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The Civil Aviation Authority of Thailand

TCAR PEL PART FCL SIMULATOR SCENARIO GUIDE FOR MP AIRCRAFT

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Approved by

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0 INTRODUCTION

0.1 Background

This version is issued by The Civil Aviation Authority of Thailand (CAAT) in order to provide its stakeholders with an updated and easy-to-read publication. To establish standards to assess pilot trainees.

0.2 Purpose

The purpose of the SIMULATOR SCENARIO GUIDE FOR MP AIRCRAFT is to present to ATO (approved training organizations), AOC (Air operator certificate) and organizations seeking this approval, the guidelines for the development and implementation of SIMULATOR SCENARIO GUIDE MP AIRCRAFTS to support Skilll tests, and proficiency checks for Multi pilot aeroplanes.

Prior the use of this this guidance material, personal in charge of drafting the related scenario (scenario **designer, the Head of Training of an ATO or the person responsible for the management and supervision of the crew member training in an AOC) must be familiar with the related requirements included in TCAR PEL Part FCL and Part ORA and related AMCs and GMs.**

0.3 Applicability

Flight examiner (TRE/SE/SFE), candidate, scenario designer, the Head of Training of an ATO or the person responsible for the management and supervision of the crew member training in an AOC.

0.4 Reference

NIL

0.5 Definitions and Abbreviations

The list below does not cover all technical terms and acronyms used in the document. For this, please refer to the definition's sections of the corresponding regulations.

MULTIPILOT AIRCRAFT or MP AIRCRAFT: An aircraft certified to be operated with a minimum crew of two pilots.

ATPL CANDIDATE: pilot taking the practical test for the ATPL. A candidate may only take the skill-test for the issuance of an ATPL by the CAAT after prior agreement from CAAT (validated application file). The candidate and the TRE/SFE (examiner in charge of the skill-test) are jointly responsible for compliance with this provision.

FREE CANDIDATE: a pilot who takes the skills-test for the revalidation of a TR or the ATPL skill-test without this test being organised by or through an ATO or an operator. The logistics of the examination (simulator slot, documentation, examiner's service, insurance if applicable, etc.) are entirely and directly organised by the candidate in coordination with the examiner.

CPT - PILOT IN COMMAND: means the pilot designated as being in command and charged with the safe conduct of the flight.

COMPETENCY: means a combination of skills, knowledge and attitudes required to perform a task to the prescribed standard.

SCENARIO DESIGNER: An individual examiner or a person - under the responsibility of the Head of Training of an ATO or the person responsible for the management and supervision of the crew member training in an AOC holder; in charge of designing an examination scenario and interacting with CAAT during the scenario approval process.

PROFICIENCY CHECK: means the demonstration of skill to revalidate or renew ratings or privileges, and including such oral examination as may be required.

CRM - *CREW RESOURCE MANAGEMENT*: a managerial process implemented by the crew with the aim of increasing the level of safety and based on skills in cognition, communication, optimised use of available resources and decision making.

OPERATOR'S DOCUMENTATION: Non-flight specific documents and manuals normally available on board and enabling the flight to be conducted in accordance with the applicable operating rules (in particular the Operator's or ATO's Operations Manual and all associated documentation).

MANUFACTURER'S FLIGHT DOCUMENTATION: Standard flight documentation provided by the manufacturer (FCOM and all associated documentation). In the context of an FCL examination, the manufacturer's flight documentation may partially substitute for the operator's flight documentation for a competent check carried out by a free candidate (refer to sub-chapter 3.2).

EXAMINER DOCUMENTATION: see scenario file.

SCENARIO FILE: the set of documents required for the performance of a given FCL test. The Scenario File includes the environment conditions, the documents which are necessary to prepare for and conduct the flight (typically the equivalent of the flight record, distributed to the candidate in preparation for the test) and a TRE/SFE section (EXAMINATOR DOCUMENTATION) containing all the information necessary for handling the test in accordance with the CAAT's approved/accepted syllabus and good examination practice.

STANDARD CREW: In the exercise of a test conducted by an operator, thus means a crew of 2 pilots whose normal operating functions are for one pilot in command, for the other co-pilot. In the context of a non-operator event (ATO, free candidates), designates a crew by which during training and/or Skill-test or proficiency check is made up of a pilot operating from the left seat as Captain of the applicable task distribution and a pilot operating from the right seat as First Officer of the applicable task distribution.

NON-STANDARD CREW: Pairing of 2 pilots who do not meet the definition of a constituted crew (2 CPT or 2 first officer).

SKILL-TEST: Means the demonstration of skill for a licence or rating issue, including such oral examination as may be required.

INDIVIDUAL EXAMINER: means an examiner in the performance of his or her duties when acting as an individual and not as an employee or contractor of an ATO or operator. An individual may be active as an individual examiner while acting for one or more organisations.

SUPPLEMENTARY EXERCISES: part of an event situation that completes the travel part of that scenario and includes a series of exercises carried out in sequence, so that the navigation leg + complementary exercises All sections necessary for the validation of the test are covered. In general, the complementary exercises are usually placed after the travel part.

OPERATOR: An AOC holder (subject to the regulations governing commercial air operations).

REVALIDATION: (of, e.g. a rating or certificate) means the administrative action taken within the period of validity of a rating or certificate which allows the holder to continue to exercise the privileges of a rating or certificate for a further specified period consequent upon the fulfilment of specified requirements.

RENEWAL: (of, e.g. a rating or certificate) means the administrative action taken after a rating or certificate has lapsed for the purpose of renewing the privileges of the rating or certificate for a further specified period consequent upon the fulfilment of specified requirements.

TASK SHARING CPT/OPL: means a sharing of tasks for the execution of actions constituting an identified procedure whose distribution within the crew is not determined by the PF (pilot on duty) or PM (pilot monitoring) function but by that of Captain and First Officer.

FCL ITEMS: Manoeuvres and/or procedures listed in the tables of Appendix 9 of the FCL Part, the conditions for which are standardised and which constitute the basic elements for the breakdown of the practical training and practical examination programmes for type ratings and the ATPL examination.

DETAILED SCENARIO: support forming part of the EXAMINER DOCUMENTATION of a SCENARIO FILE on which appear in a structured format the indications and instructions allowing to carry out an FCL test according to the order and the criteria pre-established by the scenario designer. In addition to the specific needs of an operator, the use of a scenario guarantees both a better standardisation and a greater conformity in the performance of FCL tests.

2-CANDIDATE SCENARIO: A test scenario that allows the full assessment of both members of a crew for a skill test or a proficiency check in accordance with the requirements of Appendix 9 to the FCL Part. Depending on the case, a 2-candidate scenario may only be for a standard crew or may be adapted for a non-standard crew.

TYPE OF AIRCRAFT: means a categorisation of aircraft requiring a type rating as determined in the operational suitability data established in accordance with EASA Part-21, or any equivalent material established in accordance with other Type certification regulations acceptable to CAAT and which include all aircraft of the same basic design including all modifications thereto except those which result in a change in handling or flight characteristics.

Some abbreviations correspond to their regulatory affiliation. Others originate from the CAAT and are intended to ensure a good understanding of the document. The list below does not claim to cover all the abbreviations used in the document. The reader should

Abbreviations

For this purpose, please refer to the abbreviations explained in the relevant regulations.

Abbreviations	***Meaning***
A/D	Aerodrome
ATO	Approved Training Organisation
C/L	Check-List.
FFS	a full-size replica of a specific type or make, model and series aircraft flight deck, including the assemblage of all equipment and computer programmes necessary to represent the aircraft in ground and flight operations, a visual system providing an out-of-the-flight deck view, and a force cueing motion system.
FSTD	Flight Simulation Training Device (all synthetic systems approved as FSTD according to the relevant CAAT regulation. The FSTD classification is precisely indicated on the simulator approval certificate).
IOS	Instructor Operator Station (interface allowing the programming and control of an FSTD by the instructor or examiner).
LOFT	Line Oriented Flight Training (a method of instruction in FFS in which one or part of a real time flight representative of normal operations is simulated and abnormal or unusual situations are included to develop a set of skills).
LPC	Licence Proficiency Check
OPC	Operator Proficiency Check
PF/PM	Pilot Flying/Pilot Monitoring.
RTC	Recurrent Training-Checking.
ST	Skill-Test.
TR	Type Rating (multi-pilot in this guide)
TRE/SFE	Type Rating Examiner/Synthetic Flight Examiner.
TRF	Training and Report Form (FCL test report).

1 PRESENTATION OF THE GUIDE

1.1 GENERAL

Important: This guide is exclusively concerned with the approval or acceptance of ***FCL*** test scenarios conducted on ***FFSs*** for practical examinations and proficiency checks on ***MULTIPILOT CERTIFIED AIRCRAFT***.

It is primarily intended for FCL test scenario designers within ATOs (HT responsibility) as well as for TRE/SFE examiners wishing to submit one or more scenarios that they wish to use outside the ATO/operator framework (individual examiners). Secondly, it is a source of information which all SFE, TRE and of course SE examiners are advised to study in order to develop their expertise in FCL examinations.

> *Note: this guide deals with scenario **design and not with the conduct of examinations**. The documents available to examiners relating to the conduct of FCL tests are the CAAT pilot examiner manual and the FEM*

When the evolution of the regulatory context and/or significant changes in CAAT expectations regarding the presentation of scenarios and/or the administrative procedures associated with scenario validation require it, the guide will be amended, and a new revised document will be available on the CAAT website. In this case, users will be informed. It remains their individual responsibility to consider the changes and to comply with the instructions and procedures in force.

