



THE SECRETARY OF TRANSPORTATION
WASHINGTON, D.C. 20590

November 30, 2011

The Honorable Carolyn Lerner
Special Counsel
U.S. Office of Special Counsel
1730 M Street, NW, Suite 218
Washington, DC 20036

Re: OSC File Nos. DI-11-1675 and DI-11-1677

Dear Ms. Lerner:

By letter dated May 19, 2011, Associate Special Counsel William Reukauf referred for investigation disclosures from Vincent M. Sugent and Brian J. Gault, air traffic controllers at the Detroit Metropolitan Wayne County Airport (DTW) Air Traffic Control Tower. The whistleblowers allege that: (1) air traffic controllers at DTW are unable to simultaneously follow two paragraphs of Federal Aviation Administration (FAA) Order JO 7110.65, "Air Traffic Control"; (2) FAA has not provided controllers clear guidance concerning the paragraphs; and (3) the lack of clear guidance has resulted in unreported operational errors. I delegated investigative responsibility to the Office of Inspector General (OIG). OIG conducted this investigation jointly with FAA's Air Traffic Safety Oversight Service (AOV). Enclosed are OIG's Report of Investigation and FAA's response.

In summary, OIG substantiated the whistleblowers' allegations. Specifically, OIG reports:

- (1) Depending upon the specific circumstances under which their use is attempted, FAA Order 7110.65, Paragraphs 5-8-3 and 5-8-5 cannot be simultaneously followed at DTW. Given the airspace at DTW and the specific geometry of the instrument flight procedures established there, along with the speed and turning capabilities of aircraft, it may not be possible to issue headings to departures that will allow for the required 30-degree divergence for the arrival's missed approach course.
- (2) DTW air traffic control staff received inadequate guidance concerning the proper degree of divergence required to protect for missed approaches during simultaneous arrivals and departures.
- (3) It is likely that operational errors resulting from violations of radar separation rules have occurred at DTW as a result of the controllers' lack of understanding of the rules. Consequently, OIG does not believe that the controllers' failure to report these violations was intentional.

FAA Director of Audit and Evaluation H. Clayton Foushee reviewed OIG's findings and concurred with them. FAA will take corrective action, including:

Hon. Carolyn Lerner

- (1) FAA officials will review the application of Paragraphs 5-8-3, 5-8-4, and 5-8-5 at DTW, the airport's published arrival and missed approach procedures and associated training materials, and promptly correct any discrepancies necessary to ensure the safe conduct of simultaneous operations using two or more parallel runways.
- (2) DTW management officials will develop training materials and retrain controllers – beginning no later than ten working days from the date on the FAA memorandum and subject to review and approval by Central Terminal Service area officials – concerning the safe conduct of simultaneous operations using two or more parallel runways, including the proper application of Paragraphs 5-8-3, 5-8-4, and 5-8-5, and will offer the whistleblower involved in the December 25, 2009, operational error an in-depth briefing concerning the event.
- (3) DTW management officials will ensure Frontline Managers more closely supervise simultaneous operations using two or more runways and provide timely feedback to controllers. Central Service Center Quality Control Group will assign a monitor to the DTW Air Traffic Control Tower to observe simultaneous operations for a minimum of 60 days, provide DTW management officials with feedback concerning the operations within 24 hours, audit DTW's simultaneous operations for a minimum of 60 days following the commencement of the retraining mentioned above, and provide a written report and briefing to DTW management officials detailing the airport's compliance and training progress after the 60 days.

I appreciate the diligence of both Mr. Sugent and Mr. Gault in raising these concerns.

Sincerely yours,

Ray LaHood

Enclosures



U.S. Department of
Transportation
Office of the Secretary
of Transportation
Office of Inspector General

Memorandum

Subject: **ACTION:** OIG Investigation #I11A003SINV,
Re: Air Traffic Management at Detroit
Metropolitan Wayne County Airport
(DI-11-1675 and DI-11-1677)

Date: November 15, 2011

From: Ronald C. Engler *RCE*
Director, Special Investigations (JI-3)

Reply to
Attn. of: X6-4189

To: H. Clay Foushee
Director, Audit and Evaluations (AAE-1)

This report describes the findings of our investigation related to radar separation rules applied during the North Flow operation at the Detroit Metropolitan Wayne County Airport (DTW). In May 2011, Vincent M. Sugent and Brian J. Gault, Federal Aviation Administration air traffic controllers, reported to the U.S. Office of Special Counsel (OSC) that: (1) air traffic controllers at DTW are unable to simultaneously comply with two paragraphs of FAA Order JO 7110.65; (2) FAA did not provide controllers with clear guidance concerning the paragraphs; and (3) the lack of clear guidance has resulted in unreported operational errors. The Secretary delegated investigative responsibility to the Office of Inspector General (OIG). OIG conducted this investigation jointly with FAA's Air Traffic Safety Oversight Service.

We are required to provide a copy of our Report of Investigation and FAA's response to the Secretary. Please review this report and respond to us in writing by November 17, 2011. Your response should include any comments, a statement of corrective action planned or taken as a result of our investigation, and FAA's timeframe for implementation of any planned corrective action. By law, the Secretary is required to report to OSC on our investigation and the agency's corrective action. OSC will review the investigation and corrective action for sufficiency.

