

RECOMMENDED GUIDANCE FOR FPL AND RELATED ATS MESSAGES

Abbreviations

ACI	Airports Council International
ADS	Automatic Dependent Surveillance
ADS-B	Automatic Dependent Surveillance-Broadcast
ADS-C	Automatic Dependent Surveillance-Contract
AFTN	Aeronautical Fixed Telecommunication Network
AIDC	ATS Interfacility Data Communication
AIP	Aeronautical Information Publication
ANSP	Air Navigation Service Provider
AMHS	Automatic Message Handling System
APAC	Asia Pacific
APANPIRG	Asia/Pacific Air Navigation Planning and Implementation Regional Group
ASBU	Aviation System Block Upgrade
ASIOACG	Arabian Sea Indian Ocean ATS Coordination Group
ATFM	Air Traffic Flow Management
ATM	Air Traffic Management
ATS	Air Traffic Service
AUSEP	Australian Area Navigation Operations
CHG	Modification Message
CNL	Flight Plan Cancellation Message
CPDLC	Controller Pilot Data Link Communication
CPL	Current Flight Plan
DARP	Dynamic Airborne Reroute Procedure
DLA	Delay Message
EOBT	Estimated Off Block Time
FAA	United States Federal Aviation Administration
FIR	Flight Information Region
FIRBX	Crossing FIR Boundaries
FPL	Filed Flight Plan
GANP	Global Air Navigation Plan
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IFPL	Initial Flight Plan specification (EUROCONTROL)
ISPACG	Informal South Pacific ATS Coordinating Group
LOA	Letter of Agreement
RPL	Repetitive Flight Plan
RQP	Request Flight Plan Message
SID	Standard Instrument Departure
SMS	Safety Management System
STAR	Standard Terminal Arrival
UPR	User Preferred Route

1. Effective FPL Filing

The seamless and efficient flow of air traffic across FIR boundaries is achieved, in part, by ensuring that flight plans and associated messages are transmitted, processed, and transferred between FIRs in a seamless, efficient, and consistent manner.

The methods and procedures used to file and/or originate flight plans have a residual effect on the quality of the air traffic services rendered. The introduction of duplicate or multiple flight plans, or flight plans containing erroneous information, has a direct impact on the safety and efficiency of flights within the global airspace system.

Identified sources of flight planning errors include:

- A lack of quality and consistency of filed flight plans
- The use of Repetitive Flight Plans (RPL)
- Conversion of non-compliant flight plans to the ICAO Flight Plan 2012 format
- Manual entry and manual processing of FPL and associated messages

2. Direct Submission of Flight Plan Messages

To reduce the risk of manual input errors, ANSPs according to Doc. 4444 under 11.2.1.1.1, may implement local agreements that delegate the responsibility to operators for direct transmission of movement messages via the Aeronautical Fixed Telecommunication Network (AFTN) or the Aeronautical Message Handling System (AMHS). Movement messages include FPL, Modification (CHG), Delay (DLA) and Flight Plan Cancellation (CNL).

If the ANSP had delegated the responsibility to the airlines, for originating the flight plan messages, then according to the Doc. 4444 appendix 2, page A2-3, part 2.1, the airlines will have the responsibility to correctly transmit the initial FPL as well as the related messages, to all the involved ATS units, according to the Doc. 4444, 11.2.1.1.3.

Prior to delegating responsibility for direct submission of flight plan messages, ANSPs should consider conducting a trial with new operators, using a central AFTN/AMHS address to receive the messages for initial manual validation.

ANSPs should also specify in local agreements or the AIP, any required time limits for completing the submission of movement messages (DLA and CHG) for individual flights, for example, by a time parameter prior to the Estimated Off-Block Time (EOBT).

It is preferential to use a CNL and refile the FPL as an alternative to sending multiple change messages to the same FPL or several changes within the same message

3. Similar and Multiple Flight plans errors

Similar

Improper filling procedures by resending the changed flight by the originator, instead of using the CHG or DLA, causes similar flight plans for the same flight. These causes confusion among the different ATS units that will have to select 1 flight plan (not necessarily the latest valid one consider by the airline), to update it with the surveillance information and/or on the flight transference processes.

