Federal Aviation Administration

Memorandum

Date: APR 09 2015

To: H. Clayton Foushee, Director, Office of Audit and Evaluations, AAE-1

From: Joseph Teixeira, Vice President for Safety and Technical Training, AJI-0

Subject: Update to Corrective Action Plan on Office of Special Counsel Case Numbers DI-13-4206, DI-14-0359, DI-14-0461, DI-14-0492, and DI-14-1590 regarding Detroit Metropolitan Wayne County Airport Flight Plans and Staffing Referral dated March 11, 2014

Background: This memorandum provides our latest status update concerning the Corrective Action Plan (CAP) outlined in our April 17, 2014, Report of Investigation in response to the Office of Special Counsel case numbers DI-13-4206, DI-14-0359, DI-14-0461, DI-14-0492, and DI-14-1590 regarding Detroit Metropolitan Wayne County Airport (DTW) Flight Plans and Staffing Referral.

The Air Traffic Organization (ATO) concurred with the findings of the report of frequent and systemic problems with computer-based systems designed to automate the filing and amending of flight plans and delivery of departure clearances. The ATO developed and is implementing actions delineated in the CAP.

Update: As required by the CAP, in June 2014, the Multiple Flight Plan Task Force convened a Safety Risk Management (SRM) Panel to evaluate risk associated with multiple flight plans for the same flight and to develop corrective actions. We have attached the signed SRM Document developed by the SRM Panel.

To support the communication outreach initiative also outlined in the CAP, during the monthly flight plan filers' teleconference on January 7, 2015, ATO briefed participants on the Information for Operators (InFO) 14012, *Flight Plan Discrepancies and Amendment Filing Procedures*, published in December 2014. A participating representative from the International Air Transport Association forwarded a copy of InFO 14012 to the International Civil Aviation Organization (ICAO) North American, Central American, and Caribbean (NACC) Regional Flight Plan Monitoring Group. ATO representatives also discussed InFO 14012 during the monthly National Customers Forum meeting on January 14, 2015.

The Multiple Flight Plan Task Force met on February 5, 2015, to review the status of the CAP activities. Procedural changes are still planned for publication on December 10, 2015. National Airspace System automation changes are tentatively planned for implementation in 2016.

The ATO will conduct an audit from April 20 to May 1, 2015, to determine the frequency of multiple flight plans at selected en route and terminal facilities and the methods and procedures used by each facility to document, report, and address issues related to multiple flight plans.

To continue outreach efforts for controllers and operators, an article on Multiple Flight Plans was published in the winter 2015 edition of *Safety Matters*. Hard copies of the article were available at the All Points Safety booth during the 2015 National Air Traffic Controllers Association (NATCA) Communicating for Safety Conference.

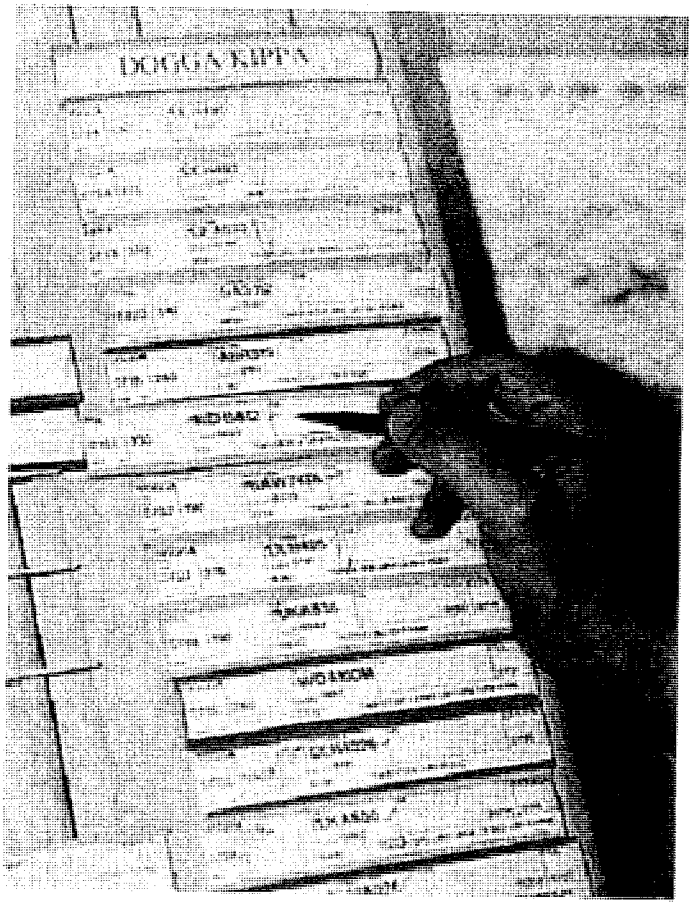
Completed: Recommendation 4 (of 6) from the FAA Report of Investigation, dated April 17, 2014, was to restore the second clearance delivery position at DTW. All actions were completed to reinstate that position. We consider our actions on this item complete and request that this item be closed.

Next Update: The Multiple Flight Plan Task Force is scheduled to meet again on June 4, 2015. Our next report on this CAP will be provided in July 2015. If you have questions or need additional information, please contact Stephen J. Lloyd, Director, Safety, AJI-1 at 202-267-4645 or Stephen.J.Lloyd@faa.gov.

cc: Teri L. Bristol, Chief Operating Officer, AJO-0
Terry Biggio, Vice President, Air Traffic Services, AJT-0
Elizabeth Ray, Vice President, Mission Support Services, AJV-0
Nancy Kalinowski, Vice President, System Operations Services, AJR-0
James T. Eck, Acting Vice President, Program Management Organization, AJM-0
Vaughn Turner, Vice President, Technical Operations, AJW-0

Attachments:
SRM Document, *Multiple Flight Plans*
Safety Matters Article, *More is Not Always Better: Multiple Flight Plans Cause Extra Work and May Jeopardize Safety*

Multiple Flight Plans
Safety Risk Management Document (SRMD)



Version 1.0
December 10, 2014

Signature Page

Title: Multiple Flight Plans Safety Risk Management Document

Initiator: Ron Singletary
Initiator's Organization: Air Traffic Services Organization
Initiator's Phone Number: 202-385-8558

Submission Date: December 10, 2014
SRMD #: Version 1.0
SRMD Revision Number:
SRMD Revision Date:

SRMD Review Signature:

Signature	Ron Singletary Manager, Technical Advisory Group, AJT-22	12/19/14 Date
Signature	For Lawrence Beck Manager, Terminal Procedures Team, AJV-822	12/16/14 Date
Signature Acting	~~Richard Kagehiro~~ David J Swanson Manager, En Route Operations Standards, AJV-823	12/22/14 Date

SRMD Approval Signature(s):

Signature	Heather Hemdal Director, Air Traffic Procedures, AJV-8	12/30/14 Date
Signature	for Jeanne Giering Director, Flight Services Operations, AJR-B	12/18/14 Date
Signature	John S. Duncan Director, Flight Standards Service	1.5.15 Date

Executive Summary

This SRMD presents the results of the Safety Risk Management Panel (SRMP) convened to satisfy the requirements of a Corrective Action Plan that was developed to address an investigation conducted by the Office of Audit and Evaluation (AAE) for the U.S Office of Special Counsel (OSC). In March 2014, the Office of Audit and Evaluation, Federal Aviation Administration (FAA), was directed by the Secretary of Transportation to investigate a whistleblower disclosure that alleged "...FAA Management has failed to properly address frequent and systemic problems with computer-based systems designed to automate delivery of departure clearances". While there were other allegations raised in that whistleblower disclosure, this SRMD focuses on the issue of the filing of multiple (or duplicate) flight plans (for the same flight); a known (existing) hazard in the National Airspace System. When multiple flight plans are filed for the same flight, there is the potential that a controller can clear the flight for departure based upon a flight plan that is different than the one most recently filed by the operator, which could result in the crew flying a route not anticipated or planned for by Air Traffic Control (ATC). On any given day it is possible to have anywhere from 800 to 1000 multiple flight plans in the system.

In response to this investigation, the Chief Operating Officer, Teri Bristol, commissioned a safety risk management panel of subject matter experts to evaluate the risk associated with this known hazard and to recommend an appropriate set of risk mitigations. While this hazard, identified in this SRMD as ***MFP-01: Multiple flight plans for the same aircraft identification and the same departure airport*** (See Appendix A) is an initial low risk hazard ***(Initial Risk 4C/Low)***, the panel did come up with the following risk mitigations to help reduce the frequency of multiple flight plans:

1. The first requirement is to develop Order changes that standardize the path of flight plan communication. The Order changes will contain several items to address the lack of guidance for modifying flight plans. The items include:
    a. DCP 7210.3, Paragraph 8-1-4, FLIGHT PLAN DROP INTERVALS standardizes flight plan drop times to 2 hours;
    b. DCP 7210.3, Paragraph 17-2-3 ATCSCC and Paragraph 17-5-4 RESPONSIBILITIES add the requirements for the ATCSCC to include changes made to drop times to the Command Center Advisory Page when notified by an ARTCC;
    c. DCP 7110.10, Paragraph 6-3-2 NOTIFING ARTCC changes the notification lead time for manual coordination of flight plans, when necessary, from 30 minutes to 45 minutes prior to the proposed departure time
    d. Requirements to update the Command Center Advisory Page contained in DCP 7210.3 Paragraphs 17-2-3 ATSCC and 17-5-4 RESPONSIBILITES also create a vehicle to publish the rationale for extending the 2 hour drop times; and
    e. Create a mechanism for the ATCSCC to communicate the extended drop times to its airline partners and the rationale for the extension.

