

## Gorman, Karen

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**From:** Debra.Rosen@dot.gov  
**Sent:** Wednesday, September 23, 2009 11:07 AM  
**To:** Gorman, Karen  
**Cc:** McMullen, Catherine; Judy.Kaleta@dot.gov  
**Subject:** FW: SUGENT follow-up  
**Attachments:** 1999 Study.pdf; OSCSugentAttach1.pdf; OSCSugentAttach2.pdf; DTW-FAA Tech Rpt.pdf

Karen: Please find below, responses (in red) to the follow-up questions in your e-mail of August 27, 2009, concerning the Sugent investigation, DI-08-0591 and DI-09-1696. Documents referenced in the responses are attached.

Debbie

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●OSC - "In reference to the finding that FAA managers failed to prepare a timely clarification of FAA's September 17, 2007 letter to Senator Levin [Joseph Figliuolo and Marcia Boliard], Secretary LaHood's letter to OSC dated June 10, 2009 states that "...I will ask the new Administrator to examine these circumstances to determine whether formal disciplinary action is warranted and to apprise you [OSC] of the disposition." Has this been completed? If so, what was the determination? If not, when is completion expected? We are aware of a letter sent to Senator Levin from Bob Tarter, Vice President Office of Safety, FAA, dated August 11, 2009, reporting on the status of several matters, but the above matter was not addressed. A copy of the letter is attached for your reference."

Response - This matter is under active review. We will apprise you of the determination in this matter as soon as it is completed. We will provide you a status report at the end of October should the matter not be completed by that time.

●OSC - "Recommendation 1(b) and FAA's response as noted in the May 6, 2009 response to OIG from FAA indicate that ATO's Office of Safety and Office of Terminal Safety and Operations Support were to complete an audit report by June 30, 2009. Has this been completed and is the report available for OSC's review?"

ATO Response - As noted in our August 11, 2009 response to Mr. Beitel from Mr. Krakowski regarding recommendation 1(b), the ATO has not conducted a follow-up audit of DTW's intersecting runway training because the facility has instead elected to cease use of the runway configuration in question.

See Attachment 1 attached to this e-mail.

●OSC - "Recommendation 1(c) and FAA's response as noted in the May 6, 2009 response states that the Director of Operations for the Central Service Area will require that the DTW Manager provide "further follow-up to the facility staff." Please clarify what follow-up was provided and to whom?"

ATO Response - The DTW ATM provided further follow-up after the May 6, 2009 memo to members of the management team and operational personnel. This follow-up consisted of specific prohibition on conducting the Southwest Flow Operation in question. Please see attached internal facility email to front line managers Attachment 2 to this e-mail.

• OSC - "Recommendation 2(a) and FAA's response states that "FAA investigated" the allegations that false statements were made to Senator Levin. Was there an investigation separate and apart from the OIG investigation? If so, is there an investigative report and is it available for OSC's review?"

ATO Response - There is no separate investigative report on this subject. FAA's Investigation consisted of a review of the circumstances and a review of the OIG report.

• OSC - "Recommendation 2(b) and FAA's response states that the Acting Administrator will apprise Senator Levin of the disposition of actions at DTW pursuant to Mr. Sugent's concerns and the OIG findings. Recommendation 2(b) concerns the misleading information provided to Senator Levin. FAA's response is that the Acting Administrator "will forward Senator Levin a copy of the response to the OIG." Does this refer to the May 6, 2009 memo? If not, is there another response? Is this related to the August 11, 2009 letter from Mr Tarter? If so, please address whether there will be additional follow-up consistent with the Secretary's request that the new Administrator consider whether formal disciplinary action is necessary"

ATO Response - As described in Acting Administrator Osmus' memorandum of May 6, 2009, a copy of that memorandum, which was FAA's response to the OIG, was provided to Senator Levin.

• OSC - "Recommendation 3(a) and FAA's response indicates that an assessment for all "hold-short" lines and lighted signs on Taxiway Quebec was to be initiated by May 30, 2009. Was this initiated and what is the current status. We are aware of the issuance of a new order relating to Taxiway Quebec and the hold-short lines (DTW N7110.181); is this the result of that assessment? Was there a written assessment or report and is it available for review by OSC?"

ATO Response - As noted in our August 11, 2009 response to Mr. Beitel from Mr. Krakowski regarding recommendation 3(a), the Runway Safety Office did complete an assessment of the Taxiway Q hold-short lines. The above referenced facility directive, DTW N7110.181 (see Attachment 1), was modified as a result of this assessment. No formal report was prepared as a result of this assessment.

• OSC - "Recommendation 4 and FAA's response notes that upon completion of the items addressed in recommendation 3 (to be completed by June 30, 2009), ATO will request that AOV conduct an audit of actions taken in response to the OIG report. Has this audit occurred or is it planned? If so, will there be a report available for OSC's review? A reference to this audit is also contained in the letter to Senator Levin dated August 11, 2009."

ATO Response - A follow-up audit by AOV is planned for October 2009. A report from this audit will be prepared and will be provided to OIG upon completion. OIG will forward a copy to OSC.

• OSC - Page 10 of the OIG report states in the first full paragraph that "new standardized classroom training for operational personnel has been implemented." Has classroom training occurred, and if so, when and for which operational personnel? DTW Support Manager for Training and Quality Assurance Earl Grand advised the OIG on September 3, 2009, that for approximately one year, contract personnel of Raytheon have been conducting new employee training and most verbal briefings for all of Detroit's

operational personnel, i.e., TRACON and Tower controllers and supervisors. (He noted that the training has been ongoing, so we would have to access Detroit's training records to determine, for example, exactly when all of the verbal briefings occurred.)

Grand specified that the verbal briefings conducted by Raytheon are those that constitute a new procedure, a change in operating procedure, or are open to interpretation or not strictly fact-based. He stated that DTW management, primarily himself along with consultation from the TRACON and Tower Operations Managers, decide which verbal briefings Raytheon will brief.

According to Grand, upper management at DTW, including himself and Air Traffic Manager Joseph Figliuolo, implemented this policy to standardize the consistency of the verbal briefings received by operational personnel. Grand stated that this was done in direct response to the inconsistency of the guidance previously provided by the facility's various supervisors (FLMs).

Last, Grand advised that he is very pleased with the quality of the training performed by Raytheon and is unaware of any complaints regarding the training. In fact, he stated that he has received positive feedback from controllers and supervisors, especially concerning the training for new employees.

●OSC -Page 13 of the OIG report states in the first paragraph that the 750' hold-short mark was established pursuant to a 1999 airspace study. Could you provide a copy or link to the referenced study?

A copy is attached.

● OSC - In reference to OSC File No. DI-08-0591, OSC referred allegations that briefing materials were attached to a briefing folder after controllers were briefed and signed the folder, and that this was improper and caused confusion. Please see page 2 of the OSC Report of Disclosures Referred for Investigation, OSC File No. DI-08-0591, attached to the March 12, 2008 letter to Secretary Peters from Special Counsel Scott Bloch. This allegation was not addressed – was it investigated?

As previously advised, this matter was investigated and reported out to FAA via the OIG technical report dated April 3, 2009. It was not contained in the shortened report from the IG to Secretary LaHood but was addressed in the OIG technical investigative report accompanying and referenced in the memorandum report of investigation ( It states on pp. 8-9:

"Mr. Sugent alleged to OSC that DTW management attempted to deceive ATO-Safety by attaching a copy of FAA Order 7110.65, Paragraph 3-9-8, and other guidance to the R & I (Read and Initial) sheet that controllers signed indicating that they had attended one of the August briefings. Mr. Sugent claimed that in doing so, management intended to create the impression that they had distributed copies of this guidance to controllers during the briefings, even though this never actually occurred. Mr. Sugent stated that, in reality, controllers did not receive any form of written guidance during the briefings.

We did not find evidence to substantiate this allegation. ATO-Safety's October 19, 2007, memorandum concluded that management did not provide controllers with any written guidance during the briefings in question, and we did not find any evidence that management attempted to contradict this finding." A complete copy of the technical report was previously provided to OSC and is also attached herein.



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Willow Run Airport, East  
8820 Beck Road  
Airports District Office  
Belleville, MI 48111

April 9, 1999

Mr. Linn Day, Director of Airports for  
Properties, Facilities & Planning  
Wayne County Department of Public Services  
Division of Airports  
Detroit Metropolitan Wayne County Airport  
L.C. Smith Terminal, Mezzanine  
Detroit, MI 48242

Dear Mr. Day:

Detroit Metropolitan Wayne County Airport, Detroit, MI  
Proposed Taxiway Q, and J and T  
Airspace Case No. 99-AGL-601-NRA

We have completed an aeronautical study on the partial ALP revision to add Taxiway "Q", and reevaluation of taxiways "J" and "T" and interpose no objection from an airspace utilization standpoint provided the following conditions are adhered to:

1. TWY Q, underlying the approach trapezoids to RWYs 3L and 9R, is clear of aircraft during approach operations (controlled by properly located marking/signage and ATCT).

2. TWY Q, underlying the departure trapezoid to RWY 21R, is clear of aircraft unable to remain below 705' MSL during RWY 21R departure operations (controlled by marking/signage and ATCT). 705' MSL will be entered on the Airport Master Record (Form 5010) as a permanent obstacle so that commercial operators will be able to use this information for determining aircraft performance requirements. In addition, take action to insure information is added to the published departure procedures stating that for RWY 21R departures, the minimum DER crossing height shall be 651' MSL (13' AGL).

3. TWY Q, underlying the departure trapezoid to RWY 27L, is clear of aircraft during RWY 27L departure operations (controlled by marking/signage and ATCT).

4. Future TWY J, underlying the departure trapezoid to RWY 21C (existing and future), is clear of aircraft unable to remain below 698' MSL for existing RWY 21C and unable to remain below 653' MSL for future RWY 21C during RWY 21C departure operations (controlled by marking/signage). These MSL restrictions will be entered on the Form 5010 (see item 2. above). In addition, take action to insure information is added to the departure procedures stating that for RWY 21C departures, the minimum DER crossing height for current conditions shall be 651' MSL (15' AGL).

5. Future TWY J, underlying the approach trapezoid to RWY 3C (existing and future), is clear of aircraft during RWY 3C approach operations (controlled by marking/signage and ATCT).
6. TWY T, underlying the departure trapezoid to RWY 21C (existing and future), is clear of aircraft unable to remain below 728' MSL for existing RWY 21C and unable to remain below 660' MSL for future RWY 21C during RWY 21C departure operations (controlled by marking/signage and ATCT). These MSL restrictions will be entered on the Form 5010 (see item 2. above). In addition, take action to insure information is added to the published departure procedures stating that for RWY 21L departures, the minimum DER crossing height shall be 671' MSL (35' AGL).
7. TWY T, underlying the approach trapezoid to RWY 3C (existing and future), is clear of aircraft during RWY 3C approach operations (controlled by marking/signage and ATCT).
8. The proposed 1,500 foot extension to the approach end of RWY 9R and its associated TWYs conflict with proposed TWY Q. Further study will be required if TWY Q is constructed.
9. The sponsor informs airport users and the Air Transport Association of the above restrictions and in particular items 2., 4., and 6 when taxiways are constructed and before they are operational.
7. Proposed construction activity identified on the ALP shall be submitted as a separate airspace case study. A Construction Safety Phasing Plan (CSPP) shall be included as part of the airspace study for each proposed construction contract, and must be approved by FAA before any construction activity can begin. Also, each proposed construction activity shall be highlighted on the submitted CSPP.
8. The Air Traffic Control Tower (ATCT), Air Traffic Manager (ATM), is invited to all construction planning, pre-construction and/or construction meetings for the purpose of coordinating any impact upon air traffic flow.
9. Improvements resulting in impacts on FAA facilities or cables due to construction will have to be coordinated through ANI-400 in order to establish reimbursable funding for the engineering and relocation.
10. Centerline of taxiway Q should be approximately 2167 feet from the runway 3L threshold to split the existing ALSF II lights at that location. Modification of lights will be in accordance with No. 9 above.
11. When taxiway Q is opened a note should be added to the Master Record noting the possible illusion of an aircraft on the runway that is on taxiway Q within the departure trapezoid. This should also be done for taxiways J and T.