If you have any questions or concerns about this report, please contact me at (202) 366-4189 or Assistant Special Agent-in-Charge Barbara Barnett at (202) 366-5200.



U.S. Department of Transportation
Office of Inspector General

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| REPORT OF INVESTIGATION | INVESTIGATION NUMBER I11A003SINV | DATE Nov. 15, 2011 |
| TITLE Air Traffic Management at Detroit Metropolitan Wayne County Airport | PREPARED BY: Brian Uryga <i>Bu</i> Attorney-Investigator Special Investigations, JI-3 | STATUS Final |
| | DISTRIBUTION AJO-1, AAE-1 | APPROVED BY: JI-3 <i>RCE</i> |

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BACKGROUND

On May 19, 2011, the U.S. Office of Special Counsel (OSC) referred for investigation to U.S. Secretary of Transportation Ray LaHood disclosures made by two Air Traffic Control Specialists at Detroit Metropolitan Wayne County Airport (DTW). The whistleblowers allege: (1) air traffic controllers at DTW are unable to simultaneously follow two paragraphs of Federal Aviation Administration (FAA) Order JO 7110.65; (2) FAA has not provided controllers clear guidance concerning the paragraphs; and (3) the lack of clear guidance has resulted in unreported operational errors. The Secretary delegated investigative responsibility to the Office of Inspector General (OIG). OIG conducted this investigation jointly with FAA's Air Traffic Safety Oversight Service (AOV). (**Attachment 1**)

FAA Order 7110.65, "Air Traffic Control," frequently referred to as the "Controller's Handbook," provides air traffic control procedures. In favorable weather conditions, controllers typically provide visual separation between aircraft, during which they observe flight operations from the air traffic control tower and ensure that aircraft are safely separated. When, however, weather conditions do not allow for visual separation, controllers must provide some other form of separation. Generally, this other form is radar separation and Chapter 5 of the Order provides the associated requirements.

Paragraph 5-8-3a requires controllers to ensure that successive departures from the same runway diverge by at least 15 degrees within one mile from the end of the runway. Paragraph 5-8-3c of the Order applies to two radar departures from parallel runways where the runways are spaced at least 2,500 feet apart. (This rule is also applicable to three departures from three parallel runways.) Paragraph 5-8-3c permits the simultaneous departure of the aircraft, one from each runway, if their departure headings diverge immediately by at least 15 degrees.

Paragraph 5-8-5 of the Order permits the arrival of one aircraft to one runway while a departing aircraft simultaneously departs from a second, parallel runway. This rule requires controllers to ensure a 30-degree divergence between the departing aircraft's initial heading and the missed approach course the arriving aircraft will follow in the event of a missed approach.

The whistleblowers' primary allegation concerns the inter-operation of the above two paragraphs as used with the specific layout of DTW.

SYNOPSIS

We found that, depending upon the specific circumstances under which their use is attempted, FAA Order 7110.65, Paragraphs 5-8-3 and 5-8-5 cannot be simultaneously

followed at DTW. According to AOV experts, the Order's separation rules are conditional and cannot always be used simultaneously. In DTW's case, both Paragraphs 5-8-3 and 5-8-5 can be adhered to if arrivals and departures are managed in a manner that does not result in simultaneous operations on all four parallel runways at the same time. If, however, two aircraft depart DTW while two other aircraft are simultaneously on final approach and, depending upon the specific circumstances of the event, *e.g.*, timing and distance between flights, the controller will need to rely on other rules to permit the operation. Given the airspace at DTW and the specific geometry of the instrument flight procedures established there, along with the speed and turning capabilities of aircraft, it may not be possible to issue headings to departures that will allow for the required 30-degree divergence for the arrival's missed approach course.

We substantiated the whistleblowers' allegation of inadequate guidance to DTW air traffic control staff concerning the proper degree of divergence required to protect for missed approaches during simultaneous arrivals and departures.

We also found it is likely that operational errors resulting from violations of radar separation rules have occurred at DTW. The evidence indicates, however, that the DTW air traffic control staff's failure to follow the radar separation rules resulted from their lack of understanding of the rules. Consequently, we do not believe that their failure to report these violations was intentional.

Below are the details of our investigation.

DETAILS:

Allegation 1: During simultaneous arrivals and departures on parallel runways at DTW, the air traffic control rule for protecting airspace in the event of a missed approach conflicts with the rule for maintaining radar separation between aircraft.

FINDINGS

Conflict between Paragraphs 5-8-3 and 5-8-5

The whistleblowers allege that controllers at DTW cannot simultaneously provide the 15-degree divergence requirements of Paragraph 5-8-3 and the 30-degree divergence requirement of Paragraph 5-8-5. According to the whistleblowers, the published missed approach procedures for aircraft arriving to Runways 4L and 3R (used during the North Flow) create a conflict between those arriving aircraft and aircraft departing Runways 4R and 3L. (Missed approach procedures are published, flight-checked instructions that take missed approach aircraft away from other aircraft and ground obstacles to an area where the aircraft can safely conduct a holding pattern until further instruction.)