2. The panel also believed it was extremely important to educate dispatchers and flight plan filers to the new requirements and its rationale. It became apparent during the panel that the non-standard drop times used by the various ARTCCs and lack of published standardized procedures made dispatchers and flight plan filers operate under false assumptions. The panel felt that standardizing drop times and making it well known would curb this issue.

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Introduction

In response to an Investigation by the Office of Audit and Evaluation (AAE) for the U.S Office of Special Counsel (OSC) (See Appendix B) the ATO has developed a Corrective Action Plan (CAP) to address the problem of multiple fight plans. One of the requirements of this CAP was to convene a Safety Risk Management Panel (SRMP) to evaluate the risk created by the filing of multiple flight plans and to identify an appropriate risk mitigation strategy.

When multiple flight plans are filed, there is the potential that a controller can issue a clearance on a routing (e.g. cleared as filed) that is different from the route filed on the most recently filed flight plan. This may result in a pilot flying a route different than that expected by ATC. Often times (for flight plan filers) it is easier to simply file a second flight plan than it would be to call the appropriate controlling facility to have the flight plan amended, revised or removed. Analysis of flight plans filed by airlines into the FAA's Center Computer Complex host, known as HOST, and the newer En Route Automation Modernization (ERAM) automation systems indicates that some airline filers are not adhering to the proper protocols. Instead of amending current flight plans when a change is necessary, new flight plans are being filed and the original flight plans are not being removed from the system. While the filing of multiple flight plans does not violate any current regulation, it does introduce risk to the National Airspace System (NAS) as delineated in this SRMD.

sometimes longer (site-specific), departure and departure coordination flight strips are printed to the tower and TRACON as defined in adaptation. Strips are printed to the departure ARTCC at a different adapted time, which is typically 45 minutes before departure. If the departure tower has Terminal Data Link System (TDLS), the departure strip goes to that system and may generate an automated Pre-Departure Clearance (PDC).

Verbal Pre-Departure Clearance

When the pilot calls for clearance, the controller reads the clearance from the flight strip printed and/or from a flight plan readout. If more than one flight plan has been filed, there should be multiple departure strips. If an FR (Flight Plan Readout) is done on the ACID, a duplicate flight plan error will be returned. If an FR on the beacon code or CID is done, the presence of another flight plan will not be evident.

- ➔ If the departure clearance position notices multiple flight strips, the controller will work with the filer or the pilot to resolve which one is correct. Once the correct flight plan is identified, two steps must be taken: all incorrect flight plans must be removed, and the correct flight plan must be sent/resent to the terminal automation system (ARTS or STARS).
- ➔ Duplicate and multiple flight plans are usually identified by an alert air traffic controller or a questioning pilot before safety has been seriously compromised, but controller and pilot intervention are last lines of defense and they are not foolproof.

Current Operations:

Proposed Flight Plans

Each departure originating in FAA-controlled airspace normally begins with a proposed flight plan, which is then activated on departure. Most proposed flight plans are received into the ATC system via the Aeronautical Fixed Telecommunications Network (AFTN). (In the U.S., NADIN is our piece of the AFTN). Bulk storage, once used for many flight plans, does not exist in ERAM and is no longer used. A similar service is available in AISR - flight plans can be stored in AISR and recalled and sent to the ATC system on a schedule.

The services available to file flight plans include:

1. FAA Flight Services
    a. Call Flight Service and specialist enters flight plan
    b. Use Flight Service, DUATS or DUAT service via the internet
    c. In Alaska, call flight service station and specialist enters flight plan
2. Commercial Service
    a. Many vendors provide flight planning services to GA and airline customers, e.g. Universal Weather, Jeppesen, ARINC, Fltplan.com, and many others.
3. Operator Ops Center
    a. Some airlines and other types of operators have dispatch operations and their own proprietary systems that can file directly.
4. Military BASOPS
    a. Some military installations have a Base Operations Center- analogous to an Airline Operations Center- where flight plans can be filed by Military Dispatchers.
5. Air Traffic Services Reporting Office (ARO). Some countries have AROs at departure airports, and require that flight plans be filed through them

controller calls to coordinate the flight. The proposed flight plan is used as the basis, and only key details are coordinated.

- Multiple flight plans are often received from different sources: both the Operator and an ATS Reporting Office (ARO) at the departure Aerodrome often send flight plans, and there often are discrepancies. These problems have been reported exclusively with respect to the Miami/San Juan interfaces. It is not known whether the same problem exists in the other centers with manual interfaces, but we are not getting reports.

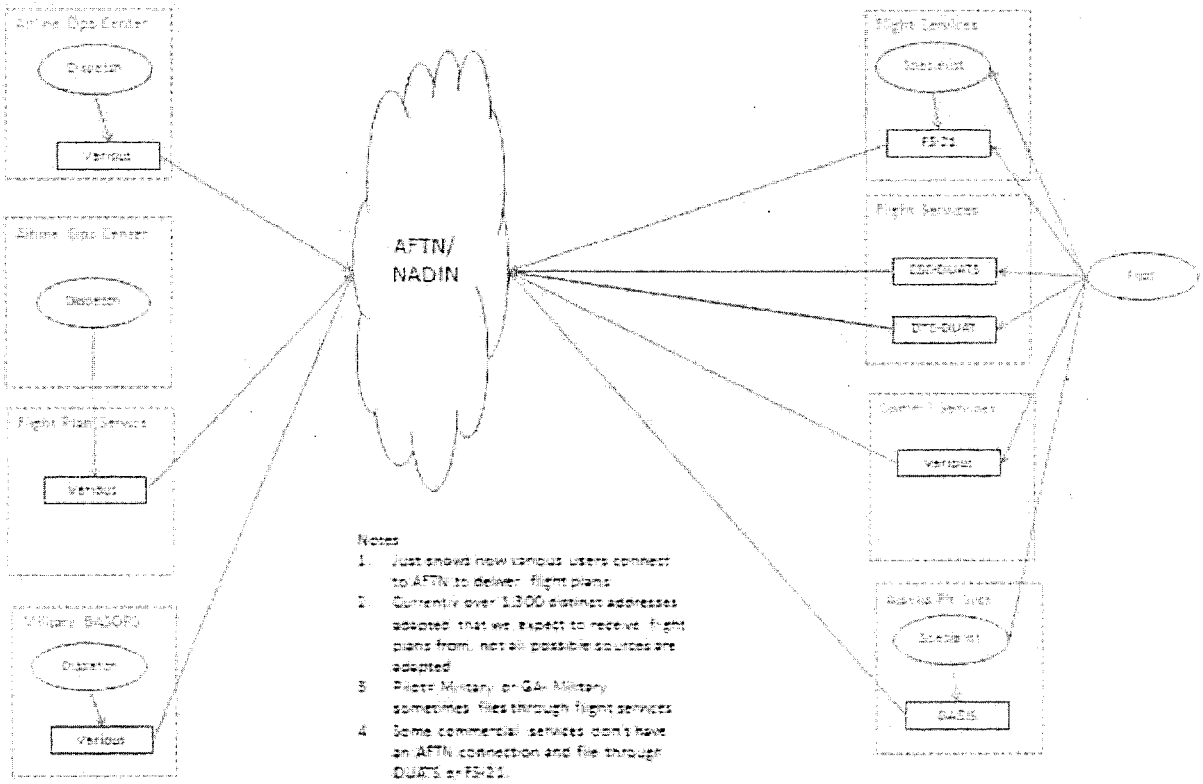


Figure 1.1: Representative Flight Plan Filing System for the NAS

Section 3 – Safety Risk Management Planning and Impacted Organizations

The panel of subject matter experts met in Washington, DC over a three day period, June17-June 19, 2014.