Any questions or remarks regarding this guide should preferably be addressed to the CAAT by email.

1.2 OBJECTIVES AND SCOPE OF THE GUIDE

1.2.1 Objectives

- To recall and highlight certain regulatory requirements (in accordance with TCAR PEL Part FCL regulations), on which the validation of an FCL test program depends,
- Specify CAAT's expectations regarding the general organization of the scenario file, the sequence and articulation of the different exercises in accordance with Appendix 9.B.6 of the TCAR PEL Part FCL Regulation,
- Specify CAAT requirements and instructions for the presentation and writing of scenario files,
- Specify the administrative procedures for the approval or acceptance of a scenario by the CAAT,
- Respond (usually in the form of remarks/notes) to the most frequently asked questions from scenario designers.

1.2.2 Scope of application (types of scenarios concerned)

Important remark: for the elaboration of the FCL+OPS scenarios of AOC (in the framework of the RTC), the person responsible for the management and supervision of the crew member training in the AOC must comply with the instructions given in the dedicated guide made available by CAAT.

ATO domain only:

- Skill-test for issuance of TRs,
- Proficiency Check for TR revalidation and renewal,
- MPL examination (reserved).

ATO/operator/individual examiner area:

- Proficiency Check for the revalidation of the TR,
- ATPL Skill-test.

Note: the development of short scenarios of 2nd attempts following a partial pass is not within the scope of this guide (ref CAAT-GM-PEL-FEM)

1.2.3 Regulatory benchmark

FCL domain

TCAR PEL Part FCL constitutes the applicable regulation for licences, ratings and certificates for Thai licenses holders. For the associated examinations, Appendix 9 to Part FCL sets out the conditions and criteria for practical training, practical skill tests and proficiency checks for the MPL, ATPL, type and class ratings and proficiency checks for the IR.

OPS area (see note above)

TCAR OPS constitutes the operational regulation applicable by the air operators. The following parts of this regulation develop the elements concerning crew training and checks:

- Part ORO subpart FC (ORO-FC),
- Part SPA - specific approvals.

2 GENERAL INSTRUCTIONS FCL SCENARIO

2.1 CREW CONFIGURATION FOR AN FCL EVENT

2.1.1 FCL test without OPS test (ST or LPC without OPC)

When not paired with an OPC, an FCL event does not require a "standard crew" composition. However, it is still desirable to use a crew whenever possible, both in training and in checking.

For “non-standard crew A” candidate may choose to operate from either the left or right seat if all items can be completed from the selected seat (Appendix 9A14). In practice, **the test should be conducted from the seat occupied during training and the candidate should prefer the seat they occupy or will be expected to occupy in operation**.

In the case of a test organised for 1 candidate only:

- The support pilot must be qualified on type (Appendix 9A13), i.e. with the corresponding valid TR endorsed to an ICAO license.

  Note 1: the use of a pilot in training for the corresponding TR as a support is not permitted, unless the pilot has completed his training and his presentation for the skill-test or the proficiency-check is recommended by the Head of Training (typical case of presentation of a pair of trainees on 2 separate examination sessions).

  Note 2: The use of an SFI/TRI current on the type rating and holding a pilot proficiency check for the relevant type rating syllabus less than 12 months old as a support pilot is permissible provided the SFI/TRI has not been involved in the candidate's training and acts as a "standard" crew complement throughout the test.

In the case of a test organised for 2 candidates:

- If both choose to operate from the same seat, it is permissible for the candidate to be assessed in the PM function (as required by Appendix 9A14 for ATPL and RT skill-test) when occupying the opposite seat and supplementing the crew for the PF. This is also applicable for an ATPL skill-test.
- In the case of scenarios including the ATPL (whether or not associated with TR-related events for the candidate(s)), only one pilot per crew may present the ATPL (the second being either a support pilot or a second candidate presenting a TR-related event. In the case of a double event (2 candidates), the part covering the ATPL will systematically be positioned in the first part of the scenario.

2.1.2 FCL+OPS test (LPC+OPC) (reminder)

In the case of a combined FCL+OPS event, the crew pairing must meet the most restrictive requirements (i.e. those of ORO.FC.230).

Each candidate will therefore occupy the seat allocated to his or her function in operations (CPT or OPL) and the test will be conducted as a crew.

In the particular case where only 1 candidate is checked, the support pilot will be duly qualified on the type and with the operator (thus up to date with his LPC + OPC checks) in order to constitute a standard crew (CPT or OPL). The use of a pilot who has finished his training and presented to the OPC without any additional training between the examinations for which he is acting as a support and his own test is tolerated (typical case of presentation of a pair of trainees on 2 separate examination sessions). The

use of an instructor (e.g. SFI) as a support pilot is only possible if he meets the conditions of this paragraph.

2.2 REQUIREMENTS FOR FCL ITEMS

Refer to the table in Appendix 9B6 of the TCAR PEL Part FCL Regulations for detailed definitions of FCL entries.

Important: refer to Annex 1 of this document for CAAT instructions concerning the conditions of execution validating these sections.

2.2.1 Mandatory items regardless of the type of FCL test

Designation	Remarks
1.1	Under Appendix 9 A7 and A11
1.4 (M)	
1.6 (M)	
2.5.2 (M)*	
2.6 (M)	
3.4.X (M)	See sub-chapter 2.5
3.6.X (M)	See sub-chapter 2.5
3.8.1 (M)*	
3.8.3.4 (M)*	
3.8.4 (M)*	
4.4 (M)*	
5.5 (M)	

2.2.2 Additional mandatory items

Rubrics required for the TR skill-test and the ATPL skill test	
Designation	**Remarks**
1.5	Under Appendix 9 A7 and A11
3.8.3.1 (M)*	
5.6 (M)	If tri/quad aircraft

*Note: a TR **renewal** test is not a skill-test in the regulatory sense but a proficiency check. Therefore, the above exercises are not required.*

2.3 DISTRIBUTION OF PF AND PM FUNCTIONS

2.3.1 Regulatory reminders

Appendix 9A14: The candidate will be required to act as pilot flying (PF) during all sections of the practical examination, except for abnormal and emergency procedures, which may be conducted as PF or pilot monitoring (PM) in accordance with the MCC. The applicant for the initial issue of a type rating or ATPL will also be required to demonstrate in all cases the ability to act as a PM.

2.3.2 Interpretation

Each candidate must be assessed on all the compulsory items in the PF function except for the following items which may be treated only once as a crew (one pilot being PF, the second PM) and counted as performed by both candidates:

Section 1

For a 2 candidate test involving a single navigation leg, the flight preparation should be carried out as a crew (this includes the calculation of limitations and performance taking into account the operational conditions imposed, fuel carriage, mass and balance and flight parameters). The distribution of tasks should either correspond to the distribution of tasks in the operations manual used or be balanced between the two pilots. The examiner's questioning during the briefing should validate the corresponding skill elements for each candidate.

For a 2-candidate test involving two navigation legs, each candidate should prepare the leg for which he/she will be a PF.

In the particular case where only one candidate is being checked, it is the candidate who is responsible for the preparation of the flight. This does not preclude the candidate from being assisted by the support pilot who will endeavour to provide effective co-operation but without excessive initiative that could make the assessment of the candidate difficult. Questioning will be focused exclusively on the candidate.

Item 2.6(M)

A single rejected take-off exercise (accelerate-stop) is sufficient, provided that the task allocation used (as defined in the Operations Manual or FCOM used and as taught in training) includes actions specifically related to the CPT/FO function (CPT/FO task sharing) and that the crew is standard. In all other cases, each candidate must be assessed in the seat (and therefore the function and task sharing) they have chosen to present the test. This implies a minimum of 2 exercises 2.6 for a scenario that can be used for a non-standard crew with both pilots performing the test.

Items 3.4.X (3.4.0 to 3.4.14) and 3.6.X (3.6.1 to 3.6.9)

The scenario (which applies to 1 or 2 candidates, crewed or not) will include a minimum of 3 different items from section 3.4 and a minimum of 3 different items from section 3.6. Each item will be counted for each candidate whether they are acting as a PF or PM.

These items will be spread in the scenario so that ideally each candidate will complete 3 items in the PF function and the balance in the PM function. Similarly, endeavour to select and allocate items 3.4.X and 3.6.X in such a way that the examiner can find sufficient material to assess each candidate's competence in the PM function and in the PF function in a degraded situation.

In the particular case of a skill test or an ATPL skill test and when only one candidate is being checked, the scenario must include at least the treatment of a significant failure while the candidate is on PM duty. This PM part is usually included in the complementary exercises part but may also appear in the navigation leg section (e.g., in case of a breakdown involving a change of PF).

> *Important note: in the FCL framework, there is no particular requirement for the alternation of 3.4.X and 3.6.X items to which an individual is subjected during successive checks (from a strictly regulatory point of view and although such a practice is obviously open to criticism, a pilot could extend his TR on the same scenario for several years).*

2.4 REQUIREMENTS FOR THE SELECTION OF EVENTS FOR ITEMS 3.4.X AND 3.6.X

Neither the Technical Tolerances known at the stage of flight preparation, nor the application of the operational instructions linked to them can be counted as an item 3.4.X. On the other hand, the application of a technical tolerance (MEL/CDL) involving the performance of a significant operational procedure (in the sense indicated below) following a failure or defect injected after the start of the simulator session may be taken into account.