Controllers are required to apply a form of separation at all times. Not all forms of separation, however, are applicable all the time. Thus, the separation rules of FAA Order 7110.65 cannot always be used simultaneously. (Similarly, all of the separation rules cannot be used at all of the nation's airports.) Most separation rules are conditional, meaning certain specific circumstances must exist before they can be used. A controller must be trained to recognize which forms of separation are applicable at the time, use good judgment in applying the separation, and take into account aircraft characteristics.

When fully operational, DTW has four north-south parallel runways and two east-west parallel runways. (**Attachment 2**) During a North Flow operation, aircraft arrive in a northerly direction on the outer parallel north-south runways (4L and 3R) and depart in a northerly direction from the inner parallel north-south runways (4R and 3L). According to the DTW officials we interviewed, the North Flow operation is used approximately 10-20% of the time at DTW.

In DTW's case, both Paragraphs 5-8-3 and 5-8-5 can be adhered to if arrivals and departures are managed in a manner that does not result in simultaneous operations on all four parallel runways at the same time. If DTW air traffic control staff staggered arrivals or departures so that, for example, an aircraft arrived on 4L while no aircraft departed 4R, the controller could meet the conditions of both 5-8-3 and 5-8-5.

If, however, two aircraft depart DTW while two other aircraft are simultaneously on final approach and, depending upon the specific circumstances of the event, *e.g.*, timing and distance between flights, the controller will need to rely on other rules to permit the operation. Given the airspace at DTW and the specific geometry of the instrument flight procedures established there, along with the speed and turning capabilities of aircraft, it may not be possible to issue headings to departures that will allow for the required 30-degree divergence for the arrival's missed approach course.

December 25, 2009, Operational Error

On December 25, 2009, one of the whistleblowers was involved in an air traffic event that occurred while simultaneously controlling arrivals to Runway 4L and departures from 4R. (Another controller was responsible for arrivals to Runway 3L and departures from 3R.) FAA officials investigated the event and determined that a loss of separation occurred because the whistleblower did not provide the 30-degree divergence required under FAA Order 7110.65, Paragraph 5-8-5.

We interviewed the FAA officials who investigated the December 25, 2009, event and who determined it was an operational error. Additionally, we analyzed the January 20, 2010, Event Review Report issued by the Event Investigation Manager. During the event, the whistleblower cleared an aircraft for departure from Runway 4R

and issued it a heading of 330 degrees while an arrival to Runway 4L was on final approach. When the arrival to 4L executed a missed approach, there was a loss of separation between the two aircraft, as they came within 0.3 nautical miles and 200 feet. The FAA officials said the whistleblower did not provide immediate divergence between the departure's course and the possible missed approach and issued the departure a 330-degree heading across the extended centerline of Runway 4L.

The whistleblowers contend, however, that the December 25, 2009, event should not have been an operational error because the pilot conducting the missed approach failed to promptly follow the whistleblower's instruction (to turn to the west and away from the 4R departure). More important, they contend the whistleblower could not have simultaneously provided the 15-degree divergence between the Runway 4R and 3L departures and the 30-degree divergence between the missed approach to Runway 4L and the departure from Runway 4R.

According to the investigating FAA officials, because the weather and visibility on December 25, 2009, did not allow for visual separation, some other form of separation was required. Absent the use of any other separation rule, the failure to ensure any divergence between the departure and the missed approach aircraft, much less the required 30 degrees, would have constituted an error even if the missed approach aircraft had promptly turned to the west.

According to the investigating FAA officials, if the whistleblower elected to issue the departure a 330-degree heading, the whistleblower could have, for example, waited until there was assurance the aircraft arriving to Runway 4L would land before departing the aircraft from Runway 4R. By issuing the 330-degree heading to the Runway 4R departure while the Runway 4L arrival was still on final approach, the officials determined that the whistleblower did not provide the 30-degree divergence required under Paragraph 5-8-5.

Notwithstanding the FAA investigators' analysis of the December 25, 2009, operational error, the event demonstrates the difficulties controllers at DTW face while conducting simultaneous arrivals and departures during the North Flow. As explained in allegation 2 below, the difficulties are compounded by a lack of common knowledge and understanding – as evidenced by the statements of the DTW controllers and managers we interviewed – concerning the proper divergences required for simultaneous operations and when, precisely, the controllers must apply them.

Allegation 2: DTW controllers have received inadequate guidance concerning the application of the rules for protecting airspace in the event of a missed approach and maintaining radar separation during simultaneous arrivals and departures on parallel runways.

FINDINGS

The whistleblowers allege that FAA officials have not provided clear guidance to controllers concerning the proper application of the divergence requirements for simultaneous arrivals and departures. The whistleblowers contend, for example, that the mandatory briefing item (MBI) DTW officials provided to controllers in response to the December 25, 2009, event failed to provide adequate guidance concerning the application of radar separation rules in relation to the error. They also allege that the whistleblower associated with the event has not yet been briefed concerning the error or been provided with a requested interpretation of the relevant radar separation rules. The whistleblowers add that the situation will become more confusing with the impending introduction of new procedures requiring aircraft be “broken out” of the approach sequence (aircraft that have to be re-sequenced in the arrival flow) to diverge 20 degrees from the adjacent runway’s final approach course.