Table 3.1: SRM Panel Members

Chris Stephenson	NATCA	Terminal Ops Specialist
Jim Kettenhofen	AJI-314	SENTEL Contract Support
Bill Vogelgesang	CLE ATCT	FLM
Ray Ahlberg	Air Traffic Requirements	Automation SME
Joe Russell	AJI -314	SENTEL Contract Support
Joel Brown	AJV-723	HSI Contract Support
Marvin A. Burnette	HDQTRS	Technical Advisor
April Hart	Safety	Safety Analyst
Monica Bradford (Phone)	AJR-B1, Flight Services	FS Staff Specialist
Robert Ingram	AJR-B1, Flight Services	FS Staff Specialist
Wayne Maxwell	Tech Center	ERAM
Constance Mack	Training	AJI-2
Vincent McMenamy	AJV-823	Enroute SME
Chris Wilbanks	ZHU	OS ZHU
Gordy Rother	MSP FSDO AFS-240	ASI/Dispatch
Keith Alexander	CSA/ ATCSCC	AJR-17 Senior Advisor
CDR. Keith Shipman	Military	Navy Liaison FAA
Sandra Park	Dispatch	Air Traffic Mgr.
Clint Long	NATCA ERAM SME	ZKC SME
Brian Dubois	NATCA	BOS TWR SME
David Swanson	AJV-8	Airspace Team, Terminal & En Route Oceanic Airspace Group/Traffic Control Specialist
Ann Moore	AJI-15 (Representing AJI-1)	AJI Safety Services
Dan Watkins	AJI-314	US Air Captain (Retired) SENTEL Contract Support-Pilot SME
Natking Estevez	AJI-314	Facilitator

Section 5 – Phase 1: System Description

THE 5M MODEL

The initial part of any Safety Risk Management assessment is to define the system. This process describes the current system and proposed changes to the system. The system is described by using the "5M Model", as defined in the FAA, Version 2.1. The "5M Model" describes the proposed change in the following terms: the Mission, the (hu)Man, the Management, the Machine, and the Media.

The five elements of the 5M Model for the proposed change are as follows:

Mission – Reduce the Frequency of Multiple Flight Plans in the NAS.

(hu)Man

Flight Plan Filers

- Dispatchers
- Flight Service Station (FSS)
- Military Base Ops
- General Aviation filers through a filing service (DUATS/Jeppesen/ARINC/etc)

Air Traffic Controllers

- Terminal
- En Route

Machine

- ERAM/HOST/OFDPS/ATOP/FDP-2000
- NADIN/AFTN
- Flight Plan Input System- (There are numerous systems today for inputting flight plans) No changes are being proposed to these systems)
- URET

Management

- FAA Order 7110.10, Flight Services- Chapter 6 section 3 governs IFR Flight Plan handling and Flight Plan Filing. An update may be required to this Order.
- FAA Order 7110.65, Air Traffic Control-
- FAR 91.169- Governs the information required for a flight plan. An update may be required to this section
- FAA Order 7210.3- Chapter 6 section 5, governs the stored flight plan program
- November 2012 FAA ICAO Flight Planning Interface Reference Guide
- Proposed Advisory Circular
- 7210.3 (Protocol for Flight Plans)
- Educational Briefing for Filers
- Automation
- FAA Order Standardizing Flight Planning Storage Times, Lockout Times, and amendment procedures

Section 6 – Phase 2: Identified Hazards

Hazard Identification

The Multiple Flight Plan SRMP began its hazard analysis by receiving a presentation created by the Duplicate Flight Plan Task Force. The briefing described the problem and assisted the panel of SMEs to define the issue's entire scope. Grounded on their duties and firsthand knowledge as air traffic controllers (terminal and en route), flight service staff specialists, pilots, ATC automation specialists and airline dispatchers, the panel was familiar with the problem and readily grasped the potential seriousness of the multiple flight plan issue. Their first resolution was to drop the Duplicate Flight Plan moniker and call the issue Multiple Flight Plans. Although the panel renamed the issue **Multiple Flight Plans**, they did accept the Duplicate Flight Plan Task Force definition: "Any flight plans filed intended to be for the same flight with the same aircraft identification and departure point." And agreed these multiple flight plans will typically (but not always) have the same or similar departure time.

The lack of available, quantifiable data made it difficult for the panel to determine the exact magnitude of the problem. The panel acknowledged that multiple flight plans are an old problem that is becoming more difficult to manage. It is not really known how bad the problem is because there is no real vehicle in the NAS to capture the enormity of numbers. Based on their collective SME experience the panel did recognize multiple flight plans as a safety threat in the NAS and identified one potential hazard.

The SRM panel identified one potential hazard.

MFP-01: Multiple flight plans for the same aircraft identification and the same departure airport.

Hazard description:

The difficulty manifests itself when a controller issues a clearance based on a flight plan and the pilot is looking at a different flight plan.

The panel expressed their collective opinion that the hazard most often appeared during severe weather events – ice, snow and thunderstorms. Although weather episodes seemed to be the time when the problem became most apparent, the panel decided not to limit the situation to weather occurrences. NASCAR races and the Superbowl were also specifically mentioned when members of the panel had dealt with the multiple flight plan situation.

Multiple flight plans are not an easily solved problem. There are too many users in the NAS who have an expressed need to file multiple flight plans using the same aircraft identification and departure points.

Secondly, the system creates situations where two flight plans are received for the same flight but from different sources. Two examples quickly come to mind. Example one, an operator flight plan and a flight plan from an ARO (Air Traffic Service Reporting Office) in Central or South America. Example two, there is an operator flight plan and a flight plan from an adjacent ARTCC. As an illustration, New York ARTCC (ZNY) sends a JFK departure flight plan to Boston ARTCC (ZBW).

Miami ARTCC (ZMA) frequently receives flight plans from operators in South and Central America and another flight plan from the Central or South American ARO for the same flight. Sometimes there are slight differences in the flight plans that could lead to incidents and errors. For ZMA the situation is a vexing issue. Miami ARTCC has addressed the situation while conducting a safety risk management panel for a new automated interface with Cuba. The ZMA SRMP deliberations and solution were briefed to the Multiple Flight Plan Panel on June 18 2014. Miami ARTCC has created a Standard Operating Procedure (SOP) to address the problem manually, but is interested in a more comprehensive solution that relies less on manual comparison of flight plans. The Multiple Flight Plan (MFP) Panel deliberated the ZMA issue and decided, since there was no representation from ZMA on the MFP Panel and the MFP Panel was not very familiar with the exact ZMA issues, it was not appropriate for the MFP Panel to determine a solution.

Large quantities of data were not available for the panel's risk analysis. The SRM panel used the data available in combination with subject matter expertise to determine the risk multiple flight plans introduce. The panel concluded that the severity of possible effects of multiple flight plans was **Minor (4)**. The rationale was based on the group's collective, operational, experience observing and dealing with multiple flight plans and the potential of 10 to 15 reported route deviations where an aircraft flies a different route than the controller anticipates and the one loss of separation reported in a 2 year period.

The rationale mentioned above drove the panel to determine the likelihood of the possible effects of multiple flight plans as **Remote (C)**.

Ultimately, the risk of multiple flight plans is the combination of the severity (Minor) with the likelihood (Remote). Using Figure 3.9: Risk Matrix, found on page 44 of the *Air Traffic Organization Safety Management System Manual*, Version 2.1, dated May 2008, the panel determined a risk for multiple flight plans in the NAS as **Low**.

The panel spent considerable time discussing when the issue of multiple flight plans was most evident. Based on the panel's collective experience, they determined that the frequency was most probable during a weather event – ice and snow or heavy thunderstorm activity. After much discussion the panel decided not to limit their hazard only to times when weather events were taking place. NASCAR races and the Superbowl were also identified as times when members of the panel had seen and experienced multiple flight plans. The panel did not tie the hazard to any specific events; so their risk analysis was not limited.

Operators, based on a fallacious assumption, file another flight plan. Now, there are multiple flight plans in the system. Operators may not understand that different facilities have different parameters determining when a flight plan has "timed out" and is dropped from the system. This issue may be quickly solved by making dispatchers and pilots aware of the different guidelines for the facilities they use. The difference in drop times between centers and the fact the times are not widely known by operators may be one of the root causes multiple flight plans are filed introducing its incumbent risk into the NAS. The panel unanimously agreed to recommend a NAS wide adoption of a standard flight plan storage time of two hours after the proposed time of departure. This change was proposed to give filers, particularly airline dispatchers, a standard time parameter.

The panel discussed the proliferation of services that allow operators and pilots to file flight plans directly into the NAS. The panel's discussion, when distilled to its basic elements, determined that FAA sponsored services like DUATS, DUAT and third party services like FltPlan.com have made it easy for operators to enter electronic flight plans into the NAS. The ease of filing flight plans has not been extended so users can cancel or amend those same flight plans. The Aeronautical Information Manual, paragraph 5-1-13b, Change in Proposed Departure Time states: "Due to traffic saturation, control personnel frequently will be unable to accept these revisions via radio. It is recommended that you forward these revisions to the nearest FSS." The panel discussed the fact that changes to DUATS/DUAT capabilities would require a contractual change.

Anecdotally, the panel conducted an experiment. One of the panel members, to show how quick and easy it was to direct file a flight plan, used DUATS to file a flight plan for an Instrument Flight Rules (IFR) flight. When inside two hours from the proposed departure time, the filer, based on instructions in the AIM paragraph 5-1-13 called FSS to cancel the flight plan and was told by the briefer "I do not have access to the flight plan."

