources available whether inside or outside the cockpit working as a team member.

An accurate perception by all crew members of the factors and conditions currently affecting the safe operation of the aircraft and crew.

Perceptions of each crew member are unique and will vary. The situational awareness of a crew as a group has an important influence on the safety of the flight, which will be measured by the input of individual crew members who will bring their unique perceptions to the group. Individuals are not the sum of the parts of the group, nor is each individual necessarily the lowest common denominator.

Factors which would affect situational awareness are as follows:-

Indicators of Deteriorating Situational Awareness:

- Behind aircraft e.g. An altitude bust, arriving fast and high, descending below MDA when not in visual contact with the runway.
- Tunnel vision, over concentration on one set of indicators, insistence on manoeuvring in a particular direction regardless of contrary indications.
- No-one in control. All crew concentrating on a problem with no-one actually in control of the aircraft.
- Ambiguity, Difficulty with resolving contradictory indications.
- Confusion. Events don't tie in with what was expected.
- Unresolved Differences. Where a difference between two sets of indications, or a disagreement between crew has been allowed to continue, unresolved.
- Violating SOPs. A conscious decision to depart from SOPs may sometimes indicate that departure has already been taking place unknowingly.

Prevention of Deteriorating Situational Awareness

Some factors that help to raise crew and individual Situational Awareness are:

- General monitoring and feedback
- Effective stress management
- Ground rules established during briefing and followed through
- Self-monitoring and critique/feed back
- Assertiveness on the part of all crew members
- Well-managed interpersonal relationships
- Effective information management

1.9 GROUP EXERCISE

Briefing of a flight from STN to CDG where two candidates would be selected to perform the flight in front of other students and the action recorded on video. Observing students would be briefed to take notes on MCC issues good and bad, to form part of the feedback and discussion afterwards, even as a debrief and assessment.

The scenario would introduce non-technical disruptions to the flight in order to test the MCC Loop and how much the students had absorbed from the three days. Examples of non-technical disruptions would be introduced by the instructor as a third party taking the part of ATC, Cabin Crew, or ATIS. These would include some examples such as

- The crew being informed of late slot advice, SID or Noise Abatement infringement, Level bust, severe turbulence (including cabin service problems), avoiding action, clearance to a level that would cause problems en-route, unpublished holds, sick passenger, sick cabin crew member.
- Weather problems: line squalls, CBs, strong headwinds or tailwinds (changing flight times), marginal conditions at destination involving a go around or impossible weather at destination with a diversion

These may be introduced at times of high workload.

Particular attention should be taken of the Pre-flight briefing and whether there was any application of the intentions. Also, what discussions there were; the attitude and behaviour through the disruptions, and if the co-operation on the flight deck produced the desired synergy with all the difficulties. It is important that the 2 students assess their own performance as well as the observers. Lessons learned should then be underpinned with the key MCC objectives.

SECTION 2 - GROUND SCHOOL

2.1 SYSTEMS GROUND SCHOOL

- The duration for the EASA approved ground school course is 12 days

  The trainee will study the A320 systems through a Computer Based Training course (CBT). This course is prepared for via a self-study reading process and reinforced with an instructor System Debriefing.

- The instructor will evaluate each trainee to ascertain satisfactory performance. The trainee must fully understand the normal, alternate, abnormal and emergency operation of the system. In addition, knowledge of SOPs will be required.

- At the end of each CBT lesson there will be a CBT question test. If the student fails to answer any question correctly the instructor will review that item.

- At the end of each day the instructor will review the systems covered and brief.

2.2 PERFORMANCE GROUND SCHOOL

- Take-off gross weight limits
- Thrust and performance options
- Landing gross weight
- Water, slush, snow and ice corrections
- Cruise operating charts
- Conversion charts

  Flight planning
  Weather considerations
  Fuel considerations
  Payload considerations
  Minimum equipment list considerations
  Aircraft configuration considerations

2.3 MASS & BALANCE AND AIRCRAFT INSPECTIONS

- The student will make mass and balance calculations prior to each FFS session. Paperwork is addressed during aircraft Line Training.

- Aircraft visual pre-flight procedures are addressed during Aircraft Training.

2.4 JEPPESEN CHARTS

- A presentation covering the contents of SIDs and STARs, approach charts and en-route charts will be given, a DVD is also available for self-study should the student require any additional self-study.

- Practical exercises will be carried out to ensure full understanding.

2.5 LESSON PLANS

COURSE CONTENT

Ground School – The Type Rating Ground School programme is outlined below. During the Ground School the OTD will be used to develop MCC and SOP skills and will follow this lesson plan.

References

Where deemed necessary, the Airbus References column indicates the Airbus Reference from the FCOM, unless otherwise stated as follows:-

2.6 MANUAL/HANDOUTS

The following items should have been collected prior to the start of the course.

- Flying Crew Training Manual (FCTM)
- Abnormal and Emergency Manual
- Technical Manuals FCOM's 1, 2, 3 and 4
- QRH A320 FAMILY

The following will be issued at the start of the course.

- Ground School Technical Study Guide
- Performance and Operational Information Supplement
- Flight training Study Guide (for use in the full flight sim phrase)

2.7 FLIGHT MANAGEMENT GUIDANCE SYSTEM TRAINER (FMGS)

There are 4 details totalling 6 hrs of Flight Management Guidance System trainer exercises. They allow you to practice FMGS programming and procedures for a typical flight and consolidate the information presented in the technical lessons. The Flight management Guidance System trainer is available for ad-hoc self-study both during and after your technical period, please ask your instructor for details.

FLIGHT MANAGEMENT GUIDANCE SYSTEM TRAINER EXERCISES

These exercises allow you to consolidate the Flight Management Guidance System information presented in the CBT lessons.

Each exercise starts with Flight Management Guidance System initialisation and continues with you programming a complete flight profile, including secondary and alternate flight planning, to allow you to follow the appropriate operating procedures for each phase of the flight through to arrival at the destination.

2.8 COCKPIT SYSTEMS TRAINER (CST) OTD

There are 6 CST (OTD) details, totalling 10hrs These allow you to consolidate the information presented in the technical lessons and to practice normal and non-normal procedures as part of a two man crew, on a typical flight. The CST is also available for ad-hoc student self-study (although availability of the CST is much less than the FMGS trainer due to the ongoing training load) both during and after your technical training period, please ask your instructor for details.

2.9 ECAM

There are 4 ECAM exercises. This allows for practice of the operation of the ECAM and its checklists.

2.10 STUDY METHOD

This study guide provides a course structure, which lists the lessons and exercises you should cover each day. It also shows the content of each Flight Management Guidance System Trainer exercise, Cockpit System Trainer detail and progress test.

You will be given the times of your FMGS exercises, CST details and progress tests when you start the course. You may organise the rest of each day as you wish.

The recommended study method is:-

A. Complete the technical lessons.

B. Use the study guide to check your knowledge by answering the appropriate questions. There is a block of questions for each subject. At the end of each block, you will find the answers and Manual references are given.

c. Study the corresponding parts of the manual for reinforcement. Information relating to each subject may be found in:-

- The Flying Manual
- The Technical Manual
- Limitations (in the Flying manual)
- Normal Procedures (in the Flying Manual)
- Supplementary Normal Procedures (in the Flying Manual)
- Quick Reference handbook (QRH)
- The Minimum Equipment List (MEL)
- The Load and Balance Manual

2.11 EXAMINATIONS

The course structure outlines which lessons should be completed prior to each test.

There are two, forty question multi-choice progress tests. Each question has four possible answers. No marks will be deducted for incorrect answers. Time allowed is one hour.

There is a final examination paper containing 116 question's, 8 subject's being a multi-choice qualifying examination as required by EASA. There is an exam supplement book to assist you in completing sections such as Performance. The 8 subjects are:

1) Technical
2) Limitations
3) Performance
4) Load and balance
5) Emergency procedures
6) Low visibility operations
7) Requirements for Glass cockpits
8) Flight management systems

Each question has four possible answers. The pass mark for each section of the examination is 75%. No marks will be deducted for incorrect answers. Time allowed is two hours.

All examination questions are drawn from information presented in the FCOM, FCTM, QRH and MEL

2.12 GROUND SCHOOL STRUCTURE

DAY	TIME	SCHEDULED EVENT(S)
MCC 1		MCC Groundschool Day 1
MCC 2		MCC Groundschool Day 2
MCC 3		MCC Groundschool Day 3
T1	6:45	**COURSE MEETING – INTRODUCTION – CBT LOGIN** **CBT** – **Aircraft General** - Overview – Dimensions – Flight Deck Layout – Water & Waste - Exterior Lighting – Flight Deck Lighting – Emergency Lighting – Doors & Exits. **Air Conditioning** – Air Conditioning Introduction – Avionics Ventilation – Air Conditioning Packs. **Pneumatic System** – Pneumatic System Introduction – Pneumatic System Controls & Indicators. **Pressurisation System** – Pressurisation System Introduction - Pressurisation Controls & Operations.
T2	6:30	**REVIEW OF DAY 1 SUBJECTS**
		CBT – **Autoflight** – Autoflight System Presentation – Autopilot & Flight Director - FCU – FMA – Autothrust. **Communication** – Communication Introduction – Audio Management – Interphone & PA – Call System – CVR & FDR – Emergency Evacuation. **Electrical System** – Electrical System Introduction – Electrical System Controls & Operations – Electrical System Emergency Power – Electrical System Abnormals.
T3	6:45	**REVIEW OF DAY 2 SUBJECTS**
		CBT - **Auxiliary Power Unit** – APU Introduction – APU Operations. **Fire Detection & Protection** – Fire Protection Introduction – Engine Fire Protection – APU Fire Protection – Cargo Compt. Smoke Detection & Fire Protection – Avionics Smoke Detection – Lavatory Smoke Detection & Fire Protection. **Flight Controls** – Flight Controls Introduction – Slats & Flaps – Flight Controls Normal Law – Reconfiguration Laws. **Oxygen System** – Oxygen System Introduction – Cabin Oxygen – Crew Oxygen
T4	7:15	**REVIEW OF DAY 3 SUBJECTS**
		CBT – **Instruments** – EIS Introduction – ADIRS – EFIS Control Panels – Primary Flight Display (PFD) – Navigation Display (ND) – Clock – Standby Instruments – ISIS - ECAM
		CST 1
T5	7:30	**REVIEW OF DAY 4 SUBJECTS**
		PROGRESS TEST 1
		CBT – **Hydraulic System** – Hydraulic System Introduction – Hydraulic System Controls & Indicators. **Landing Gear & Brakes** – Landing Gear & Brakes Introduction – Landing Gear Operations – Brakes – Nosewheel Steering.
		FMGS 1
		CST 2
T6	7:00	**REVIEW OF DAY 5 SUBJECTS**
		CBT – **Fuel System** – Fuel System Introduction – Fuel System Controls – Fuel System Recirculation – Fuel Tanks – Refuelling. **Ice & Rain Protection** – Ice & Rain Protection Introduction – Ice & Rain Controls & Indicators.

