Santa Maria HF – Unauthorised Transmissions

Chris Shieff
17 January, 2024

An OPSGROUP member recently reported they experienced **extended interference** on Santa Maria Radio (HF frequency 11309). They were unable to use it for nearly ten minutes due to a continuous broadcast in a foreign language.

This was reported directly to Nav Portugal, and the member was kind enough to share their response with the group. Here is what they had to say.

Unknown Broadcasts

The Radio Supervisor did report **significant voice interference** on the same day for a period of nearly twenty minutes. It didn't coincide with the time the member's aircraft was inside the Santa Maria FIR, but they were quick to point out this may mean it hadn't been reported yet.

In other words, this is likely not an isolated issue.

Nav Portugal advised that in the past twenty-four months, they've observed **increasing levels of interference** on the HF frequencies assigned by Santa Maria. These are often caused by voice transmissions, but have also included radar signals – essentially 'pinging.'

These have been confirmed to originate from Eastern Europe, and the Middle East.

There is no evidence the broadcasts are malicious

While they seem to emanate from regions of high political tension, there are no indications the broadcasts are an attempt to impede the communication of air traffic.

They are simply an inconvenience. Nevertheless, they are occurring in one of the largest FIRs on the planet serving hundreds of flights per day, a number of NAT tracks, and traffic in and out of the Azores.

So, it is important to know what to do if you encounter this on your next crossing.

I don't care, I have CPDLC

It's true that CPDLC services are available to all FANS 1/A equipped aircraft in the Santa Maria FIR (logon LPPO).

But look out for this chestnut, from Santa Maria themselves…

…attention is called to flight crew that the use of data link services do not exempt the requirement of establishing voice communications with Santa Maria Radio at or before the FIR Boundary, whether on HF or VHF, even if a CPDLC connection is established…

So HF interference begins to matter for everyone, when outside of VHF coverage.

Try the other line

Your next option is the ol' sat phone.

Santa Maria's contact information is listed in NAT Doc 003, but to save you some time, their Inmarsat short code is **426305**, and the direct dial for the supervisor is **+351 296 820 401**.

There are also alternative HF frequencies listed in the attached document. As a general rule, **lower frequencies work better at night, and higher during the day.**

Appendix B-5 - SANTA MARIA Radio Station Information

Station Name:	Santa Maria Radio
Country: Portugal	**State:** Santa Maria - Azores
City: Vila do Porto	**Geographic Location:** 36°58´21N025°09´54W
Transmitter site(s) location(s): Cabrestantes (36°59´44N025°10´14W)	**Receiver site(s) location(s):** Faneca (36°59´44N025°07´48W)

Frequencies

Family	Frequency bands								
	3 MHz	3.5 MHz	4.7 MHz	5.6 MHz	6.6 MHz	9 MHz	11.3 MHz	13.3 MHz	18 MHz
A	3016			5598		8906		13306	17946
E	2962				6628	8825	11309	13354	
H		3491			6667				

Contacts

AFTN Address: LPAZYSYX	**Aircraft in Flight Address:** LPAZZZZX
SATCOM short code number: 426305	
Station Manager	**On Duty Supervisor**
Post Address: **Name:** NAV PORTUGAL APARTADO 47 AEROPORTO SANTA MARIA 9580-909 VILA DO PORTO **Phone:** + 351 296 820 509 **Fax:** **Email:** **AFTN/SITA** **Address:** LPAZYFYA	**Post Address:** NAV PORTUGAL APARTADO 47 AEROPORTO SANTA MARIA 9580-909 VILA DO PORTO **Phone:** + 351 296 820 401 **Fax:** + 351 296 886 045 **Email:** smaradio@nav.pt **AFTN/SITA Address:** LPAZYSYX
Remarks: Santa Maria radio is collocated and is a department within Santa Maria OACC. Backup receiver site is also located in the vicinity of Santa Maria OACC.	

If ionospheric propagation floats your boat, we're not here to judge. You can read more about it here.

