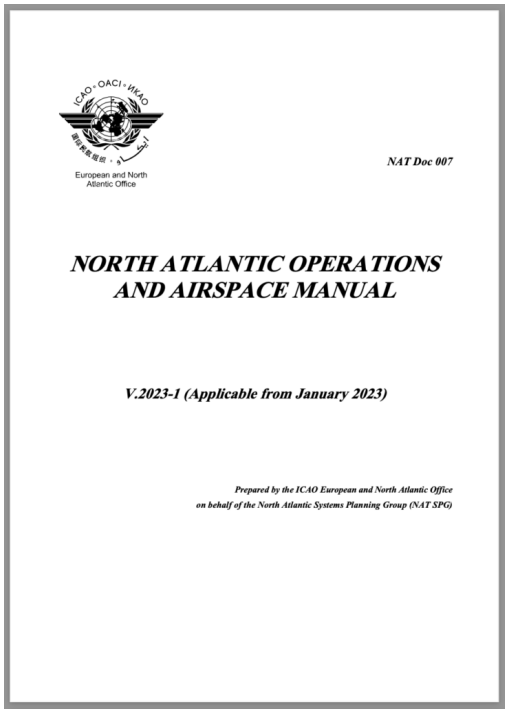
NAT Doc 007 Changes 2023

OPSGROUP Team
25 January, 2023

We knew it would happen! We predicted it would happen! And now it has happened! The annual late Christmas present from ICAO that always seems to get lost in the post and then turns up in January – **an updated version of the NAT Doc 007.**

NAT Doc 007 is the main go-to guidance doc for ops over the North Atlantic. All the specifics about how to operate your aircraft safely through the complex airspace of the region are here. **The updated version is valid from Jan 2023.** You can download it from ICAO at the source here, or click on the image below:



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The summary of changes by ICAO

They always post a little summary at the start, so here is a screenshot of it for you.

EXPLANATION OF CHANGES

Edition 2023-v1 - Content Modifications/Additions Incorporated

This modification includes:

- *Editorial and minor amendments throughout the document;*
- *Some hyperlinks were updated;*

Material changes:

- *Insertion of EFB, ETP, INF, OEP, OXP, RCL, RCP, RSP and UPR in in list of Abbreviations;*
- *Chapter 1: amendments/deletions in 1.1.2 Note, 1.1.3, 1.3.6 Notes 2, 3 and 4. 1.8.4 was updated with processing of requests for special operations in DLM airspace. Paragraph 1.8.5 was added with information on airspace excluded from the DLM;*
- *Chapter 2: 2.1.2 amended to reflect that NAT track levels are now FL340 to FL400. Deletion of text from 2.2.1 and 2.2.6. NAT track examples were updated:*
- *Chapter 3: figures of Northern routes and Tango routes were updated in 3.2.1. figures of NOTA, SOTA, BOTA and GOTA were updated in 3.3.5 – 3.3.12;*
- *Chapter 4: amendment to 4.1.3 regarding free route airspace operations. Amendment to 4.1.5 regarding routings. Amendment to 4.2.3 regarding planned Mach number and flight level. Amendment to 4.2.5 regarding EET;*
- *Chapter 5: amendment to section 5.5 regarding cruise climb and block of flight levels;*
- *Chapter 6: Figure 6-1 Reykjavik Control Direct Controller Pilot VHF Coverage was updated. Section 6.4 regarding when able higher reports was updated. Section 6.7 concerning contingency situations affection ATM provision in the NAT region was amended and moved to section 13.7; Section 6.8 regarding operation of transponders was merged with section 10.2. Section 6.9 regarding ACAS was moved to section 10.4;*
- *Chapter 8; most of this chapter was re-written;*
- *Chapter 10: insert new paragraph 10.1.3 regarding identification of ADS-B equipped aircraft. Section 10.2 regarding operation of SSR transponders was amended. Section 10.4 was moved from section 6.9. Section 10.5 was added depicting NAT HLA ATS surveillance and DCPC VHF coverage;*
- *Chapter 13: amendment to paragraph 13.5.1 regarding wake turbulence. insert new section 13.7 regarding loss or sudden withdrawal of air traffic control services in the NAT region;*
- *Chapter 14: deletion of text from 14.1.4 and 14.1.5 because the DVD "Track Wise – Targeting Risk within the Shanwick OCA" has been withdrawn;*
- *Chapter 16: Deletion of text from 16.3.1. adding reference to half degrees in 16.3.2. amendment to 16.3.8 regarding random routings. Amended flight planning guidance in 16.5.3 – 16.5.6. Deletion of text from 16.6.6 regarding EET. Amended text in 16.6.21 regarding MEL;*
- *Chapter 17: reference to charts in section 10.5 added in 17.11.2 due to deletion in Attachment 4, addition of communication channels when in difficulty in 17.14.3;*
- *Attachment 4: information on VHF coverage was deleted. Sample oceanic checklist was added;*
- *Attachment 8: information on NAT ATS surveillance coverage was moved to section 10.5 and subsequent attachments were re-numbered;*
- *Attachment 9: The checklist for dispatchers was updated.*
- *Attachment 10: Bibliography and reference list was updated.*