To validate a 3.4.X item, the event must be sufficiently **significant** and therefore involve at least either the effective application of a C/L including actions on the aircraft systems or the application of an operational procedure consisting of manipulations on one or more aircraft systems and/or the calculation of operational parameters from the on-board documentation.

For 3.6.X, the event must involve the effective application of an emergency procedure classified as such in the manufacturer's or operator's documentation (with or without memory actions). Whenever the event is appropriate, the handling of the situation shall be continued to the stage of technical and operational assessment and decision making.

It is the application by the crew of an appropriate procedure that validates the item and not the occurrence of the event. In particular, if a 3.4.X is used followed by a

3.6.X simulating a sudden deterioration of the situation, the item should be planned and dimensioned in such a way that each of the **items** is validated by the effective application of a procedure or part of a procedure (C/L, ECAM). Typical cases are the malfunction of the pressurisation system followed by an emergency descent or the engine vibration followed by a fire or an engine extinction.

An event that does not involve any concrete action other than considering information cannot validate a 3.4.X/3.6.X item (typically an ECAM consisting of a "CREW AWARENESS" message).

Additional information on the use of certain items 3.4.X and 3.6.X is given in Annex 1 of this document.

2.5 APPROACHES

2.5.1 Regulatory reminders

Definitions

An "RNP APCH" means a specification based on a PBN, used for instrument approach operations.

A "three-dimensional (3D) instrument approach operation" means an instrument approach operation using both lateral and vertical guidance.

A "two-dimensional (2D) instrument approach operation" means an instrument approach operation using only lateral guidance.

Clarification of items 3.8.3.1 to 3.8.4

Appendix B6 (j) states that in order to establish or maintain PBN privileges, one of the approaches shall be an APCH RNP).

Section 3.8.3 (formerly "precision approaches") becomes

"3D operations up to the DH/A of 200 feet (60 m) or higher if required by the approach procedure.

With the following note: In accordance with the AFM, RNP APCH procedures may require the use of the autopilot or the flight director. The procedure to be performed manually is selected taking into account the limitations of the AFM (e.g. selecting an ILS for

3.8.3.1 in case of AFM limitation)."

Item 3.8.3.1* becomes a 3D operation conducted manually without FD (it is only mandatory for TR skill-test or ATPL skill-test).

Item 3.8.3.4* becomes a manually operated 3D operation (with FD) with a stopped engine. Engine shutdown must be simulated **either** before passing 1000 FT AAL **or** after the OM has passed within 4NM of the runway threshold. The exercise in N-1 configuration must be continued either until touchdown or throughout the missed approach procedure.

Section 3.8.4* (formerly "non-precision approach") becomes

"2D operations up to MDH/A".

2.5.2 Practical implementation: 2D/3D approach

It is important to distinguish between the **type of approach** and the type of **approach operation**. In particular, depending on the aircraft equipment, certain types of non-precision approaches can be operated in 2D and 3D. FCL item 3.8.4 must be operated in 2D even if the aeroplane allows the approach to be conducted in 3D operation. This is an FCL requirement (also included in ORO.FC.230 for OPC) to verify the competence of the crew to perform this type of operation.

For 3D operations it is a matter of performing either an ILS, a GLS or a GNSS approach using VNAV guidance (G/S, SBAS or BaroVNAV depending on the available and certified equipment of the aircraft) to a DA.

For the 2D operation, it will be necessary to select a non-precision approach procedure (VOR, VOR/DME, NDB or a GNSS LNAV) and to perform it without the help of the VNAV guidance possibly available in the aircraft. The aim is to assess the pilot's ability to manage the vertical plane through a

primary steering parameter (rate of descent or FPA) using the approach chart data (altitude/distance or altitude/time information).

In all cases, the scenario should clearly indicate both the type of approach and the type of approach operation. Drafting examples:

- RAW DATA ILS30R - 3D - AP/FD OFF
- RNAV(GNSS) 17R - 2D - AP/FD ON
- SE(N-1) RNAV(GNSS) 35L - 3D - AP OFF/FD ON

2.5.3 Validation of PBN competence

Except for aeroplanes/FFS not certified for PBN approaches, any type rating test (skill-test, LPC) must be able to validate PBN. The corresponding requirement is relatively simple as it is sufficient that the scenario includes at least one GNSS-based approach (operated in 2D or 3D with or without automation). No special mention other than the identification of the approach and the approach operation (as mentioned in the previous paragraph) is required.

2.6 USE OF AUTOMATION

In FCL regulatory requirements certain exercises must be performed in manual flight with or without FD. The following table summarises the relevant requirements (only items (M) are concerned):

Items	Automatism(s) NOT allowed	Additional information
3.8.3.1*	AP + FD	The disconnection of the AP and FD must occur prior to the final approach centerline capture phase in order to judge the candidate's ability to establish the centerline without the assistance of the FD. The AP and FD remain unavailable until landing or the commencement of the go-around.
3.8.3.4*	AP	The disconnection of the AP must occur early enough to assess the candidate's ability to stabilize the horizontal and vertical trajectory following the engine failure asymmetry (typically no later than the engine failure). The AP remains unavailable until landing or completion of the missed approach.
4.4*	AP	The AP must be disconnected before starting the go-around procedure. The AP remains unavailable at least until the switch to MCT or the end of the slat/flap retraction (depending on the final configuration chosen)

Note: Depending on the limitations of the systems, some types of approaches requiring 3D operation are incompatible with the requirement for manual control (with or without FD). In this case, the scenario must provide for a suitable type of approach (typically an ILS) for the realisation of the corresponding items (3.8.3.4 and/or 3.8.3.1).

Guidelines for limiting automation in FCL scenarios

- It is important that the regulatory requirement to disengage certain automatisms for these exercises is systematically and clearly recalled by the examiner at the briefing stage (mention it in the examiner documentation). In particular, this will remove any ambiguity between a regulatory requirement (a "style" exercise) and a false good practice which would consist in voluntarily choosing to lower the level of automatism in a degraded situation.
- During a part of a "LOFT" type session, except in the case of impossibility due to the possibilities of the simulator, the neutralization of an automatism should systematically be initiated by the examiner (from the IOS) at the appropriate moment. The crew will consider this malfunction as a system failure.
- In a complementary exercise phase, it is tolerated that the disconnection of an automatism is initiated by the crew at the request of the examiner (which is generally perceived as less "aggressive" by the candidates).

Important: Experience shows that forgetting to disable an automatism is relatively frequent and is more a result of time pressure and the workload of the examiners than a lack of knowledge of the required conditions. This is detrimental to the validity of the test. It is therefore **imperative** that these requirements are clearly and visibly recalled at each key point in the examiner's documentation (do not be satisfied with a generic reminder in the introduction to the documentation).

2.7 REQUIREMENTS FOR SIMULATED WEATHER CONDITIONS

To extend or renew the IR rating associated with the type rating during the skill-test or Proficiency Check, at least the following items (marked with an asterisk (*) in the table in Appendix 9B6) must be performed by reference to instruments only (see instructions in Annex 1 of this document):

Designation	Remarks
2.5.2 (M)*	
3.8.1 (M)*	
3.8.3.1 (M)*	When mandatory (TR Skill-Test or ATPL)
3.8.3.4 (M)*	
3.8.4 (M)*	
4.4 (M)*	

Important: Experience shows that it is relatively common for exercises, or even whole sections of scenarios, to be carried out in environmental conditions that are detrimental to the validity of the test. It is therefore **imperative** that these requirements are clearly and visibly recalled at each key point of the examiner documentation (do not be satisfied with a generic reminder in the introduction to the documentation).

2.8 GENERAL ARCHITECTURE OF A FCL SCENARIO

2.8.1 General structure of a scenario

- One or more theme (projected flight (s)),
- One or more navigation leg(s),
- One or more sets of SUPPLEMENTARY EXERCISES.

PRELIMINARY REMARK CONCERNING THE NAVIGATION LEG

The completion of a navigation leg in an FCL examination is not a clearly stated requirement in the regulations. CAAT's interpretation and guidance for meeting the requirements of Appendix 9 [A13 and A16] is as follows:

- Any TR scenario (excluding ATPL) will include:
  - 1 navigation leg for a single candidate scenario, with the candidate acting as PF or PM,
  - 1 navigation leg (one candidate PF, the other PM) or 2 navigations legs (each candidate alternating PF) for a 2 candidates scenario,

  Note: A candidate who has not acted in the PF function during the navigation leg of a 2-candidate scenario will be assessed on items 1.4(M), 1.6(M) and 3.8.1 (required in the PF function) during a supplementary exercise phase which must therefore be correctly sized and adapted to this assessment.*

- For scenarios including the ATPL, the candidate concerned by this exam will systematically make one navigation leg in PF function (1st navigation leg if the scenario includes 2 navigation legs).

THEME

Regardless of the type of test (TR and/or ATPL), the scenario file will include one or two themes. A theme corresponds to a commercial flight mission representative of current operations relevant to the aeroplane type concerned. The theme is primarily intended to cover the assessment of the candidate(s) on their ability to the flight preparation. A test for two candidates may consist of only one theme (if it consists of only one trip), with each candidate performing either a separate or a joint preparation according to the task sharing defined in the Operations Manual used (PF/PM).

The crew must have a complete flight record covering the theme of the planned navigation leg (see sub-chapter 3.4.1). In case a scenario for 2 candidates foresees 2 different navigation legs, each candidate will have a flight record (the scenario will therefore have 2 themes).

