

FLIGHT PLANNING IN THE NAT REGION

1. Introduction

This document outlines the requirements and procedures necessary for the correct filing of flight plans for flights operating in the North Atlantic Region. It includes examples of the more common errors which lead to a failure of automatic processing of these flight plans. Information is also provided on the availability of Flight Levels at various times.

This document is for guidance only and must be read in conjunction with the following publications, which detail the regulatory material relating to North Atlantic aircraft operations:

ICAO PANS/ATM (DOC 4444).

ICAO Regional Supplementary Procedures (DOC 7030/4).

North Atlantic MNPS Airspace Operations Manual.

UK CAP 694 – “The UK Flight Plan Guide”.

Relevant parts of State Aeronautical Information Publications (AIP) and Aeronautical Information Circulars (AIC).

2. General

2.1 General Principles

(a) USE BLOCK CAPITALS;

(b) Adhere to the prescribed formats and manner of specifying data;

(c) Insert all clock times and estimated elapsed times, in hours and minutes, as four figures, UTC, or as six digits if including the date;

(d) Shaded areas preceding Item 3 to be completed by ATS and COM services;

Fields 3 to 19 to be completed only as indicated below.

3. Instructions for the Completion of the Flight Plan Message

3.1 Message Envelope:

The Message Envelope is that part of the flight plan outside the open and close brackets. It should not contain any information other than the Annex 10 message header and optional extra addresses (for IFPS, see below). Any other information inserted into the message envelope will invalidate the entire message and prevent its correct processing.

Message addressing

Flight plans for flights operating to or from the IFPS zone in Europe should be filed with IFPS, not the individual NAT centres. However, with the exception of the Santa Maria FIR and Bodö FIR, the NAT region lies outside the IFPS zone. When submitting flight plans for trans-Atlantic flights to

IFPS, operators should therefore specify the relevant NAT centre(s) using the IFPS "extra address" feature. Note that flight plans for flights not entering the IFPS zone will not be accepted by IFPS and should therefore be sent directly to the relevant centre(s).

3.2 General Message Content

The letter "O" and the digit "0" are **not** interchangeable. Inappropriate use of these characters will prevent the correct processing of the flight plan.

The line length must not exceed 69 character columns. Lines exceeding the Annex 10 maximum of 69 columns are invariably broken at that position by intervening AFTN communication centres, without any regard for content, causing the creation of unintelligible fragments.

3.3 Field 3: Message Type

To be completed when the responsibility for originating flight plan messages has been delegated.

For filing of subsequent flight plans use either the "modification" (CHG) or "cancellation" (CNL) format as outlined in ICAO DOC 4444.

Common Error:

It is common for CNL messages to be received without a subsequent FPL message. This is equivalent to having received no flight plan at all. If an Airline Operator still intends to operate the flight, another FPL must be sent.

Also note that there is no guarantee messages are received in the same order they are transmitted. If a CNL (referring to a previous FPL) is sent and immediately followed by a new FPL it is quite possible that the FPL arrives first and is then immediately cancelled by the delayed CNL.

Creative use of time stamps does not help, it is the arrival sequence rather than the time stamp that determines how messages are processed. It is therefore recommended that a few minutes be allowed to elapse between the CNL and a subsequent FPL.

Another common error occurs when using CHG messages. Transmitting only those parts of a field that have changed is not acceptable because the new field will replace the entire contents of that field in the original message.

3.4 Field 7: Aircraft Identification (ACID)

One of the following ACIDs must be included:

- (a) The registration marking of the aircraft (e.g. EIAKO, 4XBCD, N2567GA)
- (b) The ICAO designator for the aircraft operating agency followed by the flight identification (e.g. KLM511, NGA213).
- (c) The call sign determined by the military authorities if this will be used to identify the aircraft during flight.

Common Errors:

The ACID must not exceed 7 characters. An ACID of more than 7 characters will invalidate the message. Furthermore it will be impossible to manually

correct the data as computer systems are only designed to handle the ICAO stipulated maximum of 7 digit aircraft identification strings.

The hyphen, often used in the graphical representation of aircraft registration, is also used as the field separator in all flight related ICAO messages and so **must not** be used in the flight plan ACID.

All-numeric ACIDs must be avoided. Even when the registration of a military flight is all numeric it is expected to be preceded by the operating agency descriptor assigned to the military operator in question.