Hideous

The summary of changes by us

Hideous indeed. So here is a less hideous (but possibly less informative) summary of the changes we spotted as we scrolled through the 174 pages of Nat Doc 007 V.2023-1. We decided to go chapter by chapter so you can head on in and read the full info direct from the NAT Doc 007 itself if it interests you to.

Chapter 1: Operational Approval & Aircraft System Requirements for Flight in the NAT HLA

Something about Target Levels of Safety

This is probably of interest if you're a huge fan on the *"Where you all went wrong this year"* updates from the NAT HLA. They set the 'maxima' to 5×10-9 fatal accidents per flight hour, which I think means one in every 500 millionth or something.

OK, moving on.

Equipment related stuff

This is all stuff you probably know already, but they have updated and edited it so we figured we would recap on the important bits as well.

RVSM: Two handy links have been added in providing you info on **RVSM equipment requirements.**

This one from the FAA.

And this one from Skybrary

Along with a reminder that **because the NAT HLA is RVSM, you need to be RVSM approved** to fly in it.

Clocks: Make sure yours is accurate and synchronised to an 'acceptable' UTC time signal before heading off. A lot of aircraft have clocks that can only be updated on the ground so check before you fly.

LRNS: Do you fly an aircraft with only 1 LRNS (and it's a GPS)? Then its got to be approved in accordance with **FAA TSO-C129** or whatever the EASA equivalent is (it is ETSO-C129a).

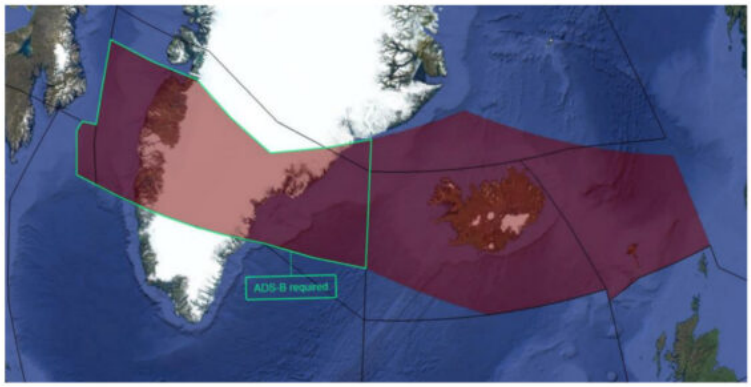
CPDLC: Don't have FANS 1/A "or equivalent"? *(we still aren't totally sure what "or equivalent" really means!)* Then you can still request to climb or descend through the NAT DLM airspace, and there are some exceptions for specific flights where you might even get let in –

