

# Rocket Debris in Bodø

OPSGROUP Team  
11 November, 2021



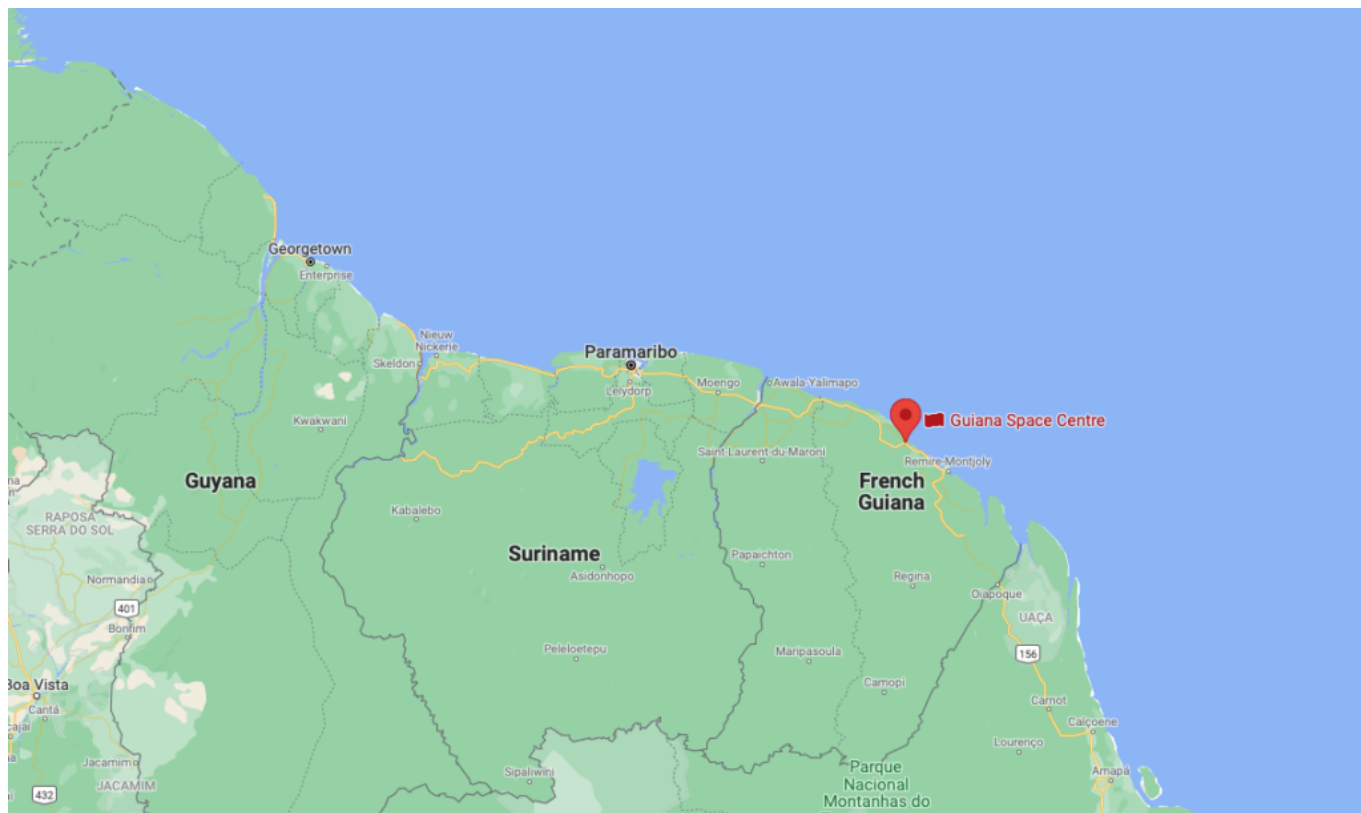
On November 16 the Arianespace Vega rocket, otherwise known as VV20, will be launched from French Guiana.

The rocket will carry some Ceres satellites for the French military into space.

## **Will the launch affect aviation?**

The Guiana Space Centre, also known as Europe Spaceport is a French (and rest of Europe) launch site.

It is here –



To give some worldwide context.

So if you are flying into **SOCA/Cayenne** or **SMJO/Paramaribo** airports (or any of the smaller domestic ones around there) on that day you might want to watch out for some **prohibited airspace around the Space Center**.

You can read more about the space centre, and this upcoming mission, on the Space Center website, and if you are in the area go check it out or even watch the launch.

But in general, the actual going-up-of-the-rocket is not the issue. It is the bits that come down again that are.