		FMGS 2
		CST 3
T7	7:00	**REVIEW OF DAY 6 SUBJECTS**
		CBT – **Navigation** – Navigation Introduction – ADIRS – Weather Radar – Global Positioning System – Radio Navigation – Predictive Windshear System – TCAS – EGPWS.
		FMGS 3
		CST
T8	7:15	**REVIEW OF DAY 7 SUBJECTS**
		CBT – **Power Plant** – Introduction – Thrust Levers – FADEC – Indications – Oil System – Fuel System – Ignition – Thrust Reverser – Autostart – Manual Start
		FMGS 4
		CST 5
T9	7:00	**REVIEW OF DAY 8 SUBJECTS**
		PROGRESS TEST 2
		CBT REVISION/LIMITATIONS/EMERGENCY PROCEDURES
		ECAM 1
		CST 6
T10	6:30	**REVIEW OF DAY 9 SUBJECTS**
		CBT REVISION/LIMITATIONS/EMERGENCY PROCEDURES
		ECAM 2
		FINAL EXAMINATION PART 1 – CLOSED BOOK
T11	6:30	**ECAM 3**
		FLIGHT PLANNING – PERFORMANCE
T12	6:00	**ECAM 4**
		LOAD & BALANCE – AWOPS
		COMPUTERISED FLIGHT PLAN
		JEPPESEN CHARTS
		FINAL EXAMINATION PART 2 – OPEN BOOK

2.13 COCKPIT SYSTEMS TRAINER DETAILS

These details allow you to practise two crew standard operating procedures and to consolidate information presented in the CBT lesson.

Each detail starts with cockpit preparation and continues through a complete flight profile, with you following the appropriate procedures and checklists for each phase of flight until final shutdown and secure.

Normal and non-normal procedures, control, indication and limitations relating to the subject matter of the exercise are included for emphasis. ECAM, the Quick Reference Handbook and normal checklists will be used as appropriate.

The details involve use of the Flight Management Guidance System to allow you to further consolidate key FMGS procedures.

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SECTION 3

3.1 OTHER TRAINING DEVICE (OTD) COCKPIT SYSTEM TRAINER

OTD Training is designed to provide the student with an understanding of Normal and Abnormal/Non Normal SOPs in preparation for the Fixed Base and Full Flight Simulator phase of training.

3.2. FLIGHT SIMULATOR WITH MOTION OFF (FSMO) TRAINING or (CST)

A. These FSMO or CST sessions are normally conducted in a flight simulator without motion. Or Cockpit Systems Trainer, the Session length is as required to train to proficiency, nominally 4 hours. Briefings are scheduled for 1 hour and de-briefings will be dependent upon the simulator session but are nominally 30 minutes.

B. Most FSMO/CST training is conducted in a flight sequence format. Trainees are required to "role play" their positions and maintain a realistic flight environment. Cockpit management, and command qualities and CRM are stressed. As procedures are completed in the FSMO or CST, each trainee must touch the appropriate controls and indicators**.**

3.3 FULL FLIGHT SIMULATOR (FFS) TRAINING

A. FFS sessions are conducted in a flight simulator with certified motion and visual systems.

B. Conversion simulator training consists of 9 four-hour periods, including 2 three-hour License Skill Test's (LST's) including a Loft exercise. Briefings are scheduled for 1 hour.

De-briefings will be dependent upon the simulator session but are nominally 30 minutes.

C. AWOPS and MCC Courses are included in this course.

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3.4 LST (Licence Skills Test) ITEMS

The course syllabus will ensure that all normal and abnormal items are covered. The following table indicates the point in the course when the item is covered and should be used as a study guide.

EXERCISE		FFS
1.1	Performance Calculation	1
1.3	Cockpit Inspection	1
1.4	Checklist, Starting Procedures, Radio Navigation Equip etc.	1
1.5	Taxying	1
1.6	Pre Flight Checks	1
2.1	Normal Take-offs with Different Flap Settings	2
2.2	Instrument Take-Off, Transition to Instrument Flight	2
2.3	Crosswind Take-Off	8
2.3	Take-Off at MTOM	6
2.5	Take-Off with Simulated Engine Failure Between V1 & V2	4
2.5.4	RTO	5
3.1	Turns With and Without Spoilers	1
3.2	High Speed Characteristics	1
3.4	Normal and Abnormal Operation of Following Systems	
3.4.0	Engine	4
3.4.1	Pressurisation and Air Conditioning	2
3.4.2	Pitot Static System	4
3.4.3	Fuel System	7
3.4.4	Electrical System	7
3.4.5	Hydraulic System	6
3.4.6	Flight Control and Trim System	5
3.4.7	Anti, De-icing and Glareshield Heating	4
3.4.8	Auto-pilot Flight Director	7
3.4.9	Stall Warning and Stability Augmentation Devices	1
3.4.10	GMSPS, Weather Radar, Rad Alt, Transponder	3
3.4.11	Radios, Navigation Equipment, Instruments, FMGS	7
3.4.12	Landing Gear and Brake System	2
3.4.13	Flap and Slat System	6
3.4.14	APU	7

EXERCISE		FFS
Manoeuvres/Procedures		
3.5.	TCAS	3
3.6.	Abnormal and Emergency Procedures	
3.6.1.	Fire Drills, Engine, APU, Cabin, Electrical	4
3.6.2.	Smoke Control and Removal	2
3.6.3.	Engine Failures Shut Down and Relight	4
3.6.5.	Windshear Take-Off/Landing	3
3.6.6.	Simulated Cabin Pressure Failure/Emergency Descent	2
3.6.7.	Incapacitation of Flight Crew Member	8
3.6.8.	Other Emergency Procedures from the AFM	5
3.7.	Steep Turns with 45° bank -180° to 360° Left and Right	2
3.8.	Approach to Stall in Cruise and Landing Configuration	1
3.8.1.	Recovery From Full Stall	1
3.9.	Instrument Flight Procedures	
3.9.1	Adherence to Departure, Arrival Routes and ATC	2
3.9.2.	Holding Procedures	3
3.9.3.	ILS Approaches Down to a DH Not Less Than 200'	3
3.9.3. 1	Manually Without Flight Director	1
3.9.3.2.	Manually with Flight Director	2
3.9.3.3.	Automatically with Autopilot	4
3.9.4.	NDB/VOR/LLZ approach to MDA with autopilot	5
4.	Missed Approach Procedures	
4.1.	Go Around With All Engines Operating After DH - ILS	3
4.2.	Other Missed Approach	3
4.3	Go Around With 1 Engine Inoperative From ILS/NDB/LLZ or VOR Approach	4
4.4.	Rejected Landing from 50° AGL	1
5	Landings	
5.1	Normal Landing from ILS - Transition to Visual at DA	2
5.2	Landing with Jammed Horizontal Stabiliser	5
5.3	Crosswind Landings	3
5.4	Traffic Pattern and Landing Without Extended or Partly Extended Flaps and Slats	5
5.5.	Landing with Critical Engine Inoperative	4

3.5 CST/FBS/FFS GUIDE

THE FOLLOWING APPLIES TO ALL FSMO & FFS SESSIONS

TRAINEES MUST BRING:

	CAPT	F/O
TRAINING FILE	**X**	**X**
FLYING PROCEDURES	**X**	**X**

THE INSTRUCTOR WILL PROVIDE THE FOLLOWING:

- FCTM - Flight Crew Training Manual
- QRH
- SIMULATOR SYLLABI
- TAKE-OFF & LANDING DATA CARDS
- TRAINING DOCUMENTATION
- LOADSHEETS
- COMPUTER FLIGHT PLANS
- AIRFIELD PERFORMANCE
- AIRCRAFT SYSTEMS

Takeoff Data Calculations

- The takeoff data will be prepared for each FBS & FFS session, using the parameters given in the session syllabus and using the Runway Analysis chart. Thrust Settings and speeds will be cross checked by the other pilot.
- The data will be checked during briefing.

3.5.1 Briefing:

For all sessions, the instructors will brief the crew before the session starts. Trainees must study the session before briefing.

3.5.2 Checklist Review

The following areas of checklist discipline require special focus by both instructor and students

- Command and Control Concepts
- Crew Concept & Management
- Standardization
- ECAM – Pilot Interface and discipline with the Electronic Checklist
- Conduct of QRH Checklists
- Challenge-Response
- Checklist Initiation
- Routine Calls and Responses
- Checklist Completion
- Checklist Procedures-Techniques
- Standard Terminology
- Warnings, Cautions and Notes
- Verification
- Use of Cockpit Interphone/Oxygen

3.5.3 CST/FSMO/OTD COMMUNICATIONS

Instructor provides ATIS and ATC clearances.

3.5.4 CST/FSMO/OTD GENERAL PHILOSOPHY

A. These periods provide the opportunity to learn Standard Operating Procedures, as well as to review, summarize and reinforce previous system training.

B. Drill and practice of all Normal Checklist items, SOPs and Task Sharing in the cockpit in a simulated flight sequence. Checklist management, electronic and paper, cockpit management, pre-flight preparation, procedural compliance and performance are reinforced with special emphasis on the following:

1) Item accomplishment prior to calling for the checklist.

2) Effective checklist management being a vital element in overall cockpit management - ensure effective checklist challenge and response communication.

3) Importance of proper checklist response terminology.

C. Trainees must make every effort to "role play" their crew positions and achieve as realistic a flight environment as possible. Cockpit management and command is stressed. One trainee must "fly" the airplane. Establish effective panel scan flow pattern.

D. Instructor will highlight individual weak areas to each trainee for further self-study and review

SECTION 4 ALL WEATHER OPERATIONS (AWO)

AWOPS TRAINING WILL BE CONDUCTED IN ACCORDANCE WITH JET FLIGHT & INSTRUCTOR TRAINING AWOPS PROCEDURES.

WHERE REQUIRED, STUDENTS WILL BE PROVIDED WITH A COPY OF THE AWOPS SUPPLEMENTS WHICH CONFORMS TO APPENDIX 1 OF EU-OPS 1.450

4.1 AWO GROUND TRAINING CBT

The full ground training course for All Weather Operations shall cover, as a minimum the following topics:

A. The characteristics and limitations of the ILS and/or MLS;

B. The characteristics of the visual aids;

C. The characteristics of fog;

D. The operational capabilities and limitations of the particular airborne system;

E. The effects of precipitation ice accretion, low level windshear and turbulence;

F. The effect of specific aeroplane malfunctions;

G. The use and limitations of RVR assessment systems;

H. The principles of obstacle clearance requirements;

I. Recognition of and action to be taken in the event of failure of ground equipment;

J. The procedures and precautions to be followed with regard to surface movement during operations when the RVR is 400 metres or less and any additional procedures required for take-off in conditions below 150 metres;

K. The significance of decision heights based upon radio altimeters and effect of terrain profile in the approach area on radio altimeter readings and on the automatic approach/landing systems;

L. The importance and significance of Alert Height if applicable and the action in the event of any failure above and below Alert Height;

M. The qualification requirements for pilots to obtain and retain approval to conduct Low Visibility Take-offs and Category II & Category IIIb operations; and the importance of correct seating and eye position.

4.2 AWO FLIGHT SIMULATOR TRAINING

A. The approved flight simulator and flight training for All Weather Operations shall include:

1) checks of satisfactory functioning of equipment, both on the ground and in-flight;

2) effect on minima caused by changes in the status of ground installations;

3) monitoring of automatic flight control systems and autoland status annunciators with emphasis on the action to be taken in the event of failures of such systems;

4) actions to be taken in the event of failures such as engines, electrical systems, hydraulics or flight control systems;

5) the effect of known unserviceabilities and use of minimum equipment lists;

6) operating limitations resulting from airworthiness certification;

7) guidance on the visual cues required at decision height together with information on maximum deviation allowed from glide path or localiser; and

8) importance and significance of Alert Height, if applicable, and the action to be taken in the event of any failure above and below Alert Height.

B. Each flight crewmember must be instructed on the co-ordination required with other crewmembers. Maximum use should be made of suitably equipped approved flight simulators for this purpose.