We interviewed several DTW officials, including five controllers (among them both whistleblowers), three Frontline Managers, the Operations Manager, the Support Manager for the Air Traffic Control Tower, and the Air Traffic Manager. All five controllers expressed confusion concerning the application of the 30-degree divergence required under FAA Order 7110.65, Paragraph 5-8-5. For example, both whistleblowers and another controller wondered at what point during the missed approach they should apply the 30-degree divergence. Another controller stated that: as recently as 2010, the controller’s Frontline Manager instructed the controller to apply only a 15-degree divergence to a missed approach; the controller was unaware of the 30-degree divergence requirement; and this requirement has not been applied at the facility since the December 25, 2009, event.

Both whistleblowers echoed that the operation regarding missed approaches has not changed since the event. Additionally, one whistleblower stated that the instruction received during air traffic control training in Oklahoma City – approximately three years ago – was to treat a missed approach as a departure. The other whistleblower advised that, during the whistleblower’s seven years at DTW, 15 or 20-degree divergence has always been used for missed approaches.

One Frontline Manager could not recall being informed of the 30-degree divergence during controller training approximately 15 years ago. This Frontline Manager first heard of the 30-degree divergence only after the December 25, 2009, event and believed

DTW's treatment of missed approaches has not changed over the years. This Frontline Manager's initial reaction to a missed approach would be to apply 20-degree divergence from the adjacent departure, then resolve the issue in a safe manner. This Frontline Manager believed management officials need to inform the air traffic control staff whether they need to apply 30-degree divergence.

A second Frontline Manager stated that a missed approach is treated as a departure and, therefore, requires only 15-degree divergence from the adjacent departure. This Frontline Manager also advised that DTW has operated in this manner for approximately 21 years.

A third Frontline Manager stated that a missed approach is treated as a departure and requires a 20-degree divergence from adjacent departures. This Frontline Manager confirmed that the air traffic control staff has not been trained to provide 30-degree divergence for missed approaches. This Frontline Manager could not recall any meetings concerning the 30-degree divergence during the manager's year-and-a-half at DTW.

The Operations Manager told of being trained to treat missed approaches as departures and to apply at least a 15-degree divergence. The Operations Manager was unsure when to use a 15 or 30-degree divergence.

This confusion and lack of understanding still exists despite the MBI mentioned above, which resulted from the recommendation of the Event Investigation Manager who reviewed the December 25, 2009, event. In the January 20, 2010, Event Review Report, the Event Investigation Manager recommended, among other things, that the "facility should conduct a Mandatory Briefing Item (MBI) on the requirements of paragraph 5-8-5." In response to the recommendation, an unsigned and unattributed piece of paper appeared in the "Read & Initial" binder in the DTW air traffic control tower sometime in late December 2009, stating: "The ATO Safety Team has recommended a review of paragraphs 5-8-4 and 5-8-5 in regards to a recent loss of separation between a departure and go-around. Please review the pertinent information included in the MBI."

The "pertinent" information consisted of three additional pages containing Paragraphs 5-8-4 and 5-8-5 as copied directly from FAA Order 7110.65. The Read & Initial sheet attached to the MBI indicates that DTW air traffic control personnel reviewed the item between approximately December 31, 2009, and February 23, 2010. Although the Event Investigation Manager stated that the MBI satisfied the recommendation, confusion concerning Paragraph 5-8-5 still exists at DTW, as evidenced by the interviews of DTW personnel summarized above.

Further, the evidence indicates the whistleblower was not briefed concerning the December 25, 2009, event. Typically, the whistleblower's Frontline Manager would

review the event with the whistleblower and explain why it was an operational error. The Frontline Manager stated she did not brief the whistleblower because she had not yet received a briefing from DTW management officials explaining why the event constituted an operational error.

In sum, the evidence we found indicates that, beyond the MBI, DTW management officials have not provided additional clarification concerning the application of divergence requirements for missed approaches, nor altered the facility's training and operations since the December 25, 2009, event. According to the Air Traffic Manager, DTW managers have not changed the airport's simultaneous arrival and departure operations because no FAA official outside the facility has advised them that DTW is not operating in compliance with FAA Order 7110.65.

Nevertheless, given the whistleblower's request for clarification concerning the operational error and the proper application of Paragraphs 5-8-3, 5-8-4, and 5-8-5, as well as confusion by DTW staff concerning the paragraphs, DTW management officials sought assistance from officials at FAA's Central Service Area. In a memorandum dated February 4, 2011, sent to the then Director of Terminal Operations for the Central Service Area, the Air Traffic Manager sought an interpretation concerning, among other things, the application of Paragraphs 5-8-3, 5-8-4, and 5-8-5. The Air Traffic Manager specifically requested that FAA "verify" that the 30-degree divergence for a missed approach aircraft may be reduced to 15 degrees once the aircraft crosses or is perpendicular to the threshold of the arrival runway. **(Attachment 3)**

FAA's Acting Director for Terminal Safety and Operations Support responded in a memorandum dated July 15, 2011. The Director stated it is "incorrect" to assert that the 30-degree separation requirement may be reduced to 15 degrees once the missed approach aircraft crosses the arrival runway or is perpendicular to it. Thus, the response appears to advise that DTW controllers must provide 30-degree divergence. However, the response also states that "a missed approach aircraft is considered a departing aircraft once it crosses that landing threshold." **(Attachment 4)** This conversely implies that use of 15-degree divergence is appropriate. As a result, DTW management officials desired further clarification from FAA.