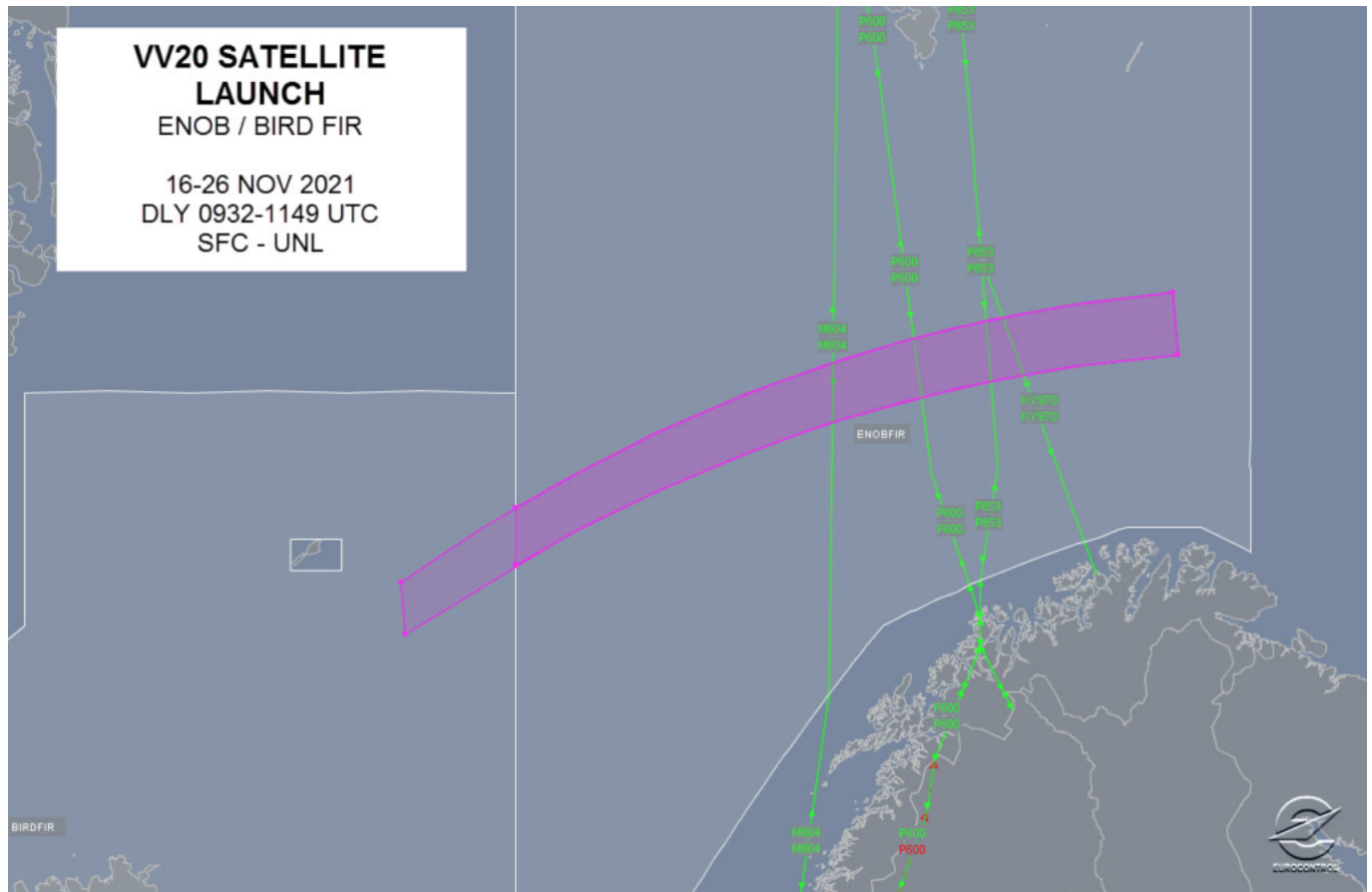
### Where are the bits going to come down?

The launch has a **northbound trajectory** and as the third stage detaches, debris from this is expected to fall somewhere in the **ENOB/Bodø or the BIRD/Reykjavik Oceanic FIRs** – both of which are of course part of the **North Atlantic region** where a fair amount of of traffic often tends to be.

The latitude is from around **70°50N to 74°10N** so is unlikely to impact the NAT HLA organised track system, but **may impact some random route or polar flights**.

