



ICAO

**Twenty-Second Meeting of the AFI Planning and Implementation Regional Group
(APIRG/22)
(Accra, Ghana, 29 July – 2 August 2019)**

Agenda Item 4: Regional Air Navigation Matters

4.1 Air Navigation Deficiencies

**MITIGATION OF THE AMOUNT OF MISSING AIR TRAFFIC SERVICES MESSAGES
IN THE AFI REGION**

(Presented by South Africa)

SUMMARY

The APIRG/21 meeting, discussed the issue of missing flight plans, which covers the loss of, or the non-existence of air traffic services (ATS) messages and flight plans (FPL), outlining the statistic that more than 80% of the occurrence of missing flight plans was contributed to Africa.

This paper outlines the following aspects that South African would like to propose solutions to on the mitigation or the decrease of the amount of missing ATS Messages in the AFI Region:

1. Processes and procedures implemented by South Africa to ensure that flight plans are addressed correctly;
2. The usage of collective addresses for the routing of flight plan messages in the various FIRs;
3. Establishment of a procedure for the collection, monitoring and analysis of flight plans (Statistics on missing flight plans since APIRG/21 - Monthly data collection of missing flight plans and diligence in treatment in coordination amongst neighbouring centres);
4. Result of measures implemented by South Africa to reduce the number of missing ATS Messages in the AFI Region.

Action by the Meeting:

- a) to take note of the information provided in this working paper;
- b) to note that the possible solutions as mentioned in the APIRG/21 – WP27, were adopted;
- c) note that the statistical information in 2.3 and 2.4 reflects respectively presented from 1st November 2017 till 30th June 2019;
- d) provide statistical data on the number of missing flight plans/ATS messages that have not been received for flights originating from South Africa;
- e) understand the repercussions of the lack of migration to more reliable ATM systems (such as AMHS and Flight planning systems). States that do not upgrade their systems are susceptible to safety occurrences;
- f) address AFTN for flight planning purposes for individual airports within a State, as they are not readily available in the State's AIP as these are not being updated;
- g) note that the reciprocal exchange of AIP's is not adhered to, resulting in a one-sided exchange, as again not all States AIP's are readily available. A platform where all

	<p>African States' updated AIP's are easily available needs to be created;</p> <p>h) reject messages sent to States resulting in incorrect flight plan data, which contributes to safety occurrences. To highlight the importance of actioning these messages by all States;</p> <p>i) the possibility of the creation of a platform where each State reports their missing flight plans to ICAO. This will allow ICAO to respond by requesting the FPL originator to investigate and report back on the reasons and solutions to mitigate the issues.</p>
<p><i>Strategic Objectives</i></p>	<p>Related ICAO Strategic Objective(s):</p> <p>Safety: In order to enhance global civil aviation safety, the issues surrounding the deficiencies in Air Navigation, specifically those around ATS messaging need to be addressed.</p> <p>Air Navigation Capacity and Efficiency: By finding solutions/mitigations to issues regarding missing ATS messages could lead to an increase in the capacity and improvement in the efficiency of the global civil aviation system.</p>

1. INTRODUCTION

1.1 Communication is a vital component of aviation safety, and the issue surrounding the communication of crucial elements communicated via ATS messages, have a direct impact on safety.

1.2 Historically and presently, flights reach their destination with missing flight plans. These flight plans are then created on the ATM Systems to ensure that both a safe and expeditious service is provided. This however, can pose a huge challenge in causing reduced separation due to incorrect flight information (e.g. aircraft type and registration) being coordinated by the neighbouring States who have not correctly filed flight plans.

1.3 South Africa has investigated the major reasons for the occurrence of missing flight plans and have established the following:

- Technical issues related to unstable AFTN links.
- Lack of awareness and failure to make use of the correct AFTN flight planning addresses.
- Rejected messages not being actioned by the State.
- Flight plans not being filed as per the ICAO flight planning requirements.
- State AIP's not readily available and not regularly updated, hence uncertainty surrounding the addresses to use when filing flight plans.

2. DISCUSSION

2.1 Processes and Procedures implemented by South Africa to ensure that flight plans are addressed correctly.

2.1.1 Within South Africa, the Air Traffic and Navigation Services (ATNS) Aeronautical Information Management Unit (AIMU) ensures that systems are updated using the ATS Messaging Management Centre (AMC) Routings Tables which are downloaded from EURO Control. These are updated every AIRAC Cycle.

