

FLIGHT PLANNING QUALITY IMPROVEMENT INITIATIVE IN THE NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN REGION

Problem Analysis and Resolution of Automated Data Exchange Flight Plan Disparities at Miami ARTCC

Presented To: Air Traffic Services Inter-facility
Data Communication (AIDC) Implementation
Follow-up Meeting (AIDC/NAM/ICD/3

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Date: Feb 25-28, 2020

**Agenda Item 3::
NAM/CAR Pending AIDC Implementation
Process**



**Federal Aviation
Administration**



ATS Interfacility Data Communication (AIDC) Quality Improvement Initiative

- Flight plan errors, missing flight plans and duplication/retransmission of flight plans are interconnected problems as multiple flight plans with conflicting information about the same flight can degrade processing efficiency and safety of flight. To solve the issues described in this working paper which span international boundaries will require a collaborative approach to identify the causes, which are behind the proliferation of errors. Specific deficiencies associated with the flight plans can be identified but it will need the help of the filers, ICAO, the ANSPs, and the local filing authorities to improve the quality of flight plans being routed through the international flying environment. Additionally, hard work and commitment to solving the problem is required to accomplish the needed change.



Miami ARTCC Best Practices and Lessons Learned

- The hope is the facility successes will serve as a beginning of a collaborative environment to identify the issues and work toward resolution of Issues with flight plan errors as the workload has been an ongoing issue for many years. The FAA, IATA, ICAO and other organizations have circulated documents and guidelines to help resolve the problem, but little improvement has been seen.



Early Efforts

Common Practices that were not effective included:

- **Advise the flight crew:** For many years when a controller recognized a bad route, a duplicate flight plan, or some other discrepancy. Miami corrected it and advised the flight crew of the error.
 - Unfortunately, this was not effective as the next day or week it was a different crew, or a new crew. Seldom was any improvement seen. There was no way to follow up to see if the information got to the correct source or if any steps were taken to correct the issues.
- **Contact Dispatch:** This method was more effective but was also subject to different personnel on different days, weeks, or months and eventually the issues re-occurred.



Timeline to change floor procedures on ADE

- Goal: Reduce ZMA/Cuba ADE discrepancies and elimination of associated flight progress strip transcription by October 10th , 2019



Overview of Game Plan:

1. Collect DATA with discrepancies from controller workforce

- April 29th thru May 13th
- Memo describing collection procedures
- Distribute collection logs and boxes for strips
- Collect logs and strips daily

2. Scrub Data for accuracy

- May 20th thru May 31st
- Verify validity of all reports (NASQUEST, SARBOT, Flight Aware etc.)
- Build and populate excel spread sheet to analyze the data
- Identify common discrepancies and user filling issues



The Quality Improvement Analysis Begins

- The facility established a team that put in hundreds of person-hours collecting, sorting, and documenting data. Collection boxes and log sheets were installed at every sector that worked with ADE. The information was collected daily.
- ZMA airspace department captured several weeks of data from the operation and recorded discrepancies. The data was then analyzed for accuracy and validity. The data showed that the facility was receiving hundreds of discrepancies per week.
- Once the users were captured the data was sorted, each carrier was approached individually and advised of the issues. The data was grouped into categories to see the trends and where they could be fixed.
- Findings were divided into four main categories: NO FPL, Duplicate FPLs, No FPL at HAV, and other.



Common problems found

- No FPL
- Duplicate FPL
- No FPL at HAV
- Route discrepancies



Discrepancy Analysis Results & Findings (2 Week Summary)

- No FPLs 160
- Duplicates 71
- No FPL at Havana 30 *
- Others 11
- Total
Discrepancies 272

* Determined to be the greatest workload, highest risk for error and most heads-down time. Additional workload can include copying and verifying all flight plan data with the pilot or over a landline with Cuba.



Analysis Results Breakout – ADE Discrepancies

Total Validated Discrepancies = 266 for two week period

Week One

WSC 58

OCN 6

CAR 20

Total 84

No FPL 54

Dups 12

Others 18

Total 84

Week Two

WSC 66

OCN 6

CAR 110

Total 182

No FPL 98

Dups 45

Others 39

Total 182



Carriers Addressed

- CMP
- AAL
- CAY
- RPA
- AVA
- LRC
- NKS
- TAI
- TPU
- LAN
- TPA
- CBS
- LTG
- UPS



The Quality Improvement Effort

- Data was grouped by airline and then by country
- Sorted, the staff was able to identify what airlines and which departure points were causing the issues.
- The data identified that the largest carriers with the most flights were having the most errors.
- The staff began to communicate with each user identifying the impact of the incorrect filing practices, the adverse impact to our system, and the workload it was causing to the controller work force.
- Since speaking to pilots and dispatchers was not effective in the past, the issues were elevated.
- Operations managers and above were contacted for each carrier.