The Air Traffic Manager, with the assistance of one of the whistleblowers, submitted a supplemental request for interpretation dated August 23, 2011, to the current Director of Terminal Operations for the Central Service Area. Among other things, the memorandum asks for clarification and the specific application of the radar separation requirements as they relate to DTW's air traffic operations and runway configuration. **(Attachment 5)**

The Acting Director for Terminal Safety and Operations Support, in a memorandum dated November 7, 2011, referred DTW officials to his July 15, 2011, response. The memorandum advises, "The information provided in our response remains unchanged and applicable to [DTW's August 23, 2011, supplemental request for interpretation]." **(Attachment 6)**

DTW air traffic control personnel did not believe the July 15, 2011, and November 7, 2011, memoranda were responsive. In a November 8, 2011, email to the Central Service Center Operations Support Group Team Manager, an Operations Support Specialist at the Central Service Center agreed and asked for help to ensure that the Air Traffic Manager's request for interpretation is properly answered. **(Attachment 7)** DTW officials told us they have not provided clarification to air traffic control personnel regarding the use of Paragraphs 5-8-3, 5-8-4, or 5-8-5 while they await further assistance on the issue from FAA Terminal officials.

Allegation 3: The conflicting rules for protecting airspace in the event of a missed approach and maintaining radar separation have resulted in unreported operational errors at DTW.

The whistleblowers contend that the confusion concerning the conflicting divergence requirements of Paragraphs 5-8-3 and 5-8-5 has resulted in unreported operational errors. Our investigation indicates that *unrecognized* operational errors, rather than "unreported" operational errors (implying misconduct), have likely occurred at DTW. Based on our interviews of those DTW managers and controllers referenced in Allegation 2, we found it is likely that operational errors resulting from violations of radar separation rules have occurred at DTW. The evidence indicates, however, that the DTW air traffic control staff's failure to follow the radar separation rules resulted from their lack of understanding of the rules. Consequently, we do not believe that their failure to report these violations was intentional. We also found operational errors in violation of radar separation rules are likely to continue to occur until the air traffic control staff receives clear guidance and training concerning the correct application of the rules, especially Paragraphs 5-8-3, 5-8-4, and 5-8-5.

#

INDEX OF ATTACHMENTS

1. Methodology of Investigation
2. Diagram of DTW Airport Layout
3. Request for Interpretation from DTW Air Traffic Manager, February 4, 2011
4. Response from Acting Director, Terminal Safety and Operations Support, July 15, 2011
5. Request for Interpretation from DTW Air Traffic Manager, August 23, 2011
6. Response from Acting Director, Terminal Safety and Operations Support, November 7, 2011
7. Email from Operations Support Specialist, Central Service Center, November 8, 2011

ATTACHMENT 1: METHODOLOGY OF INVESTIGATION

This investigation was conducted by an OIG Senior Attorney-Investigator with technical assistance from an FAA Air Traffic Investigator. To address the whistleblowers' concerns, we interviewed the following 19 individuals:

- Motown District Manager, FAA
- Detroit Air Traffic Manager, FAA
- Detroit Air Traffic Control Tower Support Manager, FAA
- Detroit Air Traffic Control Tower Operations Manager, FAA
- Detroit Quality Assurance Manager, FAA
- Three Detroit Tower Frontline Managers, FAA
- Five Detroit Air Traffic Control Specialists, FAA
- ATSAP Event Review Committee Chairperson, Central Service Area, FAA
- Quality Control Group Manager, Central Service Center, FAA
- Quality Control Specialist, Central Service Center, FAA
- Senior Advisor, Office of Safety, FAA
- Event Investigation Manager, Office of Safety, FAA (Retired)
- Quality Control Group Manager, Terminal Operations, FAA

In addition, our investigative team analyzed numerous FAA records and documents obtained from the whistleblowers, witnesses, DTW, and FAA including memoranda, emails, and FAA regulations, orders, and notices.

#111A003SINV

ATTACHMENT 2: DIAGRAM OF DTW AIRPORT LAYOUT

#111A003SINV

**ATTACHMENT 3: REQUEST FOR INTERPRETATION FROM
DTW AIR TRAFFIC MANAGER, FEBRUARY 4, 2011**



Federal Aviation Administration

Memorandum

Date: 02/04/2011

To: Nancy Kort, Director, Terminal Operations, Central Service Area, AJT-C

Thru: Rick Kervin, Acting Manager, Operations Support Group, Central Service Area, AJV-C2
Gary Ancinec

From: Gary Ancinec, Acting Air Traffic Manager, DTW ATCT, TCL-DTW

Prepared by: Rodney Harris, Support Specialist, DTW ATCT, 734-955-5024
Ronald D. Bazman, Support Manager, DTW ATCT, 734-955-5050

Subject: Request for Interpretation/Clarification of JO 7110.65T, Air Traffic Control, Paragraphs 3-8-2 Touch-And-Go Or Stop-And-Go Or Low Approach, 5-5-7 Passing Or Diverging, 5-8-3 Successive Or Simultaneous Departures, 5-8-4 Departure And Arrival, and 5-8-5 Departures And Arrivals On Parallel Or Nonintersecting Diverging Runways, Pertaining to Detroit Metro Wayne County Airport Runway 04L and 04R Operations.