Phone a Friend

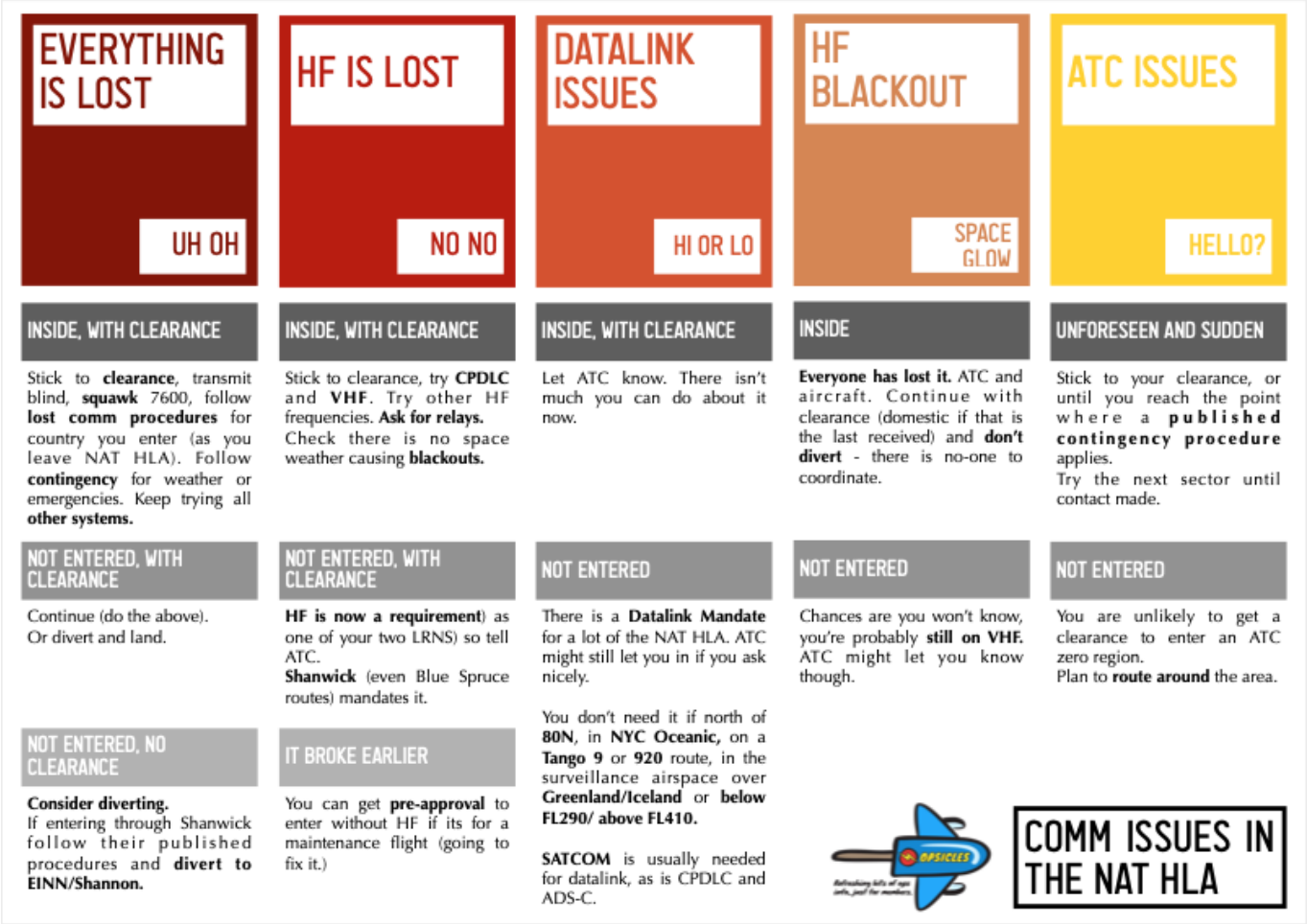
If you're not satvoice equipped, and you can't reach Santa Maria Radio directly – what then?

In the first instance, attempt to **raise a nearby aircraft on 121.5 or 123.45** who can relay your position report for you.

Or you can try and contact adjacent ATC oceanic sectors – namely Shanwick, Gander, New York Oceanic or Piarco. Nearby radar units may also be able to assist too – Lisboa, Canarias, Sal or Madrid Controls.

Failing that, you're into the **lost comms procedure.** You can find that here.

Here's a quick sheet the team previously put together...



OPSGROUP members: click to download PDF.

Keep Reporting

If you encounter HF frequency interference, it is important that you **report it.** The more detail the better – including the UTC time, position, altitude, duration and any other identifying details. It's likely you're not the only one who will encounter the problem.