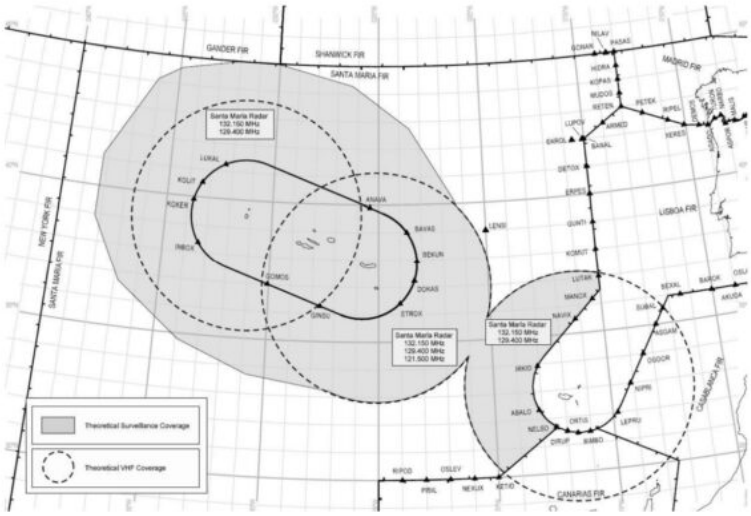
- Scientific research type flights (probably not any of you)
- If your equipment fails on you post take off then you might be ok, talk to ATC
- If you're in the NAT DLM and your equipment fails then you might be re-cleared (to move you out of the way of less dysfunctional folk), but they aim is to try and keep you on the plan you were already on

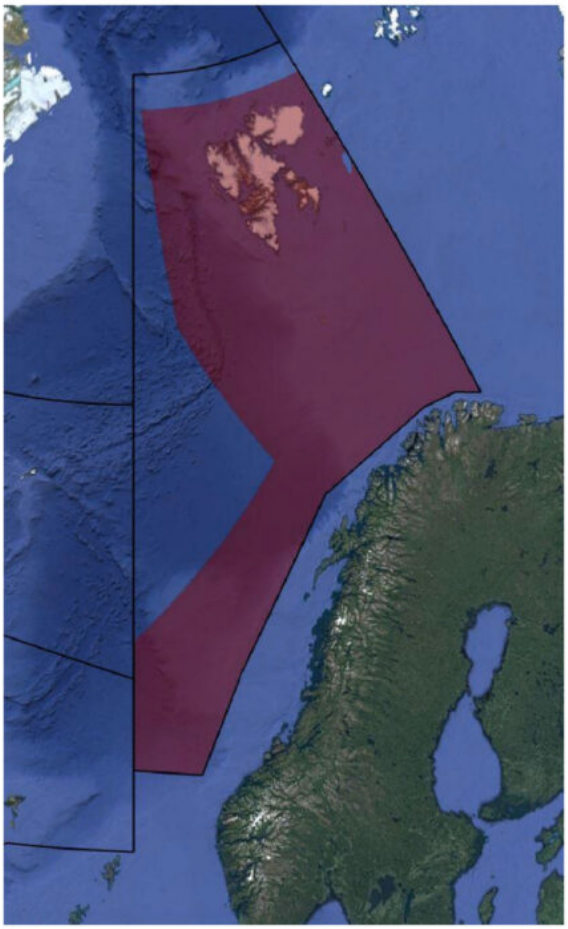
They have also clarified three specific areas where datalink is not required. This one has been bugging us for a long time with previous NAT Doc updates! Datalink exempt areas have always been these three:

1. *Airspace north of 80° North*
2. *New York Oceanic East flight information region (FIR);*
3. *Airspace where an ATS surveillance service is provided by means of radar, multilateration and/or ADS-B, coupled with VHF voice communications as depicted in State Aeronautical Information Publications (AIP), provided the aircraft is suitably equipped (transponder/ADSB extended squitter transmitter).*

We've never understood what number 3 means – until now. The new NAT Doc now specifically lists where these areas are: a chunk of airspace over Iceland/Greenland, one over the Azores, and another in Bodo. They have even provided some maps and coordinates too.