With the conditions noted above all aircraft with a tail height of 65 feet or less (747) can operate on the taxiway during departure operations.

Sincerely,

*Robert L. Conrad*

Robert L. Conrad  
Program Manager

cc: DTW ATCT, ATM  
Paul Daccache, DTW (Facsimile)

OPTIONAL FORM 99 (7-90)

**FAX TRANSMITTAL**

# of pages **3**

To <i>Ren Brazman</i>	From <i>David Wp /house</i>
Dept./Agency <i>DTW ATCT</i>	Phone #
Fax # <i>(734) 955-5289</i>	Fax #



## Federal Aviation Administration

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### Memorandum

Date: AUG 11 2009

To: Rick Beitel, Assistant Inspector General for Washington  
Investigative Operations

From: Hank Krakowski, Air Traffic Organization, Chief Operating Officer

Prepared by: Bob Tarter, Vice President, Office of Safety *Bob Tarter*

Subject: Response to OIG Recommendations for Detroit Metropolitan Wayne County  
Airport (DTW) Air Traffic Control Tower  
Ref: OIG Investigative Report, 08111B33H001, Apr. 3, 2009

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The Office of Safety submits the following update on Detroit Metropolitan Wayne County Airport (DTW) in response to your recent Investigative Report.

**Recommendation - 1 (a)** Before DTW considers reinstating operation of the Southwest Flow, it must consult with ATO's Office of Terminal Safety and Operations and the Air Traffic Safety Oversight Service (AOS) to develop detailed procedures for safe operation of this configuration.

**RESPONSE (status)** - Since the Southwest (SW) Flow configuration has been suspended and future use of the SW Flow configuration is dependent on safety risk analysis and operational necessity, no procedures development will occur on this configuration until the risk and operational necessity evaluation are completed. Advanced modeling and simulation techniques are being used to understand the risks and safety mitigation necessary to utilize this configuration in the future. Once the modeling and simulation is complete, safety risk management, procedures and training development, and much coordination will be required before reinstating operation of the SW Flow. The Air Traffic Safety Oversight Service may elect to audit any procedures developed by the ATO whenever they deem necessary.

**Recommendation - 1 (b)** ATO conduct an audit into DTW's air traffic controller training program to ensure that controllers are provided thorough, consistent, and uniform training regarding proper air traffic procedures pertaining to intersecting runways.

**RESPONSE (status)** - DTW has not yet developed training for intersecting runways, because there is currently no operational configuration that utilizes intersecting runways. Without a training program regarding proper air traffic procedures pertaining to intersecting runways, the Office of Safety cannot complete the recommended audit contained in Recommendation 1 (b). When DTW determines that intersecting runway configurations are desired, procedures will be

developed, and training will be conducted prior to implementation. If DTW begins training again for intersecting runway operations, the recommended audit by AJS and AJI to ensure that controllers are provided with thorough, consistent, and uniform training regarding proper air traffic procedures pertaining to intersecting runways will be completed.

**Recommendation - 2 (b)** The (Acting) Administrator apprises Senator Levin of the disposition of actions at DTW pursuant to Mr. Sargent's concerns and our findings and recommendations.

**RESPONSE (status)** - Our May 6<sup>th</sup> response to your office and the latest status is contained in our letter to Senator Levin. The attached draft letter is expected to be signed out and delivered by August 10, 2009.

**Recommendation - 3 (a)** Promptly determine the correct location for all "hold-short" lines on Taxiway Quebec and ensure that painted lines and lighted signs are situated correctly.

**RESPONSE (status)** - The Runway Safety Office validated the location of runway hold-short lines on Taxiway Q. Painted lines and lighted signage installations were checked and found to meet all requirements. The hold-short lines and raised signage have been properly placed along Taxiway Q to indicate the 750 foot requirement when Approach Lighting System with Sequenced Flashing Lights (ALSF-2) operations are necessary. DTW operating procedure notice DTW 7110.181 describes this change, and a draft copy is attached. This notice is expected to be approved and published very shortly.

**Recommendation - 3 (b)** modify ASDI-X in accordance with the foregoing determinations.

**RESPONSE (status)** - DTW has initiated changes to their Airport Surface Detection Equipment, model X (ASDI-X) displays to reflect the new hold-short line locations on Taxiway Q. The ASDI-X displays properly contain the 750 foot hold-short line locations. Until the 200 foot markings can be permanently removed from the ASDI-X displays, shading is added overlaying the 1500 foot (750 feet left and right of Runway 4R extended centerline) region that taxiing aircraft are to remain clear of when ALSF-2 lighting is being used. Pictures of the modified ASDI-X displays are attached.

**Recommendation - 3 (c)** properly train controllers on "hold-short" requirements.

**RESPONSE (status)** - Training on the location of the hold-short lines on Taxiway Q is expected to begin as soon as notice DTW 7110.181 is approved, and it is anticipated all operational personnel at DTW will have completed training on the location of Taxiway Q hold-short lines within fifteen days following approval of the notice DTW 7110.181.

**Recommendation - 3 (d)** DTW, with the review and concurrence of ATO-Terminal's Office of Terminal Safety and Operational Support, revise subchapter 5-7.6 (11) of the ground control chapter of its Operating Manual by changing wording from "should" to "shall."

**RESPONSE (status)** - DTW operating procedure notice DTW 7110.181 includes this change, and a draft copy is attached. This notice has been reviewed, received concurrence of ATO-



Terminal's Office of Terminal Safety and Operational Support, and is expected to be approved and published very shortly.

Please contact Joseph Teixeira (202) 267-3341 if you have further questions regarding this matter.

Atch: draft copy of letter to Senator Levin  
notice DTW 7110.181  
photos showing ASDI-X displays and the Taxiway Q hold-short lines

cc: Vice President, Terminal Services  
Director, Air Traffic Safety Oversight Service



U.S. DEPARTMENT OF  
TRANSPORTATION

**Federal Aviation  
Administration**

800 1 800 1

The Honorable Carl Levin  
United States Senator  
477 Michigan Avenue, Room 1860  
Detroit, MI 48226

Dear Senator Levin:

In August of 2007, you wrote to us on behalf of your constituent, Mr. Vincent Sugent. Mr. Sugent had concerns about air traffic procedures utilized at the Detroit Metropolitan Wayne County Airport (DTW). I am writing today to provide you an update on the Federal Aviation Administration (FAA) responses to those concerns.

As you may know, Mr. Sugent's disclosures were raised to the Office of Special Counsel. The Office of Special Counsel process is ongoing and any details related to that process must be provided by that office. Nonetheless, I can report the actions the FAA has taken to address concerns raised by Mr. Sugent.

#### **Procedures and Training**

Since the Southwest (SW) Flow configuration has been suspended and future use of the SW Flow configuration is dependent on safety risk analysis and operational necessity, no procedures development will occur on this configuration until the risk and operational necessity evaluation are completed. Advanced modeling and simulation techniques are being used to understand the risks and safety mitigation necessary to utilize this configuration in the future. Once the modeling and simulation is complete, safety risk management, procedures and training development, and significant coordination will be required before reinstating operation of the SW Flow.

If the FAA determines that intersecting runway configurations are desired at DTW, procedures will be developed, and training will be conducted prior to implementation. As recommended by the Department of Transportation Inspector General, FAA would conduct an audit to ensure that controllers are provided with thorough, consistent, and uniform training regarding proper air traffic procedures pertaining to intersecting runways.

#### **Compliance**

Administrative action has been effective in ensuring compliance with procedures pertaining to SW Flow operations. The DTW Manager was counseled and additional reporting and follow up discussions have been held to reinforce expectations for management and staff.

**Runway Safety**

We have validated the location of runway hold-short lines on Taxiway Q. Painted lines and lighted signage installations were checked and found to meet all requirements. The hold-short lines and raised signage have been properly placed along Taxiway Q to indicate the 750 foot requirement when Approach Lighting System with Sequenced Flashing Lights (ALSF-2) operations are necessary. DTW operating procedure notice DTW 7110 181 describes this change.

DTW has initiated changes to their Airport Surface Detection Equipment, model X (ASDE-X) displays to reflect the new hold-short line locations on Taxiway Q. The ASDE-X displays include the proper 750 foot hold-short line locations. Until the 200 foot markings can be permanently removed from the ASDE-X displays, shading is added overlaying the 1500 foot (750 feet left and right of Runway 4R extended centerline) region that taxiing aircraft are to remain clear of when ALSF-2 lighting is being used.

Training on the location of the hold-short lines on Taxiway Q did begin August 7, 2009 and it is anticipated all operational personnel at DTW will have completed training on the location of Taxiway Q hold-short lines within fifteen days.

Once the above actions are completed, we will request that the FAA's Office of Safety conduct an audit of actions taken in response to the OIG report. I hope you find this information helpful.

If we can be of further assistance, please contact the Acting Assistant Administrator of Government and Industry Affairs, Mary U. Walsh, in (202) 267-3277.

Sincerely,



for Bob Tarter  
Vice President, Office of Safety

Enclosure: Letter to DOI OIG dated 5/6/09

cc - Washington Office



## Federal Aviation Administration

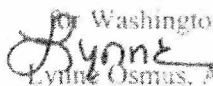
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### Memorandum

Date: May 6, 2009

To: Rick Beitel, Assistant Inspector General  
Washington Investigative Operations

From:   
Lynne Osmus, Acting Administrator

Subject: Detroit Metropolitan Airport (DTW) Airport Traffic Control Tower Operations

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We have reviewed the above identified OIG Report and submit the following responses to the recommendations contained in the report:

1. (a) Recommendation: Before DTW considers reinstating operation of the Southwest Flow, it must consult with ATO's Office of Terminal Safety and Operations and the Air Traffic Safety Oversight Service (AOV) to develop detailed procedures for the safe operation of this configuration.

**Response:** Concur. DTW in conjunction with ATO-Terminal will review the Southwest Flow operations to include current procedures and compliance. Modifications or changes and the approval processes will be accomplished through the Safety Management System (SMS) processes and completed by October 31, 2009. The SMS process will include a review by the Air Traffic Safety Oversight Service (AOV). In addition, AOV may elect to audit any procedures developed by the ATO whenever they deem necessary.

(b) Recommendation: ATO conduct an audit into DTW's air traffic controller training program to ensure that controllers are provided with thorough, consistent, and uniform training regarding proper air traffic procedures pertaining to intersecting runways.

**Response:** Concur. ATO's Office of Safety and Office of Terminal Safety and Operations Support will jointly conduct an audit of DTW's air traffic controller training program to ensure that controllers are provided with thorough, consistent, and uniform training regarding proper air traffic procedures pertaining to intersecting runways. The audit report will be completed by June 30, 2009.

(c) Recommendation: Consider appropriate administrative action for DTW Manager Joseph Figliuolo and DTW Operations Manager Kevin Grammes based on their failure to ensure that the Southwest Flow complied with FAA Order 7110.65 (regarding the safe operation of runways with intersecting flight paths), and their failure to ensure that controllers received adequate

training and guidance. Mr. Figliuolo and Mr. Grammes were counseled. We believe the counseling was effective and produced the required change in procedures and understanding.

**Response:** Concur. Administrative action has been effective in ensuring compliance with procedures pertaining to Southwest Flow operations. The Director of Operations for Central Service Area counseled the DTW Manager. Closer supervision was provided by monthly reports through November 2008, followed by quarterly reports to the Director. The Director will meet with the DTW Manager on April 23, 2009 to reinforce expectations. Additionally, the Director will require that the DTW Manager provide further follow-up to the facility staff.

2. (a) Recommendation. Consider appropriate administrative action for DTW Manager Joseph Figliuolo and former DTW Staff Manager Marcia Boliard for providing information for FAA's initial response to Senator Levin that was, at a minimum, disingenuous.