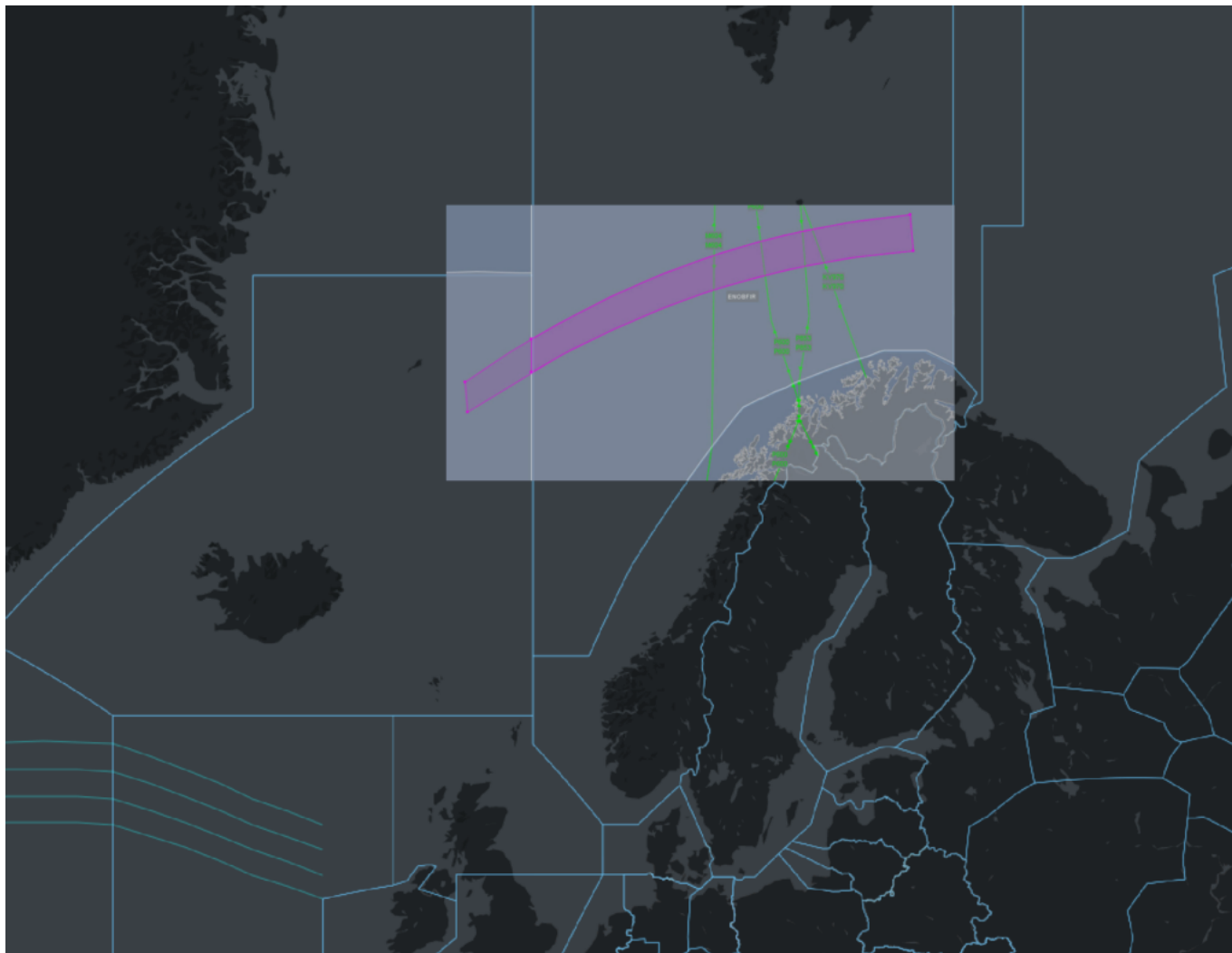
So there will be a restricted bit of airspace, and by restricted we mean traffic **totally forbidden**.

Here is a picture of it –



Eurocontrol's map.

And to put that into better context, here it is superimposed on a larger area of map.



Eurocontrol's map on top of another map.

### When will it happen?

The **primary launch window is on November 16**, which means debris could be expected between the **very specific times of 09:32 - 11:49 UTC**. If this doesn't go ahead for whatever reason then the **secondary launch window is on November 26**, with debris fall hazards between the same times again.

The timings of the airspace restriction will be confirmed in Notam via the Norwegian NOTAM office. For now, **ENOB Notam A4648/21 has the info**.