Although the regulations do not impose any minimum duration of flight and no specific operation (long-haul flight, ETOPS, etc.), the theme of the test must allow:

- In the case of an ATPL skill-test (in accordance with Appendix 9A15), to generate the material necessary to judge the candidate's ability to make decisions representative of the responsibilities of a CPT. This implies a mission complexity such that the candidate is faced with one or more limitations requiring analysis and operational choices with effective use of on-board documentation (choice of aerodromes and route, operational data [weather, proposed loading, MEL/CDL, NOTAMs, etc.]),

- In all other cases, to enable the examiner to verify through flight preparation and questioning that the candidate(s) has/have acquired or maintained sufficient knowledge to enable satisfactory implementation of the aeroplane and the mission under standard operational conditions.

During the preparation of the flight, calculations of performance, limitations and take-off parameters shall be systematically performed by the candidate(s).

THE NAVIGATION LEG

The navigation leg should preferably be placed before the supplementary exercise(s) and should be initiated in accordance with the theme of the test (prepared and briefed by the candidate(s)). The following notes and instructions apply:

- Although the notion of LOFT is reserved for training sessions, the same principles apply in the navigation leg of an FCL test. In particular, the principle of no direct intervention by the examiner, the concern to simulate the reality of the operational environment, the control of the scenario through the data transmitted to the crew through the simulator and by the different actors simulated by the examiner [ATC, PNC, OCC, etc.]. The scenario design and instructor documentation must take account of these principles and provide the examiner with all the necessary data.
- The (completed) navigation leg may deviate from the theme (prepared trip) once the event has started (insertion of operational events leading to changes to the planned flight (change of runway, route, return to the departure aerodrome or diversion). This is typically how the designer will be able to satisfy the requirement for a rich event theme in decision making (particularly for the ATPL) and shorten the navigation leg made to meet the time requirements of the practical session.
- Except as stated in the following paragraph, the navigation leg performed must include as a minimum the aircraft start-up phases, one take-off, one climb, a minimum of 15 minutes cruise flight, one descent and the arrival to a complete landing. (See definition of route sector) It may include any event, whether or not anticipated at the pre-flight stage (event theme). There are no other constraints on the timing or duration of the trip. Depending on the events simulated, it may or may not end at the intended destination,
- In the case of a TR revalidation for a candidate who has completed 10 legs as a pilot on type within the validity period of their TR or holds a valid OPC on type (typically an FCL check as part of a company RTC), the journey portion may end after the climb (typically at FL100) and continue directly with the complementary exercises.

(Therefore, there is no longer a requirement to maintain a ”LOFT” environment).

Note: The navigation leg portion of a practical TR skill-test should be sufficiently uncomplicated to allow easy assessment of the candidate's ability to conduct a standard flight profile. This is also an important element in building the candidate's confidence at the end of the training. For the same reasons, a skill-test scenario for two candidates should preferably include one topic (and therefore one navigation leg) per candidate.

COMPLEMENTARY EXERCISES

This part of the test allows for the assessment of mandatory FCL items not covered (or not covered in PF where this is a requirement) in the navigation leg part (and whose inclusion in the navigation leg part would make the scenario cumbersome, difficult to achieve and/or unrealistic).

There is 1 part of additional exercises (performed in PF) per candidate. For the scenarios of the TR skill-test or ATPL skill-test for 1 candidate, the assessment requirement in the PM function may be subject to a 2nd part of complementary exercise performed by the candidate in PM function (see subchapter 2.3.2).

The following guidelines apply:

- In the case of 2-candidate scenarios with only one navigation leg, the PM candidate's supplementary exercise part during the nav leg will contain mandatory items 1.4(M), 1.6(M) and 3.8.1* (required in function PF) which will be completed as described in Annex 1 of this document,
- The corresponding exercises are often "style" exercises requiring initialization and execution conditions determined by the regulatory requirements and varying from one exercise to another (repositioning, reconfiguration of the simulator, insertion of faults, meteorological parameters, neutralization of automatisms, etc.). Consequently, and to ensure the regulatory validity of the test, the scenario designer will endeavor to precisely define all the parameters required exercise by exercise and to make them clearly and visibly apparent at each key point of the examiner's documentation,
- Similarly, although there are no particular constraints on the sequence of exercises or on the continuity of environmental or operational conditions in the complementary exercise phases, try to organize the scenario in such a way as to limit the number of IOS manipulations, and in particular repositioning, to a minimum. This optimizes the examiner's work and limits confusion and disorientation among the candidates.

2.8.2 Multi-option or "drawer" scenarios

The use of scenarios with multiple options is strongly encouraged. This mainly concerns the travel part of a scenario. Although more complex to design, document and implement, this method allows the relevance of a scenario to be sustained over time and makes it more realistic as it is better adapted to the crew's decision variables. There are mainly two types of tools available to the designer to develop multiple possibilities for the unfolding of a scenario:

- Multiply the choices (left to the examiner) of system failures (MEL in preparation, sections 3.4.X) and/or events requiring the application of an emergency procedure (sections 3.6.X),
- Multiply the possibilities of possible sequences to encourage the crew to take into account their decisions (trajectories and types of approach, options after the go-around [new approach, possibilities of alternate to different aerodromes], etc.).

Tips and guidelines for the development of option scenarios:

- The examiner's documentation should be particularly concise and practical in order to locate and define:
  - points where different options are opened to the crew (divergences),
  - the points where a single frame is found again (convergence),
  - the elements needed to drive the scenario after a divergence for each option considered and until the next point of convergence (the point of convergence is frequently the end of the travel part of the scenario).

- In case of multiple choice of faults, the circuits concerned, and all the faults envisaged must be clearly mentioned (e.g. ELEC IDG FAULT; ELEC APU GEN FAULT; AIR PACK FAULT). During the design phase and for each of the proposed failures, the compatibility of the consequences of these events with the good continuity of the scenario must be carefully checked. Ensure that in all cases, 3 items 3.4.X and 3 items 3.6.X, all different, are covered during the test,

- In the case of multiple choices of trajectory, approach types and alternate/departure aerodromes, the options chosen must be clearly stated in the scenario. Ensure that there is ambient data available covering all possible choices (both in the file used for flight preparation and in data that the examiner can use to update the crew during the test). Also ensure the compatibility of the possible choices with the good continuity of the scenario and the databases of the FFSs used.

2.8.3 Preservation of room for maneuver examiner

A scenario loses its relevance as soon as its use to judge impartially the ability of a candidate is questionable, especially considering the inevitable loss of confidentiality of its content (typical case of ATOs dealing with a large number of trainees from the same operator). Experience shows that this loss of confidentiality can be such that candidates arrive 'mechanised' for the test to the point of being completely destabilised in the event of minor changes to the scenario. Similarly, certain FCL requirements, such as the systematic performance of certain exercises with critical engine failure, can have deleterious effects on the real objectives of the training and the test.

The constraints of the test programmes are such in terms of both the normality of the exercises and their density that it is extremely difficult to provide an effective response to this problem.

Apart from the use of multi-option scenarios as discussed in the previous sub-chapter, scenario designers are encouraged to implement the following partial solution:

- Analyze the exercises or conditions for carrying out exercises which can give the examiner room for maneuver (typically the parts of the scenario for which a choice left to the examiner has no impact on the sequence of the rest of the test and on its regulatory validity),
- Write the examiner's instructions and the detailed scenario in such a way that this room for maneuver is made clear (by omitting detailed conditions for realization or, if necessary, by setting the scope and the possible choices),
- Mention the approach when applying for approval of the scenario.

Some examples of examiner's room for manoeuvre:

- Selection of the failure side of a symmetrical system (engine, GEN, computer, flight instrument, flight control, etc.),
- Choice between different faults of equivalent complexity on the same circuit (or even different circuits if properly documented),
- Examiner's choice on the positioning of an event in the scenario (TCAS in climb, cruise, descent...),
- Examiner's choice of conditions for initiating an event (TCAS, conventional approach procedure available, reason for a stop-and-go, etc.).

Note: It is essential that the designer carefully checks that any potential choices left to the examiner are compatible with the subsequent development of the scenario and the validity of the test.

2.8.4 Summary tables - scenario architecture

SKILL-TEST scenario 1 candidate (A) assisted by a support (B)					
Option 1		Nav leg	compl.ex.	compl.ex.	
	PF	A	A	B	
	PM	B	B	A	
Option 2		Nav leg	compl.ex.		
	PF	B	A		
	PM	A	B		

Scenario ATPL/TR 1 candidate (A) with support (B)				
	Nav leg	compl.ex.	compl.ex.	
PF	A	A	B	
PM	B	B	A	

Revalidation/renewal scenario TR 1 candidate (A) assisted by support (B)					
Option 1		Nav leg	compl.ex.		
	PF	A	A		
	PM	B	B		
Option 2		Nav leg	compl.ex.		
	PF	B	A		
	PM	A	B		

Skill-test scenario, revalidation or renewal TR 2 candidates (A) and (B)					
Option 1		Nav leg A	compl.ex.A	Nav leg B	compl.ex.B
	PF	A	A	B	B
	PM	B	B	A	A
Option 2		Nav leg	compl.ex.A	compl.ex.B	
	PF	A	A	B	
	PM	B	B	A	

ATPL/TR 2 candidate scenario (A [TR/ATPL]) and (B [TR])					
Option 1		Nav leg	compl.ex.A	compl.ex.B	
	PF	A	A	B	
	PM	B	B	A	
Option 2		Nav leg A	compl.ex.A	Nav leg B	compl.ex.
	PF	A	A	B	B
	PM	B	B	A	A