Datalink exempt areas (the others in the NAT are: airspace north of 80° North, and the NY Oceanic FIR).

Update 3 APR 2023: There have been some changes to the boundaries of the datalink exempt airspace in the northern bit of the North Atlantic. This used to extend down south to SAVRY, but now only goes as far as EMBOK. So now you need datalink in the NAT oceanic airspace over Greenland controlled by Gander. Check this post for more info.

Chapter 2: The OTS

More reminders on things you know rather than any major new stuff.

- If you want to fly on the half-spaced **PBCS Nat Tracks**, you need RNP 4 approval but also RCP240/RSP180 equipment (and a state approval). That's been the case for a while.
- You will also get messages saying **"SET MAX UPLINK DELAY VALUE TO 300 SEC"**. Do it.
- **Nat Tracks are now from FL340 to FL400** inclusive. (Remember, Nat Tracks at FL330 and below were removed back in March 2022).
- If there is a particularly strong westerly jetstream then Shanwick will post a **split westbound structure** which means you might see two adjacent landfall and exit points at the Eastern NAT boundary for the daytime eastbound flow to use.

Chapter 3: Routes, Route Structure, Transition areas

They have updated the maps and info on the bits adjacent to the NAT HLA (your NOTA, BOTA, SOTA and GOTAs).

Chapter 4: Flight Planning

Doc 7030 is the main reference for flight planning in the NAT (and state AIPs). There are little bitty edits here but nothing new.

Chapter 5: Oceanic Clearances

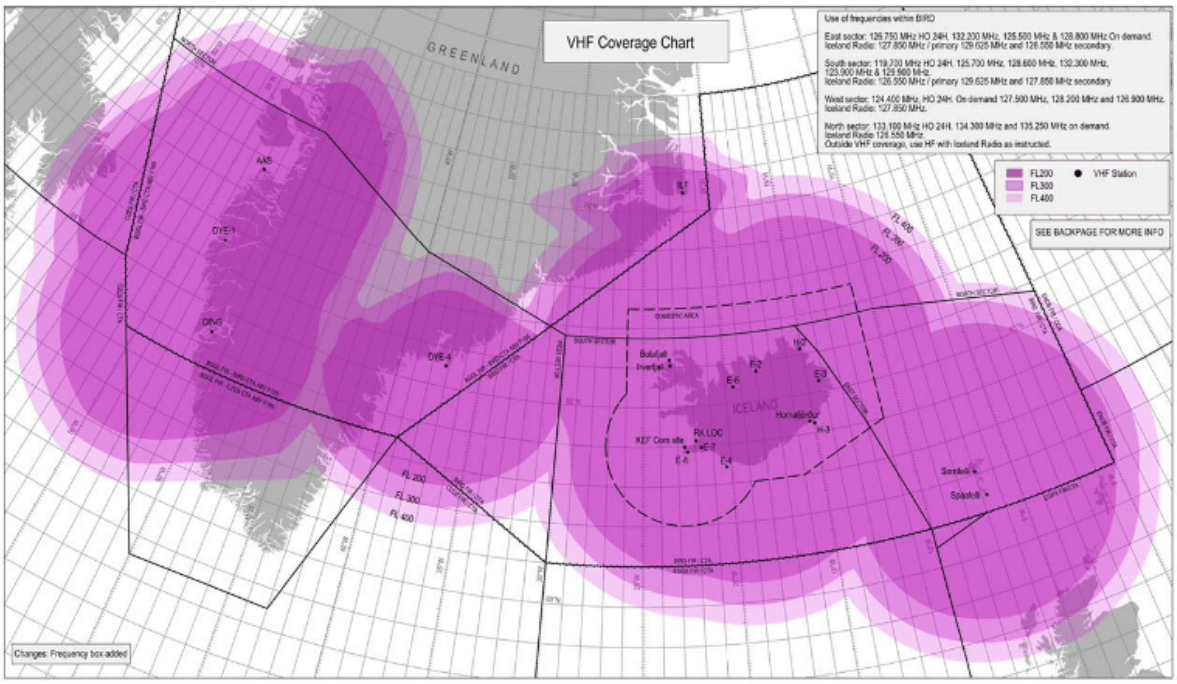
A cruise climb can be requested if you're fat and heavy and want to climb little more flexibly as your drop weight (burn fuel). ATC will do their best to accommodate this.