The panel spent considerable time discussing methods to address amending or canceling flight plans. The panel collectively grasped the fact that the lack of a readily available and known method to amend or cancel flight plans may be a significant cause of the problem. The panel decided a protocol should be established and made known to flight plan filers to allow them to quickly change or cancel a flight plan within 2 hours of the proposed time. Another facet of this discussion was: who and where the filer was to call and what were the various telephone numbers? All these areas were important parts of the panel's discussion to determine recommendations. The panel believed a readily available method to change or cancel flight plans would decrease the number of times operators filed multiple flight plans because the amending process was easier.

There was considerable discussion concerning the option allowing only one proposed flight plan with the same Call Sign and Point of departure in the system at the same time. Although this solution would completely mitigate the risk caused by multiple flight plans by eliminating them completely from the system, its adoption was considered too burdensome for military and other multiple flight plan filers such as flight schools and skydiving/parachuting operations who were

Table 7.1: Severity Definitions

Affected Operation	Hazard Severity Classification				
	Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
ATC Services	Conditions resulting in a minimal reduction in ATC services, or a loss of separation resulting in a Category D Runway Incursion(RI)[1], or proximity event	Conditions resulting in a slight reduction in ATC services, or a loss of separation resulting in a Category C RI[1], or Operational Error (OE)[2]	Conditions resulting in a partial loss of ATC services, or a loss of separation resulting in a Category B RI[1], or OE[2]	Conditions resulting in a total loss of ATC services, (ATC Zero) or a loss of separation resulting in a Category A RI[1] or OE[2]	Conditions resulting in a collision between aircraft, obstacles or terrain
Flight Crew	– Flightcrew receives TCAS Traffic Advisory (TA) informing of nearby traffic, or, – PD where loss of airborne separation falls within the same parameters of a Category D OE [2] or proximity Event – Minimal effect on operation of aircraft	-Potential for Pilot Deviation (PD) due to TCAS Preventive Resolution Advisory (PRA) advising crew not to deviate from present vertical profile, or, -PD where loss of airborne separation falls within the same parameters of Category C (OE) [2] , *or* -Reduction of functional capability of aircraft but does not impact overall safety e.g. normal procedures as per AFM	-PD due to response to TCAS Corrective Resolution Advisory (CRA) issued advising crew to take vertical action to avoid developing conflict with traffic, or, -PD where loss of airborne separation falls within the same parameters of a Category B OE [2], or, -Reduction in safety margin or functional capability of the aircraft, requiring crew to follow abnormal procedures as per AFM	-Near mid-air collision (NMAC) results due to proximity of less than 500 feet from another aircraft or a report is filed by pilot or flight crew member that a collision hazard existed between two or more aircraft -Reduction in safety margin and functional capability of the aircraft requiring crew to follow emergency procedures as per AFM	-Conditions resulting in a mid-air collision (MAC) or impact with obstacle or terrain resulting in hull loss, multiple fatalities, or fatal injury

Table 7.3: Likelihood Definitions

	NAS Systems & ATC Operational	NAS Systems		ATC Operational		Flight Procedures
		Qualitative				
	Quantitative	Individual Item/System	ATC Service/ NAS Level System	Per Facility	NAS-wide	
Frequent A	Probability of occurrence per operation/operational hour is equal to or greater than $1x10^{-3}$	Expected to occur about once every 3 months for an item	Continuously experienced in the system	Expected to occur more than once per week	Expected to occur more than every 1-2 days	Probability of occurrence per operation/operational hour is equal to or greater than $1x10^{-5}$
Probable B	Probability of occurrence per operation/operational hour is less than $1x10^{-3}$, but equal to or greater than $1x10^{-5}$	Expected to occur about once per year for an item	Expected to occur frequently in the system	Expected to occur about once every month	Expected to occur about several times per month	
Remote C	Probability of occurrence per operation/operational hour is less than or equal to $1x10^{-5}$ but equal to or greater than $1x10^{-7}$	Expected to occur several times in the life cycle of an item	Expected to occur numerous times in system life cycle	Expected to occur about once every year	Expected to occur about once every few months	Probability of occurrence per operation/operational hour is less than or equal to $1x10^{-5}$ but equal to or greater than $1x10^{-7}$
Extremely Remote D	Probability of occurrence per operation/operational hour is less than or equal to $1x10^{-7}$ but equal to or greater than $1x10^{-9}$	Unlikely to occur, but possible in an item's life cycle	Expected to occur several times in the system life cycle	Expected to occur about once every 10-100 years	Expected to occur about once every 3 years	Probability of occurrence per operation/operational hour is less than or equal to $1x10^{-7}$ but equal to or greater than $1x10^{-9}$
Extremely Improbable E	Probability of occurrence per operation/operational hour is less than $1x10^{-9}$	So unlikely that it can be assumed that it will not occur in an item's life cycle	Unlikely to occur, but possible in system life cycle	Expected to occur less than once every 100 years	Expected to occur less than once every 30 years	Probability of occurrence per operation/operational hour is less than $1x10^{-9}$

Section 3 – Phase 5: Treatment of Risks / Mitigation of Hazards

The Multiple Flight Plan SRMP deliberated the issue for three days. The panel understood several key components that made any resolution difficult. The panel collectively realized there is NO published official guidance to modify flight plans and NO published guidance for filing alternative flight plans for dynamic NAS situation changes. The panel believed most of the multiple flight plan issue is created by present system inadequacies. Much of the panel discussion during its three day session was devising ways to address the inadequacies without penalizing the operators who have a need to file multiple flight plans.

The panel made several determinations that have been levied as requirements for changes to the NAS. The requirements (in no hierarchical order) are listed below and can be found in the Multiple Flight Plans Preliminary Hazard Analysis (PHA), Column 10. The PHA is located in this document as APPENDIX A.

1. The first requirement is to develop Order changes that standardize the path of flight plan communication. The Order changes will contain several items to address the lack of guidance for modifying flight plans. The items include:
   a) DCP 7210.3, Paragraph 8-1-4 FLIGHT PLAN DROP INTERVALS standardizes flight plan drop times to 2 hours;
   b) DCP 7210.3, Paragraph 17-2-3 ATCSCC and Paragraph 17-5-4 RESPONSIBILITIES add the requirements for the ATCSCC to include changes made to drop times to the Command Center Advisory Page when notified by an ARTCC;
   c) DCP 7110.10, Paragraph 6-3-2 NOTIFING ARTCC changes the notification lead time for manual coordination of flight plans, when necessary, from 30 minutes to 45 minutes prior to the proposed departure time
   d) Requirements to update the Command Center Advisory Page contained in DCP 7210.3 Paragraphs 17-2-3 ATSCC and 17-5-4 RESPONSIBILITES also create a vehicle to publish the rationale for extending the 2 hour drop times; and
   e) Create a mechanism for the ATCSCC to communicate the extended drop times to its airline partners and the rationale for the extension.

2. The panel also believed it was extremely important to educate dispatchers and flight plan filers to the new requirements and its rationale. It became apparent during the panel that the non-standard drop times used by the various ARTCCs and lack of published standardized procedures made dispatchers and flight plan filers operate under false assumptions. The panel felt that standardizing drop times and making it well known would curb this issue.

3. It was decided by the panel that a requirement should be made to create an Advisory Circular to delineate the process for filing, amending, revising and deleting flight plans. The advisory circular will provide guidance for amending a flight plan within 45 minutes of the proposed departure time. Improvement guidance for FAA flight plan filing can be found in Appendix H. As the system now functions, only ATC can amend a flight plan within 30 minutes of the proposed departure time and pilots or filers must contact ATC directly for any revisions. But, procedures are not apparent how to contact ATC directly. This panel requirement was intended to remedy this situation.

4. An AIM revision to **Paragraph 5-1-13 Change in Proposed Departure Time** to indicate flight plans are dropped in the ARTCC computer after **2** hours. The AIM revision would also

Section 9 – Tracking and Monitoring of Hazards

Table 9.1: Recommended Control Implementation/ Monitoring Plan Structure

Task	Responsible	Due Date/ Frequency	Status
Implementation of Controls			
Develop DCPs Standardize 2 hour drop time and path of communication	David Swanson		Drafts Completed
Dispatcher/Flight Plan Filer education	Les Smith AFS-200		Completed
Advisory Circular delineating flight plan process	Ray Ahlberg (AJV-72) and Les Smith, AFS-200		To Be Completed
Automation changes	Ray Ahlberg and Wayne Maxwell		Draft Completed
AIM revisions to Paragraph 5-1-13	AJV-822		Draft Completed
Revise FAAO 7110.10 Paragraph 6-3-2	AJV-822		Draft Completed

ensure the risk level for the hazard remains acceptable.			