C. The training will be divided into phases covering normal operation with no aeroplane or equipment failures but including all weather conditions that may be encountered and detailed scenarios of aeroplane and equipment failure, which could affect Category II or III operations.

D. Flight crew shall practise incapacitation procedures appropriate to Low Visibility Take offs and Category II or III operations.

E. The training shall include the following exercises:

1) approach using the appropriate flight guidance, autopilots and control systems installed in the aeroplane, to the appropriate decision height and to include transition to visual flight and landing;

2) approach with all engines operating using the appropriate flight guidance systems, autopilots and control systems installed in the aeroplane down to the appropriate decision height followed by missed approach; all without external visual reference;

3) where appropriate, approaches utilising automatic flight systems to provide automatic flare, landing and roll-out;

4) normal operation of the applicable system both with and without acquisition of visual cues at decision height;

5) approaches with engine failure at various stages of the approach;

6) approaches with critical equipment failures (e.g. electrical systems, autoflight systems, ground or airborne ILS/MLS systems and status monitors);

7) approaches where failures of autoflight equipment at low level require either:

- reversion to manual flight to control flare, landing and roll-out or missed approach; or
- reversion to manual flight or a downgraded automatic mode to control missed approaches from, at or below decision height including those which may result in a touchdown on the runway;

8) failure of the systems which will result in excessive localiser or glideslope; deviation, both above and below decision height, in the minimum visual conditions authorised for the operation; and failures and procedures specific to the aeroplane type or variant.

F. The training programme will provide practice in handling faults, which require a reversion to higher minima.

G. The training programme must include the handling of the aeroplane when, during a fail passive Category III approach, the fault causes the autopilot to disconnect at or below decision height when the last reported RVR is 300 metres or less.

H. Training to cover systems failures and engine failure resulting in continued as well as rejected take-off.

I. Training to cover windshear on final approach and go around.

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DAY T1

	Lessons	References	Estimated Time
	COURSE AND CBT INTRODUCTION		1:00
	Fire/Administrative Brief		
	Course Documentation & CBT Login		
	Airbus Manuals		
CBT	**AIRCRAFT GENERAL**		2:30
	Aircraft Overview		
	Dimensions and Ground Manoeuvring Distances		
	Flight Deck Layout		
	Water and Waste Systems		
	Exterior Lighting		
	Flight Deck Lighting		
	Emergency Lighting		
	Doors and Exits		
	NOTE: OMIT ECAM SECTION, THIS WILL BE COVERED DURING DAY T4		
CBT	**AIR CONDITIONING**		1:30
	Air Conditioning System Introduction		
	Avionics Ventilation		
	Air Conditioning Packs		
CBT	**PNEUMATIC SYSTEM**		0:50
	Pneumatic System Introduction		
	Pneumatic System Controls and Indicators		
CBT	**PRESSURIZATION SYSTEM**		0:55
	Pressurization System Introduction		
	Pressurization System Controls and Operations		
	TOTAL TIME DAY 1		**6:45**

DAY T2

	Lessons	References	Estimated Time
	REVIEW		1:00
	All subjects from Day T1		
CBT	**AUTOFLIGHT**		2:30
	Autoflight System Presentation		
	AP and FD Engage Disengage		
	Flight Control Unit (FCU)		
	Flight Mode Annunciator (FMA)		
	Autothrust		
CBT	**COMMUNICATION**		1:30
	Emergency Evacuation System		
	Cockpit Voice Recorder and Flight Data Recorder		
	Call System		
	Interphone and PA Systems		
	Communication Systems Introduction		
	Audio Management		
CBT	**ELECTRICAL SYSTEM**		1.30
	Electrical System Introduction		
	Electrical System Controls and Operations		
	Electrical System Abnormals		
	Electrical System Emergency Power		
	TOTAL TIME DAY 2		**6:30**

DAY T3

	Lessons	References	Estimated Time
	REVIEW		1:00
	All Subjects from Day T2		
CBT	**AUXILIARY POWER UNIT**		1:15
	APU Introduction		
	APU Operations		
CBT	**OXYGEN SYSTEM**		1:00
	Oxygen Systems Introduction		
	Cabin Oxygen		
	Crew Oxygen		
CBT	**FIRE DETECTION & PROTECTION**		1:30
	Fire Protection Introduction		
	Engine Fire Protection		
	APU Fire Protection		
	Cargo Compt. Smoke Detection and Fire Protection		
	Avionics Smoke Detection		
	Lavatory Smoke Detection and Fire Protection		
CBT	**FLIGHT CONTROLS**		2:00
	Flight Controls Introduction		
	Slats and Flaps		
	Flight Controls – Normal Law		
	Flight Controls Reconfiguration Laws		
	TOTAL TIME DAY 3		**6:45**

DAY T4

	Lessons	References	Estimated Time
	REVIEW		1:00
	All Subjects from Day T3		
CBT	**INSTRUMENTS**		4:15
	EIS Introduction		
	ECAM (Aircraft General)		
	EFIS Control Panels		
	Primary Flight Display (PFD)		
	Navigation Display (ND)		
	Clock		
	Standby Instruments		
	Integrated Standby Instrument System (ISIS)		
	NOTE: OMIT <u>ADIRS</u> AND <u>WEATHER</u> <u>RADAR</u> SECTIONS, THESE WILL BE COVERED DURING DAY T7		
	CST 1		2:00
	TOTAL TIME DAY 4		**7:15**

DAY T5

	Lessons	References	Estimated Time
	REVIEW		1:00
	All Subjects from Day T4		
	PROGRESS TEST 1		1:00
CBT	**HYDRAULIC SYSTEM**		1:15
	Hydraulic System Introduction		
	Hydraulic System Controls and Indicators		
CBT	**LANDING GEAR & BRAKES**		1:45
	Landing Gear and Brakes Introduction		
	Landing Gear Operations		
	Brakes		
	Nosewheel Steering		
	FMGS 1		1:00
	CST 2		1:30
	TOTAL TIME DAY 5		**7:30**

DAY T6

	Lessons	References	Estimated Time
	REVIEW		1:00
	All Subjects from Day T5		
CBT	**FUEL SYSTEM**		1.45
	Fuel System Introduction		
	Fuel System - Controls		
	Fuel Recirculation - IDG Cooling		
	Fuel System - Fuel Tanks		
	Fuel System - Refueling		
CBT	**ICE AND RAIN PROTECTION**		1:15
	Ice and Rain Protection Introduction		
	Ice and Rain Protection Controls and Indicators		
	FMGS 2		1:30
	CST 3		1:30
	TOTAL TIME DAY 6		**7:00**

DAY T7

	Lessons	References	Estimated Time
	REVIEW		1:00
	All Subjects from Day T6		
CBT	**NAVIGATION**		3:00
	Navigation Introduction		
	ADIRS (Instruments)		
	Weather Radar (Instruments)		
	Global Positioning System (GPS)		
	Radio Navigation		
	Predictive Windshear System (PWS)		
	TCAS		
	Enhanced Ground Proximity Warning System		
	FMGS 3		1:30
	CST 4		1:30
	TOTAL TIME DAY 7		**7:00**

DAY T8

	Lessons	References	Estimated Time
	REVIEW		1:00
	All Subjects from Day T7		
CBT	**POWER PLANT**		3:15
	Power Plant Introduction		
	Engine – Thrust Levers		
	Engine - FADEC		
	Engine - Indications		
	Engine - Oil		
	Engine - Fuel		
	Engine - Ignition		
	Engine – Thrust Reverser		
	Engine - Autostart		
	Engine – Manual Start		
	FMGS 4		1:30
	CST 5		1:30
	TOTAL TIME DAY 8		**7:15**

DAY T9

	Lessons	References	Estimated Time
	REVIEW		1:00
	All Subjects from Day T8		
	PROGRESS TEST 2		1:00
	CBT REVISION/LIMITATIONS/EMERGENCY PROCEDURES		2.00
	ECAM 1		1.30
	CST 6		1.30
	TOTAL TIME DAY 9		**7:00**

DAY T10

	Lessons	References	Estimated Time
	REVIEW		1:00
	All Subjects from Day T9		
	CBT REVISION/LIMITATIONS/EMERGENCY PROCEDURES		1.30
	ECAM 2		1.30
	FINAL EXAM PART 1 CLOSED BOOK		**2:30**
	TOTAL TIME DAY 10		**6:30**

DAY T11

	Lessons	References	Estimated Time
	PERFORMANCE		3:00
	FLIGHT PLANNING		2:00
	ECAM 3		1:30
	TOTAL TIME DAY 11		**6:30**

DAY T12

	Lessons	References	Estimated Time
	LOAD & BALANCE		1:30
	COMPUTERISED FLIGHT PLAN		1:00
	ECAM 4		1:30
	JEPPESEN		1:00
	FINAL EXAM PART 2 OPEN BOOK		**1:00**
	TOTAL TIME DAY 12		**6:00**
	COURSE DEBRIEF		

Note:1 Days off will be allocated by scheduling to meet the course requirements and CAP 371.

FMGS 1			
Student Name		**Date**	
Instructor Comments			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

FMGS 1	
SESSSION OBJECTIVE	Preliminary FMGS Familiarisation – Route and Entry data
POS INIT	EGKK 08R – Stand 52 – Flight Number JFT001
ROUTE	EGKK/EGCC FL240 EGKK RW08R – LAM 5P – BPK – TNT - DAY 2A (1A) – ILS RWY 05L EGCC
PERF INIT	TAXI 0.2 ZFWCG 27.0 / ZFW 58.0 BLOCK 6.0 T/O FLAP 1+F CI 35 SPEEDS 132 / 138 / 138 FLAPS 1/0.5UP FLEX 55
MET NOTAM	EGKK 120/11 CAVOK 20/10 Q1000 EGCC 060/10 CAVOK 15/10 Q1000 FL240 Temp: -30°C , Wind 150/30kt
NOTES	A QNH of 1013 may be required for certain FMGS software

FMGS 1					
AP	FD	AT	FPV	**1**	FMS TRAINER START-UP
				2	GENERAL
				3	MCDU menu page
				4	A/C Status page
				5	INIT A page
				6	FPLN page
				7	RAD NAV page
				8	SEC FPLN
				9	INIT B page
				10	PERF page
				11	PROG page
				12	Storing the FPLN
				13	FUEL PRED page
				14	Settings for takeoff

FMGS 2			
Student Name		**Date**	
Instructor Comments			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

FMGS 2	
SESSSION OBJECTIVE	Route and Entry data Practice Flight 2
POS INIT	EGKK 08R – Stand 52 – Flight Number JFT002
ROUTE	EGKK/EGNX FL180 EGKK RW08R - LAM 5P – BPK – DTY – UPDUK - EME – EGNX ILS 27
PERF INIT	TAXI 0.3 ZFWCG 28.3 / ZFW 60.0 BLOCK 5.4 T/O FLAP 1+F CI 20 SPEEDS 136 / 136 /142 FLAPS 1/0.2DN FLEX 49
MET NOTAM	EGKK 070/12 5000 DZ OVC014 20/10 Q1010 EGNX 300/10 4500 RA BKN018 12/10 Q1017 FL180 Temp: -18°C , Wind 350/25kt
NOTES	A QNH of 1013 may be required for certain FMGS software

FMGS 2					
AP	FD	AT	FPV	**1**	FMGS Setup
				2	INIT A
				3	FPLN - Departure, SID & transition
				4	SEC FPLN
				5	INIT B Page preparation
				6	PERF Page preparation
				7	Pre-flight preparation
				8	Takeoff
				9	Climb
				10	Cruise
				11	Descent
				12	Approach and Landing
				13	Done phase