In order to promote National Airspace System (NAS) safety and efficiency, Detroit Air Traffic Control Tower requests interpretation/clarification of JO 7110.65S, Air Traffic Control, Paragraphs 3-8-2 Touch-And-Go Or Stop-And-Go Or Low Approach, 5-5-7 Passing Or Diverging, 5-8-3 Successive Or Simultaneous Departures, 5-8-4 Departure And Arrival, and 5-8-5 Departures And Arrivals On Parallel Or Nonintersecting Diverging Runways, pertaining to Detroit Metro Wayne County Airport Runway 04L and 04R operations as they relate to DTW ATCT Operational Error Report DTWT09E004 dated 12/25/2009.

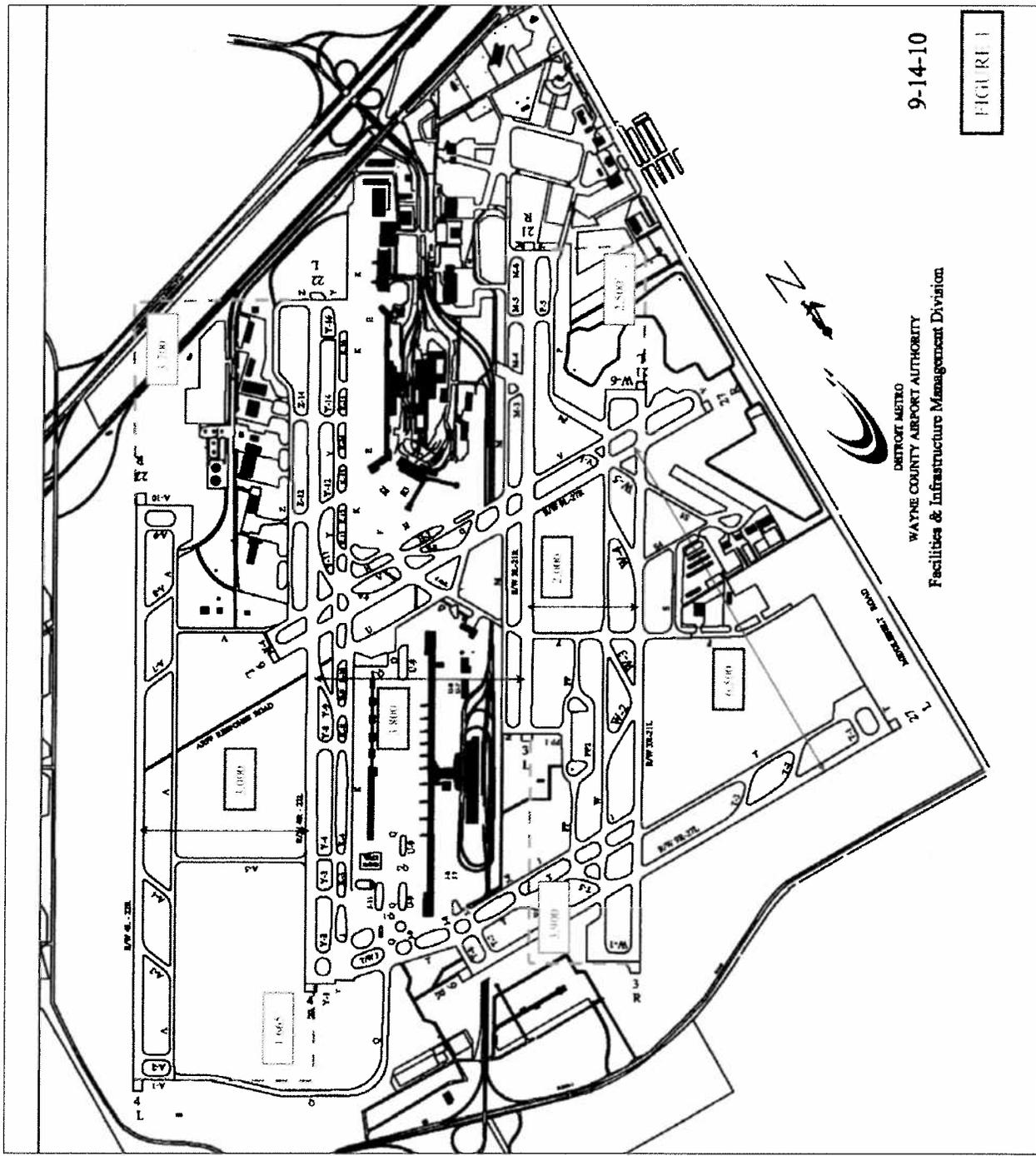
BACKGROUND

On December 25, 2009 at 0924L an operational error was recorded for DTW ATCT between a departure aircraft off Runway 04R and a missed approach aircraft off Runway 04L. Follow-up guidance received from the Central Service Area required the briefing of paragraphs 5-8-4 and 5-8-5 of JO 7110.65 to tower personnel. However, application of these paragraphs in conjunction with the operational error prompted review of the application and intent of not only these paragraphs, but several others. Additionally, an Air Traffic Safety Action Program (ATSAP) report (AIR-088) was filed. The ATSAP Information Request specifically requested an interpretation of paragraphs 5-8-4 and 5-8-5 of JO 7110.65, and the relationship to the requirements of 5-5-7 as it relates to the runway configurations at DTW.

