



FOCA GM/INFO

Guidance Material / Information

Certification Leaflet North Atlantic High Level Airspace (NAT HLA)



Scope	GM for operators (applicants) and authority for the use of the NAT HLA
Applies to	All users of the NAT HLA
Valid from	23 May 2018
Purpose	Compulsory / Information

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Log of Revision (LoR)

Date	Issue	Revision	Highlight of Revision
01.12.2013	1	0	First Issue
15.05.2018	1	1	Change of the term «MNPS» into «NAT HLA»

List of Effective Chapters

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List of Abbreviations

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The following abbreviations are within this GM/INFO:

Abbreviation	Definition	Abbreviation	Definition
ACAS/TCAS	Traffic Collision Avoidance System	SSR-Transponder	Secondary Surveillance Radar Transponder
ADS	Automatic Dependent Surveillance	TC	Training Captain
AOC	Air Operator Certificate	Tech-Log	Technical Log System
CAME	Continuing Airworthiness Management Exposition	TRE	Type Rating Examiner
CBT	Computer Based Training	TRI	Type Rating Instructor
CDU	Control Display Unit		
CL	Certification Leaflet		
CPDLC	Controller-Pilot Data-Link-Communications		
EASA	European Aviation Safety Agency		
FMS	Flight Management System		
FOCA	Federal Office of Civil Aviation		
FSTD	Flight Simulation Training Device		
GI	Ground Instructor		
GPS	Global Positioning System		
HIL	Hold Item List		
LIFUS	Line Flying under Supervision		
LRNS	Long Range Navigation System		
MEL	Minimum Equipment List		
MNPS	Minimum Navigation Performance Specification		
NAT	North Atlantic		
NAT HLA	North Atlantic High Level Airspace		
OPS SPECS	Operations Specifications		
RNP	Required Navigation Performance		
RVSM	Reduced Vertical Separation Minima		
SFE	Synthetic Flight Examiner		
SFI	Synthetic Flight Instructor		
SLOP	Strategic Lateral Offset Procedure		

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0 Introduction

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All Guidance Material / Information (GM/INFO) are intended to assist the organisation/operator in administrative matters. The administrative requirements and processes will facilitate liaising with the Federal Office of Civil Aviation (FOCA). It is to be considered a tool for the organisation/operator in order to ease processes of obtaining required and defined approvals and authorisations issued by the Federal Office of Civil Aviation (FOCA). Using the GM/INFO will be conducive to establishing compliance with FOCA requirements and will lead through the respective certification or variation process in regard to administrative tasks.

0.1 Legal References

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Reference	Issue	Subject
Basic Regulation (EC) No 216/2008	20.02.2008	Common rules in the field of civil aviation and establishing a European Aviation Safety Agency
Commission Regulation (EU) 965/2012	Rev 9	Regulation on air operations
Regulation (EU) No 376/2014		Occurrence reporting in civil aviation
ICAO Annex 6		Operation of Aircraft
ICAO Doc 4444		Communication Procedures
ICAO NAT Doc 7030	7030/5	Regional Supplementary Procedures
NAT Doc 007	Edition 2018	Air Navigation in and above NAT HLA-Airspace
ICAO Doc 9613		Performance Based Navigation Manual
GM/INFO PBCS		Info leaflet of Performance Based Communication and Surveillance

0.2 Purpose of this GM/INFO

Ch. 0.2 ISS 1 / REV 1 / 15.05.2018

Operators acquiring the operations specification «NAT HLA» must be in compliance with the requirements concerning airworthiness, operational procedures and training of all involved personnel. The approval process includes the adoption of all parts of the Operations Manual System in the respective chapters as well as the amendment of affected maintenance documentation, procedures and tasks.

0.3 Scope

Ch. 0.3 ISS 1 / REV 1 / 15.05.2018

The presented guidance material covers all aspects of NAT HLA operations requirements and shall assist the applicant to be compliant with these requirements.

Note: The term NAT HLA will be used in this CL instead of MNPS, although in Commission Regulation (EU) No 965/2012 Part SPA.MNPS for the time being still the term MNPS is used.

0.4 Terms and Conditions

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When used throughout the GM/INFO the following terms shall have the meaning as defined below:

Term	Meaning	Reference
<i>shall, must, will</i>	These terms express an obligation, a positive command.	EC English Style Guide: Ch. 7.19
<i>may</i>	This term expresses a positive permission.	EC English Style Guide: Ch. 7.21
<i>shall not, will not</i>	These terms express an obligation, a negative command.	EC English Style Guide: Ch. 7.20
<i>may not, must not</i>	These terms express a prohibition.	EC English Style Guide: Ch. 7.20
<i>need not</i>	This term expresses a negative permission.	EC English Style Guide: Ch. 7.22
<i>should</i>	This term expresses an obligation when an acceptable means of compliance should be applied .	EASA Acceptable Means of Compliance publications FOCA policies and requirements
<i>could</i>	This term expresses a possibility.	http://oxforddictionaries.com/definition/english/could
<i>ideally</i>	This term expresses a best possible means of compliance and/or best experienced industry practice.	FOCA recommendation

Note: To highlight information or an editorial note a specific note box is used.

- The use of the male gender should be understood to include male and female persons.

0.5 Organisation / Operator Responsibilities

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Before submitting the application, it is essential for the operator to be familiar with the regulation and to submit the complete documentation in respect to the applicable regulation.