Chapter 6: Comms and Position Reporting Procedures

The "When Able Higher" report is no longer mandatory in the New York OCA. The only place it's still required is **when entering the Santa Maria OCA.**

There's also an update in this section about **where the VHF stations are.** Remember, when you're on VHF you might not be talking direct with an ATSU. You can request a direct patch-through on HF or GP/VHF if you need it (and are on Iceland Radio or Shanwick Radio).

They've updated the big pink blob map to show where you should be able to get VHF coverage. Here it is.



Big pink blob map.

INTERESTING SIDE-NOTE: *Now, DON'T PANIC, they haven't put this in the updated Doc, but we saw it in the 'proposed changes that might one day come in' document... You currently need 2 LRCS and one of them must be HF (generally). This isn't changing, but if you lose HF then you might (when they make the change) be able to enter so long as you have two other LRCS systems that are appropriate for the route. Exciting...*

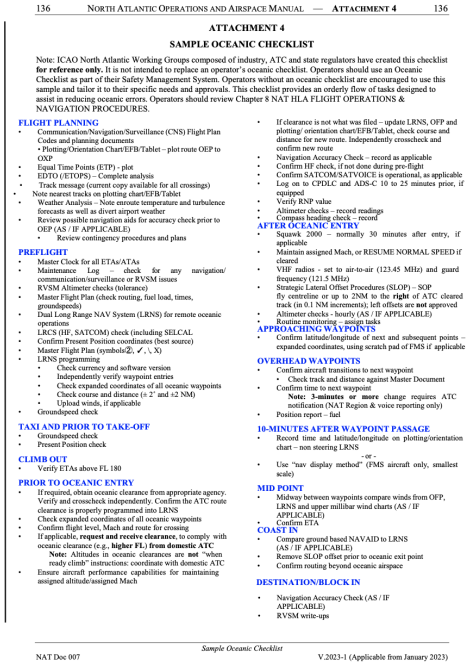
Chapter 7: Application of Mach Number Technique

Don’t get confused between RNP10 and RNAV 10. Not the same thing, but they can’t be bothered to correct everyone all the time on it so they’ve added a note saying this.

Also, don’t make Gross Navigation Errors. They ain’t good and will be investigated. Here’s the tip: if you’re on a random route, a single digit error in latitude could put you pretty darn near another aircraft so be careful!

Chapter 8: Flight Ops & Navigation Procedures

They have provided a very helpful Checklist. This chapter goes into full detail on it, and Attachment 4 has it nicely summarised.



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ATTACHMENT 4

SAMPLE OCEANIC CHECKLIST

Note: ICAO North Atlantic Working Groups composed of industry, ATC and state regulators have created this checklist **for reference only.** It is not intended to replace an operator’s oceanic checklist. Operators should use an Oceanic Checklist as part of their Safety Management System. Operators without an oceanic checklist are encouraged to use this sample and tailor it to their specific needs and approvals. This checklist provides an orderly flow of tasks designed to assist in reducing oceanic errors. Operators should review Chapter 8 NAT HLA FLIGHT OPERATIONS & NAVIGATION PROCEDURES.