3.5 **Field 8: Flight Rules and Type of Flight**

Flight Rules

Insert one of the following letters to denote the category of flight rules with which the pilot intends to comply:

I	if IFR;
V	if VFR;
Y	if IFR first
Z	if VFR first

Specify in item 15 the point(s) where the change of flight rules is planned.

Type of Flight

Insert one of the following letters to denote the type of flight:

S	if Scheduled Air Service;
N	if Non-scheduled Air Transport Operation;
G	if General Aviation;
M	if Military;
X	if the type of flight does not match any of the predefined categories.

Common Error:

It is imperative that the letter 'X' is used when the type of flight does not match any of the predefined categories. Failure to do so causes the message to fail processing.

3.6 **Field 9: Number and Type of Aircraft and Wake Turbulence category**

Number of Aircraft

Insert the number of aircraft *only when that number exceeds one*, using two digits (e.g. 03).

Type of Aircraft

Insert the appropriate designator as specified in ICAO DOC 8643 – “Aircraft Type Designators”,

OR

If no designator has been allocated insert *ZZZZ* and specify in Item 18 the type of aircraft, using the “TYP/...” sub-field and free text.

OR

In the case of flight plans covering more than one aircraft type, insert ZZZZ and specify in Item 18 the types of aircraft using the “TYP/...” sub-field with the format used in Item 9 (e.g. TYP/02F18 KC135).

Common Errors:

Including the number of aircraft as 1 or 01. ICAO DOCs clearly state that the number of aircraft shall only be specified when there are more than 1.

Inserting a space between the number and type of aircraft. The correct format is to specify the number and type as a single group, any intervening blanks will cause a syntax error.

Wake Turbulence Category

Insert an oblique stroke followed by one of the following letters to indicate the wake turbulence category of the aircraft:

H HEAVY, to indicate an aircraft type with a maximum certificated take-off weight of 136 000 kg (300 000 lb) or more;

M MEDIUM, to indicate an aircraft type with a maximum certificated take-off weight of less than 136 000 kg (300 000 lb) but more than 7 000 kg (15 500 lb);

L LIGHT, to indicate an aircraft type with a maximum certificated take-off weight of 7 000 kg (15 500 lb) or less.

3.7 Field 10: Equipment

Radio Communication, Navigation and Approach Equipment

Preceding the oblique stroke insert one or more of the following letters as appropriate:

N if no COM/NAV/Approach aid equipment for the route to be flown is carried, or if the equipment is unserviceable;

OR

S if the prescribed COM/NAV/Approach aid equipment for the route to be flown is carried and is serviceable;

AND/OR

D DME;

F ADF;

G GNSS;

H HF RTF;

I Inertial Navigation;

J Data Link (see note i);

K MLS;

L ILS;

O VOR;

R RNP type certification;

T TACAN;

- U UHF RTF;
- V VHF RTF;
- W RVSM certified;
- X MNPS certified;
- Y Radio with 8.33 kHz spacing;
- Z Other equipment carried (see note ii).

Notes:

The definition of “prescribed equipment” allowing the use of the letter “S” (“standard”) is the carriage of the equipment represented by the letters “V”, “F”, “O” and “L”.

If the letter “J” is used, specify the equipment carried in Item 18 with DAT/ followed by one or more of the following letters:

- H HF;
- M Mode S;
- S Satellite;
- V VHF.

If the letter “Z” is used, specify the other equipment carried in field 18, preceded by COM/ and/or NAV/ as appropriate.

If an aircraft is suitably equipped, the letters “W” and “X” must be included, even if the FPL is for a flight which does not penetrate RVSM and/or MNPS airspace.

SSR Equipment

Following the oblique stroke insert one of the following letters to describe the serviceable SSR equipment carried:

- N Nil;
- A Transponder – Mode A – 4096 Codes;
- C Transponder – Mode A – 4096 Codes and Mode C;
- I Transponder – Mode S with aircraft identification transmission but without pressure altitude transmission;
- P Transponder – Mode S with pressure altitude transmission but without aircraft identification transmission;
- S Transponder – Mode S with both aircraft identification and pressure altitude transmission;
- X Transponder – Mode S without pressure altitude transmission and without aircraft identification transmission.

Note:

Aircraft capable of establishing ADS contracts should indicate this by the use of the additional letter D, regardless of whether the capability represents the ICAO SARPS-compliant ATN-based version or a FANS-1/A implementation.

3.8 Field 13: Departure aerodrome and time

Insert the ICAO four-letter location indicator of the aerodrome of departure and, without a space, the estimated off-block time.