Since this CL shall give additional information to the applicable regulation, the sole rely upon this CL is not sufficient. The applicant must be familiar with and take the mentioned regulations into account.

The operator has to ensure that all Parts of the Operations Manual System are revised to be compliant with the requirements relevant for NAT HLA-Operations.

The following subjects must be covered:

- **Evidence of the certification status** of the affected aircraft has to be provided to FOCA. (AFM / Supplement)
- **Standard Operating Procedures (OM-B)** as well as the **Training Programmes (OM-D)** must be defined and implemented in the OM-System.
- **Regional specific operational procedures** and information must be implemented (OM-C).
- **Occurrence Reporting Procedures** have to be established and described accordingly (OM-A).

Note: All airworthiness requirements must be fulfilled.

0.6 Format of the GM/INFO

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The GM/INFO has the format of a Certification Leaflet (CL). The CL consists of a standardised modular reference box system. The following presentation provides details of the defined format:

1	3.2. Minimum Equipment List (MEL) TOPIC	M/CC EVALUATION METHOD	2
3	RVSM CL TOPIC 3-B9-075 CL Ch.-OM Ch.-Seq.-No.	ORO.MLR.105 CAT.IDE.A.105 LEGAL REFERENCE	4
5	OM B, Chapter 9, Minimum Equipment List (MEL) MANUAL REFERENCE		5
6	APP: The MEL and any amendment thereto requires prior approval <small>IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL</small>		
7	<input checked="" type="checkbox"/> Is the MEL amended in order to cover all system components that are relevant for the RVSM capability of the aeroplane? <small>QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT</small>		
8	The MEL shall be amended in order to comply with the requirement for RVSM operations in respect to system capability and redundancy.		

1	Topic: subject description
2	FOCA evaluation method
3	FOCA / Topic Reference Number which may be used as identification in addition to interlink between this leaflet and the Document Evaluation Report (Finding Report). The Number consists of a combination of: - a subject code related to the specific topic/ theme; and - sequence number in the respective chapter of the CL. The above example 3-B9-075 indicates: RVSM = CL regarding RVSM Specific Approval, 3 = CL section; B9 = OM chapter under evaluation (here OM-B, Chapter 9.), followed by 075 = sequence number.
4	Associated legal reference and/ or reference to other relevant publications including information on formal Acceptance (ACC) or Approval (APP) where applicable.
5	Reference to the Part(s), Chapter(s) and/or Subchapters of the organisation's document systems or manual system as required by the applicable Part.
6	If the legal provision requires a formal approval, a short description of the content of this approval is provided.
7	Questions for self-assessment and compliance verification.
8	Provides instructions, provisions, regulatory requirements, guidelines, acceptable means of compliance and examples of current best practice.

1 Formal Application

Ch. 1 ISS 1 / REV 1 / 15.05.2018

1.1 Operational Documents Ch. 1.1 ISS 1 / REV 1 / 15.05.2018		M/CC EVALUATION METHOD	
NAT HLA CL TOPIC 1-G-005 CL Ch.-OM Ch.-Seq.-No.	ORO.MLR.100 LEGAL REFERENCE	ORO.MLR.105	SPA.MNPS.100 SPA.MNPS.105 MANUAL REFERENCE

APP: If applicable, short description of the element requiring approval/acceptance

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

Has the application form 44.20, together with all relevant documents, been submitted to the FOCA?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

- Revision of the relevant parts of the Operations Manual System including checklists and Minimum Equipment List (MEL).
- Description of the relevant operating history of the operator together with the experience-level of flight crew members concerning NAT HLA operations.
- Plan for participation in verification/monitoring programmes.

The revised parts of the Operations Manual System containing instruction and information on NAT HLA operations, as a complete package, shall be submitted to FOCA.

2 Operational Approval

Ch. 2 ISS 1 / REV 1 / 15.05.2018

2.1 Operations Specification NAT HLA		M/CC
Ch. 2.1 ISS 1 / REV 1 / 15.05.2018		EVALUATION METHOD
NAT HLA CL TOPIC	SPA.MNPS.100 SPA.MNPS.105 LEGAL REFERENCE	
2-A0-010 CL Ch.-OM Ch.-Seq.-No.	OM – A, Chapter 0, Administration and Control of the Operations Manual, 0.1 Introduction MANUAL REFERENCE	

APP: Operation in designated minimum performance navigation specifications airspace (NAT HLA) requires an approval by the competent authority.

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

Is the operations specification «NAT HLA» mentioned in the introduction paragraph of the operations manual part A?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

The operations specification «**NAT HLA**» must be listed together with all other operations specifications of the operator concerned.

2.2 Route Competence for NAT HLA		M/CC
Ch. 2.4 ISS 1 / REV 1 / 15.05.2018		EVALUATION METHOD
NAT HLA CL TOPIC	SPA.MNPS.100 SPA.MNPS.105 LEGAL REFERENCE	
2-A5-015 CL Ch.-OM Ch.-Seq.-No.	OM – A, Chapter 5, Qualification Requirements 5.1 Description of Required Qualification/Competence for Flight Crew Members MANUAL REFERENCE	

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

Is the route-competence for NAT HLA airspace declared?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

For flight crew members, the qualification «route-competence to operate in NAT HLA airspace» must be declared in OM-A, Chapter 5.