FLIGHT PLANNING
- Communication/Navigation/Surveillance (CNS) Flight Plan Codes and planning documents
  - Plotting/Orientation Chart/EFB/Tablet – plot route OEP to OXP
- Equal Time Points (ETP) - plot
- EDTO (/ETOPS) – Complete analysis
- Track message (current copy available for all crossings)
- Note nearest tracks on plotting chart/EFB/Tablet
- Weather Analysis – Note enroute temperature and turbulence forecasts as well as divert airport weather
- Review possible navigation aids for accuracy check prior to OEP (AS / IF APPLICABLE)
  - Review contingency procedures and plans

PREFLIGHT
- Master Clock for all ETAs/ATAs
- Maintenance Log check for any navigation/ communication/surveillance or RVSM issues
- RVSM Altimeter checks (tolerance)
- Master Flight Plan (check routing, fuel load, times, groundspeeds)
- Dual Long Range NAV System (LRNS) for remote oceanic operations
- LRCS (HF, SATCOM) check (including SELCAL
- Confirm Present Position coordinates (best source)
- Master Flight Plan (symbols✈, ✓, \, X)
- LRNS programming
  - Check currency and software version
  - Independently verify waypoint entries
  - Check expanded coordinates of all oceanic waypoints
  - Check course and distance (± 2˚ and ±2 NM)
  - Upload winds, if applicable
- Groundspeed check

TAXI AND PRIOR TO TAKE-OFF
- Groundspeed check
- Present Position check

CLIMB OUT
- Verify ETAs above FL 180

PRIOR TO OCEANIC ENTRY
- If required, obtain oceanic clearance from appropriate agency. Verify and crosscheck independently. Confirm the ATC route clearance is properly programmed into LRNS
- Check expanded coordinates of all oceanic waypoints
- Confirm flight level, Mach and route for crossing
- If applicable, **request and receive clearance**, to comply with oceanic clearance (e.g., **higher FL**) **from domestic ATC**
  Note: Altitudes in oceanic clearances are **not** “when ready climb” instructions: coordinate with domestic ATC
- Ensure aircraft performance capabilities for maintaining assigned altitude/assigned Mach
- If clearance is not what was filed – update LRNS, OFP and plotting/ orientation chart/EFB/Tablet, check course and distance for new route. Independently crosscheck and confirm new route
- Navigation Accuracy Check – record as applicable
- Confirm HF check, if not done during pre-flight
- Confirm SATCOM/SATVOICE is operational, as applicable
- Log on to CPDLC and ADS-C 10 to 25 minutes prior, if equipped
- Verify RNP value
- Altimeter checks – record readings
- Compass heading check – record

AFTER OCEANIC ENTRY
- Squawk 2000 — normally 30 minutes after entry, if applicable
- Maintain assigned Mach, or RESUME NORMAL SPEED if cleared
- VHF radios - set to air-to-air (123.45 MHz) and guard frequency (121.5 MHz)
- Strategic Lateral Offset Procedures (SLOP) – SOP fly centreline or up to 2NM to the **right** of ATC cleared track (in 0.1 NM increments); left offsets are **not** approved
- Altimeter checks - hourly (AS / IF APPLICABLE)
- Routine monitoring – assign tasks

APPROACHING WAYPOINTS
- Confirm latitude/longitude of next and subsequent points – expanded coordinates, using scratch pad of FMS if applicable

OVERHEAD WAYPOINTS
- Confirm aircraft transitions to next waypoint
  - Check track and distance against Master Document
- Confirm time to next waypoint
  Note: 3-minutes or more change requires ATC notification (NAT Region & voice reporting only)
- Position report – fuel

10-MINUTES AFTER WAYPOINT PASSAGE
- Record time and latitude/longitude on plotting/orientation chart – non steering LRNS
  – or –
- Use “nav display method” (FMS aircraft only, smallest scale)

MID POINT
- Midway between waypoints compare winds from OFP, LRNS and upper millibar wind charts (AS / IF APPLICABLE)
- Confirm ETA

COAST IN
- Compare ground based NAVAID to LRNS (AS / IF APPLICABLE)
- Remove SLOP offset prior to oceanic exit point
- Confirm routing beyond oceanic airspace

DESTINATION/BLOCK IN
- Navigation Accuracy Check (AS / IF APPLICABLE)
- RVSM write-ups

Sample Oceanic Checklist

NAT Doc 007 V.2023-1 (Applicable from January 2023)

Sample Checklist. Click to download PDF.