A4648/21 - TEMPO DANGER AREA 'ZC/VV20-Z9 FALLING AREA' ACTIVATED WITHIN LIMITS OF BODOE OCEANIC (ENOB) FIR. FALLING AREA FOR SCIENTIFIC ROCKET FROM FRENCH GUIANA SPACE CENTER. DANGEROUS ZONE BOUNDARIES ARE PSN 713431N 0000000E - 741000N 0265100E - 732700N 0270400E - 705000N 0000000E - (713431N 0000000E). GND - UNL, DAILY 0932-1149, 16 NOV 09:32 2021 UNTIL 26 NOV 11:49 2021. CREATED: 08 NOV 11:21 2021

### What is the overall operational impact likely to be?

**It is likely to be low.** It is a short window and a narrow area of airspace that is expected to be impacted, but caution should be applied if you are operating in that region during those times.

**Fancy reading some more on space stuff?**

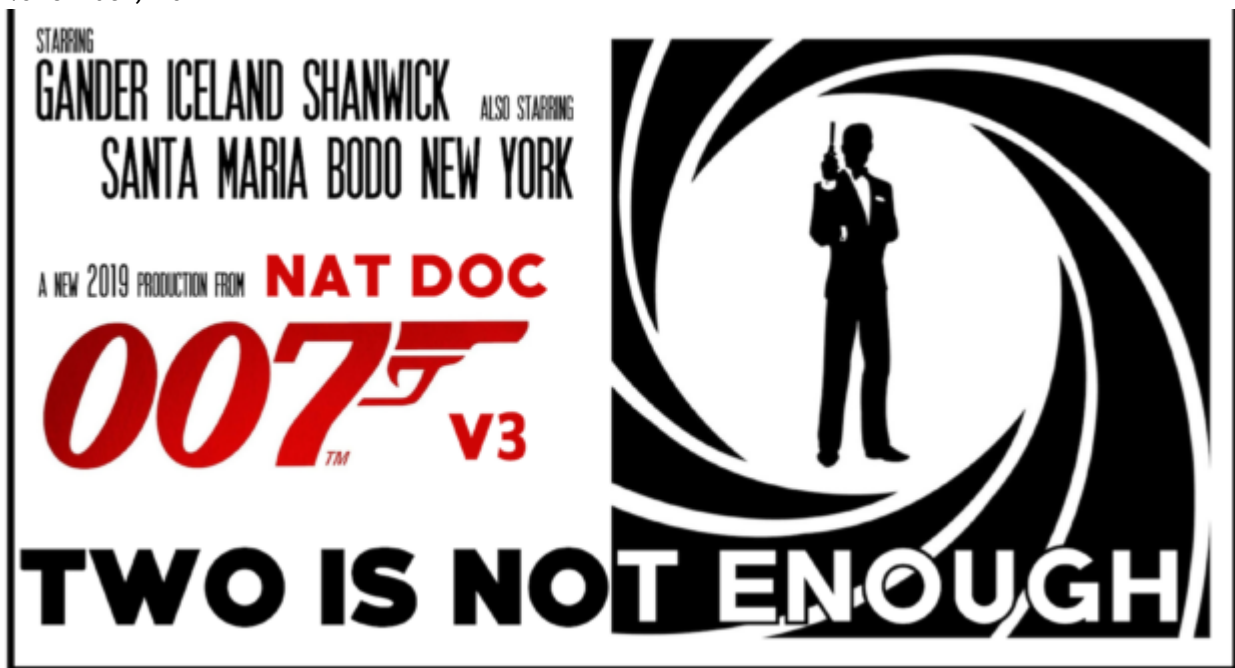
Here's an article we wrote before looking at the impact of space travel on ground based aviation.

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## **Two is Not Enough: New NAT Doc 007 (Version 3) - August 2019**