2.9 TIME MANAGEMENT - TIME MARKERS

There is no specific regulatory requirement regarding the duration of an FCL proficiency test or check ride (GM1 FCL.1015 mentions 120 minutes [per candidate] for an TR or ATPL examination). Experience shows that a 4 hours simulator slot can accommodate 2 TR acts for even an untrained crew whereas a test for 1 candidate requires a slot of at least 2.5 hours. The following time management guidelines apply:

- The scenario file must clearly indicate the duration of the simulator slot used for the test and, for the 2-candidate scenarios, the estimated duration of the different parts (trip(s), additional exercises),
- The proposed scenarios must have a 15-minute margin over the planned simulator slot,
- A break (of about 10 minutes, roughly halfway through the session) should be provided for any scenario lasting more than 3 hours,
- The scenario (or examiner documentation) should have sufficiently numerous predictive time markers (times ≤ 40 minutes) to allow the examiner to easily identify a lead or a delay during the test in relation to the predictive timeline (the mentioning of partial/accumulated times under each item is no longer formally required, it remains nevertheless an excellent tool for scenario design)

Caution: It is particularly important, both for the validity of a test and to ensure its quality, that a scenario can comfortably fit into the allocated simulator slot. An unrealistic proposal will always be rejected at the approval stage. Approval is always given subject to verification by the responsible body of the feasibility of the scenario in the allocated slot (this should be done before the scenario file is submitted). In the event that the responsible organisation finds a problem with the feasibility of the scenario in the planned time slot, the scenario must be amended without delay (and submitted for re-approval if this is already effective). Following an act of CAAT surveillance, the approval of a scenario may be immediately suspended (and the tests of the candidates concerned invalidated) if it is found that the scenario is not feasible within the planned duration indicated in the scenario file.

3 SCENARIO FILE

3.1 DEFINITION AND CONTENT

The term scenario file refers to all the documents necessary for the organisation and conduct of a given FCL event, except for the on-board documentation.

It contains at least the following elements

Designation	Remarks
The cover pages	Must content: - The term "scenario" followed by the purpose of the scenario (e.g., A320 type revalidation and renewal scenario) - The name of the part concerned (e.g., examiner's file, candidate's file) - The CAAT approval number (see Chapter 5) and the date of approval or acceptance of the scenario - The designation of the organization (or individual examiner) using the scenario
Examiner instructions including the table of items	See sub-chapters 3.3 and 3.6
Environmental conditions	See sub-chapter 3.4
The detailed scenario	See sub-chapter 3.5
The TRF	Only when using a customised TRF for the event

During the approval procedure, the scenario file must be presented as a PDF file (except for the detailed scenario, which can be presented in a more appropriate form if necessary). The environment section should be clearly identified as an independent unit. It is desirable that the rest of the file is compiled into a single file. The first page of each file should be the corresponding cover page.

The script file must be well structured and easily understandable. It should be written in either Thaï or English and should not contain any blank sections for later insertion (except for the CAAT approval number).

3.2 ON-BOARD DOCUMENTATION

The ATO, the operator or the independent examiner is responsible for providing the crew with **RECENT** on-board documentation **in the briefing room and then in the simulator**. This documentation will be in the form as close as possible to that commonly used by candidates in operations or training. An EFB (electronic) type of documentation can only be used if it has been approved for use and provided that both crew members are sufficiently familiar with its use. Outside the EFB framework, the use of an electronic display medium (e.g. touch-screen tablet, PC) is only possible for those parts of the documentation that are rarely used in flight (i.e. neither the cartography, nor the C/L and QRH).

> *Note: in this context, the term RECENT documentation refers to mapping and performance data that are in line with the database of the simulator used, aircraft documentation that does not contain any major differences with the latest manufacturer's version (in terms of normal/abnormal/ emergency procedures) and an up-to-date regulatory reference.*

In the case of a proficiency check for independent(s) candidate(s), the manufacturer's documentation may be substituted for the relevant parts of an operator/ATO documentation (in particular the Operations Manual Part B).

Photocopies are tolerated provided that the different components of the documentation are easily usable, identifiable and accessible (in the form of booklets and not loose sheets).

The on-board documentation is the essential complement to the scenario file and will contain at least the following elements

Designation	Remarks
Mapping	- 2 complete sets of aerodrome maps covering all aerodromes likely to be used for the preparation of the flight(s) and during the simulator session - 1 set of 'enroute' maps covering all routes, diversions and clearances planned at the flight planning stage
Checklist and QRH	- Standard equipment to that available on board
Operations Manual (Parts A, B and C and associated documents)	- It must comply with and be identical to the one used in operation or training by the crew - In the case of independent(s) candidate(s) taking a proficiency check to revalidate the TR, it is acceptable for the Operations Manual to be replaced by the manufacturer's (recent) documentation provided that it covers all aspects necessary for the operation of the flight, including the MMEL
Take-off parameter calculation data	- If no operations manual or approved EFB, the available data must cover all usable QFUs of all relevant A/Ds and must be in the form of a booklet identical to those commonly used in operations
Regulations and decoding documentation	- If no operations manual, Airways Manual type documentation can be used

3.3 EXAMINER'S INSTRUCTIONS

The examiner's instructions are a preamble to the scenario and a working guide for the examiner. Scenario developers are free to present this part of the scenario file. The document should meet all of the following objectives:

- Define unambiguously the scope of applicability of the scenario (type of controls covered, possible crew configuration(s), optional parts depending on the type of control and crew configuration),
- Provide assistance to the examiner in checking that all necessary documentation is present prior to the test (including flight documentation and flight recorder),
- Remind the participants of the essential points for conducting the briefing (the TRE checklist available in the CAAT FEM can be used),
- Remind the examiner of the responsibilities for checking candidates' pre-requisites (regulatory checks in accordance with the CAAT FEM **and**, where appropriate, additional internal ATO checks),
- Briefly recall the regulatory criteria for carrying out certain exercises (in particular, items (M), (*), restrictions on the use of automatic systems),

- Provide the examiner with any additional information that will make it easier for him/her to run the script (writing conventions, use of symbols, shortcuts, details of the script's chronology, etc.),
- Provide the examiner with a **TABLE OF ITEMS** listing all the FCL items included in the scenario. This table will facilitate, at the end of the test, the entry of the test report (TRF). It should have a structure similar to the one described in sub-chapter 3.6,
- Remind the participants of the essential points relating to the administrative procedures for entering the test (TRF, EMPIC, entry on the candidate's license, internal ATO entry systems),
- (optional) provide the examiner with a memo of how to deal with the failure (in accordance with the CAAT FEM).

Note: while the "examiner's instructions" section of the script file should include all of the above points, it is advisable to keep it as concise and practical as possible (thus motivating the examiner to make effective use of this aid). The aim is not to present an exhaustive document to facilitate the approval process, but clearly to help the examiner optimise time while avoiding errors and omissions that could be detrimental to the validity of the tests.

3.4 THE ENVIRONMENT CONDITIONS

3.4.1 Flight records (Nav leg(s))

The flight record(s) will be given to the candidate(s) at the stage of preparation of the test topic (prior to the briefing). It shall contain all volatile data not already included in the on-board documentation necessary for the complete preparation of the flight in accordance with applicable and current operational regulations. The documents provided must be similar to those commonly used in operations. It should not contain duplicates or extracts of data normally accessible through the on-board documentation.

Particular attention will be paid to the preparation of the flight record so that all the information presented is consistent with each other and with the environmental and operational parameters that will be simulated during the travel part of the practical session.

It will contain at least the following elements (for each of the themes of the test)

Designation	Remarks
The description of the mission and the time data	- Ex: commercial flight LFPO-EGGW, departure block 06:00 UTC - Crew composition if special
Operational data normally available at flight preparation	- Aircraft type and variant, flight designator - Condition of the aircraft (MEL/CDL, any other information about the aircraft) - The provisional loading statement and special features - NOTAM (all the route and A/Ds likely to be used) - Any other instructions or information concerning the operational aspect of the mission
Weather report	- General situation (at least TEMSI map and wind map at FL) - TAF/METAR/SIGMET/SNOWTAM for all A/Ds that may be used
OFP	- An operational flight plan in accordance with those commonly used in operations. It must be consistent with the elements of the test theme. The fuel load must be determined by the crew at the flight planning stage.

Load sheet	- Can be pre-filled
Other volatile documents	- e.g. :take-off/landing boards when used

3.4.2 Complementary exercise parameter sheets

Although this is not a strict requirement, it is strongly recommended that a parameter sheet be provided for each of the "complementary exercises". They will be distributed to the candidates at the briefing stage. This practice limits insertion errors and frees up examiner time. It will contain the necessary insertions for the initialisation of these phases (Mass/balance/fuel, take-off parameters, etc.) and the necessary environmental parameters (ATIS/METAR, if significant NOTAMS are required).

The presentation of such parameter sheets is left to the initiative of the scenario designer. When the aircraft lends itself to it, a presentation in the form of FMS insertion pages is particularly suitable (e.g. INIT[A+B], F-PLN and PERF pages for the Airbus).

3.5 PRESENTATION OF THE DETAILED SCENARIO

Introduction

It is not for CAAT to impose a precise and unique format for the presentation of a scenario. In particular, the development of computer tools and electronic media considerably and increasingly increases the possibilities of presenting information to the examiner (HTML or graphic formats, sub-menus, hypertext links, etc.). Therefore, as long as the principles and guidelines set out below are consistently applied, the greatest initiative is left to the organisations to develop the examiner's working tools.