Overview of Miami Game Plan:

3. **Contact Users May 31st - ongoing**

- Via Phone/email to address and correct issues
- Ask Users to contact 3rd party filers and cease and desist
- Forwarded data to FAA Hughes Tech Center to coordinate with Cuba and follow up via telecom/email
- Used ICAO, IATA and FAA International office resources.

4. **Pre audit follow up and analysis**

- June 10th thru June 14th

5. **Brief progress and plan at OM/Rep meeting**

- July 10th



The Quality Improvement Effort (Continued)

- Some of the carrier's representatives came to the facility for face-to-face meetings. Some went to the FAA district office, and some invited airspace office personnel to their offices to discuss how the problems could be remedied



A Three-step Approach Used : Educate, Improve, and Monitor/Report

- **EDUCATE:**
- Users were provided with references to FAA/ICAO documents on proper filing practices.
- Data results were used providing compelling proof from analysis on how flight plans were being filed incorrectly and how to correct it.
- In some cases, it was a few emails and calls and in some cases it was excel spread sheets, Power Point presentations and numerous emails and telephone conversations



IMPROVE:

- Improved the outcome by improving the relations and communications with the users. Developed first name basis communications with the Ops managers of the air carriers.
- A one-week grace period to develop their plan for improvement was agreed on. If the desired improvements were not seen, contact was made daily.
- Some progress was as simple as No FPL caused by a misspelled ERAM address, or a transposed call sign identifier. These issues were resolved within a day or a few hours.
- Duplicate flight plan problems get more complicated as some companies have contractual issues with third party filers in different countries and with different systems and ways of amending flight plans.
- Some carriers had to send representatives to other countries they operated from to resolve the problem in person. Some airlines were not as cooperative, so help was requested. The issue was elevated to FAA international/IATA/ICAO or the FAA Flight Standards Office. The facility stayed persistent until the desired results were achieved.



MONITOR/REPORT:

- **The initiative has given Miami ARTCC great results.**
 - **The facility went from evaluating hundreds of discrepancies in a month to about 20 per month.** This much smaller number makes the task more manageable to monitor and address any repeat offenders or systemic non-compliant users.
 - Having the right contacts with the users, can allow reaching the right person quickly to address any issues.
 - The workforce is seeing results from their reported discrepancies within hours or a couple of days. These results have boosted system confidence and the ability to get things fixed. Many controllers are willing to report discrepancies as they are seeing quick and effective results. The Airspace Office still monitors certain areas where discrepancies have been seen in the past, and investigates all reported discrepancies.



Miami Game Plan:

6. **Memo to the workforce**
 - July 11th
7. **Audit the system to verify compliance and performance; Strips & logs**
 - July 12th thru July 18th
8. **Scrub data and analyze collected data**
 - July 19th
9. **Safety analysis**
10. **Go, or no Go decision**
11. **OPS Bulletin and Changes to SOPs**



Summary

- The fidelity and accuracy of the flight plans is to the level where the controller no longer has to compare every FPL to CPL strip.
- The workload and heads down time has been reduced for the manual controller and allows them to be more engaged at assisting the radar controller.
- One specialist several hours a week now monitors what was once a full time mission for the entire office for hundreds of person-hours per week.
- Will continue to monitor and help improve the system where possible.



Working Paper Conclusions

- The NACC AIDC/AIM Meeting is invited to.
 - note the content of this working paper;
 - Consider conducting a quality control system exercise similar to the one Miami ARTCC has completed;
 - critically examine systems which utilize flight data inputs from both AFTN sources and ATC interfaces;
 - analyse the flight data inputs of their own ATC systems and determine if the systems are accepting flight plans that pass format checks but contain errors, missing or incomplete;
 - data; multiple flight plans on the same aircraft, whether there is disparity between the two; and
 - work in a collaborative manner with data providers, filers, processors and ATS units to optimize the international flight data product.