FMGS 3			
Student Name		**Date**	
Instructor Comments			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

FMGS 3	
SESSSION OBJECTIVE	Route and Entry data – Practice Flight 3
POS INIT	EIDW Stand 12 – Flight Number JFT003
ROUTE	EIDW/EGPF FL180 EIDW RW10 - BOYNE 1E – BLACA – TRN 1A - ILS RWY05 EGPF
PERF INIT	TAXI 0.2 ZFWCG 26.5 / ZFW 60.0 BLOCK 5.2 T/O FLAP 3 CI 20 SPEEDS 122 / 128 / 138 FLAPS 3/0.3UP TOGA
MET NOTAM	EIDW 090/05 4000 BR 11/9 Q1010 EGPF 120/13 800 FG OVC003 11/11 Q1012 BCMG 0300 FL180 Temp: -20°C , Wind 150/30kt
NOTES	A QNH of 1013 may be required for certain FMGS software

FMGS 3					
AP	FD	AT	FPV	**1**	FMGS S
				2	DATA
				3	INIT A
				4	FPLN
				5	SEC FPLN
				6	PERF preparation
				7	Pre-flight preparation
				8	Takeoff
				9	Climb
				10	Cruise
				11	Descent
				12	Approach and Go around
				13	Following second missed approach

FMGS 4			
Student Name		**Date**	
Instructor Comments			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

FMGS 4	
SESSSION OBJECTIVE	Route and Entry data – Practice Flight 4 – Progress check
POS INIT	EGPF Stand 5A – Flight Number JFT004
ROUTE	EGPF/EGCC FL210 EGPF RWY23 - NGY1H – A1 – DCS – ROSU1A - RWY 05L EGCC VOR DME
PERF INIT	TAXI 0.1 ZFWCG 27.5 / ZFW 59.5 BLOCK 5.2 T/O FLAP 1+F CI 28 SPEEDS 129 / 135 / 135 FLAPS 1/0.1UP FLEX 46
MET NOTAM	EGPF 260/03 300 FG 2/2 Q1019 – LVP's EGCC 090/08 5000 OVC009 15/13 Q1019 RW05R CLSD ILS U/S FL210 Temp: -25°C , Wind 150/30kt
NOTES	A QNH of 1013 may be required for certain FMGS software

NOTAMS
EGCC 05R CLOSED EGCC 05L ILS Unserviceable

FMGS 4					
AP	FD	AT	FPV	**1**	FMGS Setup
				2	Selected Check Items
				3	At destination
				4	Second missed approach
				5	Instructional Items

ECAM 1			
Student Name		**Date**	
Instructor Comments			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

ECAM 1	
SESSION OBJECTIVE	• Description of the ECAM features • Use of ECAM

NEW EXERCISES REFERENCES	**Items**	**FCOM**	**QRH**
	• ECAM procedures	3.02.01	
	• Relation ECAM / QRH	3.02.01	
	• ECAM Reconfiguration	1.31.10 - 1.31.30	
	• DISPLAY UNIT FAILURE		1.12

SUPPORT	• FCOM • QRH

ECAM 1 CONDITIONS					
INIT A	**EGCC / EGCC**	**CRZ FL: FL120**	**CRZ T°: - 10°C**	**CRZ Wind: 290° / 20kt**	
	ALTN: EGBB	**CI: 30**			
FPLN	**LOCAL FLIGHT: EGCC 23R - SID SANBA 1R - … - ILS RWY 23R**				
INIT B	**ZFWCG : 30%**	**ZFW : 56 t**	**FUEL : 7 t**	**TOCG : 28,6%**	
PERF	**FLAPS : 2**	**TOGA / FLEX: 58°**	**V1: 135**	**VR: 137**	**V2: 140**
ATIS	**EGCC: 230/10 9999 SCT002 1°/0° QNH 1009 RWY DRY**				
NOTES	**A QNH of 1013 may be required for certain FMS software**				

ECAM 1					
AP	FD	AT	FPV	**1**	**INIT**
				2	HYD B RSVR OVHT
				3	ECAM Presentation
				4	ENG 1 HOT FUEL
				5	APU Start
				6	ENG 2 TAILPIPE FIRE
				7	ENG 2 Start
				8	Level 1, 2 and 3 Failures
				9	L1 - AUTO FLT FCU 1 FAULT
				10	L2 - ANTI ICE CPT + FO PITOT
				11	L3 – ENG 1 FIRE
				12	ECAM Systems Page Review
				13	ECAM Status Page
				14	ELEC AC BUS 1 FAULT
				15	DU Failure
				16	ELEC AC BUS 2 FAULT
				17	ECAM Single Display
				18	A/FLT FCU 1 + 2 FAULT
				19	A/P Disconnect
				20	EIS DMC 3 FAULT
				21	EIS DMC 1 FAULT
				22	ELEC DC ESS BUS FAULT

ECAM 2			
Student Name		**Date**	
Instructor Comments			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

ECAM 2	
SESSION OBJECTIVE	• Supporting the aircraft system study • Improving the knowledge and practicing the ECAM procedures through various failure events • Improving ECAM system handling skills through practicing various malfunctions

NEW EXERCISES REFERENCES

Items	FCOM	QRH
• ECAM warning architecture • ECAM controls	1.31.10 - 1.31.30	
• ECAM malfunction classification	1.31.10	
• ECAM malfunction presentation	1.31.15 - 1.31.20	
• Study of ECAM action process through various malfunctions	3.02.01 6 3.02.90	

SUPPORT	• FCOM • QRH

ECAM 2 CONDITIONS					
INIT A	**EGKK / EGKK**	**CRZ FL: FL120**	**CRZ T°: - 10°C**	**CRZ Wind: 290° / 20kt**	
	ALTN: EGBB	**CI: 30**			
FPLN	**LOCAL FLIGHT: EGKK 26L - SID - … - ILS RWY 26L**				
INIT B	**ZFWCG : 30%**	**ZFW : 56 t**	**FUEL : 7 t**	**TOCG : 28,6%**	
PERF	**FLAPS : 1+F**	**TOGA / FLEX: 58°**	**V1: 135**	**VR: 137**	**V2: 140**
ATIS	**EGKK: 200/05 6000 SCT003 15°/10° QNH 1002 RWY DRY**				
NOTES	**A QNH of 1013 may be required for certain FMS software**				

ECAM 2					
AP	FD	AT	FPV	**1**	**INIT**
				2	EIS DMC 3 FAULT
				3	EIS DMC 1 FAULT
				4	FWS SDAC 1 FAULT
				5	FWS SDAC 1 + 2 FAULT
				6	FWS FWC 1 + 2 FAULT
				7	F/CTL SEC 1 FAULT
				8	F/CTL ELAC 2 FAULT
				9	F/CTL ELAC 1 + 2 FAULT
				10	NAV RA 1 FAULT
				11	NAV RA 1 + 2 FAULT
				12	AUTO FLT RUD TRV LIM 1
				13	ELEC GEN 1 FAULT

ECAM 3			
Student Name		**Date**	
Instructor Comments			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

ECAM 3	
SESSION OBJECTIVE	• Studying procedures in case of ECAM components are degraded or lost • Practicing and further improvement of using ECAM through various malfunctions

NEW EXERCISES REFERENCES

Items	FCOM	QRH
• Failure of ECAM components	1.31.75 - 3.02.31	
• Syllabus malfunctions	3.02	

SUPPORT	• FCOM • QRH

ECAM 3 CONDITIONS					
INIT A	**EGCC / EGCC**	**CRZ FL: FL 120**	**CRZ T°: - 21°C**	**CRZ Wind: 290° / 20kt**	
	ALTN: EGLL	**CI: 30**			
FPLN	**LOCAL FLIGHT: EGCC 23R - SID SANBA 1R - … - ILS RWY 23R**				
INIT B	**ZFWCG : 30%**	**ZFW : 53 t**	**FUEL : 15 t**	**TOCG : 25%**	
PERF	**FLAPS : 1+F**	**TOGA / FLEX: 64°**	**V1: 157**	**VR: 157**	**V2: 157**
ATIS	**EGCC: 230/10 CAVOK 9°/7° QNH 1010 RWY DRY**				
NOTES	**A QNH of 1013 may be required for certain FMS software**				

ECAM 3					
AP	FD	AT	FPV	1	HYD G RSVR LO LVL
				2	HYD B RSVR OVHT
				3	HYD Y RSVR LO AIR PR
				4	HYD G + B SYS LO PR
				5	F./CTL FLAPS FAULT
				6	APU FIRE
				7	ENG 1 FAIL
				8	ENG 1 FIRE
				9	NAV IR 2 FAULT
				10	NAV IR 1 FAULT
				11	NAV ADR 2 FAULT
				12	NAV ADR 2 + 3 FAULT

ECAM 4			
Student Name		**Date**	
Instructor Comments			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

ECAM 4	
SESSION OBJECTIVE	• To study Preliminary and normal cockpit preparation

NEW EXERCISES REFERENCES			
	Items	**FCOM**	**QRH**
	• Preliminary Cockpit Preparation	3.03.04 - 4.05.10	3.00

SUPPORT	• FCOM • QRH

ECAM 4 CONDITIONS					
INIT A	**EGCC / EGCC**	**CRZ FL: FL120**	**CRZ T°: - 10°C**	**CRZ Wind: 290° / 20kt**	
	ALTN: EGBB	**CI: 30**			
FPLN	**LOCAL FLIGHT: EGCC 23R - SID SANBA 1R - … - ILS RWY 23R**				
INIT B	**ZFWCG : 30%**	**ZFW : 56 t**	**FUEL : 7 t**	**TOCG : 28,6%**	
PERF	**FLAPS : 1+F**	**TOGA / FLEX: 58°**	**V1: 135**	**VR: 137**	**V2: 140**
ATIS	**EGCC: 230/10 9999 SCT002 1°/0° QNH 1009 RWY DRY**				
NOTES	**A QNH of 1013 may be required for certain FMS software**				

ECAM 4					
AP	FD	AT	FPV	1	L/G LGCIU 1 + 2 FAULT
				2	FUEL LEAK
				3	ELEC AC BUS 1 FAULT
				4	ELEC AC BUS 2 FAULT
				5	ELEC AC ESS BUS FAULT
				6	ELEC DC ESS BUS FAULT
				7	F/CTL SLATS FAULT
				8	F/CTL SLATS + FLAPS FAULT
				9	ENG 2 FIRE
				10	SMOKE AFT CARGO SMOKE
				11	HYD G + Y SYS LO PR
				12	ELEC EMER CONFIG

UK CAA / EASA APPROVED

A320 FAMILY

COMBINED MCC AND AIRCRAFT TYPE RATING COURSE

AIRBUS SOP'S

SIMULATOR TRAINING

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CST/FSMO (MCC only)			
Student Name		**Date**	
Instructor Comments			
CRM/MCC			
Exercises incomplete			
Instructor Signature	**x**	**Instructor Name**	
Student Signature	**x**		

CST/FSMO (MCC only) BRIEFING	
SESSION OBJECTIVE	**Practical application of MCC theory in a two crew operating environment Familiarisation with Standard Operating Procedures.**
BRIEFING	1 Hour • Pre-flight Preparation Documentation • Cockpit set up PF/PNF Cockpit Equipment Seating Position Flight Instruments Lighting Radio & Navigation Equipment Set Up – PF/PNF ECAM • Briefings PF/PNF duties Before Take-off Checklists Take-off - Normal Task Sharing PF - PNF Call Outs • Climb Task Sharing PF/PNF Duties • Descent & Approach Preparation PF/PNF Rolls - Monitoring • ILS Approach Callouts
STUDENT REVIEW	• Standard Operating Procedures • Task sharing in the cockpit • ECAM • PF/PNF duties