**Response:** Concur. The FAA investigated and determined that Mr. Figliuolo and Ms. Boliard misunderstood the AOV verbal outbrief reference the Southwest Flow operations. When they received the written response from AOV, it was recognized that it differed from their understanding of the initial verbal briefing. Mr. Figliuolo and Ms. Boliard were counseled. We believe the counseling was effective and produced the required change in procedures and understanding. Reference the FAA's response to Senator Levin, there was no intent to mislead. The information provided to the Senator was based on DTW management's understanding of the AOV verbal briefing. The Director of Central Service Area counseled the managers on providing information based on verbal briefings.

(b) Recommendation: The Acting Administrator apprises Senator Levin of the disposition of actions at DTW pursuant to Mr. Sugent's concerns and our findings and recommendations.

**Response:** Concur. I will forward Senator Levin a copy of the response to the OIG.

3. (a) Recommendation. Promptly determine the correct location for all "hold-short" lines on Taxiway Quebec and ensure that painted lines and lighted signs are situated correctly. (b) modify ASDE-X in accordance with the foregoing determinations. (c) properly train controllers on "hold-short" requirements. (d) DTW, with the review and concurrence of ATO-Terminal's Office of Terminal Safety and Operations Support, revise Subchapter 5-7.b (II) of the ground control chapter of its Operating Manual by changing wording from "should" to "shall."

**Response:** 3 (a) Concur. ATO's Office of Runway Safety will assist in providing an assessment for all "hold-short" lines and lighted signs on Taxiway Quebec. We will request that Airports and the Airport Authority bring identified deficiencies into compliance and advise of the expected completion date. The Office of Runway Safety will initiate these actions by May 30, 2009.

**Response:** 3 (b) Concur. The FAA will ensure ASDE-X and hold short requirements are integrated pending completion of actions in 3 (a).

**Response:** 3 (c) Concur. DTW will review the training on hold short requirements for Taxiway Quebec operations based upon any changes that result from actions addressed in 3a and 3b. Any

changes to training found to be appropriate following the review will be completed by June 30, 2009.

**Response:** 3 (d) Concur. DTW, with the review and concurrence of AJT, will revise as necessary the subchapter 5-7 b.(11) of the ground control chapter of its Operating Manual by changing the word "Should" to "Shall". This will be completed by June 30, 2009.

4 Recommendation: Require that AOV conduct a follow-up audit to ensure that DTW's corrective measures regarding segregation of outbound jet and propeller aircraft are still being properly trained and implemented, and are sufficient to remedy the safety concerns previously identified by AOV.

**Response:** Once the above actions are completed, the ATO will request that AOV conduct an audit of actions taken in response to the OIG report.

**NOTICE**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

DTW N7110.181

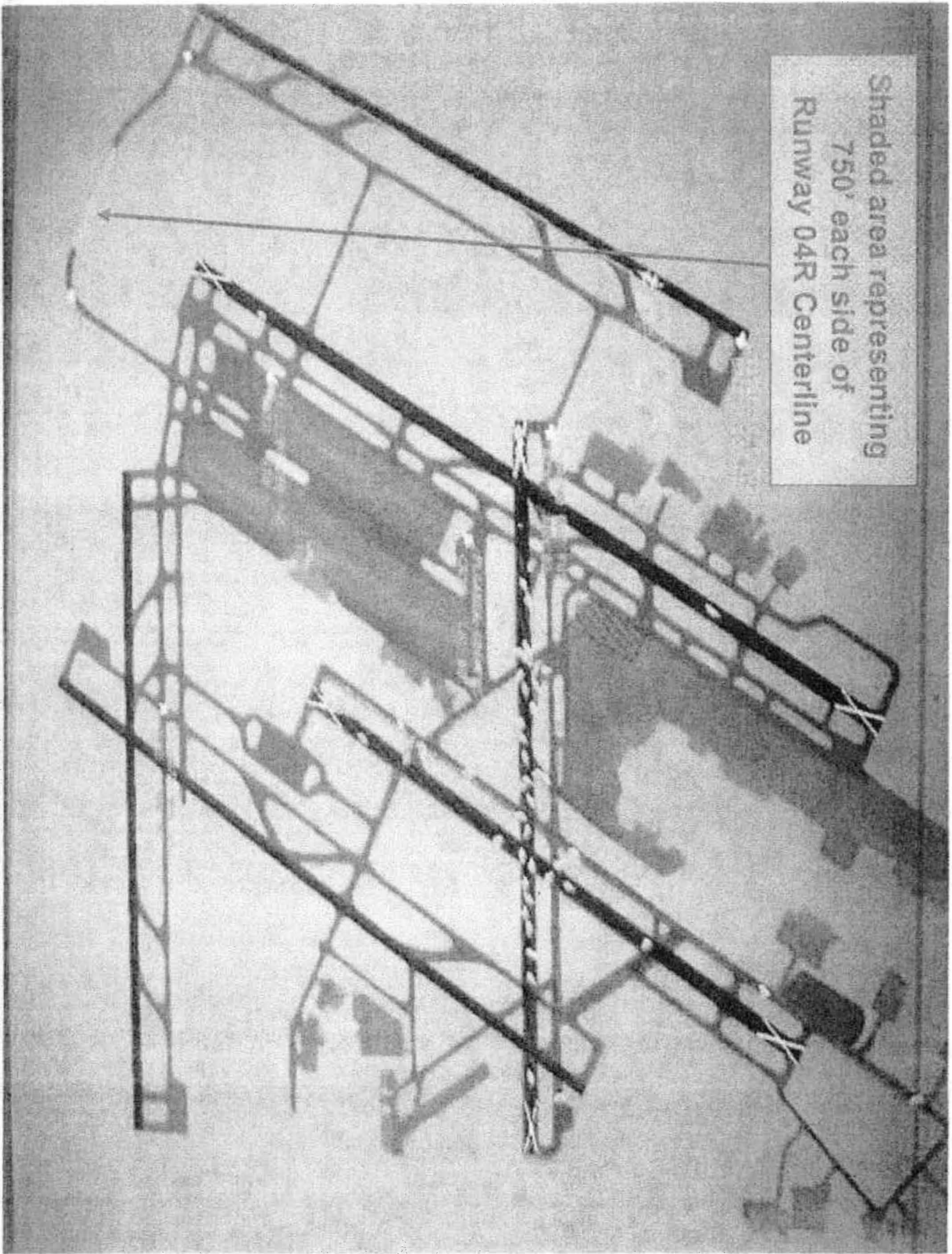
DETROIT METRO ATCT

Effective Date:  
ImmediatelyCancellation Date:  
July 31, 2010**SUBJ: Taxiway Quebec Restriction**

- 1. Purpose of this Notice.** The purpose of this notice is to modify the current restriction for taxiway Quebec in the DTW 7110.9, Standard Operating Procedures (SOP).
- 2. Audience.** This notice applies to DTW Tower employees, and all associated support personnel.
- 3. Where can I Find This Notice?** This notice is available in all applicable DTW publications and the FAA Federal Directives Repository, <https://loa.faa.gov/>
- 4. Explanation of Changes:** This notice modifies the distance requirement for aircraft to remain clear of the Runway 04R ALSF-2 light line during low IFR conditions. It extends the distance from 200' each side of extended center line to 750' each side of center line. It has been determined that the Runway 04R Approach Hold Short markings and signage may be used to ensure protection of these area boundaries on Taxiway Q.
- 5. Procedures.** Change paragraph 5-7 b. (1) to chapter 5, Ground Control of the DTW SOP to read:  
  
(1) GC is required to have the area on taxiway Quebec, 750' either side of the RWY 4R extended centerline, clear of aircraft while the ALSF-2 is in operation. The requirements for the ALSF-2 are 1/2 mile or less, or RVR of 4,000 or less. Controllers shall ensure taxiing aircraft are clear of this area from the time an aircraft is on a 1/2 mile final until crossing taxiway Q, or the pilot reports approach lights in sight. Aircraft shall be instructed to "Hold Short of 4R Approach". This lighted sign is located 750' from the extended centerline and is depicted on the ASDI X display.

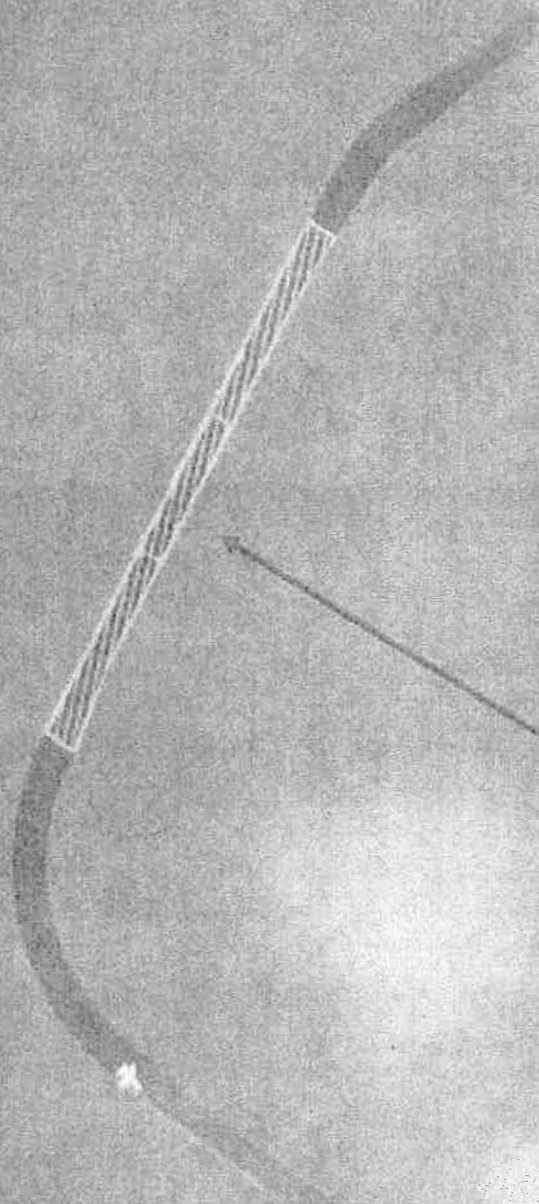
Gary Anefnee  
Acting Air Traffic Manager  
Detroit Metro ATCT

Shaded area representing  
750' each side of  
Runway 04R Centerline





Shaded area representing  
750' each side of  
Runway 04R Centerline



Lines Representing  
200' Each Side of  
Runway 04R Centerline

Lines Representing  
750' Each Side of  
Runway 04R Centerline





Kevin Grammes/AGL/FAA  
TCL-DTW, Detroit Metro  
ATCT, MI

05/20/2009 01:40 PM

To  
cc  
bcc  
Subject Urgent Reminder

FLM's

Just an urgent reminder NO SOUTHWEST FLOW!

Or any variation that the Tracon or TMC's attempt to coordinate.

Here is what we can do:

South FLOW Arrival and Departures on 22's and 21's

North Flow: Arrivals and Departures on 3's and 4's

~~North East Flow Arrivals on 4L and 4R Dept. 3L, and 9R.~~ Currently dropped from the D21 SOP.

West Flow Arrivals on 27's and Departures on 27's and / or 22R

DO NOT approve converging arrival operations, such as landing RY22R and RY27L. (this was requested this past weekend and correctly denied)

The SOP 6-9 specifies how to handle transitions between flows and it is very specific on where the departures must be in relation to the arrivals.

This same concept carries over into transitions of the arrivals as well. Be conservative and do not put any one in a compromised position over this issue.

This has been addressed and confirmed again in the Managers meeting today generated by the Tracon request over the weekend.

Questions see me.

