

NORTH ATLANTIC EUROPEAN ROUTEING SCHEME (NERS)**1. Introduction**

This paper outlines the basic procedures for NERS and is intended as a guideline for AOs, ANSPs, Operating Agencies and Computer Flight Plan Service Providers.

When applied, NERS are mandatory for Eastbound NAT OTS traffic, crossing W030°00 between the hours of **02.00-05.00 UTC**, to the specified system airports(s).

NERS routes are published in the CFMU RAD Annex NAT in two sections; 'Common Portion' and Non-Common Portion'

Daily NERS mandatory routing requirements shall be detailed in the Eastbound Organised Track Structure (OTS) message.

System Airports

The 12 system airports are:

EBBR	EDDM	EGLL	LIMC
EDDF	EGCC	EHAM	LIRF
EDDL	EGKK	LFPG	LSZH

| NERS IDENTIFIER

The NERS identifier shall only be used in the NAT OTS message, all other communications shall use the full ATS route/fix identifiers

NO MENTION shall be made **OF THE NERS IDENTIFIERS IN ANY RADIO COMMUNICATIONS**

NERS IDENTIFIER Characteristics

An example of the NERS identifier: **E1234**

The 'E' is used to identify the route as a NERS route and to differentiate it from a NARS (North American Routing System) route which commences with an 'N.'

The numbering e.g. **1234** is the route number. All Eastbound NERS have ODD numbers commencing with 101 and continuing to 999.

Exceptionally **Z1100**

The Z prefix identifies a NERS route which is normally not flight plannable due to RAD restrictions and is made available only in unusual circumstances

| Night Time Fuel Saving Routes (NTFSR)

In order to allow AOs to utilise more direct profiles and reduce fuel burn/emissions, NTFSRs have been established for use during night hours. The NTFSRs are promulgated as direct (DCT) routings from an Oceanic Landfall fix to specific fixes on the UK Eastern boundary for flights above FL285. For traffic via Shannon's airspace (including NOTA/SOTA) the traffic shall plan via a designated fix on the EI/EG boundary. NTFSRs are to be used in conjunction with the NERS and for ease of reference have been included in the NERS Eastbound Common Portion route table. When transiting from an Oceanic Landfall fix to the UK Eastern boundary fix between which an NTFSR exists, it is mandatory to file the NTFSR during the promulgated times of availability, as listed in the notes section of the Common Portion table. If no NTFSR exists between the chosen landfall/exit fix, a NERS route (for system airport destinations) or RAD compliant route (non-system airport) should be used.

NTFSRs can be used for destinations to both system and non-system airports with the exception of destinations EB**/EG**/EH**/LF**. Traffic to these destinations shall use either a NERS for a system airport or a RAD compliant route for a non-system airport.

The NERS numbering convention is used for the NTFSRs, however the NTFSRs are identified by the prefix "F" (e.g. **F0009**) to differentiate them from a NERS route. AOs should be aware that no "alternative route" relationship exists between similarly-numbered routes (e.g. **E0009 and F0009**).

Any additional NTFSR mandatory routing requirements shall be detailed in the Eastbound OTS message. Exceptionally, some NTFSRs may also be NOTAM'd unavailable due to danger area activity.

NERS Common Portion

The NERS Common Portion encompasses an area from 'Coastal Fixes' (which are either 'Oceanic Exit Points' (OEPs) or "Landfall Fixes" in UK, French and Irish airspace) to 'Inland Navigational Fixes' (INFs) which are normally on the UK Eastern/Southern UIR boundary and on a **longitudinal** line through France.

The NERS Common Portion contains a list of routes (normally RAD compliant) which shall be utilised for flight planning purposes at all times when operating to a 'System Airport.'

In UK airspace a number of routes contained within the Common Portion are unavailable for normal flight planning purposes (Non-RAD compliant or CDR) and may only be utilised when applied for specific ATFCM purposes and promulgated in the Eastbound OTS message.

NERS Non-Common Portion

The Non-Common Portion routes are promulgated for flight planning from the INF to System Airports. All routes contained within the Non-Common Portion are RAD compliant and are available for flight planning purposes at all times. The Non-Common Portion routes are optional, except when a NERS is mandated on the OTS message, then they become mandatory.