RUNWAY CHARACTERISTICS AND STANDARD OPERATING PROCEDURES

Runways 04L and 04R are separated by 3,000' between runway centerlines and have offset thresholds of approximately 1,665' with Runway 04L being the nearer runway of the two for the arrival aircraft (See FIGURE 1 for threshold offset & runway separation distances).

Figure 1.
DTW Airport Diagram



Normal operations for these runways at DTW are arrivals on 04L and departures on 04R. It is important to note that DTW has an adjacent pair of parallel runways, 03L and 03R which are located east of Runways 04L and 04R. Runways 04R and 03L are separated by 3,800' between runway centerlines. Normal operations for Runways 03L and 03R are arrivals on 03R and departures on 03L. Each set of parallel runways are normally controlled by a separate local controller.

Runway 04R is assigned westbound headings that require left turns after departure, while Runways 03L is assigned eastbound headings that require right turns after departure. Runway heading (035) is also an option, but may only be assigned to one of the local controllers for obvious reasons. Any deviations from assigned headings that would enter the other controller's airspace would require controller to controller coordination. All assigned departure headings are a minimum of 15 degrees divergence from other headings. Departure headings are coordinated with Detroit TRACON and entered into the Information Display System (IDS-4) by the Tower Front Line Manager. All tower Local Control positions have their own IDS-4 monitor.

PERTINENT PARAGRAPHS

Because of the geography of the Detroit Metropolitan Wayne County Airport, Air Traffic applies a variety of separation standards to safely and expeditiously work arrivals and departures. For this interpretation request, the definition of Course, Missed Approach and Missed Approach Point as well as JO 7110.65 paragraphs 3-8-2, 5-5-7, 5-8-3, 5-8-4, and 5-8-5 will be included.

COURSE-

- a. The intended direction of flight in the horizontal plane measured in degrees from north.
- b. The ILS localizer signal pattern usually specified as the front course or the back course.
- c. The intended track along a straight, curved, or segmented MLS path.

MISSED APPROACH-

- a. A maneuver conducted by a pilot when an instrument approach cannot be completed to a landing. The route of flight and altitude are shown on instrument approach procedure charts. A pilot executing a missed approach prior to the Missed Approach Point (MAP) must continue along the final approach to the MAP.
- b. A term used by the pilot to inform ATC that he/she is executing the missed approach.
- c. At locations where ATC radar service is provided, the pilot should conform to radar vectors when provided by ATC in lieu of the published missed approach procedure. (See MISSED APPROACH POINT.)
(Refer to AIM.)

MISSED APPROACH POINT- A point prescribed in each instrument approach procedure at which a missed approach procedure shall be executed if the required visual reference does not exist.

3-8-2. TOUCH-AND-GO OR STOP-AND-GO OR LOW APPROACH

Consider an aircraft cleared for touch-and-go, stop-and-go, or low approach as an arriving aircraft until it touches down (for touch-and-go), or makes a complete stop (for stop-and-go), or crosses the landing threshold (for low approach), and thereafter as a departing aircraft.

REFERENCE-

FAAO JO 7110.65, Para 3-1-5, Vehicles/Equipment/Personnel on Runways.

FAAO JO 7110.65, Para 3-9-7, Wake Turbulence Separation for Intersection Departures.

5-5-7. PASSING OR DIVERGING

a. TERMINAL. In accordance with the following criteria, all other approved separation may be discontinued, and passing or diverging separation applied when:

1. Aircraft are on opposite/reciprocal courses and you have observed that they have passed each other; or aircraft are on same or crossing courses and one aircraft has crossed the projected course of the other and the angular difference between their courses is at least 15 degrees.
2. The tracks are monitored to ensure that the primary targets, beacon control slashes, or full digital terminal system primary and/or beacon target symbols will not touch.

REFERENCE-

FAAO JO 7110.65, Para 1-2-2, Course Definitions.

NOTE-

Although all other approved separation may be discontinued, the requirements of para 5-5-4, Minima, subparas e and f shall apply when operating behind a heavy jet/B757.

5-8-3. SUCCESSIVE OR SIMULTANEOUS DEPARTURES

TERMINAL

Separate aircraft departing from the same airport/heliport or adjacent airports/heliports in accordance with the following minima provided radar identification with the aircraft will be established within 1 mile of the takeoff runway end/helipad and courses will diverge by 15 degrees or more.