We'd also love to hear from you too – you can reach us on team@ops.group

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We Need To Talk: Some Comms Hot-Spots to Look Out For

OPSGROUP Team
17 January, 2024

Communications in aviation are meant to be standard. **Everyone speaking the same language, in the same way.** Alas, alack, and unglücklicherweise, we all know **this ain't always the case**. Some areas have their own ways of doing things, others just seem to be difficult on purpose.

So here is a rundown of some of the places you might want to listen out for on your international adventures.

Er-can't hear you

If you are routing between the **Ankara FIR** and **Nicosia FIR** then you are going to need to look out for **Ercan Control**.

Ercan want to control an area over Northern Cyprus, but ICAO don't recognise their authority. So you'll probably have to **call each centre separately** as they don't like to talk to each other directly.

To make matters worse, you need to coordinate with Ankara and Nicosia **ten minutes before reaching their respective FIR boundaries**, which often means relaying via Ercan because Ankara can't hear you.

The waypoints to look out for are **TOMBI** (125.5) or **DOREN** or **VESAR** (126.3). **Call the next FIR 10 minutes before you reach these.**

Southbound is the messiest – make sure you **keep following the instructions from Ankara**, (or relayed by Ercan 126.7/ 126.9) until you reach these points. Once you do, there is a chance they will tell you you are now under Ercan control, which you should **politely acknowledge and then ignore.**

At this point, talk to Nicosia, **do what they instruct**, and once that's all sorted, then call Ercan as a courtesy to let them know what you're doing.

In Brief:

- **North** of TOMBI/DOREN/VESAR = **Ankara** controls you.
- **South** of TOMBI/DOREN/VESAR = **Nicosia** controls you.

You might have to relay info to Ankara via Ercan, and you might have to tell Ercan what you're doing in

Nicosia airspace, but remember – **Ercan don't have control!**

Asia old politics

This is just a plain old case of political rivals. Pakistan and India don't like talking to each other, which often means **they won't hand over to each other between their airspace.** So be sure to have the frequency ready – and a call to let the previous know that you're changing over at boundary is a good idea.

Pakistan Air Defence need to hear from you at least 15 minutes before you enter their airspace, and often ask for your ADC number.

There are different frequencies depending on where you're entering, but the main ones are Karachi 128.350 and Lahore 124.100.

A run in with Iran

Tehran are another strict **"call us first" airspace**, and they take it pretty seriously if you don't get in touch.

The Air Defence want a **10 minutes heads-up**. If you are departing out of a UAE airport, this probably means calling as soon as you pass 10,000ft.

ADIZ can be found on 127.900 and they're going to want to hear:

- Who you are
- Where you are going
- When you'll be reaching them
- What altitude you reckon you'll be at when you do
- Your squawk code

After relaying all this info to them you will probably get a cursory "call xxx", and that's that.

IFBPolite

Over some parts of Africa, there are more giraffes than there is radar coverage. **Big swathes of Africa have little control**, so you are going to need to do some **in-flight broadcasting** here.

It might sound like a chore, but numerous heavy and super jets route through here, and **not hitting their wake** is probably one the best reasons to work out where they are and when. (And if you're one of the big 'uns, then thinking of the little ones is a nice thing to do as well!)

Generally, one IFBP seems to wake everyone else up and triggers a bunch of others, and then you can get a good idea of where everyone is routing.

More info can be found in IATA's IFBP document, but here is a little **IFBP script** in case you need it:

Mumbai, Mumbai HF etiquette

The HF radio over Mumbai airspace is the bane of many a pilot's long-haul life. It often seems to defy all logic of night versus day frequencies, and is usually a trial and error situation to try and work out which one is working.

We found 10018 / 8879 / 5658 tend to have the best reception.

You will know when you do find the golden frequency, because you will hear the ear-aching scratchy hissing, overlaid with a dozen airplanes all calling at once and not listening out for each other.

So try to **avoid talking over another aircraft**, but be ready with your finger on the mic trigger for when a tiny pause occurs and you get your call in. The radio is rarely good at the best of times so **headsets are recommended.**

Mumbai also have CPDLC. The logon is VABF. But they only use it for specific routes. If you cannot get a hold of them, give their SATCOM a go on 441901 or 441920.