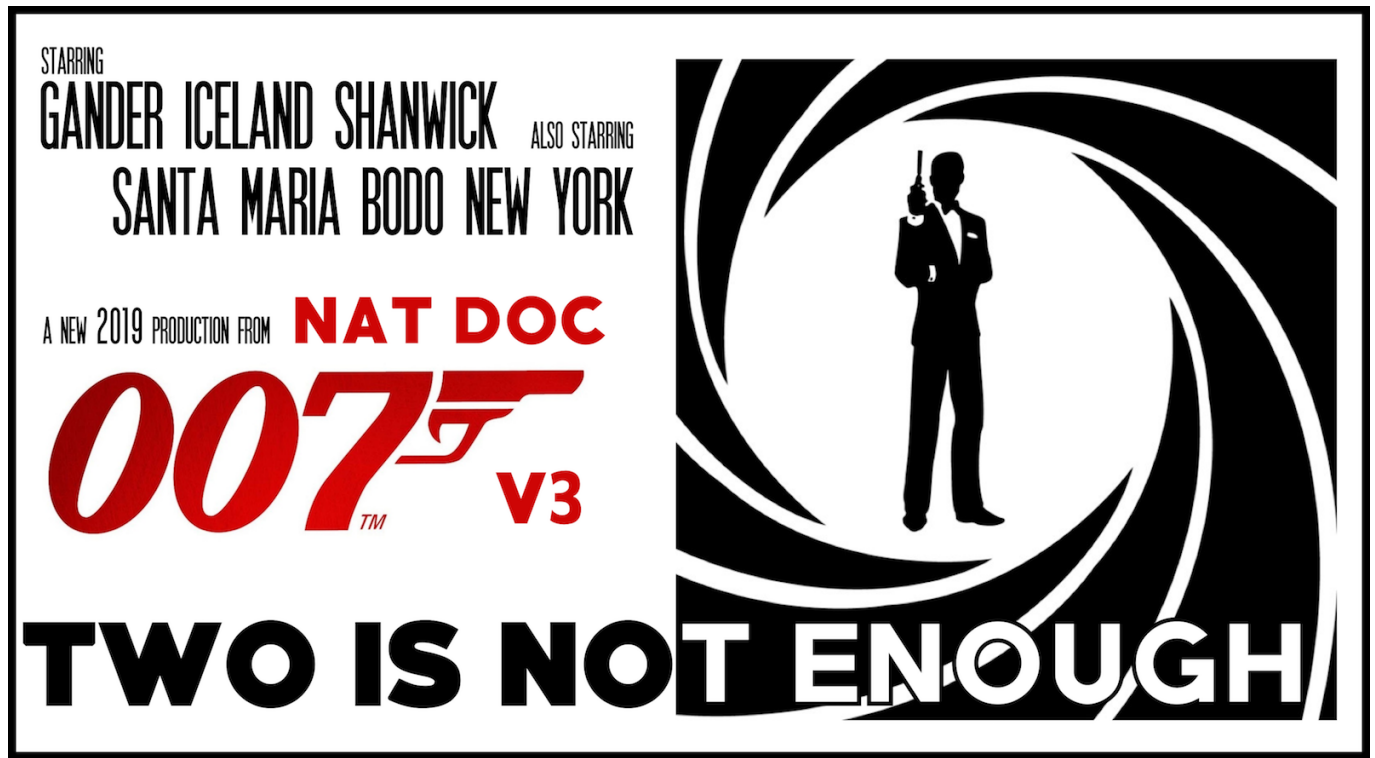
Mark Zee

11 November, 2021



NAT Doc 007 is the Bible of the North Atlantic. It's full of NAT goodness – all the specifics about how to operate your aircraft safely through the complex airspace of the region is here.

**And there's another new edition!**

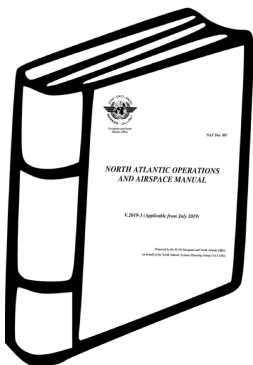


The NAT changes over the last few years have been coming thicker and faster than the sandwiches at Katz's Deli on the Lower East Side. And now, there's more. **Effective August 7th, 2019, NAT Doc 007, Version 3**, is the latest tome to digest. As aviation documents go, it's written in pretty digestible language. There's just a lot in it. But this is the first time we've had 3 editions of this in one year.

So, we're going to start naming them after 007 Movies to keep track of them all. This is the **"Two is Not Enough"** edition.

#### **NAT Doc 007, Version 3, 2019:**

Download the full NAT Doc 007.



**So, here are the three things that have changed this time:**

- 1. We got new SLOP rules!** This is a biggie. Instead of the three previous choices (0, 1, or 2nm), we now have **Twenty One choices!** More on this below.
- 2. 99 problems and Datalink is one.** The short version: check that you've got the latest software update for your datalink.
- 3. The next datalink mandate (2C) is capped at FL410.** This comes in January 30th next year. And so, the Checklist for Dispatchers is updated.

## The new SLOP rules

Now, let's take a closer look at the big change – SLOP (Strategic Lateral Offset Procedure). To get up to speed, check out our full article on SLOP – the how, and why (and where).

The change here is that instead of just being able to SLOP 1 or 2 nm right of track, (or fly the centreline), you go from these three choices to twenty one – you can use any one of 21 **Micro-SLOP** offsets. Specifically: 0.0 nm, 0.1 nm, 0.2 nm .... OK, you get it. All the way up to 2.0 nm Right of track.