3 Operating Procedures

Ch. 3 ISS 1 / REV 1 / 15.05.2018

3.1 Flight Preparation Instruction		M/CC			
Ch. 3.1 ISS 1 / REV 1 / 15.05.2018		EVALUATION METHOD			
NAT HLA CL TOPIC	SPA.MNPS.100 LEGAL REFERENCE	SPA.MNPS.105	CAT.GEN.MPA.145	ORO.GEN.110	SPA.RVSM.110
3-A8.1-020 CL Ch.-OM Ch.-Seq.-No.	OM – A, Chapter 8, Operating Procedures Section 8.1, Flight Preparation Instruction MANUAL REFERENCE				

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

- Does the operator describe and consider operational influence related to operations within NAT HLA airspace during his flight planning procedure?
- Are there procedures established and specific descriptions available, defining the verification procedures as well as the equipment checks required for the conduct of NAT HLA operations?
- Is a statement provided that for unrestricted operations within NAT HLA the aeroplane as well as the operator in addition must fulfill all RVSM requirements?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

The following subjects and procedures shall be described, as a minimum:

- Flight planning

For NAT HLA operations, instruction must be provided to the flight crew to review and verify the aircraft technical status reflected in the techlog, to consult the aeroplanes Hold Item List (HIL), to verify the aeroplane dispatch status using the Minimum Equipment List (MEL) concerning NAT HLA operations. Dual Long Range Navigation System (LRNS) and RNP 10 or RNP 4 capability is required.
- Flight documentation:
 - a) Operational Flight Plan (OFP)

The OFP shall be declared as «master document» listing sequentially all the waypoints defining the route, as well as the track and distance between each waypoint.
 - b) Plotting chart

The use of a plotting-chart in a suitable size and scale shall be described in order to facilitate visual presentation of the intended route and for the conduct of navigation cross-checking procedures.
 - c) NAT track document

The NAT track documents shall be described, in order to explain the procedures applicable within the Organized Track System (OTS).
- Flight-deck-preparation:
 - a) Navigation system alignment

Procedures for alignment of the inertial navigation systems must be described in detail, including the position initialization procedures and the use of a satellite navigation availability program. It shall be emphasized that alignment must be completed, the equipment shall be set to NAV mode and ground speed zero indication shall be verified prior to the first movement of the aircraft.
 - b) LRNS functionality verification

Check of the functionality and accuracy of 2 Long Range Navigation Systems (2 LRNS), including the indication of the aircraft position relative to the desired track.

A LRNS may be one of the following:

- 1 INS/IRS, or
- 1 GNSS, or
- 1 NAV-system using one or more IRS or
- any other sensor system complying with NAT HLA requirements

c) Loading of waypoints

Manual entry of waypoint data into the navigation system must be co-ordinated by two persons, working in sequence and independently. One pilot should key in and insert the data, and subsequently the other pilot should recall it and confirm it against source information. It is not sufficient for one crew member just to observe or assist another crew member inserting the data. The pilot responsible for the verification should work from the CDU display to the «master document» rather than in the opposite direction in order to lessen the risk of «seeing what is expected to be seen» rather than to see what is actually displayed.

After the verification of a waypoint, an appropriate symbol should then be adopted on the master document to indicate the status of each waypoint;

d) Checking of flight plan data in the FMS

Completeness of the inserted flight plan and compatibility with the «master document» shall be verified and calculated outputs from the system shall be reasonable and adequate.

e) Checking of Long Range Communication Equipment (HF systems)

Functionality check shall be defined (interval) and described clearly.

f) UTC check and synchronisation of the aircraft's masterclock

The masterclock of the aircraft must be synchronized with the correct time (UTC) in order to provide accurate time reference to the system for the calculation of accurate time-estimates at specific waypoints.

RVSM requirements applicable in NAT HLA

- Instruction shall be provided for a comparison check between the indication of the two primary altimeters to be within a tolerance of ± 75 ft for NAT HLA RVSM operation.
- NAT HLA/RVSM equipment
It must be mentioned clearly, that the following equipment must be checked «operational» prior entering NAT HLA RVSM airspace:
 - Two independent altitude measurement systems;
 - One altitude alerting system;
 - One automatic altitude control system;
 - One altitude reporting SSR transponder, coupled to that altitude measuring system, that is in operation for altitude keeping.

3.2 In-Flight Procedures		M/CC	
Ch. 3.2 ISS 1 / REV 1 / 15.05.2018		EVALUATION METHOD	
NAT HLA CL TOPIC	SPA.MNPS.100 LEGAL REFERENCE	SPA.MNPS.105	ORO.GEN.110
3-A8.3-025 CL Ch.-OM Ch.-Seq.-No.	OM – A, Chapter 8, Operating Procedures Section 8.3, Flight Procedures MANUAL REFERENCE		

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

Are the applicable in-flight procedures for NAT HLA operations described in detail?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

Detailed provisions and procedures shall be established and described, covering the following:

- NAT HLA procedures
 - a) Navigation procedures before entering NAT HLA airspace

Ground nav-aids should be used to verify performance of the LRNS to identify possible map-shifts or other discrepancies within the FMS navigation data. In spite of all modern technology and even if the FMS is using GPS sensors, it is still worthwhile to carry out a reasonableness check of the FMS/GPS position, using VOR/DME bearings and distances.