Presentation of the detailed scenario to the authority when applying for approval/acceptance

All information made available to the examiner must be presented in detailed form. If hyperlinks or sub-menus are used (dynamic support), the corresponding windows or pages must all be available to the expert either in dynamic form or as appendices (in the latter case, a notice listing and explaining the dynamic interactions must be provided).

Mandatory information to be included in any detailed scenario

1. The rank of each of the FCL items and key points of the scenario (numbering in whole numbers, counted chronologically from the beginning to the end of the test, the purpose of which is to situate each element of the scenario without ambiguity),
2. Reminders at each key point (in particular sections (M)) of the regulatory conditions for carrying out certain exercises (in particular with regard to the meteorological environment and the availability of automatic systems - see sub-chapters 2.6 and 2.7). These reminders must clearly appear in the form of instructions in order to allows the examiner how to programming the simulator.

In some exercises and where the context is not obvious, it is also advisable to specify the extent to which an event is expected to be developed/handled by the crew (e.g. 3.6.1 includes evacuation, but the scenario will not necessarily be geared towards evacuation at the end of every fire event),

> *Note: the use of the simulator's lesson-plan fonctions does not dispense with the need to document the detailed scenario as indicated above.*

3. Time marker (in the form of an indication of the expected time appearing at regular intervals in the scenario frame (maximum 40 minutes between 2 markers, see sub-chapter 2.9),
4. Detailed instructions for the management of a multi-option scenario (refer to sub-chapter 2.8.2).

Example of a classic presentation

rank	Event	Ref FCL	Instructions
1	…	…	…
…	…	…	…
5	Taxi holding point RWY33R	1.5	Via TWY C1/D4 **Set and report RVR ↓ 125m** TWR 118.3
…	…	…	…
32	Star OSVOG4E transition R29E	3.8.1(M)*	APP 123.7 **RVR 800m OVC003** **AP/FD off at OSVOG** TWR 119.0
33 ***1H10***	Raw data ILS RWY29	3.8.3.1(M)*	
…	…	…	…

Presentation of the scenario as a graphical profile

This presentation option, which inevitably generates shortcuts (not all the steps of the scenario are detailed and only the key points are clearly identified and commented on), is acceptable provided that the information provided on the document alone is sufficient to unfold the scenario unambiguously and in accordance with the Aircrew requirements (in particular conditions 2 and 3 listed above at the beginning of the sub-chapter). If such a format is used, the examiner's instructions section should contain the details of the scenario in a standard form (as presented in the previous paragraph). It is therefore more of a practical supplementary tool for the conduct of the session in the simulator.

Note: the use of certain electronic media (e.g., touch tablets) can considerably increase the detail of the information available (use of zoom or expandable comment fields).

Note: this format is suitable for regular use by the examiner and is therefore not desirable for a scenario presented by an individual examiner whose activity is assumed to be occasional.

AIRCRAFT TYPE: A 320 **Call sign: DSAC101** **1 candidat**	**SCENARIO GXP10236** **PF:** **PNF:**	**Weather: summer conditions**	**From LFLL to LFBO** **Dep. gate: C63** **Arr. gate: E10**	**ALTN: LFBD**

ATIS	LFLL LFBO LFBD	021300Z VRB03KT 9999 -RA FEW010 BKN060 BKN090 21/18 Q1017 NOSIG 021300Z 33008KT 9999 RA BKN008 BKN020 18/16 Q1019 TEMPO 1000 RASH BKN007 SCT030TCU= 021300Z 28007KT 220V330 5000 SCT033 SCT048 24/13 Q1018 NOSIG=

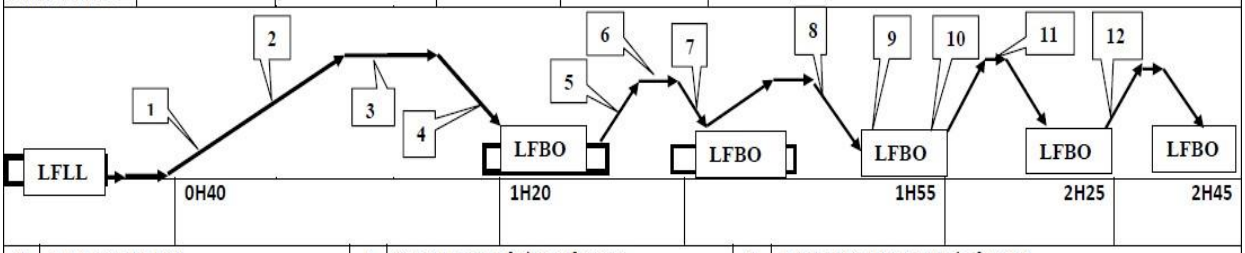
NOTAMS:
MEL items: APU out of service

ZFW/ZFWCG: kg/ %	FOB: kg (crew option)	TOW/TOWCG: kg/ %

CI = 35

Performance (crew option)	CONF. CONF.	FLEX/TOGA: FLEX/TOGA:	V1= V1=	VR= VR=	V2= V2=

Prf: 121.7 Gnd: 121.825	Twr: 120.45	Dep: 136.075	ACC : 128.3	App: 129.3	Twr: 118.1



1	3.4.4 : GEN 2 FAIL reset ok	5	2.5.2 : Engine failure after V1 RVR1000 OVC007	9	3.6.1 : ENGINE 2 FIRE before V1 RVR1000 OVC004
2	3.4.6 : SEC 1 fault during climb No reset – LDP apply	6	3.9.4 : Rad vectors VOR/DME approach RVR1200 OVC007	10	2.6 : Rejected Take-off → 3.6.1 : Emergency Evacuation
3	3.6.9 : TCAS RA event during cruise	7	4.3 : SE Go-around AP OFF - RVR1200 OVC007	11	3.4.5 : G RSVR OVHT
4	3.9.3.1 : ILS approach Raw Data. AP/FD OFF - RVR1000 OVC007	8	3.9.3.4 + 5.5 : SE ILS approach – Landing AP OFF - RVR1000 OVC004	12	3.6.3 : ENGINE 1 FAIL between V1 and V2

SWAP PF/PM

3.6 GENERAL STRUCTURE OF THE ITEMS TABLE

The table of items constitutes the nomenclature of all the items of the scenario classified in the order of the table in Appendix 9B6. The presentation of this table is left to the initiative of the designer, who may complete it according to the specific needs and working methods of the organisation. The table does not have to be presented as a separate document and can therefore be part of a larger document (the detailed scenario itself). In any case, the table should meet 2 objectives in a clear and practical way:

- A quick check of the validity of a 1 or 2 candidate scenario in terms of the presence of the required FCL items,
- Assist the examiner in entering the test report (TRF or training part of the TRF) by identifying in the order of the TRF all the items covered during the test.

Principle of presentation of items tables

Example 1

Items Appendix 9B6		**Candidate A**	**Candidate B**
…	…	…	…
1.4(M)	Before to after engine start	PF	PF
…	…	…	…
…	…	…	…
2.5.2(M)*	EFTO	PF	PF
…	…	…	…
3.4.5(M)	B HYD LO PRESS	PM	PF
…	…	…	…
3.8.3.1(M)*	NO FD/AP RAW DATA THEY	ST/ATPL only	ST/ATPL only
…	…	…	…
4.1	2 ENG GA		PF
…	…	…	…

Comments (example 1) :

Column 1 lists all items in the order of Appendix 9B6.

Depending on the scenario and the examination objectives, some items may be relevant to only one candidate or to no candidate at all, in the examples above:

- Items 1.4(M), 2.5.2(M)* are completed by each applicant (in FP, as this information is not required in the table),
- The hydraulic failure event [item 3.4.5(M)] that is injected into a part of the scenario in which candidate B is PF will be counted for both candidates (as per sub-chapter 2.4.2),
- Item 3.8.3.4(M)* will only be performed (and therefore filled in on the C/R) for skill-test or ATPL skill-tests (this information must be clearly stated in the scenario),
- The scenario calls for a twin-engine go-around in Candidate B's PF section, whereas this exercise does not exist in Candidate A's PF section.

Example 2 (minimal presentation)

Candidate A	**…**	**1.4(M)**	**…**	**…**
2.5.2(M)*	…	3.4.5(M)		3.8.3.1(M)*
…	…			
Candidate B	**…**	**1.4(M)**	**…**	**…**
2.5.2(M)*	…	3.4.5(M)	…	3.8.3.1(M)*
…	4.1	…		

4 GRADING SUPPORT, DEBRIEFING SUPPORT

Without prejudging future regulatory developments, the result of an FCL test remains essentially based on the binary PASS/FAIL notation of each of the FCL items constituting the scenario (after a possible removal of doubt on one or more exercises).

The scenario designer can always opt to integrate into the examiner's documentation a support allowing the exercises to be validated one by one during the test (in the form of boxes to be ticked directly in the scenario support or on a separate document). However, the contribution of such a tool is very limited, and even restrictive for the examiner (no significant advantage compared to classic note-taking or direct entry on an examination form witch includes specific place for Synthesis).

On the other hand, it may be interesting to provide a system of marking by competences for the main exercises of the test (according to the EBT standards). The aim is not to substitute this tool for binary marking, which is still applicable, but to collect data during the test which will make it possible to support a more complete and more relevant debriefing. However, this presupposes that the examiners concerned have been trained in competency-based assessment and that the organisation has previously defined its assessment system (marking scale, indicators, presentation and practical use). For the scenario designer, it will first be necessary to define the elements of the scenario on which a competency-based analysis will be applied (they do not necessarily merge with an FCL item and should remain limited in number), and then, for each of these elements, to list the competencies to be assessed for the PF and the PM (a maximum of 3 competencies per pilot and per exercise is advised).