2.1.2 AFTN addresses are kept current by referencing Aeronautical Information Packages (AIP - En-route 1.11) from States and contacting the States whose AIP's are outdated.

2.1.3 The processes and procedures that have been implemented are:

- The use of collective addresses.
- Updating the routing tables on the messaging system.
- Any flight plan that has an incorrect address is replied to with a reject message, allowing the originator to correct the addressing errors. For States that are connected to AMHS, when ATS messages are not delivered to the State, a non-delivery alarm is received by South Africa and the State receives a non-delivery report.
- A central address for FPL/ATS messages for a State.
ATS messages are sent to the central address of the State, whose responsibility will be to further route the FPL/ATS message to the relevant aerodrome within the FIR of the State. For example, within South Africa, all ATS messages are to be addressed to a single AFTN address (FAORZPZX), the AIMU is then responsible for the further routing of the FPL.

2.2 The usage of collective addresses for the routing of flight plan messages in the various FIRs.

2.1.1 The purpose of creating a collective address is to assist in the minimising of human error element that may occur due to manual entry of multiple addresses;

2.1.2 Messages created on the Flight Planning system are routed to the AFTN Message Switching System (AMSS) for distribution to the relevant States.

2.1.3 For example, a flight routing from FAOR to OMDDB passes through seven FIR's. A single collective address like FAZZMDUB contains multiple addresses for each Flight Information Region (FIR) crossed by the flight. FAZZMDUB contains the following addresses: FAAHYVYX, FQBEZQZX, FQBRZTZX, FQMAZTZX, FQMAZQZX, FQMAZRZX, FVRDYXYX, FVGRZQZX, FWLLZQZX, HCSTMZQZX, HKNAZQZX, HTDCZQZX, OMAEZRZX, OMDBJZX, OMDBZPZX, OOMMZQZX, and OYACZQZX.

2.3 Establishment of a procedure for the collection, monitoring and analysis of flight plans (Statistics on missing flight plans since APIRG/21 - Monthly data collection of missing flight plans and diligence in treatment in coordination amongst neighbouring centres).

2.3.1 Missing or created flight plan information is captured by the Air Traffic Control (ATC) Coordinator as soon as the FPL is created on the ATM system due to it being missing. This information is then captured daily on the Safety Management System. These reports are emailed to the South African Civil Aviation Authority (SACAA) as well as the AIMU.

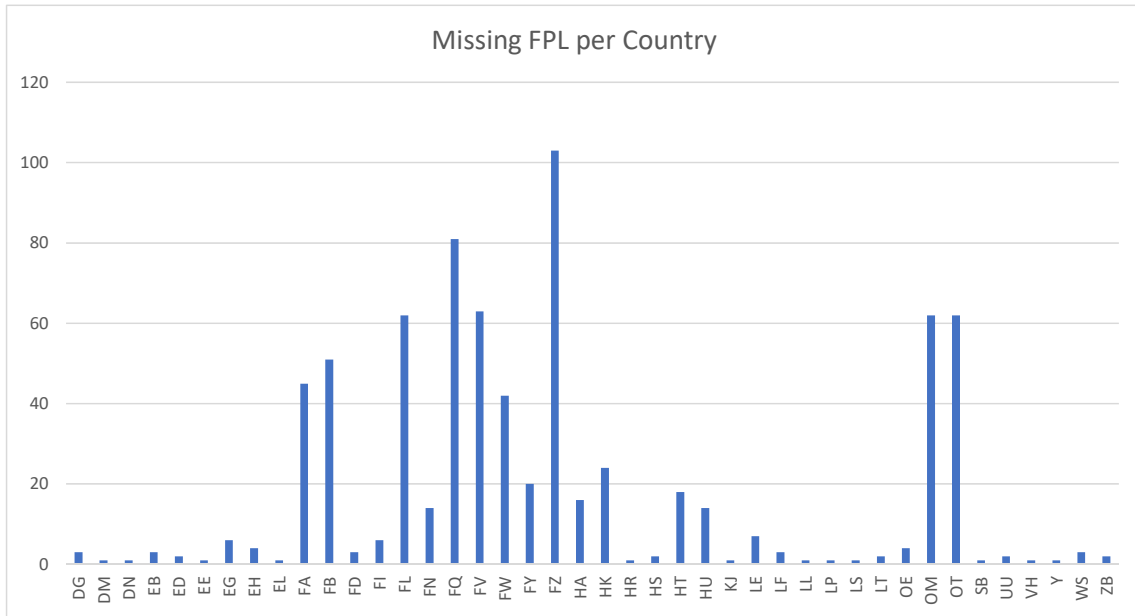
2.3.2 The AIMU communicates directly with Airline Operators or relevant Air Traffic Service Units (ATSU's) advising them to make use of the published flight planning AFTN addresses as per the AIP to ensure compliance.