Note:

If no location indicator has been assigned, use *ZZZZ* and insert in Item 18 the group *DEP/* followed immediately by the name of the aerodrome.

3.9 Field 15: Route

This field starts with the initial cruising speed and level. The basic structure of the field following this group consists of a sequence of entries, each of which contains a route (or the text “DCT” to signal a direct routing) and a fix. In addition, a diagonal slash and anew speed/level group can be appended to a fix.

Exceptions to this simple structure are:

- a) The route part may be omitted from the first entry.
- b) The route part may be omitted between points encoded as geographic coordinate.
- c) The fix part may be omitted from the last entry.

The following example shows a typical route broken down into such entries:

```
>___ GELKI< (note a)
>UP600 GOW/N0473F360<
>UN615 STN<
>UN601 AKIVO<
>UP60 ATSIX/M081F360<
>DCT 62N020W<
>___ 63N030W< (note b)
>___ 63N040W< (note b)
>___ 62N050W< (note b)
>___ 62N060W< (note b)
>DCT TANTI/N0467F380<
>DCT FEDDY<
>SCAI 5321N09000W/N0459F390<
>SCAI YRL/N0338F160<
>V304 VBI/N0466F410<
>J538 DLH<
>J89 BAE<
>V63 JVL<
>JVL4 ___< (note c)
```

It will be obvious from this description that listing routes without an intervening fix is an error, so is a sequence of fixes without either a route or the text “DCT” connecting them (except as per c) above) – or indeed any text that doesn’t adhere to this format.

Requirements for Flight Plans on Random Route Segments at or South of 070N

Turbo-jet aircraft should indicate their proposed speeds in the following sequence:

Cruising speed (TAS) in knots;

North Atlantic Airspace oceanic entry point and cruising Mach number;

North Atlantic Airspace oceanic exit point and cruising speed (TAS) in knots.

All other aircraft should indicate their proposed speeds in terms of TAS in knots.

Flight level for ocean entry should be specified at either the last domestic reporting point prior to ocean entry or when at the Oceanic Control Area (OCA) boundary.

The oceanic route of flight should be specified in terms of the following significant points:

Last domestic reporting point prior to the OCA boundary;

Oceanic entry point (only required by the Shanwick, New York, and Santa Maria Oceanic Area Control Centres (OACCs));

Significant points formed by the intersection of half or whole degrees of latitude with meridians spaced at intervals of 10 degrees from the Greenwich meridian to longitude 070W;

Oceanic exit point (only required by the Shanwick, New York and Santa Maria OACCs);

First domestic reporting point after the ocean exit

Note:

Each point at which either a change in speed and/or level is requested must be specified and followed in each case by the next significant point.

Requirements for Flight Plans on Organised Track System (OTS) South of 070N

Insert speed in terms of Mach number at commencement point of OTS.

Insert flight level requested at commencement point of OTS.

Insert the abbreviation "NAT" followed, without a space, by the code letter assigned to the track if, and only if, the flight is planned to operate along the whole length of one of the organised tracks as detailed in the NAT track message.

Notes:

Flights wishing to join or leave an organised track, or change from one organised track to another, at some intermediate point are considered to be random route aircraft and full details must be specified in the flight plan. The track letter should not be used to abbreviate any portion of the route in these circumstances.

Each point at which either a change in speed and/or level is requested must be specified as geographical co-ordinates in latitude and longitude, or as a named waypoint.

Requirements for Flight Plans on Random Route Segments North of 070N

As above, except that:

Significant points shall be expressed in terms of meridians spaced at intervals of 20 degrees from the Greenwich meridian to longitude 060W (e.g. 000W, 020W, 040W, 060W);

Requirements for Flight Plans on Polar Track Structure (PTS)

Insert speed in terms of Mach number at commencement point of PTS or at the NAToceanic entry point.

Insert flight level at commencement point of PTS or at the NAT oceanic entry point.

Insert the abbreviation "PTS" followed, without a space, by the code assigned to the track if, and only if, the flight is planned to operate along the whole length of one of the Polar Tracks.

Notes:

Flights wishing to join or leave a Polar Track, or change from one Polar Track to another, at some intermediate point are considered to be random route aircraft and full details must be specified in the flight plan. The track letter should not be used to abbreviate any portion of the route in these circumstances.

Each point at which either a change in speed and/or level is requested must be specified as geographical co-ordinates in latitude and longitude followed in each case by the abbreviation "PTS" and the track code.