Kevin J. Grammes  
Operations Manager, DTW ATCT  
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**Findings**

- I. *From approximately May 2007 to October 2007, DTW management operated a critical segment of the “Southwest Flow” configuration in non-compliance with FAA safety Order 7110.65, thereby allowing a potentially unsafe condition to persist. Moreover, from August 2007 to October 2007, the DTW Operations Manager knowingly allowed the non-compliance to occur. Further, DTW managers failed to provide FAA controllers with adequate instruction and training on the correct operation of this configuration.*

**a. Background**

DTW operates six runways. Four of the runways are oriented in a north-northeast to south-southwest parallel configuration; the two remaining runways are oriented in an east to west parallel configuration. When aircraft arrive and depart in a southerly direction, the north-northeast to south-southwest runways are designated – from west to east – Runway 22 Right (22R), Runway 22 Left (22L), Runway 21 Right (21R), and Runway 21 Left (21L). The east-west runways are designated – from north to south – Runway 27 Right (27R) and Runway 27 Left (27L). Only the westernmost of the four north-northeast to south-southwest runways does not physically intersect with one of the east-west runways. Specifically, Runway 27R intersects with Runway 22L, Runway 21R, and Runway 21L; and Runway 27L intersects with Runway 21L.

Whenever DTW controllers departed aircraft from Runways 21R and 22L, and landed arriving aircraft on Runways 22R and 27L, they executed the air traffic configuration known as the “Southwest Flow.”<sup>1</sup> According to DTW officials, they utilized the Southwest Flow to increase the airport’s air traffic capacity and efficiency during favorable weather conditions.

DTW further divided the Southwest Flow into two components: one of which it characterized as “dependent,” and the other which it characterized as “independent.” The scenario that entails outbound aircraft departing from Runway 21R while incoming aircraft arrive on Runway 27L is considered a “dependent” operation because the flight paths of the outgoing and incoming aircraft intersect. Consequently, the controllers must coordinate the departure of aircraft from Runway

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<sup>1</sup> The Southwest Flow is not unique to DTW, but, rather the term refers to the air traffic operation in which aircraft depart or arrive from the north and head to the south, while other aircraft depart or arrive from the east and head to the west.

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21R with the arrival of aircraft on Runway 27L. To successfully execute this maneuver, the controllers must create sufficient space between consecutive aircraft arriving on Runway 27L to allow aircraft on Runway 21R to depart safely. According to ATO-Safety, DTW is prohibited from using the dependent operation more than six percent of the time.

The independent component of the Southwest Flow, which entails outbound aircraft departing from Runway 22L while inbound aircraft arrive on Runway 27L, is so designated because neither the runways themselves nor the flight paths of inbound and outbound aircraft intersect one another.<sup>2</sup> Therefore, according to DTW management, the controllers are not required to coordinate departures from Runway 22L with arrivals on Runway 27L; instead, the two runways function independently.

Although Runway 21R does not physically intersect with Runway 27L, Runway 21R is directly north of Runway 27L. Thus, as stated above, an aircraft departing Runway 21R must fly over Runway 27L. Consequently, Mr. Sugent is concerned that if, while operating the dependent operation of the Southwest Flow, an aircraft attempting to land on Runway 27L executes a “missed approach” or “go-around,” that aircraft could potentially collide with an aircraft that has just departed Runway 21R.<sup>3</sup>

Mr. Sugent also contended that although Runway 22L and Runway 27L do not physically intersect, the closeness of the southern edge of Runway 22L to the western edge of Runway 27L means these two runways are not independent during the Southwest Flow. Consequently, according to Mr. Sugent, the independent operation of the Southwest Flow is also potentially dangerous in the event of a missed approach or go-around on Runway 27L, as that aircraft could potentially collide with an aircraft that has just departed Runway 22L. Additionally, Mr. Sugent alleged the wake turbulence created by large jets recently departed from Runway 22L could create a safety hazard for any aircraft conducting a missed approach or go-around from Runway 27L that flies through the turbulence.

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<sup>2</sup> The independent component also entails landing aircraft on Runway 22R. Because OSC did not refer to us for investigation any safety concerns about Runway 22R, our memorandum does not discuss the operation of this particular runway.

<sup>3</sup> A missed approach occurs when an aircraft’s pilot decides to abort a landing during final approach, while a go-around occurs when a controller instructs the pilot to abort the landing. Both require the aircraft to climb in altitude and typically turn away from its arrival runway while attempting to remain a safe distance from other aircraft in the area.

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Further, Mr. Sugent alleged that despite an August 14, 2007, audit by AOV, DTW management provided the controllers with inconsistent and insufficient guidance concerning the operation of the Southwest Flow. According to Mr. Sugent, the guidance, which DTW management provided in several briefings, memoranda, and notices between August 2007 and March 2008, failed to adequately discuss the specific requirements of FAA Order 7110.65; caused confusion and varied interpretations of the Southwest Flow among the controllers; and failed to adequately address his and other controllers' concerns about missed approaches/go-arounds, wake turbulence, and the independent operation of the Southwest Flow.

Although the evidence indicates that DTW used the Southwest Flow on an infrequent basis as early as 1996, it did not begin relying upon this air traffic configuration on a frequent basis until May 2007, when Runway 21L was closed for repairs.<sup>4</sup> During the following five months, DTW operated both the dependent and independent components of the Southwest Flow on a routine basis.

### **b. Prior FAA audits and investigations into the Southwest Flow**

FAA auditors and inspectors have already conducted several comprehensive audits and investigations into the safety of the dependent component of the Southwest Flow. In 2007, AOV conducted a comprehensive audit of five airports operating air traffic configurations involving intersecting runways or flight paths. On August 13 and 14, 2007, Kenneth Hartenstine, Lead AOV Safety Inspector, and Cassandra James, AOV Air Traffic Safety Inspector, observed air traffic operations at DTW as part of the comprehensive audit. AOV published its findings in an audit report dated September 28, 2007.

In a Letter of Investigation (LOI) dated October 1, 2007, AOV reported to ATO-Safety deficiencies it identified during the August 2007 audit.<sup>5</sup> In response, ATO-Safety visited DTW on October 15-17, 2007, and conducted interviews, reviewed documents, replayed data tapes, and observed air traffic operations. ATO-Safety issued a final report of its investigative findings in a memorandum dated October 19, 2007.

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<sup>4</sup> Runway 21L reopened on or about November 20, 2007.

<sup>5</sup> ATO-Safety conducts internal safety-related investigations of ATO operations.

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On March 24, 2008, Mr. Hartenstine and Scott Proudfoot, AOV Air Traffic Safety Inspector, conducted an unscheduled follow-up audit of DTW to determine whether it was in compliance with the recommendations of AOV's August 2007 audit.

To the extent that the findings and observations from AOV and ATO-Safety's prior audits and investigations are relevant to the current investigation, they are incorporated into our discussion below.

### **c. Inadequate guidance presented to Front Line Managers (FLMs) and controllers**

Mr. Sugent alleged that, despite the complexity inherent in operating the dependent component of the Southwest Flow, the guidance that DTW management provided to controllers on this air traffic configuration was insufficient and inconsistent. He further contended that, on those occasions when managers did offer controllers some guidance, the managers generally briefed the controllers verbally, and did not provide any instructions in writing. Mr. Sugent maintained that, as a result, controllers were left frustrated and confused regarding the proper execution of the Southwest Flow.

#### i. Initial briefings lacked specificity

Our investigation disclosed that DTW Operations Manager Kevin Grammes, was responsible for briefing the five FLMs on DTW operating procedures; the five FLMs, in turn, were responsible for briefing the controllers. According to Mr. Grammes, when controllers began using the Southwest Flow on a routine basis in May 2007, management did not issue a formal guideline dictating how far away the aircraft landing on Runway 27L should be when the aircraft on Runway 21R was allowed to depart. Rather, management merely directed FLMs and controllers to "hit the gap" between consecutive aircraft landing on Runway 27L whenever they depart aircraft from Runway 21R, and, in doing so, to take into consideration the performance and capabilities of the respective aircraft.

Mr. Grammes elaborated that "everybody was pretty much comfortable rolling" the aircraft on Runway 21R whenever the arriving aircraft was within 0.5 mile or beyond 2.5 - 3.0 miles of Runway 27L. He explained that, under those conditions, the DTW ATCT personnel were confident that the inbound aircraft would indeed complete the landing or, in the event of a missed approach or go-around,<sup>6</sup> the outbound aircraft

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<sup>6</sup> A "missed approach" occurs when the pilot decides to abort a landing during final approach, while a "go-around" occurs when a controller instructs the pilot to abort the landing. Both require the

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would have the opportunity to safely avoid the inbound aircraft. On the other hand, whenever an inbound aircraft was somewhere in between the 0.5-2.5 mile range, the controller would have to use his or her best judgment to decide whether to hold or to launch the aircraft waiting to depart from Runway 21R. Mr. Grammes advised us that the DTW ATCT operated the Southwest Flow in this manner for “the majority of the summer of 2007.”

When interviewed, most of the controllers concurred with Mr. Sugent’s concern that management did not provide them with adequate instructions for safely executing the Southwest Flow, especially during the summer of 2007. We found that, in the absence of sufficient guidance, many of them held divergent and inconsistent understandings of its proper operation. For example, two controllers reported that a departure from Runway 21R was basically permitted to “free wheel,” i.e., to depart without consideration for the location of the aircraft arriving on Runway 27L. Mr. Grammes and Mr. Figliuolo, on the other hand, denied that they had ever allowed aircraft to free wheel from Runway 21R. Another controller complained that, at the time, management did not provide any guidance for handling aircraft go-arounds on Runway 27L during the Southwest Flow, other than simply directing controllers to make sure that the aircraft miss one another.

In August 2007, AOV safety inspectors Mr. Hartenstine and Ms. James conducted the aforementioned audit and presented their findings to DTW management on August 14, 2007. Mr. Hartenstine informed us that, during the briefing, he conveyed to management that he had observed instances of noncompliance with FAA Order 7110.65, Paragraph 3-9-8.<sup>7</sup>

On August 20 and 21, 2007, Mr. Grammes, in turn, verbally briefed four of the five FLMs on the proper operation of the Southwest Flow. According to Mr. Grammes, he instructed the FLMs to ensure that the aircraft arriving on Runway 27L was “landing assured” before allowing the next aircraft to depart from Runway 21R.

The FLMs provided conflicting accounts regarding the directions that Mr. Grammes imparted during the August 2007 briefing. One FLM related an understanding of the Southwest Flow that mirrored Mr. Grammes’s, i.e., the aircraft arriving on Runway

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aircraft to climb in altitude and, typically, to turn away from its arrival runway while remaining a safe distance from other aircraft in the area.

<sup>7</sup> For a detailed discussion of FAA Order 7110.65, please see the next section under the heading Compliance with FAA Order 7110.65, Paragraph 3-9-8.”



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27L must be “landing assured” before the aircraft on Runway 21R may depart. Another FLM, however, believed that it was permissible to launch aircraft from Runway 21R as long as there were sufficient gaps between consecutive aircraft landing on Runway 27L. Yet a third FLM reported that Mr. Grammes instructed them to continue operating the Southwest Flow in a “business as usual” manner, and she was not aware that controllers “were supposed to be hitting gaps.” Thus, the FLMs left Mr. Grammes’s briefing with various understandings of the proper operation of the Southwest Flow.

After Mr. Grammes’s briefing, each of the five FLMs repeated the information to the controllers during multiple verbal briefings that took place between August 20 and September 6, 2007. According to the controllers, each of the five FLMs provided slightly different instructions to their subordinates. For example, one controller stated that his FLM advised that the aircraft on Runway 21R could not depart until the aircraft arriving on Runway 27L reaches the eastern threshold of the runway. The controller added, however, that when he worked with another FLM in the ATCT, he was advised that he only had to ensure that the aircraft arriving on Runway 27L could go behind the aircraft departing Runway 21R in the event of a go-around by the former. Nevertheless, the general understanding of all the controllers interviewed was that they were to ensure the aircraft arriving on Runway 27L would actually complete the landing and were sufficiently distant from one another before directing the aircraft to depart from Runway 21R. According to all ten of the controllers interviewed, they did not receive any written documentation during these briefings.