Multiple

Multiple FPLs is a source of errors when there are 2 different FPL originators (either the airlines or the ANSP).

In order to avoid that multiple FPL are occurring on the AFTN/AMHS, the airlines will only originate and transmit the FPL, if the ANSP has delegated this responsibility according to the chapter 2 of this guide.

4. Delay (DLA) Messages

The originator should only consider sending a DLA message, if the flight is expected to be delayed by more than 30 minutes after the EOBT sent on the previous FPL. (refer to Doc 4444, 11.4.2.2.3)

If the originator is not sending a DLA message 30 minutes after the EOBT specified on the FPL, then the FPL will be automatically cancelled.

5. Modification (CHG) Messages

If the originator is an airline and they're required to send a CHG with less than the time specified on the 2.3 of this guide, then they should first contact the TWR or the designated ATS unit that will coordinate the changes proposed with the involved TWR.

Changes concerning aircraft type and wake turbulence category, speed and/or cruising level shall be notified for each individual flight as early as possible and not later than 30 minutes before departure to:

- a) the ATS reporting office from the departing aerodrome and
- b) only if the FPL origination responsibility has been delegated as mentioned on the part 2.1, FPL the originator should also send the CHG message, to the other ATS units that were considered on the initial FPL.

If the FPL originator is willing to modify the ATS route or other en-route flight level, then the CHG message shall contain all the route portion and different FLs.

CHG messages should include the entire field 15 including modified information for the FPL it changes to avoid improper modification.

If the CHG message have a new ATS route with FIRs not considered on the original FPL, then the FPL should be cancelled with a CNL message and then, submit a new FPL.

6. AFTN Addresses

To reduce FPL filing discrepancies that result from erroneous addressing of aeronautical messages, ANSPs should list their AFTN addressing requirements in their Aeronautical Information Publication (AIP). Guidance related to the addressing of AFTN messages is also available in ICAO Annex 10, Volume II, Chapter 4, ICAO Docs 7910 and 8585, and ICAO regional AFTN routing directories.

7. Central Flight Plan Processing Unit

ANSPs with multiple ATS centres may consider implementing a central flight planning unit for the initial processing and distribution of FPLs. An example of central flight planning is provided by the EUROCONTROL Initial Flight Plan (IFPL) specification.

Studies undertaken by EUROCONTROL and the European Commission determined that inconsistencies in the content of flight data held by different parties for the processing of the same flight had a negative impact on the efficiency of operations within the European air traffic management system.

According to the EUROCONTROL website (see the References section), the IFPL specification defines the procedures and requirements for the provision, processing and distribution of flight plans in the pre-flight phase. The improvement of the consistency of flight-planning data has contributed to more seamless operations within the environment, enhanced safety, and has also allowed for new operational concepts to be defined for the area of air traffic flow management (AFTM).

8. Error Mitigation Procedures

Appropriate procedures are necessary for the resolution of issues resulting from messages that are not received. Part of that resolution should be to ensure that duplicate or erroneous messages are not introduced into the system. For example, if a movement message is received for an unknown FPL, the receiving unit should use the Request Flight Plan (RQP) message to request the FPL from the sending unit rather than creating its own FPL.

Where ANSPs provide FPL filing capability via the internet, a validation process should be implemented to prevent the introduction of inaccurate data from movement messages. NAV CANADA provides an example of the use of internet-based flight-plan-filing with use of their Collaborative Flight Planning System (CFPS). The application allows direct flight plan filing by pilots and/or flight-plan-filing agencies, is fully Flight Plan 2012 compliant, and completes front-end error checking that requires FPL filers to correct discrepancies before the flight plan is accepted for processing.

9. Review of State Regulations

ANSPs are encouraged to partner with the State regulators to review and align existing regulations with emerging technologies. In cases where State regulations require hand-delivered FPLs in conjunction with electronic FPLs, the amendment of such regulations may reduce human-induced discrepancies in the filing process.

If, following a review, State regulations still require operators to hand-deliver filed flight plans, ANSPs should initiate appropriate quality-control measures to reduce the possibility of disparity between electronic and hand-delivered FPLs.

10. Repetitive Flight Plans (RPL)

The use of RPL is known to be a major contributor to the initiation of duplicate flight plans and can lead to the provision of less-than-optimum services and the erroneous application of separation by ANSPs.