It is not the purpose of this guide to go into further detail on these concepts, which are largely developed in the dedicated documentation.

5 APPROVAL/ACCEPTANCE OF SCENARIOS

IMPORTANT REMINDERS

The procedures below do ***not concern*** the approval of scenarios developed under the ORO.FC and SPA subparts of the TCAR OPS regulation (training and checking under the responsibility of an operator holding an AOC). These will be submitted to the CAAT in accordance with the procedures applicable to AOC holders.

The scenarios covered by this chapter are those relating to ***FCL*** tests conducted on ***FFS*** for ***MULTIPILOT CERTIFIED AIRCRAFT*** developed either by ATOs or by individual examiners.

In the case of an ATO, compliance of the scenario with TCAR PEL Part FCL regulations will result in an ***approval***. In the case of an application from an individual examiner, the Authority will endorse the use of a scenario in the form of a letter of ***acceptance***.

In order to optimise the scenario validation process and to minimise approval/acceptance times, the guidelines detailed below should be strictly followed. Incomplete files or files showing an unacceptable lack of expertise on the part of the designer will be rejected.

> ***Each scenario must be applied for separately*** *(one application should only concern ONE SCENARIO).*
>
> *Note: a scenario with multiple options (as discussed in sub-chapter 2.9.2) is considered as one scenario.*

5.1 PROCEDURE FOR AN ORGANISATION (ATO)

- The ATO will make its request in the form of an email with attachments (all the elements of the scenario file) addressed directly to the CAAT by email **(add email address)** using the precise formatting indicated below,
- The expertise of the file will be attributed to one of the CAAT inspector
- The CAAT inspector in charge will manage the assessment of the file until its final conclusion. To this end, and according to requirements, he will contact the ATO's Training Manager (or - where applicable - the person designated), request any modification he deems useful (scenarios, environment, etc.) and may, if necessary, ask the ATO for any additional document (on-board documentation used for example). He may also ask to check the scenario or part of the scenario in a real situation (i.e. in the simulator),
- The return to the ATO will be done by official administrative mail.

Address	**Email address to be added**
Subject	SCENARIO **XXXXXXX** - ATO **XXXXXXX**
Text	Please find attached the **XXXXX** scenario for expert appraisal. The contact person for this request is : **Telephone number** (and) **e-mail address**
Attachment(s)	*(All elements of the scenario file)*

5.2 ACCEPTANCE PROCEDURE OUTSIDE ATO (INDIVIDUAL EXAMINER)

- The examiner will make his request by email. The expertise and the follow-up of the file until its final conclusion are identical to the case of the ATO,
- Feedback to the examiner will be by email (CAAT inspector responsibility in charge).

Address	**Email address to be added**
Subject	SCENARIO **XXXXXXX** - INDIVIDUAL SCENARIO
Text	Please find enclosed the scenario **XXXXX** for expertise. This scenario is sent to you for my individual use **NAME/FIRST NAME - EXAMINATOR NAME** *(TRE applicant)* **Telephone number** (and) **e-mail address** *(TRE applicant)*
Attachment(s)	*(All elements of the scenario file)*

Additional practical information

In the case of attachments of a size that is incompatible with the processing capacity of the email system (>4.5Mb), they must be sent in digital form (use of a large file exchange platform).

Only the initial request for expertise must be sent via the functional box. Subsequent exchanges concerning a file that has already been sent will be made directly via the e-mail of the CAAT inspector in charge.

EMAIL formatting decryption conventions (frames above) :

- In bold the variable entries. Explanatory notes in brackets (not to be transmitted).
- In the e-mail, the reference to the scenario should be unambiguous (e.g. TR/ATPL A320 July 2021).
- The contact person is the person responsible for being the direct contact for the CAAT inspector, with the authority and competence to provide additional technical information and, if necessary, to make the necessary corrections to the scenario(s) (scenario designer).

6 VALIDATION AND MANAGEMENT OF SCENARIOS

6.1 REQUIREMENTS FOR THE NUMBER OF SCENARIOS

A scenario approved for an ATO should only be used by that organisation. With the agreement of the HT, it may be used on an ad hoc basis by an individual examiner acting outside that ATO.

For each type of FCL test that the ATO is required to schedule (Skill test, proficiency check and/or aeroplane type), the ATO must develop, have approved and make available to the examiner several scenarios. The TRE/SFE chooses one of these for a given test (Appendix 9A6). The number of scenarios to be developed for each type of test is not specified in the regulations, CAAT considers two scenarios with significant differences to be a minimum.

6.2 VALIDITY OF A SCENARIO

The start date of the scenario validity is the date of the approval (or acceptance) letter (or message).

Except in the case of changes to the FCL regulatory requirements, an approved or accepted FCL scenario **has no time limit**. It is the ethical responsibility of the ATO and the examiner to judge whether a scenario remains relevant over time and/or for a given candidate (in the case of consecutive tests conducted on the same candidate). A scenario is no longer relevant when its use to impartially judge a candidate's abilities is questionable, particularly in view of the inevitable loss of confidentiality of its content (typical case of ATOs dealing with a large number of trainees from the same operator).

Examiners should only provide candidates with the elements of the script file that are necessary for the preparation of the test (environment conditions) and should endeavour to maintain the necessary confidentiality of the script file.

6.3 VALIDATION OF A SCENARIO

For each scenario, the approval (or acceptance) letter (or message) will include :

- A 5 or 6 digit CAAT approval number. After validation, this CAAT internal number will be inserted in the scenario header (ATO/TRE responsibility). Any further reference or correspondence concerning this scenario will be made through this number,
- Any restrictions, limitations and/or warnings regarding the validity and/or use of the scenario. If not already stipulated in the scenario file, these reservations will be formally inserted in the scenario file in such a way that they are clearly observed and applied by the users.

All approved scenarios for an ATO must be archived by the HT and the appropriate scenarios for the scheduled test made available to the TRE/SFE at the time of the acts organised by that ATO.

A scenario submitted by an individual TRE/SFE and accepted should only be used by that reviewer.

Any FCL test conducted in or outside an ATO must result in the scenario used (or its validation CAAT approval number) being archived by the examiner conducting the test (in addition to the TRF). This record must be kept for a period of 5 years.

In case of definitive renunciation of the use of a scenario, notify the CAAT by e-mail (**email address to be added**), recalling the CAAT approval/acceptance number and the end date of use.

7 ANNEX 1

This annex contains additional specific guidance on the insertion and implementation of certain Appendix 9B6 items in the scenarios.

> *Note: the annex covers only those sections that it was felt necessary to comment on due to ambiguities or imprecisions in the regulatory texts, or due to the many questions asked by scenario designers.*
>
> *Preliminary note: The tables below summarise CAAT's expectations **in terms of the design of FCL test scenarios**. They are not and should not be confused with the information and guidance on the assessment criteria for FCL items (which can be found in the CAAT FEM).*

The scenario designer will use this information to articulate and construct his or her programme and document the examiner instructions associated with that programme.

REF FCL	INSTRUCTIONS
SECTION 1	Section 1 corresponds to the preparation of the flight from the operational phase of the flight record in the briefing room until take-off. It is required for all TR and ATPL related actions (except for a check on section 6 only). Items 1.4(M) and 1.6(M) must be assessed against PF. Important: in the case of an ATPL scenario, the theme of the trip and the operational conditions must be chosen in such a way as to provide a basis for judging the candidate's ability to analyse and decide (and must therefore lead to the actual handling of aircraft documentation, confrontation with one or more limitations and lead to operational decisions representative of the responsibilities of a CPT in this area).
1.1	This section consists of verifying the correct application of the knowledge and skills necessary to calculate performance. It is usually assessed in 2 phases: 1. During the preparation of the flight in the briefing room where the calculation itself takes place, related to the calculation of limitations, fuel carriage, mass and balance and other flight parameters taking into account the imposed operational conditions [including MEL/CDL technical reserves]), 2. During machine preparation at the simulator in which the calculation is validated or updated and the parameters are inserted/visualised in accordance with the applicable manning procedures. This item, which is always assessed for each applicant in any RT scenario, should appear in the table of items.
1.3	A transit cockpit preparation is always acceptable provided that the simulator is prepared for this (a transit cockpit preparation is not carried out on an aircraft in extended parking configuration). For the second part of a two-candidate scenario, either the crew will perform a transit cockpit preparation or the examiner will perform a "pre-start-up" conditioning of the aircraft (without crew interference), The formal insertion of this items in the table of items is not mandatory.
1.4 (M)	This items will be mandatory in the scenario for each of the candidates in PF function. It must appear in the table of items, Although most of the time, the corresponding actions are performed at the preparation stage (FMS, departure briefing), this section also covers the performance of the departure briefing and navigation setting, In the case of a 2-candidate scenario with only one navigation leg, the complementary exercise part of the pilot on PM duty during the trip must include at