### ii. Briefings on proposed Notice 7110.151 created confusion

Mr. Sugent alleged to OSC that DTW issued an internal notice conveying updated procedures for operating the Southwest Flow, DTW Notice 7110.151, yet it failed to distribute the notice to controllers or brief them on its contents. Our investigation revealed that, in November 2007, Ms. Boliard drafted a proposed version of DTW Notice 7110.151, in an attempt to address AOV and ATO-Safety’s findings and recommendations. According to Mr. Figliuolo, at the time when Notice 7110.151 was drafted, DTW management was contemplating seeking a waiver of FAA Order 7110.65, Paragraph 3-9-8, for the operation of the Southwest Flow.<sup>8</sup> This objective was reflected in the language of the notice.

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<sup>8</sup> In the event that DTW had actually decided to seek the waiver, it would have been subject to a safety risk assessment by subject matter experts at ATO’s Operations Safety Group and then submitted to AOV for approval.

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Mr. Figliuolo and Ms. Boliard advised us that they consulted with ATO-Safety and ATO's Operations Support Group and determined that AOV probably would not grant the waiver due to the fact that compliance was not assured, and a safety risk would not be conducted. In addition, on approximately November 20, 2007, DTW reopened Runway 21L, which expanded the ATCT's air traffic configuration options. For the foregoing reasons, DTW ultimately decided against seeking a waiver, and, thus, Notice 7110.151 was never issued.

Although DTW never actually finalized Notice 7110.151, management nevertheless briefed FLMs and controllers on Proposed DTW Notice 7110.151. According to Mr. Grammes, management conducted the briefings in order to apprise ATCT personnel of what DTW contemplated in the event that it obtained the waiver. Nevertheless, Mr. Grammes acknowledged, "I actually thought this was a little bit silly, to brief something that we're not going to do. That we're under the idea that we're going to get a waiver." He added, "We hadn't even started the waiver process. So, it was going to be a long time coming. So, I was not really comfortable, you know, putting this out."

Mr. Figliuolo concurred that briefing controllers on a proposed notice probably created unnecessary confusion. He admitted that, "in hindsight," he has "no idea" why DTW management chose to brief the notice. Most of the controllers we interviewed did not recall being briefed on the proposed notice. Because Notice 7110.151 was never finalized, DTW does not maintain a record of this notice in its training files.

DTW temporarily suspended the dependent component of the Southwest Flow in October 2007. Mr. Grammes notified all DTW air traffic control and Terminal Radar Approach Control (TRACON) personnel of the suspension in an October 18, 2007, memorandum. He also briefed the FLMs on this development: training records indicate that these briefings occurred between November 21, 2007, and December 17, 2007. Once again, the FLMs, in turn, conducted face-to-face briefings on the suspension with the controllers, between November 21, 2007, and January 11, 2008.

We found that management conducted similar briefings upon reinstating the dependent component pursuant to Notice 7110.152, on January 25, 2008. According to the "read and initial" (R&I) sheet for Notice 7110.152, management briefed

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Mr. Grammes, the FLMs, and the controllers on the new guidelines set forth in the notice, on January 22, 2008.<sup>9</sup>

Even though DTW attempted to clarify the proper operation of the Southwest Flow in Notice 7110.152, AOV found, during its follow-up audit in March 2008 that FLMs and controllers remained confused. According to Mr. Hartenstine, when he interviewed the five FLMs in March 2008, they presented four different sets of instructions on how to conduct the Southwest Flow. Mr. Proudfoot similarly related that he spoke with four or five controllers, including Mr. Sugent, and received three different understandings of the Southwest Flow. AOV reported its findings in an April 7, 2008, Memorandum. Among other findings, AOV reported that (1) there was “no objective evidence that all DTW personnel received training on the changes to procedures for the southwest flow configuration” and (2) “[i]nterviews with DTW management revealed inconsistencies in the proper application of FAA Order 7110.65, Paragraph 3-9-8.”

On March 25, 2008, DTW issued Notice 7110.156, which superseded Notice 7110.152. Among other things, Notice 7110.156 ordered the ATCT to cease operating both the dependent and independent components of the Southwest Flow.<sup>10</sup> Training records indicate that management presented Notice 7110.156 to the FLMs and controllers during face-to-face briefings, all but two of which occurred between March 27 and April 14, 2008.

### iii. Allegedly misleading attachment to R & I sheet

Mr. Sugent alleged to OSC that DTW management attempted to deceive ATO-Safety by attaching a copy of FAA Order 7110.65, Paragraph 3-9-8, and other guidance to the R & I sheet that controllers signed to indicate that they had attended one of the August 2007 briefings. Mr. Sugent claimed that, in doing so, management intended to create the impression that they had distributed written copies of this guidance to controllers during the briefings, even though this never actually occurred. Mr. Sugent

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<sup>9</sup> DTW’s training records contradict the briefing date of January 22, 2008. Instead, the records indicate the briefings for Notice 7110.152 occurred between January 22 and 31, 2008.

<sup>10</sup> Notice 7110.156 primarily provides guidance for shifting from a Southwest Flow to a West Flow. After OSC referred Mr. Sugent’s current allegations to us for investigation, Mr. Sugent disclosed new information to OSC concerning an incident that occurred on July 21, 2008, which he alleged violated Notice 7110.156. OSC subsequently referred Mr. Sugent’s most recent disclosure to DOT, and it is currently the subject of a separate, ongoing OIG investigation.

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stated that, in reality, controllers did not receive any form of written guidance during the briefings.

We did not find evidence to substantiate this allegation. ATO-Safety's October 19, 2007, memorandum concluded that management did not provide controllers with any written guidance during the briefings in question, and we did not find any evidence that management attempted to contradict this finding.

### *d. Non-compliance with FAA Order 7110.65, Paragraph 3-9-8*

Mr. Sugent alleged that the instructions DTW management provided controllers for operating the dependent component of the Southwest Flow did not comport with FAA Order 7110.65, paragraph 3-9-8. FAA Order 7110.65, paragraph 3-9-8 sets forth procedures for controllers to follow when directing air traffic on two runways that either physically intersect or have intersecting flight paths.<sup>11</sup> The two runways that comprise the dependent component of the Southwest Flow are deemed to have intersecting flight paths. In reference to runways with intersecting flight paths, paragraph 3-9-8 provides that, before an aircraft on the departure runway may initiate its takeoff, the aircraft on the arrival runway must have already landed and have either (1) turned off the landing runway, such as having turned onto a taxiway, (2) held short of the extended centerline of the departure runway, or (3) passed beyond the extended centerline.

On August 13, 2007, while observing DTW's operation of the Southwest Flow as part of AOV's initial audit, Mr. Hartenstine and Ms. James witnessed three instances when controllers failed to comply with FAA Order 7110.65, Paragraph 3-9-8. Specifically, they witnessed three occasions in which an aircraft departed Runway 21R while another aircraft crossed the landing threshold of Runway 27L, yet no controller provided instructions to the arriving aircraft to ensure it would exit Runway 27L, hold short of the extended centerline of Runway 21R, or cross over the extended centerline.

As previously discussed, AOV attempted to rectify the problem by briefing DTW management on how to operate the Southwest Flow in compliance with the Order. Mr. Grammes, in turn, was responsible for relaying this information to the FLMs. During Mr. Grammes's August 2007 briefing to the FLMs, he instructed them to ensure that the aircraft arriving on Runway 27L was "landing assured" before

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<sup>11</sup> Two runways are deemed to have intersecting flight paths when they are situated such that the extended, imaginary continuation of the centerline of the departure runway intersects with the arrival runway.

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allowing the next aircraft to depart from Runway 21R. Mr. Grammes further explained that an aircraft is “landing assured” once it has passed the threshold, i.e., the eastern edge, of Runway 27L; is “over the numbers,” i.e., has crossed over the “27 L” painted on the far end of the runway near its eastern edge; or is “wheels down,” i.e., the wheels of the aircraft’s rear landing gear has touched down.

We determined that, despite their AOV counterparts’ briefing on the topic, Mr. Grammes’s August 2007 instructions for operating the Southwest Flow did not accurately reflect the requirements of FAA Order 7110.65, Paragraph 3-9-8. Mr. Grammes asserted to us that AOV’s September 28, 2007, audit report was “[v]ery confusing because we’re getting verbal guidance [from We safety inspectors during the August 2007 audit briefing] that well, you do this, it’s okay. But when their written report comes out, it says you weren’t in compliance with Paragraph [3-9-8.]” Mr. Grammes explained that he had been under the impression that it was sufficient for DTW to operate the Southwest Flow in a manner that complied with the “intent” of the paragraph. Mr. Grammes further explained that performing the Southwest Flow in strict compliance with FAA Order 7110.65 was inefficient. He asserted that, if the DTW ATCT increased the gap between the Runway 27L arrivals from four miles to six miles to strictly comply with Paragraph 3-9-8, “it’s not even advantageous for us to run this.”

### **e. ATO-Safety’s observation of an operational error at DTW in October 2007**

Pursuant to its August audit, AOV sent a Letter of Investigation (LOI) dated October 1, 2007, to ATO-Safety that conveyed the issues identified during the audit. Consequently, ATO-Safety personnel visited DTW on October 15-17, 2007, and reviewed documents, conducted interviews, replayed data tapes, and observed operations from the DTW ATCT concerning the issues identified in the LOI.

ATO-Safety issued a final report of its investigative findings in a memorandum dated October 19, 2007. According to the memorandum, on October 15, 2007, the ATO-Safety investigative team observed that arrivals on Runway 27L were spaced approximately

4-5 miles apart and aircraft departed from Runway 21R between those arrivals. Consequently, the team concluded the DTW ATCT controllers applied the proper separation standards set forth in FAA Order 7110.65, Paragraph 3-9-8.

On October 16, 2007, however, the investigative team observed noncompliance with Paragraph 3-9-8. The report specified that:

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[S]ome aircraft departing Runway 21R were issued a take-off clearance while arrival aircraft to Runway 27L were completing the landing roll. The arrival aircraft, after landing and decelerating, were not clear of the landing runway, were not clear of the landing runway, were not instructed to hold short of any intersection, and had not passed the flightpath [sic] intersection. It was apparent to [ATO-Safety] personnel that the local controller withheld takeoff clearance to the Runway 21R departure until the Runway 27L arrival had completed its landing and was decelerating on the runway, thus ensuring that the arrival aircraft had not executed a balked landing.

According to the memorandum, the ATO-Safety investigative team briefed DTW of the noncompliance that same day. The report stated:

During the briefing, the facility indicated that strict compliance with paragraph 3-9-8 would result in a reduced arrival and departure rate as operational personnel modified their control actions. Discussions with facility management, [ATO-Safety] investigators and [ATO's] Director of Special Projects, revealed that the technical non-compliance with the paragraph presented no more of an operational safety risk than that of an aircraft departing Runway 21R while an aircraft was [on taxiways]; thus, the facility was not instructed to modify the operation. [ATO-Safety] investigators believe that requiring the facility to maintain strict compliance with the [sic] Paragraph 3-9-8 would not provide any added safety benefit so long as the arrival aircraft has fully landed and begun to transition to taxi.

The ATO-Safety investigative team continued its observation of DTW's flight operations on October 17, 2007. According to the memorandum, that day, the team observed a controller not operating in compliance with Paragraph 3-9-8. The memorandum stated the controller allowed aircraft to depart Runway 21R "while aircraft were on short final, landing or completing the landing roll out on Runway 27L." When that controller was relieved of duty, the investigative team observed the replacement controller departing aircraft in the same manner. According to the memorandum, the FLM on duty in the ATCT was not monitoring the operation and failed to intervene.

The memorandum stated that later on October 17, 2007, the ATO-Safety investigative team and Mr. Figliuolo reviewed data tapes of the incident and determined that although the data did not show a definitive loss of separation, there was sufficient

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information to warrant further investigation.<sup>12</sup> According to the memorandum, Mr. Figliuolo spoke with the FLM and emphasized that the Runway 21R/Runway 27L operation was to be performed in strict compliance with Paragraph 3-9-8.