		Different Flight Plan drop times for different ARTCC's Amended drop times (dynamically modified drop times) Hold messages Different deadlines for allowing automated amendments Terminal Facilities do not have complete flight plan information		DUATS requirement Par. 3.2.1.4.4.25 AIM 5-1-12 & 5-1-13 7210.3 Par. 6-5-1 7110.65 Par. 4-3-3(4)(b)					drop times Dispatcher/Flight Plan Filer Education Advisory Circular that delineates the process of filing, amending, revising, and deleting flight plans. The advisory circular needs to provide guidance for amending a Flight Plan within 30 minutes of proposed departure time. "Only ATC CAN AMMEND A FLIGHT PLAN WITHIN 30 MINUTES OF THE PROPOSED DEPARTURE TIME. Within 30 minutes of your proposed departure time you must contact ATC directly for any revisions." Automation: Time and Alerting- Reject flight plan with same AID, and departure point and proposed departure time. Alerting for Terminal. When a multiple	

Executive Summary

In March 2014, the Office of Audit and Evaluation (AAE), Federal Aviation Administration (FAA), was directed by the Secretary of Transportation to investigate a U.S. Office of Special Counsel (OSC) whistleblower disclosure (OSC File No. DI-13-4206 et al.) sent to Secretary Anthony Foxx on March 11, 2014. AAE is an independent FAA organization with authority to conduct oversight of all FAA organizations and programs. This disclosure was submitted by Vincent Sugent; John Overman; Corinna Morris, Michael Redies, and Lewis M. Bird, air traffic controllers at Detroit Air Traffic Control Tower (DTW), Detroit Metropolitan Airport, Romulus, Michigan.

The whistleblowers alleged that (1) FAA management has failed to properly address frequent and systemic problems with computer based systems designed to automate delivery of departure clearances and (2) FAA management has failed to properly staff the facility by leaving the Operations Manager position unfilled for approximately five years.

We found that FAA's lack requirements for air carrier dispatchers and filers to follow established protocols have allowed duplicate flight plans to be entered into the National Airspace System (NAS). Duplicate flight plans contain the same aircraft identification and departure/destination airport, however; some elements such as requested altitude, routing, speed, or departure time are different from the original. We have learned that air traffic control facilities across the National Airspace System (NAS) are encountering this problem of duplicate flight plans on a regular basis, and the problem is multiplied exponentially during periods of bad weather.

Duplicate flight plans introduce a safety risk into the air traffic control system with potentially conflicting information being used by air traffic control (ATC) and the pilots. When multiple flight plans are filed, there is the potential that a controller can issue "cleared as filed" based on an flight plan that is different than the flight plan most recently filed by the operator, resulting in the pilot flying a route different than expected by ATC. We also found that FAA has no current automation system capable of identifying or "flagging" these multiple flight plans and notifying the controller.

Analysis of flight plans being sent from the airline filers to FAA's Central Computer Complex host, referred to as HOST and the En Route Automation Modernization (ERAM) automation systems indicates that some airline dispatchers may not be following proper protocols and instead of amending existing flight plans, they are entering new flight plans without removing the original flight plan, as current protocol suggests. However, we also learned that FAA lacks standards across the NAS for the length of time a flight plan is active, which makes it difficult for dispatchers to comply with FAA protocols. For instance, a typical flight plan has a time limit of two hours to execute, or it expires and a new one must be filed. However, at Cleveland Air Route Traffic Control Center (ARTCC), the facility which stores the flight plans for DTW, the time limit is three hours. Therefore, a dispatcher in Atlanta may be unaware that the existing flight plan is still active in DTW and erroneously enters a new one with an assumption that the previous one has expired.

plans for equipment changes or route changes around weather prior to the flight strip being transmitted to the ATCT. Typically, 30 minutes prior to the proposed departure time, these flight plans are transmitted to the ATCT and a flight strip is printed. Once a flight strip is printed, changes made to the flight plan from sources outside the FAA are then prohibited.

The current protocol requests that if a flight plan change needs to be made after a flight strip has been printed, then certain steps must be accomplished. The airline dispatcher should contact the Flight Data position in the ARTCC or in some cases the Traffic Management Unit (TMU) in the ATCT and ensure that the aircraft is in a position to accept a flight plan amendment. A good position would be at the airline gate. A bad position would be while the aircraft is taxiing for takeoff. If the aircraft can accept a flight plan change, the airline should communicate the change to the Flight Data or Traffic Management controller who can input the change into the NAS and ensure that the aircraft receives the new clearance.

While this is ideal, it is much easier for an airline dispatcher to enter a new flight plan and hope that the controller recognizes that a duplicate flight plan exists and that the controller ensures that the aircraft receives the correct flight plan. This can be very difficult for the controller to accomplish during periods of fast moving weather when airline dispatchers are attempting to reroute aircraft around weather.

Duplicate flight plans introduce a safety risk into the air traffic system with potentially conflicting information being used by air traffic control and the pilots. When multiple flight plans are filed, there is the potential that a controller can issue "cleared as filed" based on a flight plan that is different than the flight plan most recently filed by the operator, resulting in the pilot flying a route different than expected by ATC. We also found that FAA has no current automation system capable of identifying or "flagging" these multiple flight plans and notifying the controller.

Analysis of flight plans being sent from the airline filers to the NAS HOST and ERAM automation systems indicates that some airline filers (dispatchers) may not be following proper protocols and instead of requesting the FAA to amend existing flight plans, they are entering new flight plans without calling the FAA to have the original flight plan removed, as current protocol suggests. In some instances, we learned the airline dispatch offices did not purchase the software option that allows the users to make amendments up to 30 minutes prior to departure. Thus the users are forced to file a new flight plan by their software limitations. Finally, FAA has no regulatory guidance regarding the filing of flight plans, and thus no ability to enforce the existing suggested protocol.

DTW has reported 43 duplicate flight plans from January 1, 2014 to March 18, 2014. From January 1, 2013 to December 1, 2013 (December appears not to have been tracked), DTW reported 288 duplicate flight plans via a problem report. In December 2012 when DTW first began tracking the issue, they reported 60 just for the month of December. The DTW Support Specialist sends the problem report reflecting the duplicate plans to the chief dispatcher for the airline which filed the flight plans, but that has failed to yield substantial change.

When multiple flight plans are received by the tower, the one filter available occurs if the aircraft Pre-Clearance Delivery (PDC) capable. The PDC transmits the original flight plan and clearance

PDC Alert and Notifications

The whistleblowers identified instances in which erroneous alert notifications are displayed on the PDC system. For example the PDC will occasionally post an alert of a revision, when the facility has no associated flight plan. Other examples include revision alerts for flight that have already departed, alerts when no actual revision has occurred, or for altitude/type aircraft/suffix changes. A number of these alerts have been attributed to software "bugs" in the new ERAM software. Most of these have been eliminated once they were identified.

These types of anomalies are time consuming to track down, but appear all related to the fact that FAA's automation system allows for changes in the form of a new flight plan, provided that one single piece of information is slightly changed. This can include the type of aircraft, the altitude, or the departure time. Additionally, flight plans can be filed up to 24 hours in advance and are stored in NADIN. It is possible that flight plans are filed and stored, a slight change occurs, and NADIN transmits both to the ARTCC. As previously indicated, NADIN is simply a data storage point and does not have the capability to validate the data it receives.

Actions taken by FAA

In late 2012, the issue regarding the duplicate flight plans was elevated to FAA officials at Headquarters by DTW. The complaint identified the issue as PDC automation issue. A working group of individuals was formed in 2013 and determined that the issue was not a PDC issue specific to DTW but was a system issue across the NAS.

The group initially attempted to identify the airline dispatchers and filers not following the published ICAO protocol and contacting them directly. They also initiated a Flight Plan Filing Service Telcon which is held monthly. The Telcon has over 100 participants which include filers from industry and safety representatives.

An automation specialist/flight plan lead began investigating possible solutions through ERAM to reject duplicate flight plans, as well as other potential solutions. However, the group also needed to consider possible reasons why we would need to continue to accept duplicates. A meeting was held on October 28, 2013 with military liaisons assigned to FAA as to whether they had objections to rejecting duplicate flight plans. The military did not respond until January 2014. In a letter to FAA, Steven Pennington, Executive Director, Department of Defense (DOD) Policy Board on Federal Aviation recommended that FAA enforces existing protocols in order to mitigate duplicate flight plans. The letter evaluated three proposals from FAA for possible automation mitigation in ERAM; however, DOD wrote that "all three options seek to provide an automated solution to what is in truth a 'human in the loop' problem." Should FAA decide to proceed with automation solution, the DOD's preferred strategy for minimizing impact on DOD operations was to use a two hour Estimated Off-Block (EOBT) discriminator.

The National Air Traffic Controllers Association (NATCA) submitted a proposal to the working group which suggests that a notification strategy that alerts controllers that duplicate aircraft identifications exist for proposed flight identification. Specifically, NATCA proposed that immediately upon the FDIO Display printing a flight progress strip containing an aircraft identification that duplicates another existing flight also in proposal status, the FDIO shall print a

the tower. Only stand-alone level 11 towers will have both an operations manager and a support manager.

In the case of DTW, it is one of only two level 11 air traffic towers that are separate facilities but adjoin a TRACON in the NAS. The other is Minneapolis. DTW already had a support manager when it was split into two separate facilities in 2012, and Mr. Whitehurst chose to keep the individual as a support manager rather than reassigning him to an operations management position. Therefore the Frontline Managers (FLMs) at DTW report directly to Mr. Whitehurst. Minneapolis chose to have an operations manager and does not have a support manager.