	least the preparation of the navigation setting (FMS programming), the execution of the departure briefing and the C/L before and after take-off, In all cases, after the first engine has been started (in accordance with the applicable procedures, including consideration of and communication with the ground environment), subsequent starts can be performed in "quick start" from the IOS (no fault will be programmed during or after such a start), All engines running is only acceptable for a TR revalidation event within a company RTC and if this feature has been endorsed as part of the approval of that RTC.
1.5	For a skill-test and depending on the crew configuration and the applicable task allocation, one or more sufficiently long and representative taxi phases should allow the evaluation of each candidate (precision, flexibility, compliance with instructions, role of the PM). For other types of tests, a taxiing phase (even a reduced one) remains desirable, especially on large aircraft. The formal insertion of this items in the table of items is not mandatory.
1.6 (M)	This item will appear in the scenario for each candidate in PF (and therefore in the table of items). Beyond the simple execution of a C/L, this item encompasses the good management by the crew of all the operational elements and constraints in order to guarantee a high level of safety in this delicate phase of the flight (clearance amendment, updating of environmental parameters, good practices related to the fight against runway incursions, etc.), In the case of a 2-candidate scenario with only one navigation leg, the complementary exercise section for the PM during the navigation leg should include as a minimum the runway penetration and alignment phase and procedures.
SECTION 2	Section 2 is for take-offs. Only sections 2.5.2(M)* and 2.6(M) are mandatory. They will appear in the scenario and in the table of items for each candidate in PF. Section 2.5.1* is not a substitute for section 2.5.2(M)*. For exercises 2.5.1, 2.5.2(M)* and 2.6(M)*, the remarks in subchapter 2.6 should be taken into account wherever possible.
2.2*	Section 2.2* assumes the simulation of environmental parameters leading to the loss of all visual reference immediately after rotation.
2.5.1	The insertion of this item in a scenario does not dispense with item 2.5.2(M)*. The fault must generate a clear dissymmetry as soon as it is initialised (see the following section).
2.5.2(M)*	The failure must generate a clear dissymmetry as soon as it is initiated. Consequently, an engine fire between V1 and V2 is not acceptable if there is no immediate and significant loss of power. However, it is possible to have the engine fire appear simultaneously or later. In this case the item 3.6.1 will appear after section 2.5.2(M)*, The exercise should provide a reasonable assessment of the candidate's ability to control the trajectory by reference to the instruments. As a result, transition to IMC should be planned without delay (typically RVR/ceiling near CAT I conditions), The exercise must result in the applicable N-1 profile and trajectory being followed (typically until MCT engine speed is reached). An automatic reignition of the engine before this point is therefore not acceptable, The treatment of the engine failure (application of a procedure, securing the engine) may result in the validation of an item 3.6.3 (whether or not there is a re-ignition) or an item 3.4.0. These entries will be placed after entry 2.5.2(M)*.

2.6(M)	In the case of a CPT/FO task sharing (the most frequent case) and a standard crew, only one item 2.6 is necessary in the scenario. In all other cases, the scenario must include 2 sections 2.6 in order to allow the assessment of each candidate in PF and PM (depending on the applicable task sharing and the candidate's function), Although not mandatory, it is still desirable that the triggering event generates a dissymmetry (evaluation of the control of the lateral trajectory), The evaluation covers all aspects of the management of the take-off stop (PF and PM). The exercise must be continued until the assessment/decision stage (safety intervention, return to the parking area, anticipation of brake temperature rise, maintenance inspection, etc.). Depending on the context that triggered the take-off stoppage, the designer may validate an item 3.4.X or 3.6.X following item 2.6 provided that this event conduct to the performance of a C/L or memory item clearly identified in the manufacturer's documentation in addition to the C/L associated with the aborted take-off (a fire/smoke situation, securing an engine, an emergency assessment, etc.)
SECTION 3	Section 3 corresponding to manoeuvres and procedures, IR and the operation of aircraft systems in **abnormal situations** (failures) and the application of **emergency procedures**. The scenario must include at least 3 different items 3.4.X and 3 different items 3.6.X, broken down according to the instructions in sub-chapter 2.4.2. The chosen rubrics will appear in the scenario and in the rubric table. Each event validates the rubric for both candidates whether they are PF or PM. See sub-chapter 2.5 for the conditions of validation of the items. Here are some details concerning the nomenclature of the items
3.4.0 A 3.4.14	FCL entries 3.4.0 to 3.4.14 do not always correspond to the classification by ATA. The following guidelines apply: - The same breakdown cannot give rise to the validation of a section 3.4.8 and a section 3.4.11, - Moving surfaces, controls and associated computers are all in domain 3.4.6 except SLATS/FLAPS which are in domain 3.4.13, - (E)GPWS, radar, radio altimeter, transponder are in the domain - 3.4.10 and not 3.4.11, any other radio equipment is in the 3.4.11 domain, - The GEN APU is in domain 3.4.4 and not 3.4.14, - Fire/smoke detectors are part of the circuit they protect.
3.6.1 A 3.6.9	The application of the same C/L cannot result in the validation of both a 3.4.X and a 3.6.X. If a 3.4.X item is followed by a 3.6.X item simulating a sudden deterioration of the situation, the exercise must be planned and dimensioned in such a way that each of the items is validated by the effective and significant application of a procedure or part of a procedure, items 3.4.X and 3.6.X are not interchangeable simply because they concern the same circuit. A 3.4.X corresponds to the treatment of a fault classified as non-vital by the manufacturer whereas a 3.6.X is clearly a matter of immediate action or a situation threatening the integrity of the aircraft and/or its occupants (a pressurisation failure at FL100 is a 3.4.1 and should not be proposed as a 3.6.6 while a Zc>15000ft and uncontrollable at FL300 is a 3.6.6 and should not be proposed as a 3.4.1), 3.6.1 already includes emergency evacuation which, if carried out, cannot therefore give rise to the validation of an item 3.6.8,

	3.6.8 cannot be used for an event covered by another 3.6.X (a TCAS RA cannot validate a 3.6.8) 3.6.3 corresponds to securing the flight following one or more engine failures and handling the situation downstream with or without restart. In this respect, it complements section 2.5.2(M)* (take-off failure) and section 5 (landings) which are primarily trajectory management oriented.
3.8	Instrument flight procedures. These items will appear in the scenario and in the PF item table for each candidate. An approach followed by a visual manoeuvre cannot validate a 3.8.3.1(M)*, 3.8.3.2*, 3.8.3.3*, 3.8.3.4(M)* or 3.8.4(M)* item.
3.8.1(M)*	Exercise should be performed mostly in IMC conditions, For TR skill-test scenarios and for the ATPL skill-test, this item must be a published SID (at least from take-off to MSA) and/or STAR (at least from MSA to IAF). For all other scenarios, it is acceptable to cover this item with a sequence of ATC clearances in the form of radar vectors and/or direct track to waypoints, thus allowing the crew's ability to accurately and promptly comply with ATC instructions involving several consecutive changes in cleared track and altitude to be judged.
3.8.3.1 (M)* 3D OPS	This is only compulsory for the TR skill-test and the ATPL skill-test, The disconnection of the AP and FD must occur before the start of the approach intercept so that the candidate's ability to establish the trajectory (horizontal and vertical plane) without the aid of the FD can be assessed, The exercise should be conducted in IMC conditions to a height close to DH. It is concluded either with a landing or a go-around at DH, The exercise is carried out with all engines running and without any failure significantly affecting the manoeuvrability of the aircraft.
3.8.3.2* 3.8.3.3*	The exercise should be conducted in IMC conditions to a height close to DH. It is concluded with either a landing or a go-around at DH.
3.8.3.4 (M)* 3D OPS	This section covers 2 different exercises depending on the point of loss of the engine: - N-1 approach with loss of engine before passing 1000FT AAL, - N-1 final approach with engine loss after passing the OM and within 4NM of the runway threshold. In the first case, the loss of the engine must occur early enough to judge the candidate's ability to stabilize the flight path without external visual reference and to fly manually until landing or a go-around at DH. The AP must therefore be made unavailable before the engine failure (the FD remains available), In second case, the objective is to confront the pilot with a sudden engine failure on final approach, in manual flight and in IMC. The exercise allows the pilot to judge the handling of the situation and the ability of the crew to secure the flight (including a go-around decision). **Only one** of the 2 options will be retained in the scenario (or by the reviewer if the scenario designer gives the option) This exercise should never be grouped with exercise 3.8.3.1(M)* and should be performed without additional failure significantly affecting the manoeuvrability of the aeroplane.
3.8.4(M)* 2D OPS	The exercise **can** be performed in N-1 and **should** be conducted in IMC and 2D operation to a height near MDH. It can be concluded with either a landing or a go-around at MDH,

	There is no particular requirement for the unavailability of automated systems, which must be used in accordance with the applicable procedures, The exercise is carried out without any additional failure that significantly affects the manoeuvrability of the aircraft, The use of a vertical guidance mode is not allowed.
SECTION 4	Section 4 corresponding to the missed approaches. Only section 4.4* is mandatory, The applicable items will appear in the scenario and in the table of items in FP for each applicant.
4.4(M)*	The exercise must be initiated at a height close to the DH/MDH of the support approach (ideally on the crew's initiative due to lack of visual reference). The critical engine failure must occur at the latest at the time of the decision to abort the approach but can be planned for earlier (N-1 approach).
SECTION 5	Section 5 corresponds to landings. Only sections 5.5* and 5.6* are mandatory, The applicable items will appear in the scenario and in the table of items in PF for each applicant.
5.5(M)	This item must be preceded by the completion of an N-1 critical engine failure approach (visual or instrument).
5.6(M)	This section is only compulsory for candidates taking a skill-test for the TR on the aircraft concerned (three-engine aircraft), It must be preceded by an N-2 approach (visual or instrument) (no sudden engine failure during the landing phase), The failed engines are either the central + 1 external (three engines) or 2 engines on one side (four engines).