A compass heading cross-check should be made and recorded to determine the most accurate heading source.
 - b) Oceanic clearance / re-clearance procedures

Two flight crew members shall listen to and record any clearance obtained from ATC in order to verify correct reception. If any doubt occurs, clarification shall be obtained from ATC without delay.

If any re-clearance is obtained when temporarily only one pilot is on the flightdeck, no change in flight profile, mach number or routing should be executed, nor should the navigation- or Flight Management System be updated, until the second pilot has returned to the flight deck and a proper cross-checking and verification process can be undertaken.
 - c) Clearance- and flight plan verification procedures

Verification of received ATC clearance shall be crosschecked from the recorded data to the master document, not in opposite direction, in order to lessen the risk of 'seeing what is expected to be seen' rather than to see what was actually received and recorded.

Same technique shall be used when checking the waypoints displayed on CDU data against the master document.

After the verification, extraction and verification of the flight plan information including tracks and distance between every cleared waypoint shall take place in a co-ordinated crew procedure involving both pilots.
 - d) SSR transponder operation

SSR transponder code issued from controlling ATC must be retained for the first 30 minutes within the NAT HLA airspace, then transponder code "2000" shall be entered, since the original domestic code might not be recognised by the subsequent domestic radar service when exiting from oceanic airspace. Caution shall be exercised when selecting codes not to inadvertently cycle through any special code (7500, 7600, 7700) and thereby possibly initiate the launching of an interception. ACAS/TCAS operation is granted all the times.

e) Waypoint crossing procedure

Before reaching the waypoint track and distance to the next waypoint shall be verified. When crossing the waypoint it shall be verified that the new TO-waypoint becomes active and that the aircraft turns in the correct direction onto a reasonable heading and onto the predefined track. A position-plotting shall be carried out within 10 minutes.

f) Position reporting procedure (Doc 4444)

Example:

ACFT: «Shanwick, MasterAirlines123 calling on 8841, position... »
 OCC: «Master Airlines123 from Shanwick oceanic, go ahead»
 ACFT: «Master Airlines 123, position ETIKI at 1345, FL340
 Estimating 45N020W at 1422
 46N030W Next ... »

g) Position plotting procedure

The procedure for the preparation of a visual presentation of the intended route shall be described, which otherwise is defined only in terms of geographical coordinates. As the flight progresses in oceanic airspace, at regular intervals, actual aircraft position shall be taken out of the navigation system and then latitude and longitude coordinates shall be plotted onto the chart. When the aircraft position falls precisely on the recorded route-track, it is confirmed that the flight is following the cleared route, the navigation crosscheck is successful. Otherwise, investigation shall be conducted for the offset position of the flight and the deviation may be corrected at an early stage after the error has occurred.

h) Turnover briefing for a relief crew or a relief crew member

A brief description of a turnover briefing shall be provided, applicable for flights requiring crew augmentation. Its content shall particularly address critical information such as oceanic clearances, re-routings, conditional re-clearances, changes in mach-number and/or flight-level.

i) Step climbs

The procedure applicable for step climbs shall be described, as most NAT flights are of strategic nature whereby flights are allocated a conflict free route and profile from coast out to landfall. Such strategic clearances normally specify a single flight level for the entire crossing, without considering the basic circumstance of increasing optimum flight levels with decreasing aircraft weight. In the description of the procedure, it shall be emphasised that «leaving» the old and «reaching» the new flight level shall always be reported to ATC.

j) Special inflight procedures (SLOP)

A description of the lateral offset procedure shall be provided, as the distribution of aircrafts laterally adds an additional safety margin and reduces the collision risk. It shall be emphasised that aircrafts require an automatic offset programming capability, where the lateral offset of 1 or 2 nautical miles to the right of centreline can be programmed. Pilots may apply an offset procedure outbound at the oceanic entry point and must return to centreline prior to the oceanic exit point. An authorization from ATC is not required. Voice position reports shall be based on the waypoints of the current ATC clearance and not on the offset positions.

Aircraft without an automatic offset programming capability have to fly on the centerline.

3.3 Contingency Procedures		M/CC	
Ch. 3.3 ISS 1 / REV 1 / 15.05.2018		EVALUATION METHOD	
NAT HLA CL TOPIC	SPA.MNPS.100 SPA.MNPS.105 ORO.GEN.110		
3-A8.3-030 CL Ch.-OM Ch.-Seq.-No.	OM – A, Chapter 8, Operating Procedures Section 8.3, Flight Procedures		
	LEGAL REFERENCE		
	MANUAL REFERENCE		

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

- Are procedures established and described in the event that a single LRNS condition occurs before take-off?
- Are methods described covering the handling of a single LRNS condition before the OCA boundary is reached?
- Are actions defined if a single LRNS condition is detected after the OCA boundary is crossed?
- Are procedures defined in case the last remaining LRNS fails after entering NAT HLA airspace?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

When the flight is exposed to any situation that implies a degradation of NAT HLA/RVSM capability, specific procedure to be applied by the flight crew shall be described, such as:

- One LRNS system fails before take-off:
 - a) Delaying departure until repair is completed.
 - b) Replanning of the flight below or outside NAT HLA.
 - c) Planning of a special route known as the «Blue Spruce Routes».
- One LRNS system fails before the OCA boundary is reached:
 - a) Landing at a suitable aerodrome or returning to aerodrome of origin without crossing the NAT HLA boundary.
 - b) Diversion via a «Blue Spruce Route».
 - c) Obtaining a re-clearance to fly below or outside NAT HLA.
- One system fails after the OCA boundary has been crossed:
 - a) Prevailing circumstances shall be assessed such as performance of remaining system, remaining portion of the flight within NAT HLA etc.
 - b) Preparation of a proposal to ATC with respect to the prevailing circumstances.
 - c) Advise and consult with ATC as to the most suitable action.
 - d) Obtain appropriate re-clearance prior to any deviation from the last acknowledged oceanic clearance.
- Remaining system fails after entering NAT HLA:
 - a) Immediately advice ATC.
 - b) Make best use of procedures specified above relating in attempting visual flight conditions and establishing contact on VHF with adjacent aircraft for useful information.
 - c) Keep a special look-out for possible conflicting aircraft, and make maximum use of exterior lightning.
 - d) Obtain appropriate re-clearance prior to any deviation from the last acknowledged oceanic clearance. If no instructions are received from ATC within reasonable time, consideration to climb or descend by 500 ft, broadcasting the action on 121.5 MHz and advise ATC as soon as possible.

3.4 Special Procedures for In-Flight Contingencies		M/CC
Ch. 3.4 ISS 1 / REV 1 / 15.05.2018		EVALUATION METHOD
NAT HLA CL TOPIC	SPA.MNPS.100 SPA.MNPS.105 ORO.GEN.110	
3-A8.3-035 CL Ch.-OM Ch.-Seq.-No.	OM – A, Chapter 8, Operating Procedures Section 8.3, Flight Procedures	
	LEGAL REFERENCE	
	MANUAL REFERENCE	

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

- Are in-flight situations defined and described that imply a deviation from cleared routes in NAT HLA airspace?
- Is the basic concept described for the handling of an implied deviation from a cleared route?
- Is the contingency concept described that a flight crew has to follow when a re-clearance cannot be obtained in due time?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

When the flight is exposed to any in-flight situation that implies a deviation from a cleared route or flight profile, defined concepts and specific procedures to be followed and applied by the flight crew shall be described, such as:

<p>Deviation due to aircraft performance problems: (Permanent situation)</p> <ul style="list-style-type: none"> • Engine failure or shutdown • Pressurization system failure or degradation 	<p>Deviation due to weather: (Temporary situation)</p> <ul style="list-style-type: none"> • Storm-cells (CB) • Turbulences
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Basic concept: Deviation on revised clearance

- Revised clearance from ATC shall be obtained, using the distress (MAYDAY) signal or urgency (PANPAN) signal as appropriate.
- Deviation according ATC clearance shall be executed.

When a revised clearance cannot be obtained in due time, then the appropriate contingency concept shall be followed

Contingency concept: Permanent situation (diversion)

Deviation away from OTS system onto an offset route with 15 NM separation, vertically separated by 500 ft for flights at or below FL410 (or by 1000 ft for flights above FL410)

- Use maximum aircraft lightning.
- Apply good look-out and use maximum information displayed on TCAS.
- Broadcast at regular intervals: call sign, position, flight level, intention and action on guard frequency 121.500 MHz and air-to-air frequency 123.450 MHz.
- Deviation procedure:
 - turn heading at least 45° to the left or right whenever feasible. Direction of turn should be determined by evaluating the position of the aircraft relative to the OTS system, other traffic in the vicinity, direction to en-route alternate airport, levels allocated on adjacent route, etc.
 - climb or descend to an operationally feasible level that is differing by 500 ft (<FL410) or 1000 ft (>FL410) from the actual flight level within NAT HLA airspace.

- Within the OTS system, a parallel route with a 15 NM offset shall be flown in the direction, depending on the decision of the crew either to continue the NAT crossing or not. On random routes, the diversion route can be flown direct to the diversion aerodrome.

Contingency concept: Temporary situation (weather deviation)

Deviation away from OTS system, vertically separated by 300 ft.

- Use maximum aircraft lightning.
- Apply good look-out and use maximum information displayed on TCAS.
- Broadcast at regular intervals: call sign, position, flight level, intentions and action on guard frequency 121.500 MHz and air-to-air frequency 123.450 MHz .
- Deviation procedure:
 - Deviate laterally as operationally required and maintain assigned flight level for deviations within a range of 10 NM from the originally assigned track.
 - When deviation of more than 10 NM is required, when the aircraft is approximately 10 NM from track, a level change shall be initiated by 300 ft .
 - Level change that shall be executed is depending on the route centerline of the assigned track:

Assigned route centre line track	Deviation >10 NM	Level change
EAST (000° – 179° magnetic)	LEFT	DESCEND 300 ft
	RIGHT	CLIMB 300 ft
WEST (180° – 359° magnetic)	LEFT	CLIMB 300 ft
	RIGHT	DESCEND 300 ft

- When returning to originally assigned track, regain the last assigned flight level, when the aircraft is within approximately 10 NM of the originally assigned track.

3.5 Post Flight Procedures		M/CC	
Ch. 3.5 ISS 1 / REV 1 / 15.05.2018		EVALUATION METHOD	
NAT HLA CL TOPIC	SPA.MNPS.100 SPA.MNPS.105 ORO.GEN.110		
3-A8.3-040 CL Ch.-OM Ch.-Seq.-No.	OM – A, Chapter 8, Operating Procedures Section 8.3, Flight Procedures		
	LEGAL REFERENCE		
	MANUAL REFERENCE		

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

Are the post flight procedures adequately described with regard to NAT HLA operations?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

With respect to NAT HLA operations, the following shall be stated, as a minimum:

- Any malfunction affecting the NAT HLA capability of the airplane shall be recorded in detail in the tech log system.