CST/FSMO (MCC only) OUTLINE			
POS INIT		**EGCC 23R**	
ROUTE		**EGCC 23R to EGCC 23R – TNT Departure – Cruise FL120**	
PERF DATA		**ZFM 39200 KG, T/O FUEL 7000 KG, RES 2500 KG, CI 35**	
MET/ NOTAM		**EGCC 240/05 9999 CAVOK 14/10 Q1020 RWY DRY** **Nil NOTAM's**	
PERF SEQUENCE		**CONF 2**	
MCC	**COMPLETED**	INIT:	Aircraft on ramp GPU available
			Cockpit Set Up: PF/PNF duties/ All lights out concept
			ECAM Usage
			Before Start Checklist:
			Engine start - After Start Checklist
			Taxi - Before Takeoff Checklist
			Takeoff, Standard calls & FMA changes at power application, Aa, flap retraction. A/P ON, after takeoff checklist
		Climb:	FL 120 - radar vectoring standard calls
		Cruise:	Descent approach set up – PF/PNF duties, navaid tuning PFD/ND displays, standard calls.
		Descent:	Preparation for an ILS, FMGS preparation, approach briefing; Use of checklist, PF/PNF Duties, standard calls.
		Approach:	PF/PNF duties, standard calls
		Landing:	Autoland, FMA changes, standard calls
			After Landing Scan, Checks & Checklist, PF/PNF Duties
		INIT:	Takeoff position
			Before takeoff checklist
		Climb:	Radar vectoring, Managed/Open modes, selected or managed speed use, FCU/FMA discipline
		Cruise:	EFIS panel, review of PFD and MAP setting/display/switching navaid tuning AUTO/MAN, displays on PFD, MAP and STDBY instruments
		Parking:	Securing the aircraft
4 Hours MCC Training			

CST/FSMO 1			
Student Name		**Date**	
Instructor Comments			
CRM/MCC			
Exercises incomplete			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

CST/FSMO 1 BRIEFING	
SESSION OBJECTIVE	**Cockpit familiarisation/equipment location/seating. Use of FMGS, Instrumentation, FMA & Scan/Thrust Lever operation/sidestick.**
BRIEFING	1 hour • SOPs . Cockpit set up Lights out concept . FMGS preparation/MCDU Pages . Start . Taxi . Take-off/Side Stick Pitch and Roll Control . Climb - Vertical Modes . Cruise - Lateral Modes . MCDU preparation . Descent . Landing . Taxi . Shut-Down • EFIS/ECAM Check Lists • Task sharing • FCU/FMA discipline • MCC
STUDENT REVIEW	• Standard Operating Procedures • Task sharing in the cockpit • EFIS panel usage

CST/FMSO 1 OUTLINE			
POS INIT		**EGCC 23R**	
ROUTE		**EGCC 23R to EGCC 23R - Cruise FL120**	
PERF DATA		**DOM 44,000KG, PAYLOAD 12,000KG, FUEL 7,000KG, CONF 1 + F**	
MET NOTAM		**EGCC 240/10, 9999, SCT090,14/10 Q1009, RWY DRY**	
SEQUENCE		**PART 1, CAPTAIN PILOT FLYING OR (F/O1)**	
MCC	**COMPLETED**	INIT:	Aircraft on the ramp, GPU available
			Cockpit Set-up PF/PNF Duties
			Before Start Check List
			Engine start, After start check-list.
		Taxi:	Flight controls check, before take-off checklist
		Take-off:	Standard calls & FMA changes, Aa, slats/flaps retraction, after take-off check-list – Autopilot ON
		Climb:	FL80 radar vectoring.
		Cruise:	FMGS preparation – Duties PF/PNF – Navaid Tuning/Rad Nav Page and displays PF – PNF. Intercept VOR Radial
		Approach:	Approach Mode Manual Activation. Use of Checklist, PF/PNF Duties
		Landing:	Autoland, FMA changes and standard calls
			After landing check-list
		PART 2, FIRST OFFICER PILOT FLYING (F/O2)	
		INIT:	Takeoff position
			Normal takeoff, standard calls FMA changes at power application, slats/flaps retraction, after take-off check-list
		Climb:	Radar vectoring, Climb/Open Climb Modes, selected speed or FMGS speed use, FCU/FMA discipline
		Cruise:	EFIS panel, review of PFD and NAV setting/display, navaid tuning, and progress page. Use of raw data display on NAV and standby instruments
			Navigation in selected mode using raw data, interception of VOR radial
			FMGS - Use of the DIR TO function
			Preparation for an ILS, FMGS preparation, approach briefing
		Descent:	Radar vectors, PROG page information, approach check-list, deceleration/aircraft configuration, ILS interception, FMA changes and standard calls. Examine DES and OPEN Descent Modes
		Approach:	Approach Mode Auto activation. Dual AP ILS approach
		Landing:	Autoland, FMA changes and standard calls. After landing check-list
		Taxi-in:	Parking, Securing the aircraft
4 Hours MCC Training **NO LST SIGNOFF ITEMS (For Instructor)**			

CST/FSMO 2			
Student Name		**Date**	
Instructor Comments			
CRM/MCC			
Exercises incomplete			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

CST/FMSO 2 BRIEFING	
SESSION OBJECTIVE	**To examine EFIS Failures, develop FMGC use, familiarisation with ACP/RMP and Standby Nav tuning** **Lateral Flight Plan revisions including diversion**
BRIEFING	1 hour • FMGS Set Up • EFIS Switching • F-PLN lateral revisions • Secondary Flight Plan usage • Speed reversions and protections – AP/AT (Normal Law) • Caution Lights and Warning Lights and messages • ILS approach • Go around with Flight directors • MCC
STUDENT REVIEW	• Standard Operating Procedures • Cautions and Warnings • ACP/RMP selections • Speed reversions and protections • Go around procedure with FD • Go around procedure without FD

CST/FMSO 2 OUTLINE			
POS INIT		**EGCC 23R**	
ROUTE		**EGCC/EGCC FL80**	
PERF DATA		**DOM 43,000KG, PAYLOAD 13,000KG, FUEL 8,000KG CONF 1 + F**	
MET NOTAM		**EGCC 240/10, 9999, BKN030, 14/10, Q1015 RWY DRY**	
SEQUENCE		**PART 1, FIRST OFFICER PILOT FLYING (F/O2)**	
MCC	**COMPLETED**	INIT:	Aircraft on the ramp, GPU available
			Transit Cockpit Set Up, Before start check-list
			Engine start, After start check-list, Before take-off check-list
		Take-off:	SID, after takeoff check-list
		Climb:	Radar vectoring, Speed Protections, FCU/FMA discipline
		Cruise:	EFIS panel, review of PFD and ND setting/display & cautions
			FMGS Nav accuracy check. MCDU Perf, App & Rad Nav Pages
		Navigation:	Lateral revision practice (route and destination, including hold and new destination) - Secondary Flight Plan
		Descent:	Vertical modes, PROG page, and descent profile. Hold, approach checklist, deceleration/configuration
		Approach:	ILS. Interception, FMA changes and standard calls, landing checklist
		Go-Around:	FMA change, radar vectoring, acceleration, after take-off check-list
		Approach:	Radar vectors, manual approach, approach preparation, briefing, approach checklist, landing check-list
		Landing:	Re-engage A/P above 800ft for automatic landing
			After landing check-list
		PART 2, CAPTAIN PILOT FLYING OR (F/O1)	
		INIT:	Takeoff position
		Takeoff:	SID, after take-off check-list
		Climb:	Radar vectoring, vertical modes, FCU/FMA discipline
		Cruise:	EFIS panel, review of PFD and NAV setting/display & warnings
			FMGS Navigation accuracy check and warnings
		Navigation:	Lateral revision practice (route and destination, including hold)
		Descent:	Vertical modes, return to FMGS navigation, Fuel Predict, Prog and Flt Plan pages. Descent profiles. Hold, approach checklist, deceleration/configuration
		Approach:	Radar vectors, manual approach, approach preparation, briefing, approach checklist, ILS interception, landing checklist
		Go-Around:	FMA change, radar vectoring, acceleration, after take-off checklist
		Approach:	Radar vectors, manual approach, approach preparation, briefing, approach checklist, landing checklist
		Landing:	Re-engage A/P for automatic landing
			After landing check-list
		Taxi in:	Shut down and secure aircraft
4 Hours MCC Training **NO LST SIGNOFF ITEMS (For Instructor)**			

CST/FSMO 3			
Student Name		**Date**	
Instructor Comments			
CRM/MCC			
Exercises incomplete			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

CST/FMSO 3 BRIEFING	
SESSION OBJECTIVE	**Non precision approach** **Familiarisation NAV Display Options** **Use of FPV** **Use of Non Normal checklists** **Rejected Takeoff Procedure** **TCAS Procedure**
BRIEFING	1 hour • External Air Procedures • Use of TRK/FPA mode • Vertical Profiles • System Malfunctions – Fuel/Anti Ice/Electrical • Use of the different PFD display modes • Holding Procedures • Non Precision Approach • Go-around procedure • MCC
STUDENT REVIEW	• Standard Operating Procedures • PFD displays/FPV • QRH Drills Fuel/Pitot Static/Ice & Rain/Electrical • Non Precision Approach

CST/FMSO 3 OUTLINE			
POS INIT		**EGBB 33**	
ROUTE		**EGBB 33 to EGCC 23R**	
PERF DATA		**DOM 44,400KG, PAYLOAD 12,000KG, FUEL 8,000KG, CONF 2**	
MET NOTAM		**EGBB 300/15 2000 RA, SCT015, 15/14 Q1029 (Nil NOTAMs)** **EGCC 280/15 8000, OVC010, 12/10 Q1030 (ILS on maintenance)**	
SEQUENCE		**FIRST PART, CAPTAIN PILOT FLYING OR (F/O1)**	
MCC	**COMPLETED**	INIT:	Aircraft on the ramp, GPU available
			Preliminary & cockpit set up, Before start check-list
			Engine start using external air, After start check-list, Taxi, Before take-off check-list
		Take-off:	SID, after take-off check-list, Managed NAV Profile
		Climb:	Re-routing via new airway, route intercept with Managed navigation, FMGS/FCU/FMA discipline
		Cruise:	Malfunctions; Double Probe Heat Failure/ Loss of one generator
			ND Display Modes/Use of TRK/FPA modes
			TCAS Procedures
			New destination, MCDU flight plan sequencing, Hold, LOC DME approach preparation, approach briefing
		Descent:	Use of MCDU to optimise vertical profile, approach checklist
		Approach:	Deceleration/configuration procedural LOC DME approach
			Go-around at MDA, procedural VOR DME approach
		Landing:	Manual, FMA changes and standard calls
			After landing check-list
		PART 2, FIRST OFFICER PILOT FLYING	
		INIT:	Takeoff position
		Take-off:	Normal takeoff, SID, after take-off check-list
		Climb:	Rerouting via new airway, route intercept , FMGS/FCU/FMA discipline
		Cruise:	Malfunctions; Ice & Rain/ Electrical Loss of EDG/fuel
			ND Display Modes/Use of FPV
			TCAS Procedures
			New destination - MCDU flight plan sequencing, LOC DME approach preparation, approach briefing
		Descent:	Use of MCDU to optimise vertical profile, approach check-list
		Approach:	Deceleration/configuration, procedural LOC DME approach
			Go-around at MDA, radar vectors for procedural VOR DME approach
		Landing:	Manual, FMA changes and standard calls
		INIT:	Takeoff position. RTO Captain and First Officer handling
			After landing check-list
		Taxi in:	Shutdown, secure aircraft
4 Hours MCC Training **NO LST SIGNOFF ITEMS (For Instructor)**			