The lingo Down Under

Australia are like teenagers – **happy to text, but rarely do they actually want to talk to you.** Nearly all of the Upper Preferred Routes in Australian airspace use CPDLC. Which is actually great. But only if you've got it, and only if you get it right (you do need **RNP10** and **ADS-C/CPDLC** to route along these).

You can logon to YMMM/Melbourne or YBBB/Brisbane (15-45 minutes before) and when you enter, they like to receive a **position report**. From then on its very straightforward.

A593: The Akara Corridor

There's a bit of airspace off the coast from ZSPD/Shanghai known as the 'Akara Corridor', where **different ATC centres are responsible for the control of aircraft at various different crossing points.** South Korea (RKRR/Incheon) controls north-south flights here, while Japan (RJJJ/Fukuoka) controls east-west flights.

This area has always been unusual in that more than one center has had responsibility for controlling aircraft at different waypoints.

But on 11 Jan, 2021, ATC authorities in Japan, China and South Korea agreed to implement a proposal from ICAO regarding ATC management in this area – **so from 25 March, 2021, South Korea will control all flights in this area.**

Wild comms in Idlewild (JFK)

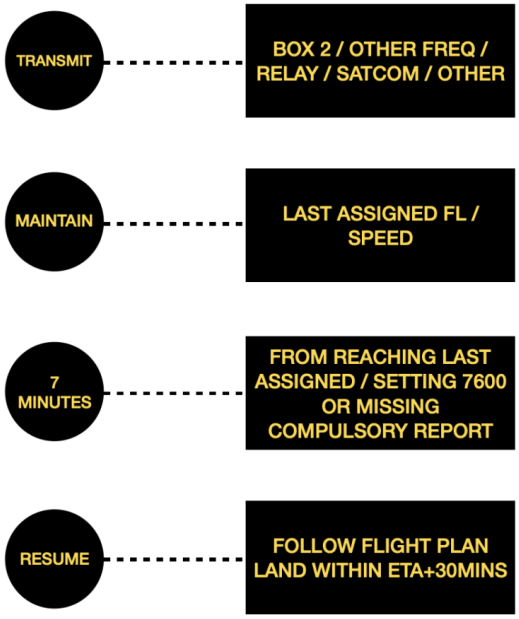
No briefing on 'The Comms Hot-Spots to Look Out For' would be complete without a mention of KJFK/New York controllers.

Granted, this is a busy airport, in busy airspace, but operating into JFK is not for the faint-hearted. **Controllers speak fast, only say what they need to say once, and get very mean very fast if you mess up.**

Expect multiple runway changes for landing, and on departure keep an eye on the ATIS because they won't always tell you if your departure runway changes, you'll just find out on the taxi.

There are quite specific when's and where's to call on the ground as well – once clear of the runway, check in with ground, but also apron to find out your gate and entry to the apron, because ground will probably want to know this, and sometimes the two don't seem to talk to each other.

Lost Comms



ICAO Doc 4444 contains the **standard lost comms procedure**. Some countries have their own versions too.

If you're in IMC:

- Maintain last assigned speed and level (or minimum flight altitude if higher) for 20 minutes after the point you failed to report at.
- Then follow your flight plan.

If you're in IMC and in an area with ATS surveillance:

- Maintain your last assigned clearance (minimum flight altitude if higher) for 7 minutes. The 7 minutes runs from when you first reach the last assigned altitude (because you lost your comms in the climb), from when you set 7600 (because you realised you'd lost comms while cruising), or from when you were unable to report at a compulsory point (you tried and it didn't work because your comms aren't working…)
- Then follow your flight plan.

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

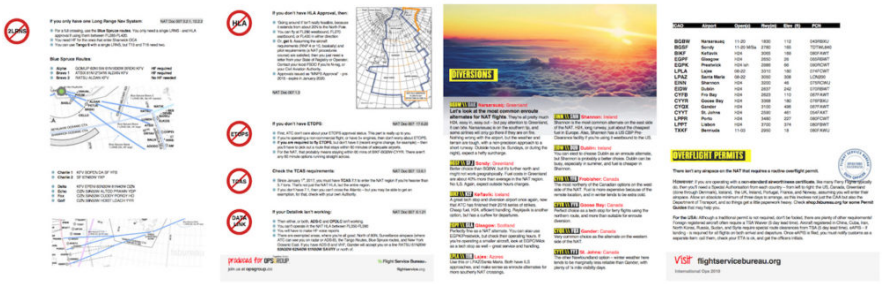
Declan Selleck
17 January, 2024

> 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**.