Parameters out of the navigation system that are indicators for a proper behaviour of the system, should be listed and should contain:

- Position drift of each IRS.
- Residual ground speed of each IRS.

3.6 Reporting of Occurrences		M/CC	
Ch. 3.6 ISS 1 / REV 1 / 15.05.2018		EVALUATION METHOD	
NAT HLA CL TOPIC	SPA.MNPS.100 LEGAL REFERENCE	SPA.MNPS.105	ORO.GEN.160
3-A11-045 CL Ch.-OM Ch.-Seq.-No.	OM – A, Chapter 11, Handling, Notifying and Reporting Occurrences MANUAL REFERENCE		

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

Are violations in regard to NAT HLA operating rules addressed to be reported by the flight crew?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

For route deviations during NAT HLA operations, at least the following shall be stated to be reported:

- Total track error of 10 NM or more
- Circumstances and contributory factors
- Deviation from assigned altitude of ± 300 ft
- The loss of NAT HLA / RVSM capability
- The application of any contingency procedure

Reporting procedure

The reporting procedure, that is applicable after any violation in regard to NAT HLA operating rules, shall be described in detail, containing at least the following:

- who has to file the report, (commander)
- who is receiving the report, (Manager Flight Operations / Flight Safety Officer, ...)
- that the report has to be filed within 72 hours after the occurrence, containing an initial analysis of causal factors and measurement taken to prevent repeat occurrence.
- that the occurrence report form has to be used for the report
- where the corresponding form can be found within the organization

4 Aeroplane Type Specific Procedures

Ch. 4 ISS 1 / REV 1 / 15.05.2018

4.1 Limitations		M/CC
Ch. 4.1 ISS 1 / REV 1 / 15.05.2018		EVALUATION METHOD
NAT HLA CL TOPIC	SPA.MNPS.100 SPA.MNPS.105 LEGAL REFERENCE	
4-B1-050 CL Ch.-OM Ch.-Seq.-No.	OM – B, Chapter 1, Limitations MANUAL REFERENCE	

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

Is the operation specification «NAT HLA» listed as a type of operation?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

The following shall be stated, as a minimum:

- The operation specification «**NAT HLA**» shall be listed together with all other operations specifications applicable for the aeroplane type concerned.
- Communication: CPDLC RCP240 capability shall be listed
- Navigation: RNP10 or RNP 4 capability shall be listed
- Surveillance: ADS-C RSP180 capability shall be listed

4.2 Normal Procedures Ch. 4.2 ISS 1 / REV 1 / 15.05.2018		M/CC EVALUATION METHOD	
NAT HLA CL TOPIC	SPA.MNPS.100 LEGAL REFERENCE	SPA.MNPS.105	ORO.GEN.110
4-B2-055 CL Ch.-OM Ch.-Seq.-No.	OM – B, Chapter 2, Normal Operating Procedures MANUAL REFERENCE		

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

- Is the aircraft pre-flight procedure adopted to include all operational equipment required for NAT HLA operations?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

Flight deck preparation

The procedure shall be described, covering the following as a minimum:

- **Navigation system alignment**
Procedures for alignment of the inertial navigation systems must be described in detail including position initialization procedures and the use of a Satellite Navigation Availability Program. It shall be emphasized that alignment must be completed, the equipment shall be set to NAV mode and ground speed zero indication shall be verified prior to the first movement of the aircraft.
- **LRNS functionality verification**
Check of the functionality and accuracy of 2 Long Range Navigation Systems (2 LRNS) including the indication of the aircraft position relative to the desired track:
1 LRNS = 1 INS/IRS, or 1 GNSS, or 1 NAV system using one or more IRS or any other position sensor complying with NAT HLA requirements.
- **Loading of waypoints**
Manual entry of waypoint data into the navigation system must be co-ordinated by two persons, working in sequence and independently. One should key in and insert the data, and subsequently the other should recall it and confirm it against source information. It is not sufficient for one crew member just to observe or assist another crew member inserting the data. The pilot responsible for the verification should work from the CDU display towards the «master document» rather than in the opposite direction in order to lessen the risk of 'seeing what is expected to be seen' rather than to see what is actually displayed.
After the verification of a waypoint, an appropriate symbol should then be adopted on the «master document» to indicate the status of each waypoint.
- **Checking of flight plan data**
Completeness of the inserted flight plan and compatibility with the «master document» shall be verified and calculated outputs from the system shall be reasonable and adequate.
- **Checking of Long Range Communication Equipment (HF systems)**
Functionality check shall be defined (interval) and described clearly.
- **UTC check and synchronisation of the aircraft's masterclock**
The masterclock of the aircraft must be synchronized with correct UTC time in order to provide accurate time reference to the system for the calculation of accurate time estimates at specific waypoints.

- NAT HLA/RVSM equipment check

The external inspection procedure shall contain all relevant equipment such as all static-ports, especially the condition of the fuselage skin around the static ports.

The cockpit preparation shall include a primary altimeter crosscheck to be within a tolerance of \pm 75 ft (indication versus airport elevation, when QNH is the reference).