According to Mr. Grammes, he and Ms. Boliard were made aware of the alleged operational error and reviewed replays of the incident. Mr. Grammes contended, however, that both of them believed there was no loss of separation during the incident. Ms. Boliard also stated she was informed of the operational error immediately after it occurred and added that she promptly contacted the FLM in the ATCT to ensure the situation was being addressed.

ATO-Safety's October 19, 2007, memorandum also contained a section describing the actions taken by DTW air traffic management pursuant to AOV's August 2007 visit. According to the report, a "verbal briefing package" was given to all air traffic control personnel by September 1, 2007, and conveyed, among other things: (1) that the Runway 21R/Runway 27L operation is a dependent operation; (2) the requirements of FAA Order 7110.65, Paragraphs 3-9-8 and 3-10-4; and (3) a "go or no-go" point for consideration when departing an aircraft from Runway 21R while an aircraft is on final approach for Runway 27L. The memorandum also indicated DTW was in the process of updating the operating manual to include more specific guidance concerning the Runway 21R/Runway 27L operation and balked landings on Runway 27L.

Nevertheless, the memorandum contained the ATO-Safety investigative team's conclusion that "[a] portion of [DTW's] operational personnel, including the FLM's [sic], do not have an accurate understanding of the appropriate application of FAA Order 7110.65 paragraph 3-9-8." Additionally, the memorandum concluded that the failure to include copies of paragraph 3-9-8 or the applicable paragraph of DTW

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<sup>12</sup> This incident was later reported as an operational error in violation of FAA Order, Paragraph 3-10-4, because the aircraft departing Runway 21R had not passed the southern edge of Runway 27L when the aircraft arriving on Runway 27L crossed the runway's eastern threshold. Mr. Sagent alleged that DTW management improperly stated the operational error concerned Paragraph 3-10-4 instead of 3-9-8 because management did not want it revealed the controllers had not, in fact, been briefed to operate the Southwest Flow in compliance with Paragraph 3-9-8. However, documents concerning the operational error indicate Mr. Figliuolo requested to reclassify the alleged operational error to a "No Occurrence" for DTW. In a December 14, 2007, memorandum, however, ATO Manager for Terminal Quality Assurance R.D. Engelke denied Mr. Figliuolo's request, stating that several reviews of the incident conclusively demonstrated the controller committed a violation of Paragraph 3-10-4. Thus, ATO ultimately decided the incident constituted an operational error in violation of Paragraph 3-10-4.

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7110.9A during the face-to-face briefings that followed AOV's August 2007 audit "potentially contributed to the non-standardized operation of the Runways 21R/27L operation."<sup>13</sup> The final portion of ATO-Safety's October 19, 2007, memorandum contains recommendations. The recommendations include that Mr. Grammes and DTW's FLMs brief the controllers on the proper application of Paragraph 3-9-8 within 14 days and that ATO revise FAA Order 7110.65, Paragraphs 3-9-8 and 3-10-4, to allow an aircraft to depart "after ensuring that an arrival to a non-intersecting runway has not executed a balked landing."<sup>14</sup>

In sum, ATO-Safety's October 2007 investigation found that although AOV briefed DTW management personnel, including Mr. Figliuolo, Ms. Boliard, Mr. Grammes, and Mr. Grand in August 2007 that the facility was not operating the Runway 21R/Runway 27L operation in compliance with Paragraph 3-9-8, DTW was still not complying with the operation two months later on October 17, 2007. Consequently, given ATO-Safety's findings and the aforementioned interview statements by DTW air traffic control personnel demonstrating the facility's controllers did not receive consistent or specific guidance to comply with Paragraph 3-9-8, the evidence indicates that DTW did conduct the Southwest Flow in compliance with the paragraph between at least August 13 and October 17, 2007.

In its October 19, 2007, investigative findings memorandum, ATO-Safety arrived at the same conclusion as AOV, finding that DTW's operation of the dependent component still did not comply with Paragraph 3-9-8. ATO-Safety further maintained

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<sup>13</sup> Mr. Sugent expressed concern that DTW management attempted to deceive the ATO-Safety investigative team by attaching a copy of Paragraph 3-9-8 and other guidance to the read and initial sheet (R&I sheet) – the grid that FLMs and controllers date and initial signifying they have received a briefing and reviewed any corresponding documentation – for the August 2007 verbal briefings. The evidence does not support this contention, however, as ATO-Safety's October 19, 2007, memorandum made no mention of this alleged deception and the memorandum stated that the August 2007 briefings did not include a copy of Paragraph 3-9-8.

<sup>14</sup> ATO-Safety repeated this conclusion in a November 6, 2007, memorandum to AOV, stating: (1) a landed aircraft slow to exit Runway 27L "is no longer a safety risk to the departing aircraft on Runway 21R even though this situation does not fully comply with the intent of FAA Order 7110.65, paragraph 3-9-8" and (2) allowing an aircraft to depart Runway 21R while an aircraft is on final approach more than two nautical miles from the threshold of Runway 27L "fully complies with the intent of [paragraph 3-9-8]." The memorandum recommended corresponding changes to DTW's operating procedures, the creation of a safety risk management panel to assess the risk of seeking a waiver of Paragraph 3-9-8 concerning the Runway 21R/Runway 27L operation, and that ATO-Safety conduct an operational assessment of the operating procedures change once it is implemented.



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that management's failure to distribute copies of paragraph 3-9-8 to controllers during the August 2007 briefings "potentially contributed to the non-standardized operation of the Runways 21R/27L operation." As a result of their findings, ATO-Safety recommended that Mr. Grammes and DTW's FLMs brief the controllers on the proper application of Paragraph 3-9-8 within 14 days. It also recommended that ATO revise FAA Order 7110.65, paragraphs 3-9-8 and 3-10-4, to state that a controller may depart an aircraft "after ensuring that an arrival to a non-intersecting runway has not executed a balked landing."<sup>15</sup>

In January 2008, DTW management issued guidance on the matter in Notice 7110.152. The Notice states, in pertinent part, "Runway 21R departure operations conducted with Runway 27L arrival operations are separation dependent and shall be conducted in accordance with [FAA Order] 7110.65 paragraphs 3-9-8 and 3-10-4 separation criteria." In addition, a copy of paragraphs 3-9-8 and 3-10-4 was attached to the notice.

We found the Notice compliant with FAA Order 7110.65. Nonetheless, we determined that, because DTW was notified of the deficiency in August 2007, it was unreasonable that it took DTW approximately five months to issue guidance to controllers that incorporated Paragraph 3-9-8.

### *f. Specific safety concerns*

Next, Mr. Sugent highlighted specific safety risks that he alleged were inherent in running the Southwest Flow. Although DTW discontinued operating the Southwest Flow in March 2008, we examined whether this air traffic configuration posed a danger to public safety during the time period when it was in regular use, from May 2007 until March 2008. Specifically, Mr. Sugent alleged that management did not provide controllers with clear guidance for handling missed approaches or go-arounds and did not consider the potential risks posed by wake turbulence.

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<sup>15</sup> In a November 6, 2007, memorandum to AOV, ATO-Safety explained that it was recommending this revision to FAA Order 7110.65 after having reached the following conclusions: (1) a landed aircraft slow to exit Runway 27L "is no longer a safety risk to the departing aircraft on Runway 21R even though this situation does not fully comply with the intent of FAA Order 7110.65, [P]aragraph 3-9-8" and (2) allowing an aircraft to depart Runway 21R while an aircraft is on final approach more than two nautical miles from the threshold of Runway 27L "fully complies with the intent of [Paragraph 3-9-8]."

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### i. Dependent Operation Segment (Runways 21R and 27L)

In regard to the dependent operation segment of the Southwest Flow configuration, Mr. Sugent advised that, although Runway 21R does not physically intersect Runway 27L, Runway 21R is situated directly north of Runway 27L. Thus, an aircraft departing from Runway 21R must fly over Runway 27L. In light of this fact, Mr. Sugent described a potentially dangerous scenario that he claims could arise during the operation of the dependent component of the Southwest Flow. He explained that an aircraft attempting to land on Runway 27L might execute a missed approach or go-around, and subsequently enter the flight path of another aircraft departing from Runway 21R, possibly resulting in a mid-air collision.

To illustrate his point, Mr. Sugent provided investigators with a compact disc showing a June 2007 incident in which an aircraft arriving on Runway 27L in windy conditions performed a missed approach shortly after a controller had departed an aircraft from Runway 21R. Although the aircraft on Runway 27L succeeded in avoiding the other aircraft, and the event was not classified as an operational error,<sup>16</sup> both Mr. Sugent and the controller involved in the incident believe that it demonstrates the Southwest Flow is unsafe. Furthermore, AOV reviewed DTW 7110.9A, DTW's operating manual at the time, and found that it did not provide specific instructions to controllers for handling a missed approach or go-around.

In January 2008, DTW management attempted to clarify the matter in Notice 7110.152, by providing controllers with guidance in the form of "Missed Approach and Go-around Requirements." Notice 7110.152 provided controllers with two alternate sets of instructions they should deliver whenever an aircraft executes a "balked landing"<sup>17</sup> on Runway 27L. Specifically, the notice instructed controllers to direct aircraft to take either: (1) "a climbing left," i.e., south, turn if there are no aircraft on or immediately airborne from Runway 21R or Runway 22L, or (2) "a

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<sup>16</sup> An "operational error" occurs when an air traffic controller allows aircraft to come too close together. More specifically, an operational error occurs when less than 90% of the minimum separation standard between two or more aircraft, or an aircraft and terrain/obstacles, is met.

<sup>17</sup> In the notice, Mr. Grammes used "balked landing" as an umbrella term that can refer to either a missed approach or a go-around. Mr. Sugent and several other controllers, however, took exception with the language, claiming it is not an official FAA term. Although We officials who participated in this investigation confirmed that "missed approach" and "go-around" are the technical terms to describe what Mr. Grammes characterized as a "balked landing," any confusion the term created was not a safety issue and could have been quickly and easily resolved by asking Mr. Grammes for clarification.

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climbing right," i.e., north, turn toward the center of the airport if there are departures on Runway 21R or Runway 22L.

### ii. Independent Operation Segment (Runways 22L and 27L)

In regard to the independent operation segment of the Southwest Flow, Mr. Sugent questioned whether traffic on Runways 22L and 27L are, in fact, truly independent of one another. He explained that, although Runways 22L and 27L do not physically intersect, the southern edge of Runway 22L is in close proximity to the western edge of Runway 27L. Consequently, Mr. Sugent expressed concerned that, in the event an aircraft arriving on Runway 27L executes a missed approach or go-around, that aircraft could potentially collide with, or be destabilized by wake turbulence from, an aircraft that has just departed from Runway 22L.

Most of the air traffic controllers interviewed concurred with Mr. Sugent's perspective. Several controllers pointed out that, during the operation of the independent component, Runways 22L and 27L are managed by two different controllers and the layout of the ATCT requires each controller to face away from the other runway.

To illustrate his position, Mr. Sugent provided investigators with a compact disc recording of an incident that occurred in June 2007. According to the responsible controller, the aircraft arriving on Runway 27L had to conduct a go-around due to windy conditions. In the process of conducting the go-around, the aircraft suddenly had to execute a left turn in order to avoid entering the airspace of another aircraft that had just departed from Runway 22L. Mr. Sugent stated that the two aircraft passed within 0.5-1.0 mile of each other.

Mr. Figliuolo, Mr. Grammes, and DTW's FLMs, however, all expressed a contrary opinion. They maintained that departures from Runway 22L could safely take off independently of the arrivals on Runway 27L. Nevertheless, DTW management cautioned that, although these two runways may function independently, the local controllers operating the two runways must always communicate and coordinate with each other. Management also noted that, inside of the ATCT, there is a large screen in each of the four corners displaying the activity taking place throughout the entire airport. During an on-site visit, we confirmed that the display screens for both Local Control East and Local Control West are easily visible from most locations within the

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ATCT.<sup>18</sup> We agreed with DTW management that Runways 22L and 27L could function safely as independent operations.