All interviewed agreed that having an operations manager to provide additional oversight would not hurt; however, the frontline managers and ATM deny that lack of an operations manager impacts safety in any manner. In 2013 Mr. Whitehurst submitted a need/justification request for an Operations Manager to Paul Sheridan (now retired), Terminal Services Regional Director, but the request was denied due to budget constraints.

ATO officials told us due to continued budget constraints, they are eliminating 200 positions across the NAS. Therefore some management positions will be eliminated and joint facilities will be expected to share resources such as quality assurance, training and policy/procedures.

Recommendations

1. The ATO needs to establish a standardized time across the NAS in which flight plans are active. This can be flexible during periods of bad weather, but even the extension of the active flight plan itself should have a standardized amount of time.

2. The ATO should standardize the time for when they transmit flight plans to facilities from the ARTCC.

3. The ATO needs to determine whether and how it will accept changes to flight plans within 30 minutes of departure.

4. The ATO should consider re-installing equipment needed to open a second clearance delivery (CD2) position during periods of bad weather. Currently, Flight Data and Clearance Delivery are combined, and in peak times, the cab coordinator assists. This takes the cab coordinator's attention away from the actual operation of aircraft. According to Mr. Sugent, the cab is configured and had a CD2 position, but the equipment was moved to the TRACON and Aerobahn, a system used to monitor congestion at the gates was installed.

5. The ATO should convene a Safety Risk Mitigation Panel to eliminate duplicate flight plans which should include representatives from all impacted divisions within FAA and the airlines. The outcome from the panel should be a published, accountable process for the airlines and FAA to follow and include any necessary changes in our automation, policy and procedures needed to ensure accountability while reducing risk.

Methodology

With Subject Matter Expertise from ATO's Safety and Technical Training (AJI), during the week of March 24-27, 2014, the investigative team traveled to Detroit. They spoke with 17 individuals, including the complainant, the air traffic tower manager, frontline managers, and personnel from FAA headquarters. We reviewed hundreds of problem reports generated by DTW personnel, emails, briefings, ICAO protocols and data collected by personnel assigned to the FAA Headquarters working group. The 17 Individuals interviewed by the team included:

Vincent Sugent, Complainant and Air Traffic Controller
John Overman, Complainant and Air Traffic Controller
Corinna Morris, Complainant and Air Traffic Controller
Michael Redies, Complainant and Air Traffic Controller
Lewis "Matt" Bird, Complainant and Air Traffic Controller
John Whitehurst, Detroit Air Traffic Controller Tower Manager
Joseph Figliuolo, Terminal District Manager, Detroit HUB
Sonny Smithwick, Dispatch Aviation Safety Inspector, Delta Airlines Certificate Management Office
Nick Perrazza, Contractor, NADIN Support and Development
Juan Fuentes, Senior Advisor, Air Traffic Services
Kevin Grammes, Operations Manager, Detroit TRACON
Rodney Harris, Detroit Tower Support Specialist
Paul Mueller, Frontline Manager, Detroit Tower
Steve Scrimscher, Frontline Manager, Detroit Tower
Joel Brown, Contractor/Senior Air Traffic Control Specialist, ATO Mission Support Services
Ray Ahlberg, En-Route Requirements, ATO Mission Support Services
David W. Swanson, Airspace Team, ATO Mission Support Services

Larry D. Beck
Manager, Terminal Standards and Procedures

Date:

Appendix D – DCP to FAA Order 7210.3, Paragraph 17-2-3, ATCSCC

DOCUMENT CHANGE PROPOSAL/BRIEFING SHEET
INITIAL

ORDER/PUBLICATION: 7210.3Z
CHANGE: Basic
EFFECTIVE DATE: December 10, 2015 TRACKING #:
CONTROL LEAD/ROUTING: Lawrence Beck AJV-82 (202) 267-0862
SPECIALIST/ROUTING: David W Swanson AJV-82 (202) 267-0816

1. PARAGRAPH NUMBER AND TITLE:
17-2-3. ATCSCC

2. BACKGROUND: A Corrective Action Plan was developed to address an investigation conducted by the Office of Audit and Evaluation (AAE) for the U.S Office of Special Counsel (OSC). In March 2014, the Office of Audit and Evaluation, Federal Aviation Administration (FAA), was directed by the Secretary of Transportation to investigate a whistleblower disclosure that alleged that " FAA Management has failed to properly address frequent and systemic problems with computer-based systems designed to automate the filing and amending of flight plans and delivery of departure clearances.

3. EXPLANATION OF CHANGE: This change to Paragraph 17-2-3 adds the requirement for the Air Traffic Control System Command Center (ATCSCC) to include changes made to drop times to the Command Center Advisory Page when notified from a Air Route Traffic Control Center (ARTCC).

4. CHANGE:

OLD	NEW
17-2-3. ATCSCC	17-2-3. ATCSCC
Title thru i.	No Change
Add	**j. Upon notification from Field Facilities that extended drop times have been implemented or terminated. The Command Center Advisory Page will be updated to include an advisory indicating the implementation or termination.**

No further changes to paragraph.

5. INDEX CHANGES: None
6. REFERENCE CHANGES: None
7. GRAPHICS: None
8. GENOT/NOTICE: None
9. FORMATTING & PLAIN LANGUAGE REVIEW: ☐
10. SAFETY RISK MANAGEMENT: (Check appropriate box).
    ☒ SRMD. Proposed change meets full SMS requirements for safety risk assessment.
    ☐ SRMDM. Proposed change does not introduce new safety risks into the NAS.
11. ICAO DIFFERENCES: YES ☐ NO ☒

ATO DCP FORM 3710-01 (07/2014)

ICAO DIFFERENCES IDENTIFICATION FORM

AJV-8 SME: DATE: ATO SCP #:

ICAO DIFFERENCE SARP/PANS

SPECIFIC US REGULATION AND REFERENCE	PANS ATM, ANNEX PROVISION	DESCRIPTION OF DIFFERENCE	REMARKS

DIFFERENCE CATEGORY:

DETERMINATION OF DIFFERENCE: YES ☐ NO ☐

VALIDATOR NAME:

VALIDATOR PHONE: ( ) -

7. GRAPHICS: None

8. GENOT/NOTICE: None

9. FORMATTING & PLAIN LANGUAGE REVIEW: ☐

10. SAFETY RISK MANAGEMENT: (Check appropriate box).

☒ SRMD. Proposed change meets full SMS requirements for safety risk assessment.

☐ SRMDM. Proposed change does not introduce new safety risks into the NAS.

11. ICAO DIFFERENCES: YES ☐ NO ☒

Larry D. Beck
Manager, Terminal Standards and Procedures Date:

Appendix F – DCP to FAA Order 7110.10, Paragraph 6-3-2. NOTIFING ARTCC

DOCUMENT CHANGE PROPOSAL/BRIEFING SHEET
INITIAL

ORDER/PUBLICATION: 7110.10X
CHANGE: 3
EFFECTIVE DATE: June 25, 2015 TRACKING #: 03- 6-3-2
SPECIALIST/ROUTING: Monica Bradford AJR-B (202) 267-6526

1. PARAGRAPH NUMBER AND TITLE:

6–3–2. NOTIFYING ARTCC

2. BACKGROUND: A Safety Risk Management panel (SRMP) convened to satisfy the requirements of a Corrective Action Plan that was developed to oaddress an investigation conducted by the Office of Audit and Evaluation (AAE) for the U.S. Office of Special Counsel (OSC). In March 2014, the AAE, Federal Aviation Administration (FAA), was directed by the Secretary of Transportation to investigate a whistleblower disclosure that alleged "…FAA Management failed to properly address frequent and systematic problems with computer-based systems designed to automate delivery of departure clearances." The resultant Safety Risk Management Document (SRMD) focused on the issue of the filing of multiple (or duplicate) flight plans (for the same flight); a known (existing) hazard in the National Airspace System (NAS). When multiple flight plansare filed for the same flight, there is the potential that a controller can clear the flight for departure based upon a flight plan that is different than the one most recently filed by the operator, which could result in the crew flying a route not anticipated orplanned for by Air Traffic Control (ATC). While the hazard was identified as an initial low risk hazard, the panel did come up with several risk mitigations to help reduce the frequency of multiple flight plans. the following change is one of the recommended changes.

3. EXPLANATION OF CHANGE: This changes the notification lead time for manual corrdination of amended departure flight plans, when necessary, from 30 minutes to-45 minutes prior to proposed departure time.