(INF)	(Non-Common routing)	(System Airport)
E.g. XAMAB	UL612 MILPA UM730 BEROK UL153 GRO	LIRF

2. NERS Flight Planning Requirements

When a NERS (or NTFSR) route identifier is published via the NAT Eastbound OTS message from a specified OEP to a NERS system airport, AOs will reference the CFMU RAD Annex NAT route tables for the NERS route identifier and corresponding flight plan routing. This route shall be filed via IFPS.

The NERS route identifier shall not be used by ATC or aircraft operating crew, with all clearances being standard route/fix descriptions.

AOs will use NERS in one of two ways:

When NERS are specified -

On the NAT Eastbound OTS message, NERS requirements will appear in the 'EUR RTS EAST' line entry relevant to an OEP and will list an applicable system airport together with NERS route identifiers. For example a line entry for OEP ATSIX with Frankfurt, Heathrow and Paris CDG inbounds being "NERS managed" would appear as follows: ATSIX.....EUR RTS EAST EDDF E127A EGLL E135A LFPG E137A. A sample signal is at Appendix 'A'.

When NERS are not specified -

If the daily NAT Eastbound OTS signal does not mandate any NERS routes for a system airport destination through the individual OEPs/Landfalls, or flights operate outside of the validity period as specified in Para 1, AOs shall then flight plan any suitable NER connected to the OEP except in the case of RANDOM traffic (see para. below). This ensures a strategic management arrangement is in place for flights destined to any of the twelve system airports at all times and naturally deconflicts core traffic flows.

Flight Planning to Non-System Airports

NERS are not mandatory for traffic inbound to Non-System airports.

Any flights planning to Non-System airports shall file a NTFSR when available, or RAD compliant route. The NERS Common Portion tables may be utilised as guidance for flight planning route portions from the Oceanic Landfall fix to the INF and the Non-Common Portions may also be utilised in a similar manner, breaking off at a suitable point to the destination.

NAT Traffic on Random Routes

Traffic on Random Routes across the NAT shall file a NTFSR where available, or a RAD compliant route in European Domestic airspace. If a NERS is mandated from an OEP, then random traffic entering European Domestic airspace via the specified OEP shall adhere to the appropriate NERS routing.

3. Air Navigation Service Provider (ANSP) Day-1 Procedures

In order to generate daily NERS requirements, key ANSPs are required to review available data and identify which system airport destinations will require specific NERS being assigned.

At 1330hrs UTC winter/1230hrs UTC summer each day, a tele-conference shall be convened between the duty pre-tactical planning staff of the UK and Shannon Flow Management Positions plus the Shanwick OACC, to discuss the NERS requirements for the following day, co-ordinated by CFMU Network Management Cell (NMC); Brest ACC and Maastricht UAC also have the option to join in when oceanic tracks may deliver significant traffic levels in their sectors.

Prior to the conference, Shanwick OACC shall obtain (from Gander) and fax a copy of the proposed OTS to those units which require it, in order for them to assess any daily NERS requirements for presentation at the tele-conference. UK FMP shall also obtain notification of any Danger Area activation which will affect the availability of the NTFSRs. Should a closure of any NTFSR be required, this shall be presented at the tele-conference. In addition, a NOTAM shall be issued by NATS advising of the closure. The CFMU shall be requested to make the affected route unavailable for flight planning purposes. The result of the conference shall be recorded in the respective FMPs, and the NMC will have the responsibility of ensuring that any NERS requirements are forwarded via Shanwick to Gander OACCs for entry into the Daily NAT Eastbound OTS signal to be published later that day.

If any unforeseen NERS requirements become apparent at the time of, or after the generation of the NAT Eastbound OTS signal, Shanwick shall advise the London FMP who will co-ordinate with adjacent units if necessary. ACCs should be aware of the impact this may have on AO flight planners, and such changes should be avoided wherever possible.

4. ANSP Day of Operation Procedures

a. Re-routeings – Oceanic to Domestic (to join the NERS Common Portion routes)

Through the normal course of operation, the relevant OACC may elect to switch aircraft between NAT tracks. In doing so, the relevant OEP for the flight will be amended and

therefore be subject to any NERS routing requirement associated with the new OEP. The ATC flight plan, through receipt of an ACH message from CFMU/IFPS will reflect the amended route to be flown and will be CFMU RAD Annex NAT compliant.