### Simple, right?

Not quite. It's not yet fully clear which of the OCA's have given the green light for this, even though NAT Doc 007 now says you **should** Micro-SLOP if you can.

But, phoning around the Oceanic Houses, we've got this to tell you:

1. **Gander** – you can micro-SLOP right now! An AIP amendment will follow soon.
2. **Shanwick** – you can micro-SLOP right now! A Notam will be published soon, and the AIP will be updated in Dec 2019.
3. **New York** – they will allow micro-SLOP from 12th Sept 2019, and will update the AIP in Jan 2020.
4. **Santa Maria** – you can micro-SLOP right now! Nothing published officially yet, but that's what the good people from the oceanic control centre have told us.
5. **Iceland** – just like New York, they will allow micro-SLOP here from 12th Sept 2019 as well. When that happens, you will still not be allowed to SLOP below FL285 within the Reykjavik CTA (that's the domestic part over Iceland, and the airspace over Greenland above FL195). We asked them to publish a Notam about this – and they actually did!! Check it out!
6. **Bodo** – Nothing official yet, but ATC say they “have no objections” to operators micro-SLOPing right now. (Currently, SLOP is only allowed here above FL285 within the OCA.)

That's the current picture as of 1100z on Monday 19th Aug.

We will **update** this as soon as we get more info. Got something for us? Email us!

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## My first North Atlantic Flight is tomorrow - NAT Ops Guide (Updated 2018)

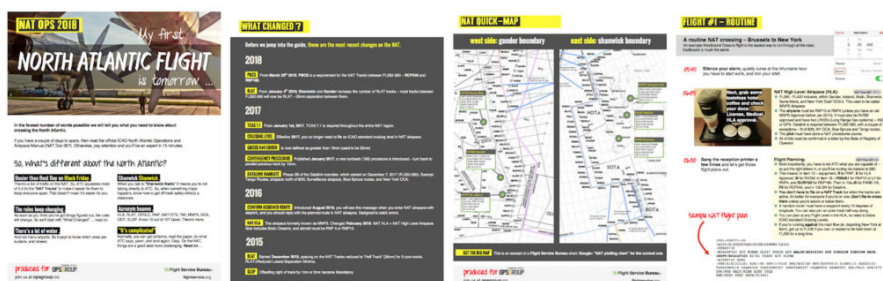
Declan Selleck  
11 November, 2021





For the **latest changes and updates on the North Atlantic**, including our most recent **Guides and Charts**, use our NAT reference page at **[flightservicebureau.org/NAT](http://flightservicebureau.org/NAT)**.

Of all the hundreds of questions we see in OPSGROUP, one region stands out as the most asked about – the NAT/North Atlantic. So, we made one of our legendary guides, to get everything into one PDF. It's called "My first North Atlantic Flight is tomorrow" – **and now we've updated it for 2018!**



Contents:

- 1. What's different about the NAT?
- 2. Changes in 2018, 2017, 2016, 2015
- 3. NAT Quick Map – Gander boundary, Shanwick boundary
- 4. Routine Flight Example #1 – Brussels to JFK (up at 5.45am)

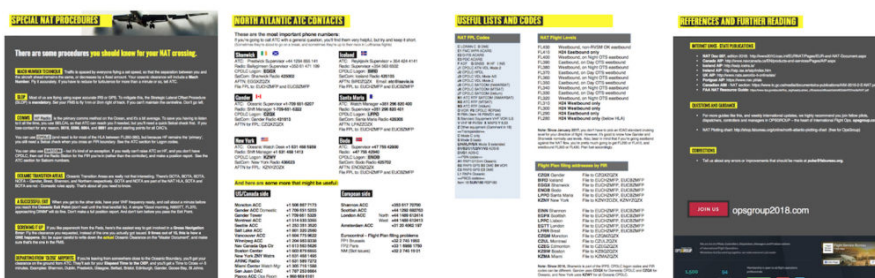




- **5. Non Routine-Flights:** No RVSM, No RNP4, No HF, 1 LRNS, No HLA, No ETOPS, No TCAS, No Datalink - what you can do and where you can go
- **6. Diversion Airports guide:** Narsarsuaq, Sondy, Kef, Glasgow, Dublin, Shannon, Lajes, Fro Bay, Goose Bay, Gander, St. Johns
- **7. Airport data**
- **8. Overflight permits** - routine and special