The flight plan information contained in the RPL may differ from the actual details intended for a flight by the operator on a particular day, for example, the type of aircraft to be flown. These types of changes can impact on the services provided, and on the integrity of the application of separation or wake turbulence standards.

Consequently, direct filing of flight plan messages via the AFTN/AMHS should be the preferred method of flight plan submission by operators.

11. Destination Alternate Aerodromes

Some automated ground systems will reject flight plans that do not contain a destination alternate aerodrome, even if an alternate is not required to be filed for the specific destination. Consequently, some operators file alternate aerodromes when an alternate is not required in order to prevent the flight plan from being rejected, resulting in the economic burden of having to carry additional and unnecessary fuel.

ICAO Annex 6, Operation of Aircraft, Part 2 provides exceptions to the requirements for filing a destination alternate aerodrome. ANSPs should ensure that the alternate field is not a mandatory field for the automated processing of flight plans, especially for flights transiting to a destination in another FIR.

12. Naming of Arrival/Departure Procedures

ANSPs should ensure that the names for any published Standard Instrument Departure (SID) or Standard Terminal Arrival (STAR) procedures permitted to be filed in flight plans comply with the naming requirements of *ICAO Annex 11, Air Traffic Services, Appendix 3*, in order to reduce the number of flight plan rejections.

ANSPs should ensure that ATM systems are able to correctly process filed flight plans that include SIDs and STARS as part of the route.

13. Supplementary Flight Plan Information (FPL item 19)

The supplementary flight plan information, should not be considered to be transmitted per each FPL.

When for SAR reason this information is required by any ANSP (according to the annex 11, part 5.2.2.1), the following sequence to acquire the information will be:

- a) *via VHF*, requested to the flight crew, if the event is considered by the ATC, as an appropriate action, or
- b) *via the telephone*, contacting the Airline designated 24/7 flight operation/dispatching unit (specified on the FPL delegation agreement), or
- c) *via AFTN/AMHS*, to the Airline designated 24/7 flight operation/dispatching unit (specified on the FPL delegation agreement).

14 ICAO FPL 2012 Format Conversions

During the transition to the ICAO FPL 2012 format, converters were used by some ANSPs to convert existing flight plans to the new format.

The following issues are associated with the continued use of converters:

- The benefits of the Amendment 1 changes are not fully realised, particularly reduced separation standards relating to Performance-Based Navigation (PBN), and the provision of ADS-B services (including separation).
- The interoperability of ATS Interfacility Data Communications (AIDC) messaging would remain restricted where converter solutions were in use.

Other known issues with the ICAO FPL 2012 include:

- The indicator RVR/ in Item 18 of the FPL. This indicator should be either accepted without processing, or deleted without rejection by ATM systems.
- Rejections of FPL occur if unexpected RMK/ information is included in Item 18.

In order to reduce erroneous messages from being originated, and to obtain the maximum benefit from the new flight plan format, ANSPs should achieve full compliance with the provisions of ICAO FPL 2012 for automation and supporting systems.

15 Operator Feedback

ANSPs should consider establishing a reporting mechanism to provide regular feedback to operators on the number and causes of flight plan rejections and errors.

Additionally, ANSPs should consider holding periodic User/Operator forums to discuss recurring discrepancies.

16 References

ICAO Annex 6, Operation of Aircraft, Part 2 (para 2.2.2.3.5)

ICAO Annex 10, Aeronautical Telecommunications, Volume II, Chapter 4

ICAO Annex 11, Air Traffic Services, Chapter 2, Appendix 3, and Appendix 4

ICAO Location Indicators (Doc 7910)

ICAO Designators for Aircraft Operating Agencies (Doc 8585)

ICAO AFTN Routing Directory, Asia and Pacific Regions, 27th Edition, August 2007

ICAO PANS ATM, (Doc 4444) (para 11.2.1.1.1)

EUROCONTROL IFPL Specification:

- <https://www.eurocontrol.int/articles/initial-flight-plan-ifpl-specification>
- <http://www.acac.org.ma/ar/Workshop%20Presentation/IFPS%20in%20Flight%20PlanningV4.pdf>