CST/FSMO 4			
Student Name		**Date**	
Instructor Comments			
CRM/MCC			
Exercises incomplete			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

CST/FMSO 4 BRIEFING	
SESSION OBJECTIVE	**Performance for Flap 3 takeoff on wet runway** **Abnormal Procedures Start Malfunctions/Engine Cautions/Hydraulics**
BRIEFING	1 hour • Start Malfunctions/FADEC • Power Plant Malfunctions, Ground/Air - Relighting • Hydraulic Malfunctions ,Downgraded Laws PTU • System Pages, Hydraulic • MCC
STUDENT REVIEW	• Standard Operating Procedures • ILS approach • MCDU rerouting, • Hydraulic System Green, Blue, Yellow, / PTU/Loss of Fluid, Single and Dual Failures/Downgraded Laws • Pilot incapacitation • TCAS Procedures

CST/FMSO 4 OUTLINE			
POS INIT		**EGCC 23R**	
ROUTE		**EGCC 23R to EGBB RWY33 SID SANBA 1R – At SANBA, DCT BHX - HOLD**	
PERF DATA		**DOM 44,000KG, PAYLOAD 13,000KG, FUEL 8,000KG, CONF 3**	
MET NOTAM		**EGCC 280/15 2000 +RA OVC010, 12/10 1030** **EGBB 300/15 5000 OVC010, 15/14 Q1029 (ILS on Maintenance)**	
SEQUENCE		**PART 1, FIRST OFFICER PILOT FLYING (F/O2)**	
MCC	**COMPLETED**	INIT:	Aircraft on the ramp, GPU available
			Transit cockpit set up, Before start check-list
		take-off	Engine start, Start Malfunctions After start check-list, Before check-list
		Climb:	Normal takeoff Flap 3, SID, after take-off check-list
		Cruise:	Radar vectoring, HYD Y RSVR OVHT – fault remains
			Y SYS LO PR
			FMGS exercises- SYS B RSVR LO AIR PR (restore B for app)
			Direct BHX – Hold – Approach Brief - Exit Options
		Approach:	NDB approach
		Go-Around: check-list	FMA change, radar vectoring, acceleration, after take-off
		Approach:	ILS approach 33 – Pilot incapacitation
		Landing:	Autoland
		PART 2, CAPTAIN PILOT FLYING (F/O1)	
		INIT:	Takeoff position
			Normal takeoff Flap 3, SID, after take-off check-list
		Climb:	Radar vectoring, HYD G RSVR LO LVL
		Cruise:	FMGS exercises HYD B ELEC PUMP LO PR (restore for app)
			Direct BHX – Hold – Exit Options
		Approach:	NDB Approach
		Go-Around: check-list	FMA change, radar vectoring, acceleration, after take-off
		Approach:	ILS approach 33 – Pilot incapacitation
		Landing:	Autoland
		Taxi-in:	Shutdown, secure aircraft
4 Hours MCC Training **NO LST SIGNOFF ITEMS (For Instructor)**			

3.6 SIMULATOR TRAINING – A320

Full Flight Simulator (FFS)

General Philosophy
Although the training is conducted in a simulator, instructors and trainees must endeavour to make it as realistic as possible. In particular:

Communications
- Communications with the ground mechanics and ATC will be performed.
- The pilot instructor will give the answers for ground mechanics, ATC, etc.
- A takeoff clearance will be provided for each take-off. It will preferably be taken from the airport charts of the airfield used. These charts are those used by the airline.

Takeoff and Landing briefing:
Takeoff and landing briefing will be performed at least once per session**.**

Note: In order to save time, a detailed takeoff brief may be conducted in the briefing room prior to the detail and an abbreviated brief used subsequently.

Normal checklists:
- Normal checklists will be requested by PF. As in flight, the actions are generally performed before they are read out. Exceptions will be explained during session briefings.
- The crewmember reading the checklist must first challenge, then receive the correct response before proceeding to the next item (incorrect response must be rectified).

Abnormal and emergency checklists:
Abnormal and emergency checklists will be performed in real time to the maximum extent practicable.

AFS selections:
AFS selections selection will be performed:
1) by PF when using the auto-pilot
2) by PNF when flying manually

ALL WEATHER OPERATIONS (AWO) FLIGHT SIMULATOR TRAINING

An AWOPs Supplements will be provided.

RTO
Once RTO procedures have been trained, drills will be included at random during the simulator phase of training, this will ensure realism**.**

SPECIAL FEATURES OF SIMULATOR SESSIONS
Simulator characteristics (refer to SIMULATOR MANUAL)
Note: For the Flight Simulator safety briefing given at the beginning of Session 1, refer to the specific simulator manual.

Simulator preparation:
The simulator preparation, parameter initialisations (wind, temperature, weight, runway number, etc.) will be accomplished at the beginning of each session. Students will be secured in their seats prior to pressurising the motion.

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FFS 1			
Student Name		**Date**	
Instructor Comments			
CRM / MCC			
Exercises incomplete			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

FFS 1 BRIEFING	
SESSION OBJECTIVE	**To Demonstrate A320 Flight Control Laws and Protections, including Alpha Floor.** **To Experience handling characteristics in Alternate and Direct Law** **To Explore the aircraft handling at low and high speed** **To handle the aircraft at high bank angles** **Early recognition of and recovery from approach to stall situations**
BRIEFING	1 hour • Flying techniques • Flight Envelope and Protections • Auto Trim Function • Approach to Stall Identification and Recovery In Normal/Alternate Law, Alpha Floor • Turns Normal Law, Alternate Law • No FD operation and ILS Approach • Go-around with no FD • Visual pattern • Landing technique • Taxi- technique • MCC
STUDENT REVIEW	• Standard Operating Procedures • Flight Control Computers • Alpha Floor Function • Visual pattern

FFS 1 OUTLINE			
POS INIT		**EGCC 05L**	
ROUTE		**EGCC 05L to EGCC 05L FL110**	
PERF DATA		**DOM 44,600KG, PAYLOAD 10,000KG, FUEL 8,000KG - CONF 1 + F**	
MET NOTAM		**EGCC 020/10, 9999, BKN030, 21/11 Q1003 – (Nil NOTAMs)**	
SEQUENCE		**PART 1, CAPTAIN PILOT FLYING OR F/O 1**	
MCC	**COMPLETED**	INIT:	Aircraft on ramp GPU available
			Cockpit set up, before start check-list
			Engine start, after start check-list, taxi technique, before takeoff checklist
		Takeoff:	Normal take off, use of FCU modes
		Cruise:	AP/FD/AT Off – Normal Law, Pitch response, stability auto trim Roll function & Limits, Low speed and overspeed protections
			ELAC Failures – 1,2, - 1 + 2 Affected controls ALTERNATE LAW High Low Speed stability (lost protections)) Approach to stall in Alternate Law. Turns in Alternate Law
			Restore ELACS – Progressively fail SECs – effect
		Descent:	Radar vectors, approach check-list
		Approach:	Deceleration, aircraft config, no FD approach & landing
		INIT:	8 NM finals Fail ELAC 1+ 2 Lower Gear App with/without AT
		INIT:	5NM finals for landing practice as required, with and without F/D (Include ILS with FD to Cat 1 Minimum)
		INIT:	Take-off - radar vectored ILS and go around with FD. Visual pattern (include rejected landing at 50 ft)
		PART 2, FIRST OFFICER PILOT FLYING (F/O 2)	
		INIT:	Takeoff position
		Takeoff:	Normal take off, use of FCU modes
		Cruise:	AP/FD/AT Off: Normal Law, Pitch response, stability autotrim Roll function & Limits, Low speed and overspeed protections
			ELAC Failures – 1,2, - 1 + 2 Affected controls ALTERNATE LAW High Low Speed stability (lost protections)) Approach to stall in Alternate Law. Turns in Alternate Law
			Restore ELACS – Progressively fail SECs – effect
		Descent:	Radar vectors, approach check-list
		Approach:	Deceleration, aircraft config, no FD approach & landing
		INIT:	8 NM finals Fail ELAC 1+ 2 Lower Gear App with/without AT
		INIT:	3NM finals for landing practice as required, with and without F/D. (Include ILS with FD to Cat 1 Minimum)
		INIT:	Take-off - radar vectored ILS and go around with FD. Visual pattern (include rejected landing at 50 ft)
FFS 1 LST SIGNOFF ITEMS (For Instructor)			
1.1 1.3 1.4 1.5 1.6 3.1 3.2 3.4.9 3.7 3.8 3.8.1 3.9.3.1 4.4			

FFS 2			
Student Name		**Date**	
Instructor Comments			
CRM / MCC			
Exercises incomplete			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

FFS 2 BRIEFING	
SESSION OBJECTIVE	**Develop skill in handling emergency situations**
BRIEFING	• 1 hour • Flap 3 Take-Off • Task sharing during abnormal and emergency situation • Air Cond and Pressurisation malfunctions • Smoke Control and Removal • Landing Gear and Brake System • Evacuation Procedures • MCC
STUDENT REVIEW	• Standard Operating Procedures • Abnormal and Emergency Procedures - Air Con & Pressurisation • Abnormal and Emergency Procedures – Smoke/Toxic Fumes Removal • Evacuation Procedures

FFS 2 OUTLINE		
POS INIT		**EGCC 05L**
ROUTE		**EGCC – EBBR FL330 DIVERSION TO EGNX RWY 27**
PERF DATA		**DOM 44,600 KG, PAYLOAD 12,000KG, FUEL 9,000KG CONF 3**
MET NOTAM		**EGCC 010/18 3500, BKN010, 17/11 q1005 RWY Damp – (Nil NOTAMs)** **EGNX 310/20, 1500BR RA OVC006 16/14 Q1003**
SEQUENCE		**PART 1, FIRST OFFICER PILOT FLYING (F/O 2)**
MCC	**COMPLETED**	INIT: Transit Checklist Starting External Air and Manual Start
		Taxi Air Pack Ovht – system normal in climb
		Take-off: Normal Takeoff – Engage AP
		Climb: Vent Blower Fault
		Cruise Air Pack 1 + 2 Fault – Explosive Decompression – Emergency Descent
		Approach: ILS approach. Nose LG fails to extend, go around
		Landing: Landing Gear Collapse - Evacuation
		PART 2, CAPTAIN PILOT FLYING OR F/O 1
		INIT: T/O Position. Before take-off check-list
		Takeoff: Normal take off
		Climb: Vent Extract Fault
		Cruise: FL 350 - Air conditioning Smoke rapid descent
		INIT FL100 Avionics Smoke -Smoke/Toxic Fumes removal
		Approach: ILS approach. Galley fire - evacuation
		INIT: Takeoff position Captain Flying (See Note Below) - RTO
		INIT: Takeoff position First Officer Flying (See Note Below) - RTO
		RTO TRAINING NOTES:- **First Officers should be trained to Reject a Take Off, FROM THE RIGHT HAND SEAT ONLY, due to an Incapacitation of the Captain at 80kts during the Take Off, through to its full conclusion.** **Under NO Circumstances should a trainee F/O Reject a take-off from the Left Hand Seat.**
FFS 2 LST SIGNOFF ITEMS (For Instructor)		
2.1 2.2 3.4.1 3.4.12 3.6.2 3.6.6 3.9.1 3.9.3.2		