Chapter 9: RVSM

FAA AC 91-85 has all your info on state approvals.

Chapter 10: ATS Surveillance Services

This is the ATS Surveillance Services chapter. They’ve updated the guidance on your squawking.

When you’ve been in the NAT HLA for 30 minutes you should **set your squawk to 2000** (the domestic controller on the other side might not want you to use the same one). **But there are some exceptions this:**

- While in the Reykjavik ACC stick with your assigned code because you’re in radar control (in the south eastern part) and they don’t want you to change it until you’re told to.
- All eastbound flights routing Reykjavik – Shanwick – Scottish should squawk 2000 after 10

minutes.

- Routing on T9 squawk 2000 10 minutes after passing BEGAS (northbound) or LASNO (southbound).
- Routing on T290 squawk 2000 10 minutes after ADVAT or GELPO

ADS-B is only mandated on T9 and T290.

Chapter 11: Monitoring of Aircraft Systems & Flight Crew Performance

This chapter has a nice list of **things to report/things ATC will report:**

- Erosions of longitudinal separation between aircraft, within the NAT HLA, of 3 minutes or more (so if you find yourself getting to close).
- Anytime you have to do something to prevent a GNE.
- Lateral deviations from cleared route of less than 25 NM.
- Discrepancies of 3 minutes or more between an ETA/ATA at a waypoint.
- Occasions when an operator is suspected of not being in possession of an NAT HLA/RVSM approval.
- Diversions or turnbacks, noting in particular whether the appropriate published contingency procedure was correctly adopted.
- ACAS RAs.
- Wake turbulence reports.
- Incorrect application of the SLOP (e.g. a left offset).

Chapter 12: Procedures in Event of Navigation System Degradation or Failure

No noteworthy newness (none that we could find, at least).

Chapter 13: Special Procedures for In-flight Contingencies

This covers all your **loss or sudden withdrawal of ATC services.** So it is basically a mini summary of Doc 006 and also covers the *'What to do it?'* situations.

They have also updated the contact info for SATVOICE. So here you go –

Oceanic Centre	Telephone Number	SATVOICE Short Code
New York	+1 631 468 1413	436623
Gander	+1 709 651 5207	431613
Reykjavik, via Iceland Radio	+354 568 4600	425105
Bodø	+47 755 42900	425702
Ballygirreen (Shanwick Radio)	+353 61 368241 Ground/Air Ops	425002
Santa Maria	+351 296 820 438 +351 296 886 042 (satellite link)	426305

Chapter 14: Guarding Against Common Errors

Updated to list recent ones.

Chapter 15: The Prevention of Lateral Deviations from Track

No newbies.

Chapter 16: Guidance for Dispatchers

There is some updated info on planning codes. Take a look.

Chapter 17: Flight Operations below the NAT HLA

So this stuff all applies for flights FL280 and below. Actually an interesting read! There aren't any massive changes here though. Mainly these one:

- Reminder the SLOP should be **right of track.**
- They re-iterate that they still haven't managed to get a decent map of **VHF coverage** of the North Atlantic. If we want one, we should go scratching around in State AIPs *(where we still won't find any – we've looked)*.
- If you're in trouble, you don't just have VHF 121.5 to turn to. Also try 123.450, SATVOICE, or "any other communication device you may have".

End of the Doc: All the attachments

Mostly forms and stuff, but **Attachment 4** is that handy sample checklist we mentioned and **Attachment 9** is an equally handy checklist for dispatchers covering equipment and what have you.

Phew, done!

Another year, another NAT Doc. Well, let's hope so – they do sometimes release a sneaky Version 2 update some time around July/August. But for now, we can relax.

Did you spot any big updates in this new NAT Doc? Haven't read it yet and don't want to scroll to the top of the page to find the link again? No worries, just click here. If you do spot anything significant that we missed, please let us know! You can email us at news@ops.group