Requirements for Flight Plans Predominantly North/South or South/North

Insert speed in terms of Mach number for turbo-jet aircraft, and TAS in knots for all other aircraft.

The speed is to be specified at either the last domestic reporting point prior to ocean entry or the oceanic entry point.

Insert the flight level for ocean entry, specified at either the last domestic reporting point prior to ocean entry or the oceanic entry point.

Insert the route of the flight described in terms of the following significant points:

Last domestic reporting point prior to ocean entry;

Oceanic entry point (only required by the Shanwick, New York and Santa Maria OACCs);

Significant points formed by the intersection of whole degrees of longitude with specified parallels of latitude which are spaced at 5 degree intervals from 20N to 90N;

Oceanic exit point (only required by the Shanwick, New York and Santa Maria OACCs)

First domestic reporting point after ocean exit.

Note:

Each point at which either a change in speed and/or level is requested must be specified and followed in each case by the next significant point.

Requirements for Flight Plans on NAM/CAR Route Structure

Insert speed in terms of Mach number for turbo-jet aircraft, and TAS in knots for all other aircraft.

The speed is to be specified at the commencement point of the NAM/CAR route structure.

Insert the flight level for oceanic entry point specified at the commencement point of the NAM/CAR route structure.

Insert the route of flight described in terms of NAM/CAR ATS route identifier(s).

Note:

Each point at which either a change in speed and/or level is requested must be specified and followed in each case by the next route segment expressed by the appropriate ATS route identifier(s), or as a named waypoint.

Flights Outside Designated ATS Routes

Insert DCT between successive points unless both points are defined by geographical co-ordinates or by bearing and distance.

USE ONLY the conventions in (1) to (5) below and SEPARATE each sub-item by a SPACE.

- (1) ATS Route (2 to 7 characters)

The coded designator assigned to the route or route segment (e.g. BCN1, B1, R14, UB10, KODAP2A)

- (2) Significant Point (2 to 11 characters)

The coded designator (2 to 5 characters) assigned to the point (e.g. LN, MAY, HADDY)

OR

If no coded designator has been assigned, one of the following ways:

Degrees only (7 characters)

Two figures describing latitude in degrees followed by “N” (North) or “S” (South), followed by three figures describing longitude in degrees followed by “E” (East) or “W” (West). Where necessary make up the correct number of figures by insertion of zeros (e.g. 46N050W).

Degrees and minutes (11 characters)

Four figures describing latitude in degrees and tens and units of minutes followed by “N” (North) or “S” (South), followed by five figures describing longitude in degrees and tens and units of minutes followed by “E” (East) or “W” (West). Where necessary make up the correct number of figures by insertion of zeros (e.g. 4620N05005W).

Common Error:

It is often observed that a mixture of the above is used e.g. 46N05461W, 5455N030W. This is not an acceptable format.

Bearing and distance from a navigation aid (9 characters)

The identification of the navigation aid (normally a VOR) in the form of two or three characters, followed by the bearing from the aid in the form of three figures giving degrees magnetic, followed by the distance from the aid in the form of three figures expressing nautical miles.

Where necessary make up the correct number of figures by insertion of zeros (e.g. a point on radial 180 at a distance of 40nm from VOR "DUB" should be expressed as DUB180040).

Change of Speed or Level (maximum 21 characters)

The point at which a change of speed (5% TAS or 0.01 Mach or more) or a change of level is planned, expressed exactly as in (2) above, followed by an oblique stroke and both the cruising speed and the cruising level, WITHOUT A SPACE BETWEEN THEM, even when only one of those quantities will be changed.

Examples

LN/N0284A045;

MAY/N0305F180;

HADDY/M084F330;

4620N05005W/M082F350.

Note:

"N" = knots; "M" = Mach; "F" = flight level; "A" = altitude in hundreds of feet. (for other expressions of height see ICAO Doc 4444).

Cruise Climb (maximum 28 characters)

The letter C followed by an oblique stroke then the point at which cruise climb is planned to start, expressed exactly as in (2) above, followed by an oblique stroke; then the speed to be maintained during cruise climb followed by the two levels defining the layer to be occupied during cruise climb, or the level at which cruise climb is planned followed by the letters "PLUS", WITHOUT A SPACE BETWEEN THEM.