The equipment relevant for RVSM operations must be checked operational.

The tech log system shall be reviewed concerning the operational NAT HLA status and RVSM capability of the aeroplane.

Altimeter setting procedures

The procedure shall be defined in detail, covering at least the following:

- The procedure for altimeter setting and checking shall be described in detail, covering all relevant aspects regarding crew coordination and crew communication (call-outs).
- The procedure for the transition out of a climb or descent into a straight level-flight shall be described, covering the relevant aspects in regard to the monitoring of correct operation of the altitude alerting system and the automatic altitude control system.
- The procedure to perform primary altimeter crosschecks and respective recording.
- The use of the autopilot system in relation to the respective altitude transmitting transponder.

4.3 Abnormal / Emergency Procedures		M/CC	
Ch. 4.3 ISS 1 / REV 1 / 15.05.2018		EVALUATION METHOD	
NAT HLA CL TOPIC	SPA.MNPS.100 LEGAL REFERENCE	SPA.MNPS.105	ORO.GEN.110
4-B3-060 CL Ch.-OM Ch.-Seq.-No.	OM – B, Chapter 3, Abnormal and Emergency Procedures MANUAL REFERENCE		

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

- Are procedures established and described in the detection of failures in navigation systems relevant for NAT HLA operations?
- Are methods described covering the evaluation of a faulty navigation system?
- Are actions defined if the faulty navigation system cannot be determined by the crew?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

Navigation system deficiencies

- A description of the procedure shall be provided on how a degradation in navigation performance is recognised. Guidance and instruction shall be given on what constitutes a faulty system.
- The methods for determination of a faulty NAV system shall be described.
- Instructions and guidance shall be provided for the case that the faulty system cannot be clearly identified.

Position sensor deficiencies

- A description should be provided on how an inertial system failure can be detected.
- Instructions shall be provided for a satellite system failure.
- Procedures for the case of a satellite fault detection outage shall be described.

4.4 Minimum Equipment List (MEL)		M/CC	
Ch. 4.4 ISS 1 / REV 1 / 15.05.2018		EVALUATION METHOD	
NAT HLA CL TOPIC	SPA.MNPS.100 LEGAL REFERENCE	SPA.MNPS.105	CAT.IDE.A.105
4-B9-065 CL Ch.-OM Ch.-Seq.-No.	OM – B, Chapter 9, Minimum Equipment List (MEL) MANUAL REFERENCE		
ORO.GEN.110			

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

- Is the MEL amended in order to cover all system components that are relevant for the NAT HLA capability of the aeroplane?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

The minimum equipment list shall be amended in order to comply with the requirement for NAT HLA operations in respect to the capability and redundancy of the whole navigation system.

5 Regional Procedures

Ch. 5 ISS 1 / REV 1 / 15.05.2018

5.1 Specific Regional Operational Procedures		M/CC
Ch. 5.1 ISS 1 / REV 1 / 15.05.2018		EVALUATION METHOD
NAT HLA CL TOPIC	SPA.MNPS.100 SPA.MNPS.105 ORO.GEN.110	
5-C-070 CL Ch.-OM Ch.-Seq.-No.	Operations Manual Part C	
	LEGAL REFERENCE	
	MANUAL REFERENCE	

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

- Are the regional operational procedures applicable for the operator's area of operation provided to the users?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

The regional operational procedures including normal and contingency procedures must be integrated in the Operations Manual Part C, covering the operator's whole area of operation as specified on the AOC.

- Europe (EUR)
- North Atlantic (NAT)
- Western Atlantic Route System (WATRS)
- Northern Canadian Airspace (NAM)
- Domestic United States (D-RVSM)
- Pacific Region (ASIA/PAC)
- Middle East (MID)

6 Training and Checking

Ch. 6 ISS 1 / REV 1 / 15.05.2018

6.1 NAT HLA Training and Checking Concept		M/CC			
Ch. 6.1 ISS 1 / REV 1 / 15.05.2018		EVALUATION METHOD			
NAT HLA CL TOPIC	SPA.MNPS.100 LEGAL REFERENCE	SPA.MNPS.105	ORO.FC.120	ORO.FC.130	ORO.FC.205
6-D2-075 CL Ch.-OM Ch.-Seq.-No.	OM – D, Chapter 2, Training Syllabi and Checking Programme MANUAL REFERENCE				

APP: All training programmes and syllabi have to be approved by the competent authority.

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

- Is the NAT HLA training correctly integrated into both the conversion and recurrent training and checking programme?
- Is a sector included in the line flying under supervision module, where NAT HLA operation can be applied within NAT HLA airspace?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

The NAT HLA training and checking module shall be implemented within «Key Courses» as listed below:

Key Courses		Training required	Checking required		
Phase	Ground and FSTD / airplane training	Conversion training and checking covering: <ul style="list-style-type: none"> • Conversion course changing operator • Conversion course changing ACFT type • Conversion course changing operator and ACFT type 		Yes	Yes
	FSTD / Airplane training	Command course		No	Yes
		Recurrent training and checking	• LPC	N/A	No
			• OPC		Yes
			• Line Check		Yes
			• Recurrent training	Yes	N/A
		Difference and familiarization training		Yes	
	In-flight relief of flight crew members training		Yes	No	
Recent experience		No	No		