FFS 3			
Student Name		**Date**	
Instructor Comments			
CRM / MCC			
Exercises incomplete			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

FFS 3 BRIEFING	
SESSION OBJECTIVE	**Identify the correct recovery manoeuvres for GPWS, TCAS and Windshear** **Continued development of two-engine go-around technique** **Further Examination of Electrical System**
BRIEFING	1 hour • Start Malfunctions • Use of documentation (MEL, QRH,) • Performance Implications • Windshear, TCAS & GPWS Recovery Procedures • Total Electrical Failure – Use of ECAM • MCC
STUDENT REVIEW	• Standard Operating Procedures • Recovery Procedures GPWS/Windshear • Electrical Emergency Configuration • Use of the MEL • Weather Radar

FFS 3 OUTLINE			
POS INIT		**EGCC 23R**	
ROUTE		**EGCC – EGNX FL80**	
PERF INIT		**DOM 44,000KG, PAYLOAD, 13,000KG FUEL 9,000KG - CONF 1 + F**	
MET NOTAM		**EGCC 200/10, 9999, BKN030 21/11 Q995 RWY DRY – (Nil NOTAMs)** **EMB CBs in vicinity** **EGNX 240/15 9999 BKN020 20/12 Q996**	
SEQUENCE		**PART 1,CAPTAIN PILOT FLYING OR F/O 1**	
MCC	**COMPLETED**	INIT:	Aircraft on the ramp, GPU available
			Cockpit set up, Before start check-list
			Abnormal engine start, use of MEL - After start check-list – Taxi - IR Fault - Before take-off check-list
		Takeoff:	Windshear on Take-Off between V1 and Vr, SID, after take-off check-list
		Takeoff:	Windshear on Climb
		Cruise:	TCAS event
			Holding Procedure
			ELEC – Emergency Configuration Approach – Radar Vectored to Land
		Approach:	Radar vectored, ILS approach - Windshear Go Around
		Approach:	Radar vectors- GPWS activation – Pull up
		Landing:	Flap 3 landing
		PART 2,FIRST OFFICER PILOT FLYING (F/O 2)	
		INIT:	Takeoff position EGNX for flight to EGCC
		Takeoff:	Windshear on Take-Off between V1 and Vr, SID, after take-off check-list
		Climb:	Windshear on Climb
		Cruise:	TCAS
			Holding Procedure
			ELEC – Emergency Configuration Approach – Radar Vectored to Land
		Approach:	Radar vectored ILS approach - Windshear Go Around.
		Approach:	Radar vectors- GPWS activation – Pull up
		Landing:	Flap 3 approach - Reverser failure after touchdown
			After landing check-list
		Taxi-in:	Engine tail pipe fire, Parking
FFS 3 LST SIGNOFF ITEMS (For Instructor)			
3.6.5 3.6.9 3.4.10 3.9.2 4.2			

FFS 4			
Student Name		**Date**	
Instructor Comments			
CRM / MCC			
Exercises incomplete			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

FFS 4 BRIEFING	
SESSION OBJECTIVE	**Aircraft handling after engine failure** **QRH procedure's** **Correct discipline to conduct a rejected takeoff to its full conclusion**
BRIEFING	1 hour • In-flight relight procedure • A320 Characteristics on one engine • Single engine profiles • Rejected takeoff
STUDENT REVIEW	• Standard Operating Procedures • QRH – Electrical Malfunctions • Single Engine Profiles • Engine failure after take-off

FFS 4 OUTLINE		
POS INIT		**EGCC 05L**
ROUTE		**EGCC – EGCC SID – LISTO 2S – FL70**
PERF DATA		**DOM 44,600KG, PAYLOAD 10,000KG, FUEL 8,000KG CONF 1 + F**
MET NOTAM		**EGCC 020/10 1000 OVC003 8/4 Q1000 (Nil NOTAMs)**
SEQUENCE		**PART 1, FIRST OFFICER PILOT FLYING (F/O 2)**
MCC	**COMPLETED**	INIT: Engines running at holding point
		Taxi ELEC DC Bat Bus Fault - Restore
		Takeoff: Normal Engage AP
		Climb ELEC DC Ess Bus Fault - Restore
		Cruise: FL80 AP Off – Engine Failure – Handling Characteristics Manual Thrust v Auto Thrust – Trimming – With/without AP
		Approach: Engine out ILS approach (with A/P) - Go-around
		Approach: Engine out ILS approach to Land AP Off
		INIT: Takeoff, engine failure between V1 and V2 - Emergency Turn
		Approach: Radar ILS to DA – Go around – S/E ILS and landing (without A/P)
		INIT: Takeoff
		APU Fire, Rejected takeoff
		PART 2, CAPTAIN PILOT FLYING OR F/O 1
		INIT: Engines running at holding point
		Takeoff: Engine failure after V1, Engine Relight (repeat if required for satisfactory handling)
		Climb: ELEC AC Bus 1 Fault – Restore ELEC DC Bus 1 Fault - Restore.
		Cruise: FL80 AP Off – Engine Failure – Handling Characteristics Manual Thrust v Auto Thrust – Trimming – With/without AP
		Approach: S/E ILS approach, (with A/P) - Go-around
		Approach: S/E ILS approach to Land
		INIT: Takeoff, Engine Fire between V1 and V2, Emergency Turn
		Approach: Radar ILS to DA – Go around – S/E ILS and landing (without A/P)
		Landing: Engine out landing
		INIT: CAPTAIN ONLY Takeoff, engine failure at V1 minus 10 Kt - Rejected Takeoff
		INIT: FIRST OFFICER Rejected Takeoff due to Captains Incapacitation at 80Kts
FFS 4 LST SIGNOFF ITEMS (For Instructor)		
2.5 2.6 3.4.0 3.4.2 3.4.7 3.6.3 3.9.3.3 3.9.3.4 4.3 5.5		

FFS 5			
Student Name		**Date**	
Instructor Comments			
CRM / MCC			
Exercises incomplete			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

FFS 5 BRIEFING	
SESSION OBJECTIVE	**Aircraft handling with abnormal Flap Slat Configuration** **Use of the aircraft anti-ice system** **Landing with Landing Gear Malfunctions**
BRIEFING	**1 hour** • Flap/Slat malfunctions • Jammed Stabilizer Approach • Non Precision Approach
STUDENT REVIEW	• Standard Operating Procedures • Flight controls and Flaps/Slats Computers • Abnormal Flap/Slat Profiles • Performance with Abnormal Flaps/Slats

FFS 5 OUTLINE			
POS INIT		**EGKK 26L**	
ROUTE		**Part 1: EGKK – EGBB FL120 / Part 2: EGKK – EGNX FL140**	
PERF INIT		**DOM 43,600KG, PAYLOAD 10,000KG, FUEL 8,000KG CONF 1 + F**	
MET NOTAM		**EGKK 310/15 G35 XXRA OVC010, 8/4 Q998** **EGBB 130/18 G32 RA OVC 009, 6/3 Q999** **EGNX 290/20 G35 RA OVC 010 8/4 Q998**	
SEQUENCE		**PART 1, CAPTAIN PILOT FLYING OR F/O 1**	
MCC	**COMPLETED**	INIT:	Transit Set Up
		TAXI	F/CTL ELAC Fault (single failure) ECAM Procedure
		Take-off:	SID, after take-off check-list
		Climb:	Protections (Slat Lock & Flap Overspeed)
		Cruise:	FL 70,
		Approach:	Jammed Stabiliser – Radar to ILS 15
		INIT:	Take Off – F/CTL Flaps Locked – Radar for ILS 15
		Approach:	TE Flaps Up Landing
		INIT:	Takeoff
		Approach	F/CTL Slats Locked
		INIT	8nm Finals – Landing Gear LGCIU 1 + " Fault - Complete Procedure
		Approach:	Radar to NDB/DME R/W 15
		PART 2, FIRST OFFICER PILOT FLYING (F/O 2)	
		INIT:	Engines running at holding point
		TAXI	F/CTL ELAC Fault (single failure) ECAM Procedure
		Take-off:	SID, after take-off check-list
		Climb:	Protections (Slat Lock & Flap Overspeed)
		Cruise:	FL 70,
		Approach:	Jammed Stabiliser
		INIT:	Take Off – F/CTL Flaps Locked – Radar for ILS 27
		Approach:	TE Flaps Up Landing
		INIT:	Takeoff
		Approach	F/CTL Slats Locked
		INIT:	8nm Finals – Landing Gear LGCIU 1 + " Fault – Complete Procedure
		Approach:	Radar to NDB/DME RW 27
FFS 5 LST SIGNOFF ITEMS (For Instructor)			
3.4.6 3.6.8 3.9.4 5.2 5.4			

FFS 6			
Student Name		**Date**	
Instructor Comments			
CRM / MCC			
Exercises incomplete			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

FFS 6 BRIEFING	
SESSION OBJECTIVE	**Refresh engine failure procedures** **Further practice in Alternate Law operations** **To develop proficiency in Landing with abnormal configurations** **Flight in Mechanical Back Up Mode** **Introduce Engine Failure at High Take Off weights**
BRIEFING	1 hour • Hydraulics – Dual System Failures, impact on Flight Control Laws • FACs and Alternate Law • Engine Failure at Max Take-Off Mass • Sidestick Failures
STUDENT REVIEW	• QRH Drills • Aircraft Performance at Heavy Mass • Hydraulic systems • Mechanical Back Up

FFS 6 OUTLINE		
POS INIT		**EGCC RWY 05L**
ROUTE		**EGCC - EGNX**
PERF DATA		**DOM 44,000KG, PAYLOAD 8,000KG, FUEL 8,000KG CONF 3**
MET NOTAM		**EGCC 020/18 2000 OVC009 3/2 Q999 R/W WET** **EGNX 300/15 4000 OVC 008 4/5 Q998**
SEQUENCE		**PART 1, FIRST OFFICER PILOT FLYING (F/O 2)**
MCC	**COMPLETED**	INIT: Engine running at holding point
		Take-off: CONF 3 Takeoff
		Climb 2 FACs off – Alternate Law - RESTORE
		Cruise: Flight in Mechanical Back Up Mode – Transition from Normal Flight Control of height, heading and airspeed - RESTORE
		Hydraulics – Green System – Low Quantity + B System LO PR
		Approach: Radar vectors to NDB approach 27
		INIT: Take Off – Flap 1 Sidestick undetected failure - RESTORE
		Approach : ILS - All Flaps up approach and landing
		INIT: Take Off Position at **MAN 05L MAX T/O MASS** Engine fire after V1 – Emergency Turn - Return to MAN
		Approach: Overweight approach and landing
		PART 2, CAPTAIN PILOT FLYING OR F/O 1
		INIT: Engine running at holding point
		Take-off: CONF 3 Takeoff
		Climb SDAC 1 Fault
		Cruise: Flight in Mechanical Back Up Mode – Transition from Normal Flight Control of height, heading and airspeed - RESTORE
		Hydraulics – Green System – Low Quantity + B System LO PR
		Approach: Radar vectors to NDB approach
		INIT: Take Off – Flap 1 Sidestick undetected failure - RESTORE
		Approach : ILS - All Flaps up approach and landing
		INIT: Take Off Position **MAN 05L MAX T/O MASS** Engine fire after V1 – Return to MAN
FFS 6 LST SIGNOFF ITEMS (For Instructor)		
2.4 3.4.5 3.4.13 3.6.1		