Below are the results of the investigation for missing flight plans not received by South Africa.

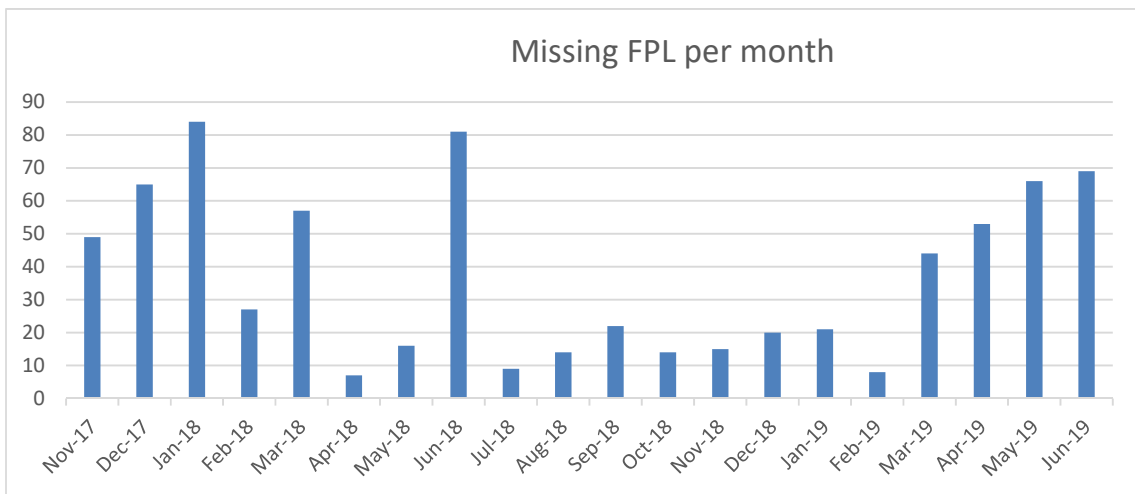
Graph 1 shows flight plans not received by South Africa from the various countries over the period from November 2017 to June 2019.

Graph 2 shows the total number of flight plans not received by South Africa per month from

November 2017 to June 2019.



Graph 1: Missing FPL’s from different Countries



Graph 2: Missing FPL’s per month

2.4 Result of measures implemented by South Africa to reduce the number of missing ATS Messages in the AFI Region.

2.4.1 Although no results of the improvement of missing FPL’s are available at this time, the South African AIMU is consistently collecting, monitoring and analysing the data received from the Safety Management System.

2.4.2 The challenges currently faced by South Africa are as follows:

- Despite the fact that the originator receives rejected messages, it is visible that these

- messages are not actioned;
- Communication barriers (language and technical) pose a continuous problem as AIP's are not updated by all States;
- Some States are not updating their ATM systems;
- Political issues in the various States are also contributing factors.

2.4.3 South Africa hopes that the actions stated above in item 3, will assist in the continuous solution/mitigation and reduction of missing FPL's.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) take note of the information provided in this working paper;
- b) note that the possible solutions as mentioned in the APIRG/21 – WP27 were adopted;
- c) note the statistical information in 2.3 and 2.4 reflect information from 1st November 2017 till 30th June 2019;
- d) note that where possible, provide South Africa with statistical data on the number of missing flight plans/ATS messages that have not been received for flights originating from South Africa;
- e) understand the repercussions of the lack of migration to more reliable ATM systems (such as AMHS and Flight planning systems). States that do not upgrade their systems are susceptible to safety occurrences;
- f) note that AFTN addresses for flight planning purposes for individual airports within a State are not readily available in the State's AIP as these are not being updated;
- g) notes the reciprocal exchange of AIP's is not adhered to, resulting in a one-sided exchange as again not all States AIP's are readily available. A platform where all African States' updated AIP's are easily available needs to be created;
- h) notes the reject messages sent to States are not always actioned resulting in incorrect flight plan data, which contributes to safety occurrences. Importance of actioning these messages must be emphasised to all States;
- i) notes the possibility of a creation of a platform where each State reports to ICAO the missing flight plans. ICAO can then respond by requesting the FPL originator to investigate and report back on the reasons and solutions to mitigate the issues.