4. CHANGE:

OLD	NEW
6–3–2. NOTIFYING ARTCC	6–3–2. NOTIFYING ARTCC
Transmit flight plans and flight plan amendments to the ARTCC for the departure point. Facilities should use FAA Order JO 7350.8, Location Identifiers, or the appropriate aeronautical charts to determine the ARTCC to which each transmission must be made. Transmit flight plans (if necessary) and flight plan amendments via interphone to the flight data position (error referral position) or departure sector when the aircraft's proposed departure time is less than 15 minutes from transmittal time. Advise the ARTCC's departure sector or flight data position (error referral position), via interphone, when a message is received indicating ineligibility or a response is not received via data terminal within 10 minutes. Transmit flight plans as follows:	Transmit flight plans and flight plan amendments to the ARTCC for the departure point. Facilities should use FAA Order JO 7350.8, Location Identifiers, or the appropriate aeronautical charts to determine the ARTCC to which each transmission must be made. Transmit flight plans (if necessary) and flight plan amendments via interphone to the flight data position (error referral position) or departure sector when the aircraft's proposed departure time is less than 45 minutes from transmittal time. Advise the ARTCC's departure sector or flight data position (error referral position), via interphone, when a message is received indicating ineligibility or a response is not received via data terminal within 10 minutes. Transmit flight plans as follows:
a. When multiple (two or more) flight plans are received from the same aircraft, or for flight	a. When multiple (two or more) flight plans are received from the same aircraft, or for flight

ATO DCP FORM 3100-05 (07/20/14)

ICAO DIFFERENCES IDENTIFICATION FORM

AJV-8 SME: DATE: ATO DCP #:

ICAO DIFFERENCE SARP/PANS

SPECIFIC US REGULATION AND REFERENCE	PANS ATM, ANNEX PROVISION	DESCRIPTION OF DIFFERENCE	REMARKS

DIFFERENCE CATEGORY:

DETERMINATION OF DIFFERENCE: YES ☐ NO ☐

VALIDATOR NAME:

VALIDATOR PHONE: ( ) -

9. FORMATTING & PLAIN LANGUAGE REVIEW: ☐

10. SAFETY RISK MANAGEMENT: (Check appropriate box).

☒ SRMD. Proposed change meets full SMS requirements for safety risk assessment.

☐ SRMDM. Proposed change does not introduce new safety risks into the NAS.

11. ICAO DIFFERENCES: YES ☐ NO ☒

Larry D. Beck
Manager, Terminal Standards and Procedures
and Operations

Date:

Appendix H – Advisory Circular (Improvement of Guidance on FAA Flight Plan Filing)

Improvement of Guidance on FAA Flight Plan Filing

Background

Currently the FAA publishes guidance on flight plan filing in the following places:

1. AIP Section ENR 1.10 (Flight Planning)
2. AIP Section ENR 1.11 (Flight Plan Addressing)
3. AIM Section 5-1 (Preflight)
4. JO 7210.3 Section 6-6 (Air Carrier Interface Program)
5. JO 7110.10 Chapter 6 (Flight Data), Chapter 7 (International Operations) and Appendix A (ICAO Flight Plans)
6. Informal guidance at http://www.faa.gov/ato?k=fpl
7. Numerous paragraphs in the AIM, in Advisory Circulars, and other documents that identify specific equipment, capability, or remarks required for various FAA programs.

There is little in the way of official guidance on required timing, including when ATC will "lock" the flight plan and prevent automated operator changes. Further, there is no official guidance on how to change a flight plan after it has been locked. Finally, the use of ICAO versus Domestic format flight plans is treated inconsistently throughout the documents.

Planned Improvements

1. Operational requirements for sending flight planning messages (including initial flight plan, changes, and cancellation) will be documented in the AIP Section 1.10, and mirrored in the AIM Section 5-1. These requirements will address:
    a. Initial filing of a flight plan
    b. Rules for filing more than one flight plan for the same Aircraft ID
    c. Automatic dropping of flight plans that do not depart
    d. How to register to receive automatic accept/reject messages
    e. Changing a flight plan before the ATC lockout
    f. Changing a flight plan after the ATC lockout
2. Guidance on message format, content, and Protocols will be documented in a new Flight Planning Advisory Circular. This will result in some material moving from the AIP, AIM, and JO 7210.3 into the advisory circular.
    a. Information will be divided between pilot guidance on what to file in a flight plan and detailed guidance for service providers on message formats
3. All information provided on the Flight Planning web site will be incorporated into the AIP, the AIM, and/or the new Advisory Circular.

Appendix J – Information for Operators: Flight Plan Discrepancies and Amendment Filing Procedures

U.S. Department
of Transportation
Federal Aviation
Administration

InFO
Information for Operators

InFO 14 FPFD
DATE: xx/xx/xx

Flight Standards Service
Washington, DC

http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/info

An InFO contains valuable information for operators that should help them meet certain administrative, regulatory, or operational requirements with relatively low urgency or impact on safety.

Subject: Flight Plan Discrepancies and Amendment Filing Procedures

Purpose: This InFO serves to remind operators of the importance of following appropriate procedures when amending an Air Traffic Services (ATS) flight plan.

Background: The Federal Aviation Administration (FAA) Air Traffic Organization (ATO) along with the Flight Standards Service (AFS) has noticed an increasing trend with discrepancies between the "filed" ATS flight plan and the "operational" flight plan provided to the flightcrew. These discrepancies can lead to a loss of separation and an increase in workload for Air Traffic Control (ATC) and flightcrew(s).

Examples include:

- During July 2014—Hours after departing JFK, ATC noticed a B77W flying a route that differed from the flight plan. While ATC had cleared the flight as filed based on the most recent flight plan, Dispatch had issued the pilot a route from an earlier filed flight plan.
- During August 2014—ATC provided a C525 1000' vertical separation in Reduced Vertical Separation Minimum (RVSM) airspace based on the ATS flight plan. However, the operational flight plan indicated the flight was not RVSM approved.

Despite efforts to correct this problem, including monthly meetings between the FAA ATO and flight plan filers, flight plan discrepancy errors have continued.

Discussion: The majority of flight plan discrepancies appear to be caused by inadequate coordination of changes to flight plans. The most common types of problems seen include:

1. Sending of a "replacement" flight plan without canceling the original flight plan.
2. Sending a "replacement" flight plan after an attempt to cancel the original flight plan was unsuccessful (usually because the attempt to cancel occurred after the departure strip printed).

Either of the above cases results in multiple flight plans in the system. ATC will resolve these when aware of them, but there are cases (especially if the change is made very late) where ATC will not see the second flight strip in time. In a busy tower with parallel runways, the strips may even be distributed to different positions.

For example:

Flight 123 departure out of New York to London is planned on North Atlantic (NAT) Track W. The aircraft is planned for a flight level that requires Controller Pilot Data Link Communications (CPDLC) and Automated Dependent Surveillance–Contract (ADS–C) equipment. During the

More Is Not Always Better: Multiple Flight Plans Cause Extra Work and May Jeopardize Safety

By James Sulton, Quality Assurance

Every day, throughout the national airspace system, or NAS, multiple flight plans are filed for a single flight. The ATO has identified these multiple flight plans as contributing factors in numerous reported safety occurrences involving unexpected routes, aircraft types, and/or aircraft equipage/capabilities. Although multiple flight plans have not yet directly resulted in an accident or serious loss of separation between aircraft, the ATO is proactively addressing the issue to help reduce the potential for risk to the system.

"Multiple flight plans are a frequent accessory to many known safety hazards in the system. Therefore, we must be proactive

Assurance manager.

Controllers often refer to them as "duplicate" flight plans, since NAS automation rejects any subsequent plan with the same aircraft identification that is departing from the same airport within a certain timeframe. Problems typically happen when other flight plan data such as aircraft type, equipage/capabilities, or route of flight differs in subsequent flight plan(s) from what is already filed.

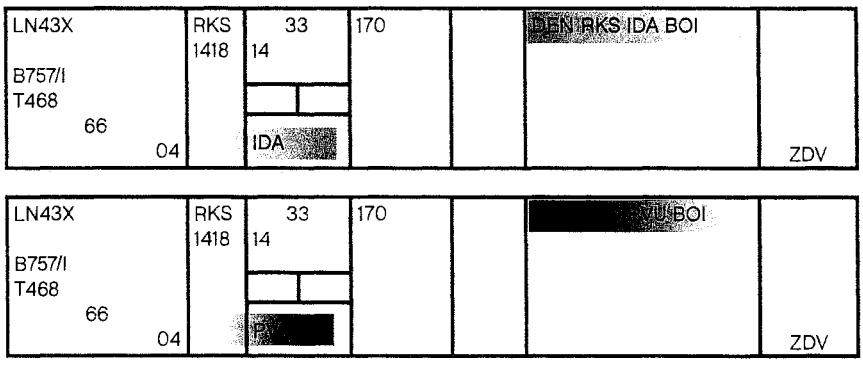
Why So Many Flight Plans?