Examples

C/48N050W/M082F290F350;

C/48N050W/M082F290PLUS;

3.10 Field 16: Destination Aerodrome and Total Estimated Elapsed Time, Alternate Aerodrome(s)

Destination Aerodrome and Time (8 characters)

Insert the ICAO four-letter location indicator of the destination aerodrome followed, WITHOUT A SPACE, by the total estimated elapsed time,

OR

If no location indicator has been assigned, insert ZZZZ followed, WITHOUT A SPACE, by the total estimated elapsed time, and specify in Item 18 the name of the aerodrome preceded by DEST/.

Notes:

(i) **Total Estimated Elapsed Time**

(a) For IFR flights this is the total estimated time from take-off until arriving over the designated point from which it is intended that an Instrument Approach Procedure, defined by reference to navigation aids, will commence, or, if no navigation aid is associated with the destination aerodrome, until arriving over the destination aerodrome itself.

(b) For VFR flights this is the total estimated time from take-off until arriving over the destination aerodrome.

(ii) For a flight plan received from an aircraft in flight, total estimated elapsed time starts from the first point of the route to which the flight plan applies.

Alternate Aerodrome(s) (4 characters)

Insert the ICAO four-letter location indicator(s) of not more than two alternate aerodromes, SEPARATED BY A SPACE.

OR

If no location indicator has been assigned to an alternate aerodrome insert ZZZZ and specify in Item 18 the name of the aerodrome preceded by ALTN/.

Common Errors:

The use of spurious names for unnamed fixes (typically extracted from navigation data bases) is to be avoided. In addition to being undefined the names fail to adhere to the format specified for fixes (five alphabetical characters) and so cause a syntax error in addition to the logical error. ARINC 424 type position reports are not to be used.

When specifying speeds in knots a leading zero is required if the speed is less than 1000 knots.

No blank spaces are to be inserted between speed and level.

The ICAO convention for specifying latitude and longitude in flight plan related messages differs from that used by data base vendors in that the hemisphere indicators (N/S, E/W) should *follow*, not *precede*, the numeric component. Therefore specifying a position as “N60W010” represents an error.

The use of FIR designators as fix names is invalid, these designators should only be used in the EET sub-field of Item 18. Some flight plans contain such designators in Item 15 to indicate the transition between two FIRs at an unnamed fix. This is a syntax error. The latitude and longitude should be used.

3.11 **Field 18: Other Information**

Insert the following information, in the preferred sequence shown below, which should always be included for North Atlantic flights. Additional information, as contained in ICAO Doc. 4444, appendix 3, may be included as appropriate.

Note:

The preface to the description of this Item in ICAO Doc. 4444 specifically states that only those sub-fields for which there is data to report should be included in Item 18. A sub-field header with no content constitutes a syntax error and will fail automatic processing.

EET/

Followed by waypoints or FIR Boundary designators plus accumulated estimated elapsed times from take-off to such points.

For flights conducted in the NAT Region on random routes, accumulated estimated elapsed times will be required for:

The last domestic reporting point prior to ocean entry.

The oceanic entry point.

Each significant point described in Item 15. (see note 2)

The oceanic exit point.

The first reporting point on the domestic track.

For flights operating along the entire length of a NAT organised track, estimated elapsed times will be required for the commencement point of the track and for FIR boundaries.

For flights operating along the entire length of one of the PTS tracks, accumulated estimated elapsed times will be required for the commencement point and for each significant point of the track thereafter.

For flights operating along the fixed ATS route network between NAM/CAR, no EETs are required.

Examples: EET/CAP0745 XYZ0830

EET/EISN0204

Notes:

Elapsed times to the oceanic entry point (e.g. EGGX0105) are required by Shanwick, New York and Santa Maria OACCs only.

REG/

The registration markings of the aircraft, if different from the aircraft identification in Field 7. (Aircraft registration should be assigned to this field for MNPS flights)

Notes:

If the aircraft registration is missing, or if it is different from that contained in the AFN CONTACT message, the ground system will not establish a CPDLC connection with that aircraft.

Hyphens contained in an aircraft registration must not be entered into the ICAO flight plan form.

SEL/

SELCAL code, if so prescribed by the appropriate ATS authority.

Note:

As directed above, if no SELCAL code has been prescribed, this sub-field should be omitted rather than inserting such data as, e.g., SEL/NIL or SEL/NONE or SEL/ followed by no data.

RMK/

Being a free text field, this is a useful sub-field for the inclusion of data only defined in particular regions (e.g. RMK/AGCS EQUIPPED RVR/800). Unrecognised sub-fields embedded within the RMK/ sub-field would simply form part of the remarks and would not be processed. Hyphens must not be used in this sub-field.