In both cases above, the domestic airspace routing across the NERS Common Portion, as passed by ATC on transfer from Shanwick, shall take this into account. *The table at Appendix B give examples of typical revision arrangements.*

In all cases, any re-routing information is to be passed using full ATS route/fix identifiers; NERS route identifiers shall not be used at any time in FPLs or radio communications.

b. Re-routings Within the NERS Common Portion

On transfer from Shanwick OACC control, all flights will be expected to continue as per their original flight planned route, or as amended by the relevant OACC, taking due account of the NERS routing requirements.

In the event that an aircraft subject to NERS requirements requests a re-route once inside the NERS Common Portion (i.e. within the Shannon, Scottish, London or Brest ACC areas of responsibility and under radar control), or the ACC itself is able to offer beneficial re-routes, the handling ACC should not approve such a re-route without prior consultation with those adjacent units expecting to handle the flight. Such co-ordination is only required when the re-route results in:

- i. a change of entry point into adjacent airspace resulting from tactical direct routing (e.g. an aircraft entering LACC airspace at LESLU in place of the planned entry via TIVLI, but re-joining the NERS Common Portion route at point LND)
- ii. a change of entry point into adjacent airspace which will also change the NERS Common Portion exit point (e.g. Shannon ACC re-routes an aircraft entering LACC airspace via SLANY which is planned to leave via XAMAB, to now enter via TIVLI to leave via ANNET. Shannon co-ordinates with both LACC and Brest ACC, if Brest agrees Shannon will inform LACC. Due to telephone connectivity, LACC will co-ordinate when required with adjacent ACCs on behalf of Shannon with the exception of Brest.
- iii. a change of entry point into adjacent airspace which may or may not change the NERS Common Portion exit point (e.g. Shannon ACC will not know if the Common Portion exit point will be changed. LACC will assess if additional co-ordination with neighbouring ACCs is required and carry it out on behalf of Shannon with the exception of Brest)

Failure to effect such co-ordination could cause imbalances in demand and sector throughput down route, thus negating any NERS principles and effects. *The Table at Appendix C gives examples of re-routing action for flights within the NERS Common Portion*

In all cases of co-ordinated re-routes, as well as passing any revised route clearance to an aircraft it is the responsibility of the handling ACC effecting a re-route to generate an ATC Flight plan Proposal (AFP) message to IFPS. This ensures that CFMU tactical systems and route charging mechanisms are updated accordingly (CFMU IFPS Handbook refers).

Tactical arrangements for re-routings within the NERS Common Portion can be established on a daily basis between the watch supervisory staff and FMPs of the relevant ACCs.

APPENDIX A

EXAMPLE NAT OTS EASTBOUND SIGNAL WITH NERS ADVISORIES HIGHLIGHTED

(NAT-1/2 TRACKS FLS 320/400 INCLUSIVE
FEB 17/0100Z TO FEB 17/0800Z
PART ONE OF TWO PARTS-
V CYMON DENDU 51/50 52/40 53/30 54/20 DOGAL BABAN
EAST LVLS 320 330 340 350 360 370 380 390 400
WEST LVLS NIL

EUR RTS EAST EGLL E377A LFPG E399A

NAR N95B N97B N99A-
W YQX KOBEV 50/50 51/40 52/30 53/20 MALOT BURAK
EAST LVLS 320 330 340 350 360 370 380 390 400
WEST LVLS NIL

EUR RTS EAST EGLL E415B

NAR N79B N83B N85A-
X VIXUN LOGSU 49/50 50/40 51/30 52/20 LIMRI DOLIP
EAST LVLS 320 330 340 350 360 370 380 390 400
WEST LVLS NIL

EUR RTS EAST NIL

NAR N63B N67B-
Y YYT NOVEP 48/50 49/40 50/30 51/20 DINIM GIPER
EAST LVLS 320 330 340 350 360 370 380 390 400
WEST LVLS NIL