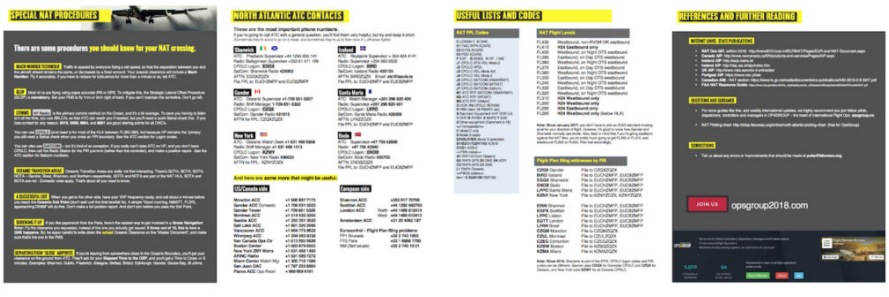
Of all the hundreds of questions we see in OPSGROUP, one region stands out as the most asked about – the NAT/North Atlantic. So, we made one of our legendary guides, to get everything into one PDF. It's called "My first North Atlantic Flight is tomorrow" – **and now we've updated it for 2018!**

Contents:

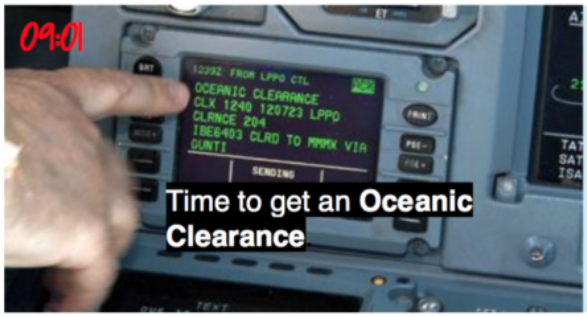
- 5. **Non Routine-Flights**: No RVSM, No RNP4, No HF, 1 LRNS, No HLA, No ETOPS, No TCAS, No Datalink – what you can do and where you can go
- 6. **Diversion Airports guide**: Narsarsuaq, Sondy, Kef, Glasgow, Dublin, Shannon, Lajes, Fro Bay, Goose Bay, Gander, St. Johns
- 7. **Airport data**
- 8. **Overflight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

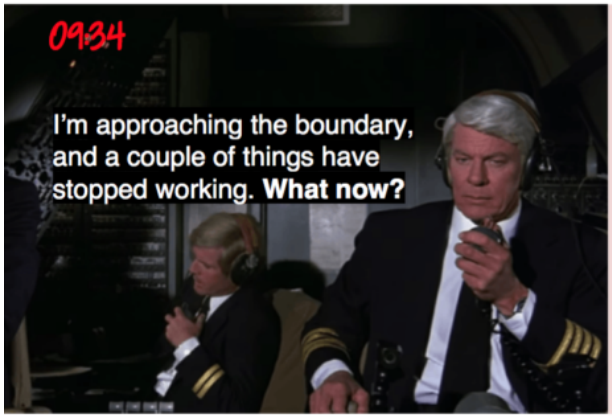


Excerpt from the Routine Flight #1:



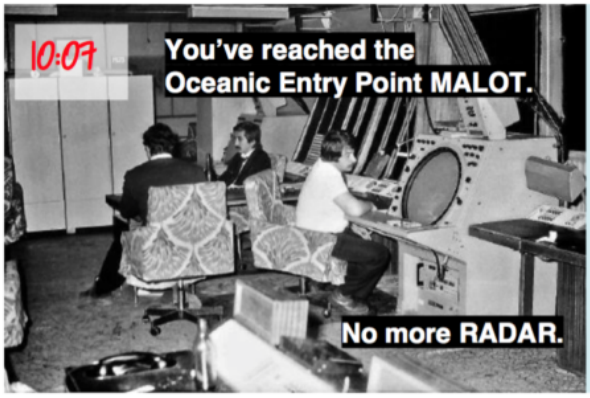
Oceanic Clearance NAT Doc 007, 4.1

- 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 Shanwick 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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