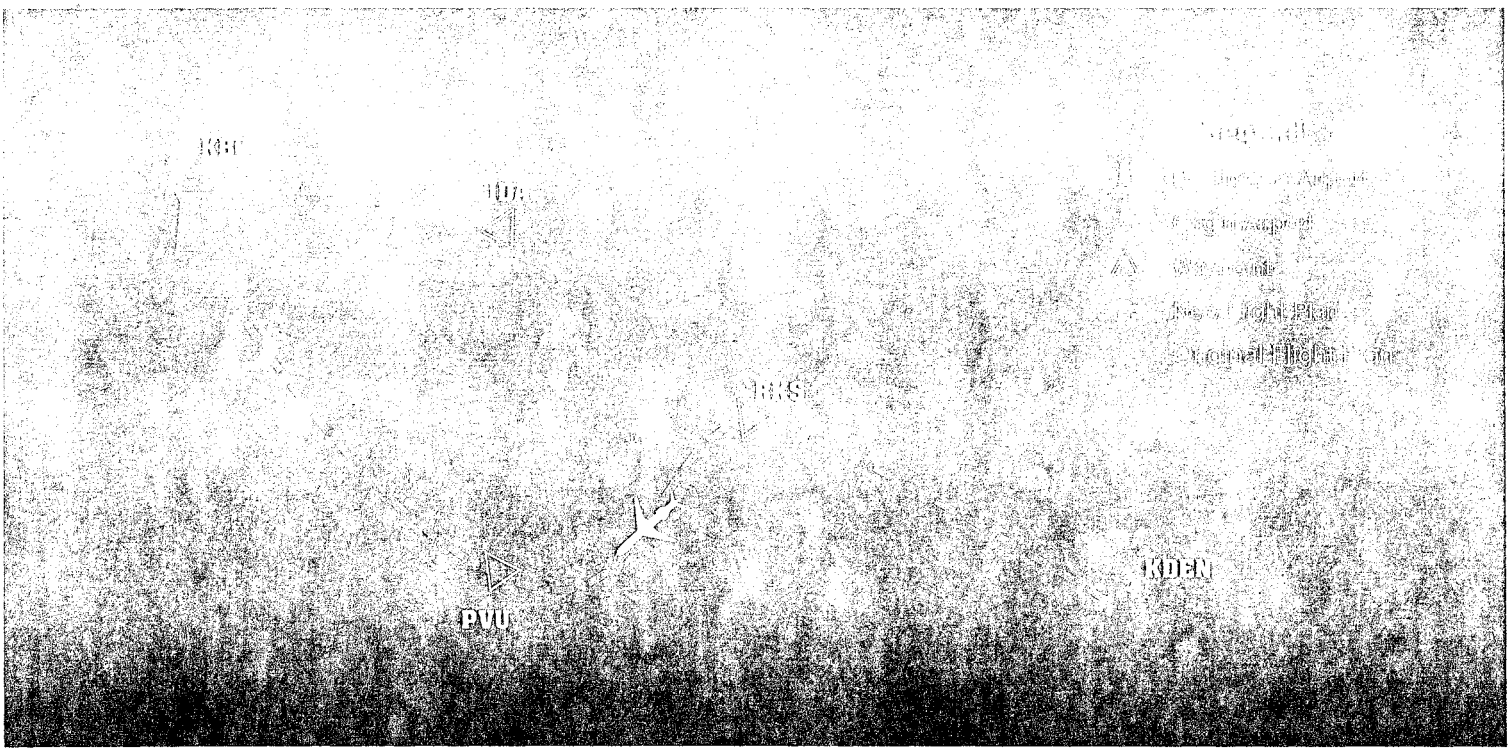
Multiple flight plans exist most frequently during widespread traffic management programs that involve system delays and/or reroutes. Instead of canceling and refiling or amending a previously filed flight plan, many file new flight plans with amended flight data for aircraft type, equipage/capabilities, or route. In addition, some of our processes and/or software, including Direct User Access Terminal Service, do not allow amendments after NAS automation accepts a flight plan. This necessitates filing subsequent flight plans for the same flight. On average, several hundred multiple flight plans exist in the NAS daily.

Impact of Multiple Flight Plans to the System

When multiple flight plans exist, air traffic control and/or the operator must try to figure out which flight plan to use. Sometimes the last plan filed with ATC differs from the plan provided to the pilot. Frequently, ATC recognizes multiple flight plans and coordinates with the pilot/operator to clarify which to use. However, in some instances, multiple flight plans can lead to a loss of separation of aircraft because the pilot is on a different route than what ATC expects, or the aircraft type has changed, requiring a different separation standard due to wake categorization.

Examples of Multiple Flight Plan Strips





Although this is a known workload issue, the ATO lacked sufficient data to indicate it as more than a low safety issue. Often, controllers fix the problems and do not report them.

Addressing the Issue

To more easily capture information from mandatory and electronic occurrence reports, also known as MORs and EORs, the ATO created a Quality Assurance, or QA, special emphasis indicator to flag events involving multiple flight plans. Service area QA specialists now annotate "#MFLTPLN" in the QA section of MORs and EORs when multiple flight plans may be a factor. In addition, other factors such as hearback/readback problems, misfiled flight data, failure to issue a full route clearance, or flight management system data entry errors sometime cause flight data to be inaccurate. Because of these indicators, analysis of these MORs/EORs help the ATO gain better understanding of even broader safety issues.

The ATO also formed a task force to better understand and address the problem and look at the multiple flight plan issue, related factors, and associated data. It was comprised of representatives from the ATO, bargaining units, and the Flight Standards Service. The task force prepared findings and information to present to a Safety Risk Management, or SRM, panel assigned to address the issue. To support the SRM panel, the ATO invited subject matter experts and stakeholders from:

- Terminal and En Route and Oceanic air traffic services
- System Operations traffic management and flight services
- Air traffic requirements and procedures Mission Support
- Program Management Organization
- Safety and Technical Training
- Flight Standards
- Department of Defense, or DoD
- Industry

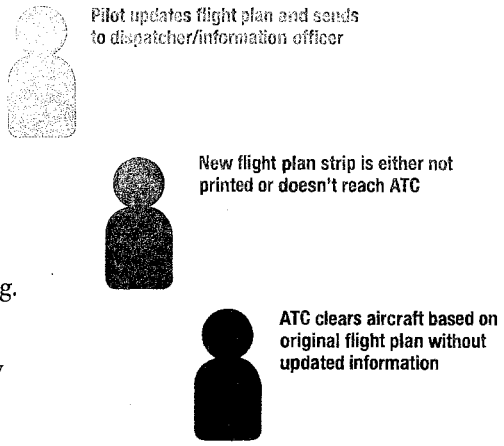
Addressing the identified initial low risk hazard, the SRM Panel developed risk mitigations and monitoring actions to significantly reduce the frequency of multiple flight plans and to better understand and mitigate safety issues associated with multiple flight plans that may still exist. Corrective actions covered in the SRM Document include:

1. Development and implementation of new requirements for NAS automation that will:
   - Reject another flight plan from being filed when there is already an existing flight plan for the same aircraft identification from the same departure point within a designated proposed departure time.
   - Standardize times when flight strips will be generated for air traffic facilities, after which time flight plan amendments cannot be accepted from

non-NAS equipment. This would mean that any flight plan changes within this standardized timeframe must be accomplished by an ATC (FAA, DoD or FAA-/DoD-contract) terminal or en route facility.

- Standardize timeframes for retaining flight plan data before it is dropped from NAS automation. Note:
  - o Drop times may be longer when severe weather or other traffic management programs are in effect, to preclude the need for refiling.
  - o New flight plans will not be accepted before a previously filed flight plan for the same aircraft identification and proposed departure time has been dropped or activated.
- Continue to allow flight plans to be filed up to 24 hours prior to the proposed departure time.
- Generate an alert for ATC when another flight strip prints for a previously printed flight plan because the proposed departure time is within a certain timeframe.

2. Regulatory changes. Though regulatory changes may be needed later, the team determined they may be beyond the scope of this SRM panel at this time. In the meantime, FAA policy changes should reflect new NAS automation requirements and provide a process for revising flight plan data that discourages the filing of multiple flight plans. They should also address a means of notifying operators when flight plan drop times will exceed standard retention times. Changes are planned for the following FAA publications:



- FAA Order JO 7110.10, Flight Services
- FAA Order JO 7210.3, Facility Operation and Administration
- Aeronautical Information Manual/Publication, or AIM/AIP

3. Planned outreach efforts for Operators (flight plan filers, pilots) and ATC include
   - Publication of AFS Information for Operators (InFO) 14-012, Flight Plan Discrepancies and Amendment Filing Procedures);
   - Publication of a new Advisory Circular on Flight Planning;
   - Discussion of issues during operator outreach sessions such as the monthly flight plan filers' telcons and/or the National Customer Forum (NCF);
   - Update to FAA Flight Planning website information;
   - Publication of a QA Safety Bulletin on multiple flight plans; and
   - Discussion during the monthly QA/QC webinar and Partnership for Safety telcon; and
     - Safety Awareness Discussions facilitated by Local Safety Councils
     - An update of FAA Flight Planning website information
   4. Publication of a QA Safety Bulletin on multiple flight plans.
   5. Discussion during the monthly Quality Assurance/Quality Control webinar and Partnership for Safety telcon.

While most of these efforts do not directly address specific safety problems caused by multiple flight