When DTW temporarily suspended the dependent component in October 18, 2007, it continued to operate the independent component. In a memorandum dated November 7, 2007, Mr. Grammes notified ATCT personnel to exercise “controller judgment . . . anytime a potential conflict is present.” The memorandum further stated that the controller working Runway 27L “must consider possible alternatives to a left turn for a balked landing,” i.e., a turn that would take the aircraft south of DTW. As a possible alternative, Mr. Grammes’s memorandum mentioned a climbing right turn, i.e., to the north, that would take the aircraft over the center of the airport. The memorandum added, however, that “[c]oordination between locals, as well as the TRACON on a heading for return to the airport would be required.” Lastly, Mr. Grammes’s memorandum reminded DTW ATCT personnel that the weather minima for the Southwest Flow still applied during operation of the independent component and that controllers should exercise “good judgment regarding conditions that may increase the likelihood of a balked landing”

Mr. Sugent and several other controllers objected to Mr. Grammes’s instructions for handling a balked landing. They contended that it is unsafe to direct an aircraft to fly over the center of the airport. They related that, in general, the November 7, 2007, memorandum only caused further confusion among controllers.

During his interview, Mr. Figliuolo stated that he ultimately decided to cease operating the independent component pursuant to the concerns of Mr. Hartenstine and Mr. Proudfoot during their March 24, 2008, follow-up audit. In particular, the AOV inspectors voiced concern regarding the potential safety risks posed by wake turbulence.

During AOV’s August 2007 audit and contemporaneous verbal briefing, DTW management was informed that they were non-compliant with the FAA Order, and were offered ways in which the facility could come into compliance, including increasing spacing of arrivals. In response, to AOV’s briefing, we found that DTW Operations Manager Kevin Grammes promptly conducted briefings with several of the FLMs; however, he failed to provide instructions that ensured compliance with

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<sup>18</sup> DTW Local Control operations are divided into two halves – designated “Local East” and “Local West.” Local East oversees arrivals and departures on Runways 21R, 21L, 27L, and 27R; “Local West” oversees arrivals and departures on Runways 22L and 22R.

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FAA Order 7110.65, Paragraph 3-9-8. In fact, the evidence demonstrates that Mr. Grammes failed to provide instructions differing from the manner in which DTW had operated the Southwest Flow since May 2007, i.e., which AOV found non-compliant. In response to our questions, Mr. Grammes told us it would be inefficient for DTW to increase spacing between aircraft, stating that if DTW increased the gap between aircraft arrivals from 4 to 6 miles to strictly comply with Paragraph 3-9-8, "it's not even advantageous for us to run this [configuration]."

Given the evidence presented above, we concluded that Mr. Grammes and Mr. Figliuolo bear responsibility for the non-compliant operation of the Southwest Flow. The evidence indicates that, as early as May 2007, Mr. Grammes provided guidance to controllers that did not comply with FAA Order 7110.65, paragraph 3-9-8. Moreover, he continued to do so, even after he attended AOV's briefing in August 2007 during which AOV advised that DTW's operation of the Southwest Flow did not comply with the paragraph. As the Operations Manager, Mr. Grammes was responsible for providing DTW air traffic control personnel with appropriate guidance, and Mr. Grammes failed to adequately fulfill that responsibility. We also find that DTW Air Traffic Manager Joseph Figliuolo, as the facility Manager for DTW, bears ultimate responsibility for the non-compliance at his facility.

### **II. FAA's September 17, 2007, letter to Senator Levin contained language that was, at a minimum, disingenuous.**

Next, we investigated Mr. Sugent's allegation that the FAA intentionally provided misleading information to Congress. We found that, in June 2007, Mr. Sugent contacted Senator Carl Levin to relay his concerns about the safety of the Southwest Flow. Senator Levin, in turn, relayed Mr. Sugent's concerns to FAA. Barry Cooper, FAA Great Lakes Regional Administrator, responded to Senator Levin in a September 17, 2007, letter. In the letter, Mr. Cooper advised that AOV visited DTW in August 2007 to perform an audit of the Southwest Flow, and he reported that "AOV did not find this operation to be unsafe." Mr. Sugent disputes the accuracy of Mr. Cooper's characterization of AOV's findings.

After OSC referred Mr. Sugent's whistleblower allegations to Secretary Peters in March 2008, Mr. Cooper sent Senator Levin a second letter dated April 25, 2008, attempting to clarify his previous letter. In the April 25, 2008, letter, Mr. Cooper admitted that his previous letter contained "incomplete information and did not reflect information contained in [AOV's aforementioned September 28, 2007, audit report]." He further stated, "[a]s documented by AOV, the Air Traffic Control facility at Detroit was, in fact, not consistently compliant with a specific safety procedure when utilizing

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the [Southwest Flow].” Mr. Sugent contended that, because FAA sent the second letter shortly after he brought to light the allegedly misleading nature of the original letter, it appears that the agency sent the second letter in order to protect itself.

Mr. Figliuolo stated that he personally drafted the aforementioned language used in the April 25, 2008, letter. He denied that the language in the FAA’s September 17, 2007, letter was misleading. Mr. Figliuolo maintained that the Southwest Flow has never been “unsafe.” He also explained that, at the time when DTW management provided Mr. Cooper with language for the September 17, 2007, letter, DTW had not yet received a copy of AOV’s audit report. According to Mr. Figliuolo, We audit report was the first time DTW’s operation of the Southwest Flow was deemed a “safety compliance issue.” Thus, Mr. Figliuolo claimed that DTW management believed the comment in question to be accurate, based on the information available to them at the time.

According to Mr. Figliuolo, Ms. Boliard was involved in drafting the September 17, 2007, letter, and she was the individual responsible for including the assertion that AOV had not found the Southwest Flow to be unsafe. Ms. Boliard did not recall whether she provided the language in question, but she acknowledged that it may have originated in correspondence she and Mr. Figliuolo sent within the Central Service Area. Along with Mr. Figliuolo, Ms. Boliard also expressed the opinion that DTW’s operation of the Southwest Flow was never actually determined to be “unsafe.” Nevertheless, Ms. Boliard conceded that the September 17, 2007, letter probably should have mentioned the fact that AOV found, during its August 2007 audit, that DTW did not always operate the Southwest Flow in strict compliance with FAA Order 7110.65.

Mr. Hartenstine expressed the opinion that Mr. Cooper’s September 17, 2007, letter misrepresented AOV’s findings. On the one hand, Mr. Hartenstine acknowledged that he never expressly characterized the Southwest Flow as being “unsafe” during his August 2007 briefing. Nevertheless, he asserted that he had clearly informed DTW management, including Mr. Figliuolo and Ms. Boliard, that he had observed instances of non-compliance with FAA Order 7110.65, Paragraph 3-9-8, which provides the framework for the safe operation of this type of air traffic configuration. Mr. Hartenstine added that AOV’s September 28, 2007, audit report did not contain any information that he had not already communicated to DTW management during the August 2007 briefing. Thus, according to Mr. Hartenstine, DTW management should have been fully aware of AOV’s findings when they assisted in drafting the September 17, 2007, letter to Senator Levin.

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Based on the foregoing, we have concluded that the language they provided Mr. Cooper for the September 17, 2007, is, at a minimum, disingenuous, because AOV had informed DTW management that the airport's operation of the Southwest Flow was not in compliance with an FAA Order pertaining to safety.

### **III. DTW's procedural guidance for conducting traffic on Taxiway Quebec is conflicting and confusing in certain areas.**

Mr. Sugent raised several concerns regarding DTW's guidance for conducting air traffic on a taxiway designated "Taxiway Quebec." Specifically, Mr. Sugent alleged that: (1) guidance concerning Taxiway Quebec that is set forth in Notice 7110.134 was fully incorporated into the local control portion of the DTW operating manual but only partially incorporated into the ground control portion of the manual; (2) a passage in the ground control manual uses the term "should" although the term "shall" would be more appropriate; (3) although controllers are required to hold aircraft short at the 200-foot mark, the guidance inaccurately implies that they should instead hold aircraft short at the 750-foot mark, and the local control manual does not address this discrepancy; (4) it is unclear whether aircraft on Taxiway Quebec are the responsibility of ground control or local control; and (5) the markings depicted on the ATCT's Airport Service Detection Equipment (ASDE) screens are "insufficient."

When aircraft arrive at, and depart from, DTW in a northerly direction, the resulting air traffic configurations are known as the "North Flow" and the "Northeast Flow."<sup>19</sup> Whenever these configurations are executed, DTW's six runways receive alternate designations from those used for aircraft traveling to and from the South. Thus, for northern-oriented aircraft, Runway 22R is designated Runway 4L, Runway 22L is designated Runway 4R, Runway 21R is designated Runway 3L, Runway 21L is designated Runway 3R, Runway 27R is designated Runway 9L, and Runway 27L is designated Runway 9R, respectively. Taxiway Quebec, which connects Runway 4L with DTW's central terminal area, lies directly south of Runway 4R. Consequently, the Runway 4R centerline intersects Taxiway Quebec.

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<sup>19</sup> The North Flow entails inbound aircraft landing on Runways 4L and 3R, while outbound aircraft depart from Runways 4R and 3L, and the Northeast Flow entails inbound aircraft landing on Runways 4L and 4R, while outbound aircraft depart from Runways 3L and 9R.

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### *a. Disparate Language in DTW's Air Traffic Control Operating Manual: Ground Control Chapter versus Local Control Chapter*

DTW Notice 7110.134, which went into effect on February 1, 2007, set forth new restrictions for using Taxiway Quebec whenever aircraft arrive on Runway 4R, i.e., during operation of the Northeast Flow. Specifically, the notice stated that, whenever Runway Visual Range (RVR) is 4,000 feet or less and/or visibility is  $\frac{3}{4}$  mile or less, ground control<sup>20</sup> is “required to have the area on [Taxiway] Quebec, 200’ either side of the 4R extended centerline, clear of aircraft” and “[c]ontrollers should ensure taxiing aircraft are clear of this area from the time an aircraft is on a mile final until crossing [Taxiway Quebec], or the pilot reports approach lights in sight.” The notice added that, “The current signage indicates a hold position of 750’ from the extended centerline and must be used until new signage can be installed by the airport.”

Some language from Notice 7110.134 was incorporated almost verbatim into the DTW ATCT’s current operating manual, DTW 7110.9B, dated January 4, 2008. Mr. Sugent expressed concern that Chapter 5, which pertains to ground control, includes more comprehensive instructions for directing air traffic on Taxiway Quebec than Chapter 6, which pertains to local control.

Specifically, Subchapter 5-7, “Taxiway Routes and Restrictions,” incorporates the following instructions from the notice: (1) ground control is “required” to keep the area 200 feet on either side of the 4R extended centerline clear of aircraft; (2) the 4,000 feet RVR and  $\frac{3}{4}$  mile visibility parameters apply; and (3) controllers “should” ensure taxiing aircraft are clear of the area 200 feet on either side of the 4R extended centerline. Subchapter 5-7 further directs: “Aircraft should be instructed ‘Hold Short of 4R Approach.’ This lighted sign is located 750’ from the extended centerline and is depicted on the [ASDE]<sup>21</sup> along with the area 200’ either side of the [Runway]4R extended centerline.” In contrast, Subchapter 6-24, “Northeast Flow,” merely includes the following note for local control: “When RVR is 4000 or less and/or

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<sup>20</sup> Ground control is responsible for directing an aircraft while it is on taxiway, as it travels between the runway and the airport terminal. Local control, on the other hand, is responsible for directing an aircraft during final approach or traveling on a runway. DTW is divided into four ground control quadrants: Northeast, Southeast, Southwest, and Northwest.

<sup>21</sup> The ASDE radar system monitors the movement of aircraft and ground vehicles on the airport surface. Both ground and local controllers use ASDE display screens, which show the location of aircraft and vehicles overlaid onto a map of the airport, to assist in the safe and orderly management of surface traffic. In approximately July 2008, FAA replaced the ASDE system with an updated surveillance program called the Airport Surface Detection Equipment – Model X (ASDE-X).