- **9. Special NAT procedures:** Mach number technique, SLOP, Comms, Oceanic Transition Areas, A successful exit, Screwing it up, Departing from Close Airports
- **10. North Atlantic ATC contacts** for Shanwick, Gander, Iceland, Bodo, Santa Maria, New York - ATC Phone, Radio Station Phone, AFTN, Satcom, CPDLC Logon codes; and adjoining Domestic ATC units - US, Canada, Europe.
- **11. NAT FPL Codes**
- **12. NAT Flight Levels**
- **13. Flight Plan Filing** Addresses by FIR
- **14. Links, Questions, Guidance**



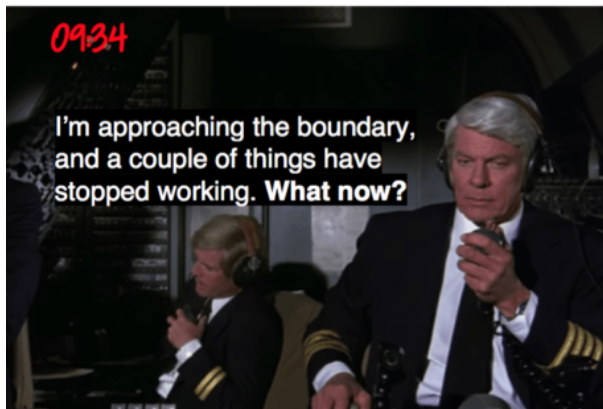
## Excerpt from the Routine Flight #1:



### Oceanic Clearance

NAT Doc 007, 4.1

- ⦿ You need a specific clearance to enter Oceanic Airspace.
- ⦿ Request it about 60 mins before entering, on CPDLC, VHF, or HF.
- ⦿ When you get your clearance, **don't be a chump** and climb to your ocean level *without* a clearance from Domestic ATC. This happens pretty often, and will make you immediately unpopular. Your Oceanic Clearance is valid from the Oceanic Entry Point (OEP) only.



### Equipment Failure before the boundary

NAT Doc 007, 6.6

- ⦿ **HF fail:** Oceanic Clearance received – **fly the clearance**. Tell Domestic ATC. Use Satcom Voice, CPDLC, or VHF relay with other aircraft. **Don't revert to the filed flight plan.**
- ⦿ **HF fail:** No Oceanic Clearance received, and no contact with Domestic ATC: You should enter the OCA **at the FPL requested Oceanic level and speed** but **not** execute any subsequent step climbs in the Flight Plan.
- ⦿ **Datalink – affecting CPDLC or ADS-C.** Tell ATC. They will try to accommodate you within the Datalink mandated area (FL350-390), but you may be rerouted.
- ⦿ **One LRNS failure** (of two) – request a reclearance below or above NAT HLA, or land and get it fixed.



### Entering the Ocean

NAT Doc 007, 4.1

- ⦿ Say goodbye to the radar controller, you're on your own now.
- ⦿ Select an offset for **SLOP** – 1nm or 2nm right of track, your call.
- ⦿ Logon to **EGGX**, and call Sharwick on HF for a radio check.
- ⦿ Expect a "Confirm Assigned Route" message on CPDLC.
- ⦿ Check next waypoint is correct, and that you're going there.
- ⦿ Set 123.45 for turbulence complaints + baseball scores, and 121.5.
- ⦿ **Squawk 2000**, 30 minutes after passing the OEP.

If you do have to make a voice position report, then do it like this:  
**Position, Swissair 100, RESNO at 1235, Flight Level 330,**  
**Estimating 56 North 020 West at 1310, 56 North 030 West Next.**



### Going around Weather

NAT Doc 007, 13.4

- ⦿ Unless you've spotted the CB late, request a deviation from ATC. Otherwise, follow the **contingency deviation procedure**:
- ⦿ Turn away from the tracks, turn on your lights
- ⦿ Call on 121.5 and 123.45 to tell others
- ⦿ If deviating >10nm, if **north of track** descend 300 feet; if **south of track** climb 300 feet, but only once you are 10nm off track.
- ⦿ Once clear, and back within 10nm of track, return to level.

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## Oceanic Errors

Declan Selleck  
11 November, 2021



Unfortunately, we don't fly with three in the cockpit anymore – or even four. The navigators job falls squarely onto the front two seats. Over one weekend in April there was one **Gross Navigation Error**, and two close calls reported on the North Atlantic.