FFS 7			
Student Name		**Date**	
Instructor Comments			
CRM / MCC			
Exercises incomplete			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

FFS 7 BRIEFING	
SESSION OBJECTIVE	**Refresh engine failure procedures** **Examine Impact on Navigation failures on Flight Control Laws** **Develop and practice visual profiles**
BRIEFING	1 hour • ADR and IR Systems • Manual Reversion • Visual profiles and circling approaches
STUDENT REVIEW	• Hydraulic failures • QRH Drills • Visual profiles

FFS 7 OUTLINE			
POS INIT		**EGKK RWY 08R**	
ROUTE		**EGKK – EGNX - SID – LAMBOURNE – FL180**	
PERF DATA		**DOM 44,000KG, PAYLOAD 11,000KG, FUEL 9,000KG CONF 1 + F**	
MET NOTAM		**AS BRIEFED BY THE INSTRUCTOR FOR EACH EXERCISE**	
SEQUENCE		**PART 1, CAPTAIN PILOT FLYING OR F/O 1**	
MCC	**COMPLETED**	INIT:	Engines running at holding point
		Take-off:	CONF 1 + F Takeoff
		Climb	IR1 Fault
		Cruise:	ADR 1 + 3 Fault – Restore ADR 3
		Approach:	Radar vectors to NDB approach
		INIT:	Take Off – Flap 1 takeoff
		Approach:	Restore F/D for ILS/DME approach and Circle to land
		INIT:	Takeoff position – RTO practice NOTE – F/Os can only reject a Takeoff from the Right Hand Seat due to an incapacitation of the Captain at 80kts.
		INIT:	Takeoff position
			Engine failure after V1 – Return for visual S/E circuit.
		INIT	Approach 10 miles – RAD Alt Fault
		LANDING	Direct Law when gear down
			After landing Checklist
		PART 2, FIRST OFFICER PILOT FLYING (F/O 2)	
		INIT:	Takeoff position
		Take-off:	CONF 1 + F Takeoff
		Climb	IR 2 Fault
		Cruise	ADR 2 + 3 Fault Restore ADR 2
		Approach:	Radar vectors to ILS approach
		INIT:	Takeoff position- Flap 3 takeoff
		Approach:	Restore F/D for ILS/DME approach to Circle to land
		INIT:	Takeoff position – RTO practice NOTE – F/Os can only reject a Takeoff from the Right Hand Seat due to an incapacitation of the Captain at 80kts.
		INIT:	Takeoff position – Max takeoff weight
			Engine failure after V1 – Return for visual S/E circuit.
		INIT:	Approach 10 miles – RAD Alt Fault
		LANDING	Direct Law when gear down
			After landing Checklist
FFS 7 LST SIGNOFF ITEMS (For Instructor)			
3.3.4 3.4.4 3.4.8 3.4.11 3.9.5			

FFS 8			
Student Name		**Date**	
Instructor Comments			
CRM / MCC			
Exercises incomplete			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

I certify that I have reviewed this student's progress and that he / she has no outstanding syllabus items and that he / she is ready for LST.			
Instructor Signature	**X**	**Instructor Name**	

FFS 8 BRIEFING	
SESSION OBJECTIVE	**Develop and practice visual profiles** **To complete any missed exercises** **To consolidate, as required, for each student**
BRIEFING	1 hour • Visual profiles • As Required by each student
STUDENT REVIEW	• Visual profiles

FFS 8 OUTLINE			
POS INIT		**EGNX OR EGFF**	
ROUTE		**AS REQUIRED**	
PERF DATA		**DOM 44,000KG, PAYLOAD 11,000KG, FUEL 9,000KG CONF 1 + F**	
MET NOTAM		**AS BRIEFED BY THE INSTRUCTOR FOR EACH EXERCISE**	
SEQUENCE		**PART 1, FIRST OFFICER PILOT FLYING (F/O 2)**	
MCC	**COMPLETED**	INIT:	Aircraft on stand GPU available
			Full cockpit set up, Pre-flight & before start checklist, taxi for takeoff, before takeoff checklist
			Completion of unfinished exercises and unsigned LST/MPA Items
		INIT:	Engines Running on Runway - CONF 1 + F Takeoff
		Take Off:	Engine Failure between V1 and V2
		Approach:	Engine out ILS approach – Go Around
		Approach:	Engine out ILS approach to S/E Landing
		INIT:	Takeoff position - RTO
		INIT:	Takeoff position – CONF 1+F Takeoff
		Approach:	Two engine visual circuits
			Repeat as required with increasing crosswind to maximum crosswind
		PART 2, CAPTAIN PILOT FLYING OR F/O 1	
		Repeat of Part 1 above	
		Taxi in:	After landing Procedure, shutdown and secure aircraft
FFS 8 LST SIGNOFF ITEMS (For Instructor)			
5.3 3.6.7			

FFS 8a AWOPS			
Student Name		**Date**	
Instructor Comments			
CRM / MCC			
Instructor Signature	**X**	**Instructor Name**	
This detail is designed to provide initial AWOPS training for a Standard crew in a 3 hour detail, or 4 hours if a Non Standard Crew, (Non-standard is 2 Captains or 2 First Officers Training together) A minimum of 8 approaches must be made. EASA Part FCL requires that the training shall include a Go-around due to simulated insufficient RVR, wind shear, airplane deviation in excess of approach limits for a successful approach and ground/airborne equipment failure prior to reaching DH and, Go-around with simulated airborne equipment failure. This programme is compliant with EASA Part FCL.			
Exercises incomplete			
Student Signature	**X**		

FFS 8 BRIEFING	
SESSION OBJECTIVE	**To familiarise pilots with the operation of the A320 in LVPs during taxi, takeoff, approach and landing to CAT II and Cat IIIb, during normal and non-normal operations.**
BRIEFING	1 hour • The monitored approach • Briefing considerations prior to descent – Task sharing – Wx Minima – Crew Qualifications – Alternate planning – Fuel – Approach Ban – Aircraft serviceability – Flight Deck Lighting – Seat Position – Braking – Autoland limitations – Autoland function prior to approach (FMA) • Conduct of the approach and associated standard calls and annunciations. • Autoland and rollout procedures • Go-around profile • AWOPS Non-normals • Taxiing in LVPs and associated airport charted procedures and lighting. • AWOPS takeoffs and RTO considerations.
STUDENT REVIEW	• AWOPS PowerPoint presentation • A320 automatic flight. • Parts A,B and C references to AWOPS and minima • Section 4 groundschool

FFS 8A OUTLINE AWOPS			
POS INIT		**EGKK RWY 26L – ROUTING AS BRIEFED BY INSTRUCTOR**	
PERF INIT		**DOM 44,000KG PAYLOAD 6,000KG, FUEL 8,000KG T/O CG 26.6%**	
MET NOTAM		**AS BRIEFED BY THE INSTRUCTOR FOR EACH EXERCISE**	
SEQUENCE		**PART 1, STANDARD CREW or FIRST CREW MEMBER IF NON**	
MCC	**COMPLETED**	INIT:	Engines running on taxiway, checklist, practice low vis taxiing to Cat III hold A3 26L.
			Takeoff checklist, practice low vis taxiing to Cat III hold A3 26L.
		Take-off:	Flap 1 Flex Takeoff. Emphasise problems associated with displaced threshold. Use of ILS to check for correct runway, and Yaw Bar. RVR 125/125/75. Climb ahead to 3000'. Radar vectors ILS 26L. Brief by Captain and handover to Co-Pilot
		Approach:	Autoland function check, FMA changes, standard calls, SOP's, Cat IIIb Autoland
		Takeoff:	Flap 1 Flex Takeoff, climb 3000'
		Approach:	Normal approach but demo visual references with flight freeze at Cat I, Cat II, Cat IIIa (change weather) and continue to autoland CatIIIb and rollout. Minima DH0/75m
		Takeoff:	Flap 1 Flex Takeoff, climb 3000' - Engine Failure at V1 – Relight in cruise
		Approach:	Reposition onto final approach for CatI IIb landing & Equipment failures 1. LOC failure – 2. Loss of ILS receiver – 3. Demo Excessive deviation beam 4. Warning with ILS landing capability – 5. Loss of Radio Altimeters – 6. Loss of standby Horizon – 7 Instrument failures.
		Approach:	Reposition onto final approach for Cat IIIb landing. Go Around due to Autoland Lights (Loss of LOC transmitter below 200')
		Approach:	Reposition onto final approach for Cat IIIb landing with Cat II reversion Minima100/300 Double Auto Thrust failure above 1000', QRH continue to land.
		Takeoff:	Flap 1 Flex Takeoff, climb 3000'
		Approach:	Cat IIIb Autoland, No Visual contact at minima, Engine Failure in Go Around
		Approach:	Approach and Landing One Engine Out
		Takeoff:	Flap 1 Flex Takeoff, climb 3000'
		Approach:	Approach. Nav ATT discrepancy (Pitch or Roll) below 1000', Go Around
		Approach:	Approach. No flare landing at 300'
		Takeoff:	Flap 1 Flex Takeoff, Fog Patches – RTO due to Engine Fire - Evacuation
		Takeoff:	Takeoff, RTO due incapacitation of Captain, no crosscheck call at 100kts (F/O's only)
		PART 2 CONTINUED ON NEXT PAGE	

		FFS 8A OUTLINE AWOPS: PART 2
		PART 2, SECOND CREW MEMBER ADDITIONAL EXERCISES IF NON STANDARD CREW
		INIT: Engines running at the taxi point.
		Takeoff: Flap 1 Flex Takeoff. Takeoff, climb 3000' – Full Briefing and handover to Co-Pilot
		Approach: Cat IIIb Approach & Autoland
		Approach: Reposition and AP1 Disengage below 1000' – Go Around
		Approach: Reposition and Engine Failure above 1000', Revert to Cat IIIa or higher minimum
		Takeoff: Fog Patches, use Yaw Bar, Engine Failure after V1 – Relight in Cruise.
		Approach: Engine Failure below 100', S/E Autoland – Discuss Autoland/Master warning light.
		Approach: Reposition and Go Around due to Autoland Lights (Excessive Deviation)
		Approach: Reposition for Cat II MinimaDH100/300 – Autoland Warning when Visual (G/S failure)
		Approach: Reposition for Cat III (Wx 300m) RA2 Fault above 1000', revert to Cat II - Land
		Takeoff: Flap 1 Flex Takeoff, climb 3000'
		Approach: Long Flare Landing
		Takeoff: Flap 1 Flex Takeoff, RTO due to Engine Failure
		Takeoff: Takeoff, RTO due incapacitation of Captain, no crosscheck call at 100kts (F/O's only)
LST SIGNOFF ITEMS (For Instructor)		
6.1, 6.2, 6.3, 6.4.		

INTENTIONALLY BLANK

FFS 9			
Student Name		**Date**	
Instructor Comments			
CRM / MCC			
Exercises incomplete			
Instructor Signature	**X**	**Instructor Name**	
Student Signature	**X**		

FFS 9 BRIEFING	
SESSION OBJECTIVE	**To Complete the Licence Skill Test** **To prepare for Base Training if time Available**
BRIEFING	1 hour • Purpose of the License Skill Test • Level of proficiency required • To prepare for Base Training if time Available
STUDENT REVIEW	• Company SOPs • Flight Profiles • Crew Co-ordination

FFS 9 OUTLINE	
POS INIT	To be briefed by Examiner
ROUTE	To be provided by Examiner
PERF DATA	To be calculated by Candidate
MET NOTAM	To be provided by Examiner
SEQUENCE	To be briefed by Examiner