EUR RTS EAST NIL

NAR N53B N59A
END OF PART ONE OF TWO PARTS)

(NAT-2/2 TRACKS FLS 320/400 INCLUSIVE
FEB 17/0100Z TO FEB 17/0800Z
PART TWO OF TWO PARTS-
Z COLOR RONPO 47/50 48/40 49/30 50/20 SOMAX KENUK
EAST LVLS 320 330 340 350 360 370 380 390 400
WEST LVLS NIL

EUR RTS EAST EDDL E493C EDDM E493C

NAR N43A N49A-

REMARKS:

1. TRACK MESSAGE IDENTIFICATION NUMBER IS 274 AND OPERATORS ARE REMINDED TO INCLUDE THE TRACK MESSAGE IDENTIFICATION NUMBER AS PART OF THE OCEANIC CLEARANCE READ BACK.
 2. CLEARANCE DELIVERY FREQUENCY ASSIGNMENTS FOR AIRCRAFT OPERATING FROM MOATT TO BOBTU INCLUSIVE:
MOATT TO SCROD 128.7
OYSTR TO CYMON 135.45
YQX TO VIXUN 135.05
YYT TO COLOR 128.45
BANCS TO BOBTU 119.42
3.80 PERCENT OF GROSS NAVIGATIONAL ERRORS RESULT FROM POOR COCKPIT PROCEDURES. ALWAYS CARRY OUT PROPER WAYPOINT CHECKS.
- END OF PART TWO OF TWO PARTS)

APPENDIX B

Re-Routes - Oceanic to Domestic (to join the NERS Common Portion routes)

Flight details	Original Track/OEP	Original NERS requirement	Amended Track/OEP	Amended NERS requirement
Flight 001 to LSZH	NAT 'Y' to GOMUP	Nil, though must route one of four available options as given RAD Annex NAT tables through the Common Portion from GINGA for LSZH traffic (via LAMSO, TOPPA LONAM or XAMAB in this case)	NAT 'Z' to PIKIL	OTS signal requires LSZH traffic through SOVED to route via XAMAB or TABOV
Flight 002 to EDDF	NAT 'X' to ERAKA	OTS signal requires EDDF traffic through ETSOM to route E0175 only (via TOPPA)	NAT 'Y' to GOMUP	OTS signal requires EDDF traffic through GINGA to route via LAMSO or TOPPA
Flight 003 to LFPG	NAT 'Z' to GOMUP	Nil, though must route as per RAD Annex NAT tables through Common Portion for LFPG traffic (via DPE)	NAT 'Y' to ERAKA	Nil, though must route as per RAD Annex NAT tables through Common Portion for LFPG traffic (via DPE)
Flight 004 to EBBR	NAT 'Y' to ERAKA	OTS signal requires EBBR traffic through ETSOM to route E0175 only (via TOPPA)	NAT 'Z' to GOMUP	Nil, though must route as per RAD Annex NAT tables through Common Portion for EBBR traffic (via LAMSO or TOPPA)

APPENDIX C

Re-routes within the NERS Common Portion

Flight details	OEP	Original NERS requirement/requested re-route	Handling ACC	Action
Flight 006 to LSZH	GOMUP	Routeing E0199 via TOPPA as per OTS signal, requests re-route via XAMAB	Scottish	Scottish ACC cannot accept the re-route; a/c continues on original route
Flight 007 to EDDF	ERAKA	Routeing E0175 via TOPPA as per OTS signal, Scottish ACC advise that a CDR into Maastricht UAC airspace has become available allowing exit via LONAM. Pilot accepts re-route	Scottish	Scottish ACC and Maastricht UAC co-ordinate change of route. Maastricht UAC advise they could offer LONAM alternative for all EDDF inbounds for the next hour
Flight 008 to LFPG	ETARI (NERS Coastal Fix MOGLO)	Routeing E1039 via NIBOG-BEL-DPE as per OTS signal, pilot request routeing via BAKUR-STU-DPE if possible	Shannon	Shannon ACC can accept this re-route in its own airspace, and request this on behalf of the pilot to London ACC who accepts also. NERS Common Portion exit of DPE remains unchanged, therefore no co-ordination necessary with Paris ACC.

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