6.2 NAT HLA Training Module		M/CC EVALUATION METHOD				
Ch. 6.2 ISS 1 / REV 1 / 15.05.2018		SPA.MNPS.100	SPA.MNPS.105	ORO.FC.120	ORO.FC.130	ORO.FC.205
NAT HLA CL TOPIC	LEGAL REFERENCE					
6-D2-080 CL Ch.-OM Ch.-Seq.-No.	OM – D, Chapter 2, Training Syllabi and Checking Programme					
		MANUAL REFERENCE				

APP: All training programmes and syllabi have to be approved by the competent authority

IF APPLICABLE, BRIEF DESCRIPTION OF ELEMENT REQUIRING PRIOR APPROVAL

- Is there an NAT HLA training module integrated within the OM-D?
- Are the topics listed below (in grey shaded boxes) implemented in the NAT HLA training module?

QUESTION FOR COMPLIANCE VERIFICATION AND SELF ASSESSMENT

NAT HLA training and checking module	Definition of topic
	The NAT HLA training module must contain comprehensive instruction of basic knowledge and operational procedures to get familiar with all aspects of operations within NAT HLA.
	Reference to qualification requirements (if required)
	NIL
	Standard of performance to be obtained
	The following <u>standards of performance</u> shall be defined as minimum requirements to be obtained after having completed this NAT HLA training module:
	<ul style="list-style-type: none"> The student has obtained a thorough knowledge of the operational procedures and contingency procedures including standard ATC phraseology used in NAT HLA; The student has conducted at least one sector during the line flying under supervision phase, where NAT HLA operation was applied.
	Prerequisites
	The candidate shall fulfil the following <u>pre-requisites</u> , before starting NAT HLA training:
	<ul style="list-style-type: none"> Vital parts of the operators manual system should have been taught to the candidate beforehand to allow an adequate overview.
	Interrelation with other training modules
	As the operation within NAT HLA is considered part of Standard Operating Procedures (SOP), NAT HLA training shall be part of the «Ground Refresher Training».
Training items (steps, lessons, sequence and detailed content)	
NAT HLA training is to be performed according to the information given in the «key course». Theoretical instruction for initial training means: classroom instruction and/or CBT;	
The following items shall be covered:	
<ul style="list-style-type: none"> The minimum equipment requirements for NAT HLA operations Specific Minimum Equipment List (MEL) content Aeroplane automation systems Airframe operation restrictions, characteristics of aeroplane altitude capture systems Use and limitations in terms of accuracy of standby altimeters contingencies; application of static source error correction/position error correction tables Visual perception of other traffic Basic concept for normal procedures in NAT HLA 	

<ul style="list-style-type: none"> • Flight planning • Pre-flight procedures • In-flight procedures: <ul style="list-style-type: none"> - Prior to entry into NAT HLA - within NAT HLA airspace - TCAS / ACAS operating characteristics within NAT HLA • Concepts for NAT HLA contingency procedures • ATC phraseology applicable for NAT HLA operations. Emphasis shall be laid on re-enforcement of understanding, compliance and query in case of uncertainties • Specific regional operational procedures and contingency procedures in accordance with the area of operation, e.g.: Europe (EUR), North Atlantic (NAT) Western Atlantic Route System (WATRS), Northern Canadian Airspace (NAM), Domestic United States (D-RVSM), Pacific Region (ASIA /PAC), Middle East (MID) • Post-flight procedures • Entries in technical log systems <p>Ground training and checking shall cover theoretical and practical parts of the subject (classroom) and practical training and checking shall be performed in an FSTD and/or aeroplane.</p>
Checking / examination including pass mark for written tests
<p><u>Means of training and checking</u></p> <ul style="list-style-type: none"> • Theoretical knowledge will be checked by means of a written test or by any other suitable method where the quality of the transferred knowledge can be traced and recorded. Questionnaire shall comprise questions distributed appropriately across the main subjects of the syllabus. • The candidate has to pass the knowledge assessment before being entitled to undergo further practical training and checking in the aeroplane or FSTD. • During the operator proficiency check the candidate has to demonstrate adequate knowledge regarding operation in NAT HLA. • Flight crew has to demonstrate their competence in carrying out normal operations within NAT HLA. Therefore, as NAT HLA operation is an integral part of standard operating procedures, proficiency and knowledge shall also be assessed during the line check.
Training and checking personnel required / involved
<p>All necessary training and checking personnel involved in training and checking as listed below have to be incorporated in the operators OM-D, Chapter 1.3 Training and Checking Personnel before being entitled to execute the privileges.</p> <ul style="list-style-type: none"> • Classroom practical and theoretical training and checking is to be given by a Technical Knowledge Instructor (TKI), Training Captain (TC) or a Type Rating Instructor (TRI). • Training on an FSTD shall given by a SFI/TRI. • Training on an aeroplane during LIFUS shall be given by a TC or a TRI. • Checking of practical NAT HLA application during OPC shall be performed by a TRE. • Checking of practical NAT HLA operation during initial and/or regular line checks shall be conducted by a Training Captain (TC) or TRE. <p><u>Subcontracted Training Organisations</u></p> <p>Reference to subcontracted training organisations, listed in OM D, Chapter 1.2; shall be made, if applicable.</p>
Reference to syllabi and lesson plan
<p>The operator shall state all references where a specific NAT HLA training syllabus and associated lesson plan can be found within the operators OM-D.</p>