### April 22nd (Friday)

*Democratic Republic of the Congo Boeing 727 100 (9QCDC/DRC001) from Santa Maria Island, Azores (LPAZ) to St. John's NL (CYYT)*

At 1235Z, Observed on radar to be over position 4720N 4745W, which was approximately **60 miles** north of the cleared route 45N 45W – 47N 50W. The crew reported correctly while in oceanic airspace. The flight was cleared direct to YYT and landed without incident at CYYT. There was no traffic, and no other impact to operations.

### April 24th (Sunday)

*Neos Airline Boeing 767-300 (INDDL/NOS730) from Ferno, Italy (LIMC) to Havana, Cuba (MUHA)*

Cleared via 49N030W 48N040W 45N050W. At 30W, the flight reported 48N040W 44N050W. The aircraft recleared to 45N050W prior to proceeding off course.

### Apr 25th (Monday)

*Transportes Aereos Portugueses Airbus A330-202 (CSTOO/TAP203) from Lisbon, Portugal (LPPT) to Newark, NJ (KEWR)*



Cleared 46N030W 46N040W 45N050W. The aircraft reported proceeding via 46N030W 46N040W 44N050W, as per the original flight plan. The aircraft was recleared via 45N050W prior to proceeding off course.

Did you notice how hard it was to find the error in the above two examples?

**Gross Navigation Errors** are a really interesting topic, and relevant not just on the North Atlantic but in any Oceanic or Remote airspace where ATC cannot monitor the aircraft tracking.

**What defines a GNE?** Normally, 25nm: That is, when on “own navigation” the aircraft departs the cleared route by more than 25nm. The NAT Central Monitoring Agency (CMA) now defines a Gross Navigation Error as 10nm instead of 25nm.

Annually, the biggest offenders in order of “market share” are: 1. Corporate/Private, 2. Military/State 3. Civil airlines.

### **How to Avoid a GNE?**

**(aka How to avoid a Nastygram from the Authorities):**

In general, when operating outside of ATC Radar coverage in any airspace:

- Crews: Don't have more than one paper copy of the Flight Plan in the cockpit. Mark the active one “Master Document”. Hide any other copies where you won't find them.
- Ops: If you send a new Flight Plan to the crew, tell them what the changes are – especially if you've filed a different route in Oceanic or Remote Airspace.
- **Fly the Clearance, not the Filed Plan.** This is the biggest gotcha. As soon as you reach the Oceanic Entry Point, or leave radar airspace – refer only to the most recent Clearance from ATC. The filed plan is a request only – sounds obvious, but most GNE's occur because the crew fly the filed plan although there was a reroute.
- **Be aware of the ‘ARINC424 problem’:** In the aircraft FMS, and map display, the current common waypoint format is 5230N for position 52N030W (as prescribed by ARINC 424). To show position 5230N030W – ARINC 424 offers a format N5230. The potential for confusion is clear. ICAO, in NAT Ops Bulletin 3/15, have recommended that operators use the format H5230, if a five-letter FMS format waypoint is required. In addition pilots are recommended to cross check any waypoints that don't have a ‘name’.
- Use a **plotting chart** – it's mandatory. You don't have to use ours, but use one.
- Use an **Oceanic/Remote Area Checklist** (sample link below).

### **And specifically on the Atlantic:**

- Read the advice on the Daily Track Message – waypoint cross check, Fly the Clearance (and be sure it is the clearance!)
- Know the weather deviation procedures: Even with the new “Half Tracks”, there are no changes to the in flight contingency procedures and weather deviation procedures as detailed in PANS ATM Doc444 Para15.2 & 15.2.3.

Here's some links and resources that we think are really useful:

- **Sample Oceanic Paperwork**
- **Oceanic Checklist**
- **Oceanic Plotting Chart**
- **ICAO: Gross Navigation Errors: NAT Ops Bulletin 02/2014**

For regular notices and content like the above, consider joining **OPSGROUP**.

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## Did you know MNPS is over? Meet HLA, the new North Atlantic Airspace.

Mark Zee

11 November, 2021



From Feb 4th, 2016, **MNPS** (Minimum Navigation Performance Specifications) Airspace is being dumped as a term (no loss, really), and replaced by the much more user friendly **NAT High Level Airspace or NAT HLA**. MNPS first came into being in 1977, and this change is significant in that the requirements for approval to enter the new NAT HLA are updated – you must now have RNP4, or RNP10. Also, the rest of the Atlantic welcomes Bodø Oceanic to the fray – it joins Shanwick, Gander, Reykjavik, New York, and Santa Maria to make up the new NAT HLA, which keep the original vertical profile of FL285-FL420.

In short, that's all you need to know. You should read our **International Ops Notice 01/16** for the full story.