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visibility is ¾ mile or less, traffic will be told to hold short of Runway 4R approach and contact southeast ground.”

In response to this allegation, DTW management personnel advised, and AOV concurred, that the difference between the two chapters is appropriate. The controllers explained that, because ground control and local control have different areas of responsibility, it follows that this difference will be reflected in the type of information included in their respective manuals. In fact, none of the DTW ATCT personnel we interviewed were able to recall a specific instance when they actually had to use the manual’s guidance concerning Taxiway Quebec.

### *b. Use of the word “should” versus “shall” in the ground control chapter*

Mr. Sugent alleged that the ground control manual’s use of the word “should” is inconsistent with language found elsewhere in the manual. Subchapter 5-7 of the manual states, in pertinent part, that ground control is “required” to keep the area of Taxiway Quebec that reaches 200 feet on either side of the extended 4R centerline clear of aircraft. In contrast, the third sentence of the same paragraph provides that controllers “should” ensure taxiing aircraft are clear of this area. Most DTW ATCT personnel, as well as AOV, recommended that the word “should” in the third sentence be replaced with “shall” to be consistent with the word “required” in the earlier sentence. They explained that the word “should” denotes a non-mandatory instruction, whereas the word “shall,” like the word “required,” denotes an imperative command. OIG and AOV concur that FAA should revise the manual to replace the word “should” with “shall.”

In addition, we found that it is possible that the word “should” is also used incorrectly in a second passage of the manual. Subchapter 5-7 also states, “Aircraft should be instructed ‘Hold Short of 4R Approach.’” We have determined that, if the guidance merely provides an example instruction for a pilot on Taxiway Quebec, then “should” is correct. If, on the other hand, that is the precise language controllers are to use, then “shall” is the correct word, and FAA should revise the manual accordingly.

### *c. Unclear “hold-short” requirements for aircraft on Taxiway Quebec*

Mr. Sugent alleged that, even though the DTW operating manual requires controllers to hold traffic on Taxiway Quebec short at 200 feet from the extended centerline, signs and hold-short lines remain at the 750-foot mark, reflecting previous guidance that is no longer in effect. OIG confirmed that 750 feet from either side of the extended centerline of 4R, Taxiway Quebec has painted lines and adjacent signs

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demarcating a hold short area. There are, however, no corresponding lines or signs on the 200-foot mark.

We determined that DTW originally established a 750-foot wide area pursuant to tail height restrictions that are no longer applicable to DTW. DTW then established the current 200-foot wide hold-short area to ensure that aircraft using Taxiway Quebec do not obstruct the ability of inbound aircraft to observe the landing lights on Runway 4R when they approach from the south. However, when DTW changed the requirement from 750 feet to 200 feet, it failed to move the signage and the hold-short lines that are based on the old 750-foot standard. In an attempt to confirm that the 200-foot standard set forth in the DTW operating manual is, in fact, the correct standard, OIG contacted the Detroit Office of the FAA Airports Division. However, they did not provide us with a definitive answer.

Mr. Sugent further complained that controller confusion is exacerbated by the fact that the ASDE-X displays lines on Taxiway Quebec at both 200 feet and 750 feet on either side of the Runway 4R extended centerline. One set of lines on the ASDE-X designates the current position of the hold short lines physically present on Taxiway Quebec 750 feet on either side of the Runway 4R extended centerline and the other set mark the 200 feet area on either side of the extended centerline that, per DTW 7110.9B, must remain clear. We found that, until the hold short line issue is resolved, the lines on the ASDE-X provide an accurate depiction of both of the applicable hold short distances currently associated with Taxiway Quebec.

### ***d. Area of control responsibility***

According to Mr. Sugent, whenever aircraft fly over Taxiway Quebec in order to arrive on Runway 4R, it is unclear who bears primary responsibility for directing aircraft on the taxiway. Mr. Sugent explained that having ground control direct an aircraft traveling on Taxiway Quebec while another aircraft flies above the taxiing aircraft creates an anomalous situation because, whenever the same situation occurs while an aircraft is traveling on a runway, local control is responsible for both aircraft. He contended that DTW should clarify who is ultimately responsible for directing the aircraft on Taxiway Quebec, by deciding that either local control is responsible for the taxiing aircraft or that ground control must first seek permission from local control before allowing aircraft on Taxiway Quebec to pass through the hold-short area and cross the Runway 4R extended centerline. Mr. Sugent expressed a preference for the second alternative, reiterating that no where else at DTW is ground control responsible for directing aircraft through a local controller's area of responsibility. Most of the

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DTW controllers we interviewed, however, believe that Taxiway Quebec should be the sole responsibility of ground control.

We found no benefit for adopting either of Mr. Sugent's suggestions. As stated above, aircraft on taxiways are typically the responsibility of ground control, and we are not aware of any increase in safety or operational efficiency that would result from either suggestion. Moreover, in our view, if the DTW ATCT personnel exhibit the proper coordination and situational awareness during times when aircraft are required to hold short on Taxiway Quebec, the operation as provided in DTW's manual can be conducted in a safe and efficient manner. Finally, we found that the manual is sufficiently clear that aircraft on Taxiway Quebec are the responsibility of ground control. We officials involved in this investigation pointed out that Chapter 6 of the manual adequately instructs local control to direct aircraft to hold short on Taxiway Quebec and then instructs them to contact ground control for further instructions.

#### **IV. Exceptions to segregation guidance for jet and propeller aircraft created confusion and constituted a potential safety issue until May 2008.**

The May 20, 2008, letter from OSC referred Mr. Sugent's concerns regarding the guidance provided to air traffic controllers for the segregation of jet and propeller aircraft. Mr. Sugent explained that the air traffic controller handling clearance delivery, who provides the aircraft with its route and flight plan, initially assigns to propeller aircraft an altitude of 4,000 feet and headings to the left or right of jet aircraft. Jets, on the other hand, are initially assigned an altitude of 10,000 feet. There are, however, exceptions to these segregation procedures, which are set forth in guidance dated August 15, 2004. Mr. Sugent contended that the exceptions contained in this guidance are too numerous and confusing for controllers to remember. Mr. Sugent further explained that the controllers' confusion is compounded by the fact that many of the exceptions only apply to one directional flow, e.g., the Southwest Flow or the Northeast Flow.

All ten of the controllers and two of the FLMs concurred with Mr. Sugent's contention that the confusion created by the numerous exceptions to the August 15, 2004, segregation guidance constituted a safety issue. One controller stated that, due to the numerous "convoluted" exceptions, on occasion the clearance delivery controller mistakenly applied the wrong exception and, consequently, provided local controllers with incorrect flight data. According to Mr. Sugent, when this type of error occurs, a jet may unknowingly enter a flight corridor already occupied by slower-moving propeller aircraft, thereby creating a dangerous situation. In fact, Mr. Sugent advised that, between approximately November 2007 and May 2008, controllers committed at

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least eight operational deviations,<sup>22</sup> which he believes can be attributed, at least in part, to the confusing nature of the separation guidance. Given the number of operational deviations that occurred, we agree with Mr. Sugent's contention that this matter constituted a safety issue.

We found that some controllers had raised concerns about the confusing segregation guidance to DTW management several years earlier, before Mr. Figliuolo and Mr. Grammes assumed their current positions in December 2006 and October 2006, respectively. However, management did not take any action to address the segregation issue until January 2008. In January 2008, DTW management implemented a policy to change the color of the ink used on the flight strip assigned to each flight within the ATCT.<sup>23</sup> According to Mr. Sugent and other air traffic controllers, however, this measure did not adequately resolve the problem, leading management to search for an alternate solution.

In May 2008, DTW management tested a new procedure, which temporarily superseded the exceptions contained in the August 21, 2004, guidance. The test procedure simplified DTW's separation guidance, and consisted of the following instructions for controllers, without any exceptions: (1) assign jet aircraft requesting an altitude of 12,000 feet and above an initial altitude of 10,000 feet and a jet departure heading and (2) assign jet aircraft requesting an altitude of 11,000 feet and below an initial altitude of 4,000 feet and a propeller aircraft heading. DTW briefed the FLMs and controllers on the trial procedure from May 9, 2008, until May 27, 2008. The trial procedure went into effect on May 20, 2008, and remained in place for the next 90 days. DTW ATCT personnel, including Mr. Sugent, concur with this position and have uniformly expressed their satisfaction with the trial procedure to OIG. Pursuant to the success of the test, Mr. Figliuolo directed that the procedure be incorporated into the Letter of Agreement (LOA) that sets forth operating procedures between DTW's ATCT and TRACON.

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<sup>22</sup> An "operational deviation" occurs when an aircraft in airspace controlled by one air traffic controller encroaches upon, or flies into, airspace assigned to another controller without proper coordination.

<sup>23</sup> The flight progress strip (FPS) is a strip of paper, approximately 1 inch x 8 inch in size, on which relevant air traffic information is printed, such as the aircraft's call sign, type, altitude, and heading. An FPS is printed by the clearance delivery controller and physically transferred to ground control in preparation for the aircraft's taxi from terminal to departure runway. Once the aircraft reaches its departure runway, the FPS is then transferred to local air traffic control in preparation for take-off. After the aircraft successfully departs, local control scans the barcode on the FPS, thereby electronically transferring the information on the FPS to the TRACON, and disposes of the FPS.

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### **V. In the absence of an electronic communication system, DTW controllers have adequate means to provide routing information to aircraft headed to Ohio airports.**

Mr. Sugent raised additional concerns during interviews with OIG, alleging that DTW controllers are unable to use an electronic communication system when transmitting routing information to aircraft traveling to several airports in Ohio. According to Mr. Sugent, this poses a danger to public safety. The affected airports include Cincinnati/Northern Kentucky International Airport, Cleveland Hopkins International Airport, Port Columbus International Airport, and Toledo Express Airport.

We learned that, when DTW transmits routing information to most airports, the air traffic controller handling clearance delivery within the ATCT typically sends the airport Standard Instrument Departure (SID) routes electronically. The SID, which contains information such as vector, altitude, and departure frequency, is then displayed on a screen in the outbound aircraft's cockpit via an electronic system.<sup>24</sup>

Since June 2006, when DTW's airspace was reconfigured under FAA's Midwest Airspace Enhancement (MASE), DTW ATCT was no longer able to electronically transmit SID routes to aircraft traveling to the specified Ohio airports. Consequently, for the affected aircraft, the clearance delivery controller at DTW must instead verbally provide the information to the pilot, who then repeats the information back to the controller to insure it was received correctly. One DTW air traffic controller estimated that the ATCT performs these steps about ten times per day.

Because of the possibility that incorrect information could be transmitted or received due to human error, Mr. Sugent and several other controllers contend that the verbal method presents a safety risk. Mr. Figliuolo, Mr. Grammes, and the FLMs disagreed. They maintained that the verbal method does not pose a legitimate safety concern and that the controllers are actually concerned about the additional workload burden it creates. We concurred with DTW management's assessment that this is a workload issue, rather than a safety issue. AOV noted that, should the SID electronic communication system fail, FAA has authorized the verbal method to be used as the backup procedure. Thus, FAA has deemed the verbal system for transmitting routing information to be a safe alternative. Lastly, and most importantly, we did not find any

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<sup>24</sup> The specific SID provided to an aircraft depends on the runway from which it departs and its next destination. Among other things, the SID provides the aircraft with a safe route for departing from the airport, as well as the waypoints to the air corridor in which it will travel.

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evidence that the verbal system contributed to any aviation accidents or air traffic operational errors.

We learned that DTW staff recently drafted a procedure to ensure all departing aircraft, including those traveling to the Ohio airports at issue, receive SIDs utilizing the electronic communication system. The draft procedure is currently under review within DTW management, and Mr. Sugent has reviewed the proposed procedure and has expressed his satisfaction with it.

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