NOTE-

1. *FAAO 8260.19, Flight Procedures and Airspace, establishes guidelines for IFR departure turning procedures which assumes a climb to 400 feet above the airport elevation before a turn is commenced. FAAO 8260.3, United States Standard for Terminal Instrument Procedures (TERPS), the ILS missed approach criteria, requires a straight climb of 400 feet be specified where turns greater than 15 degrees are required.*
2. *Consider known aircraft performance characteristics when applying initial separation to successive departing aircraft.*
3. *When one or both of the departure surfaces is a helipad, use the takeoff course of the helicopter as a reference, comparable to the centerline of a runway and the helipad center as the threshold.*

a. Between aircraft departing the same runway/helipad or parallel runways/helicopter takeoff courses separated by less than 2,500 feet- *1 mile* if courses diverge immediately after departure.

(See FIG 5-8-1, FIG 5-8-2, and FIG 5-8-3.)

FIG 5-8-1
Successive Departures

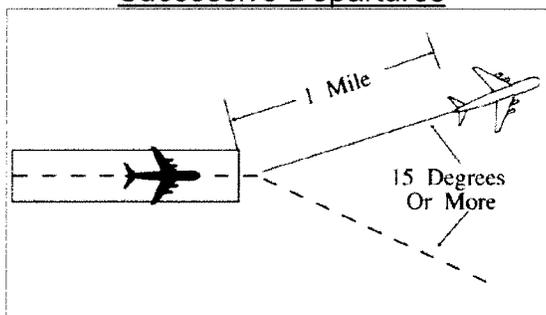


FIG 5-8-2
Simultaneous Departures

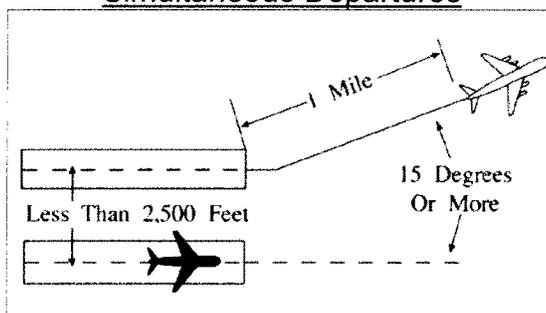
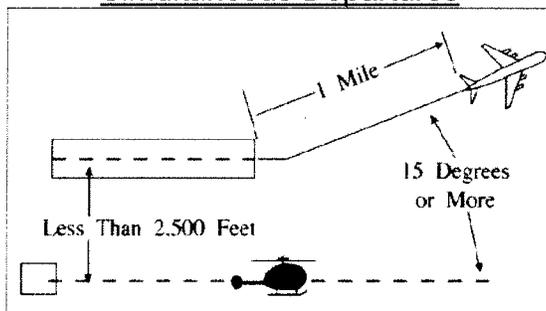


FIG 5-8-3
Simultaneous Departures



NOTE-

This procedure does not apply when a small aircraft is taking off from an intersection on the same runway behind a large aircraft or when an aircraft is departing behind a heavy jet/B757.

REFERENCE-

FAAO JO 7110.65, Para 3-9-7, Wake Turbulence Separation for Intersection Departures.

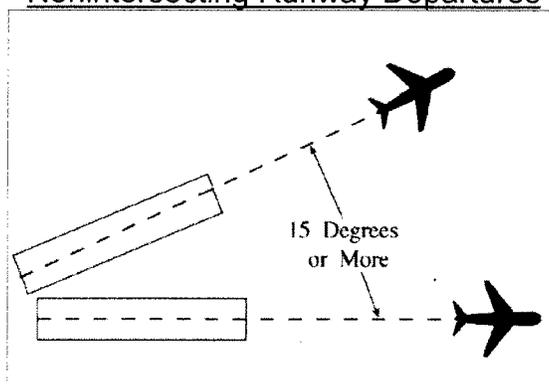
FAAO JO 7110.65, Para 3-9-8, Intersecting Runway Separation.

FAAO JO 7110.65, Para 5-5-4, Minima.

b. Between aircraft departing from diverging runways:

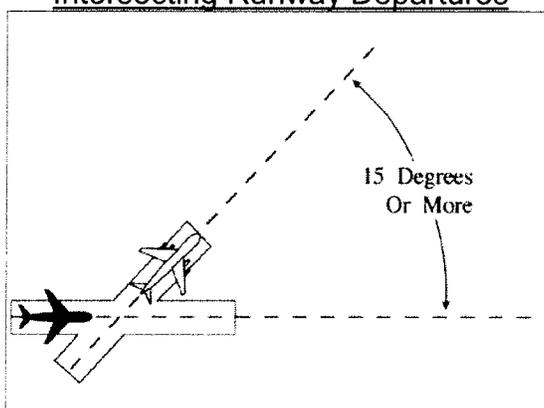
1. Nonintersecting runways. Authorize simultaneous takeoffs if runways diverge by 15 degrees or more. (See FIG 5-8-4.)

FIG 5-8-4
Nonintersecting Runway Departures



2. Intersecting runways and/or helicopter takeoff courses which diverge by 15 degrees or more. Authorize takeoff of a succeeding aircraft when the preceding aircraft has passed the point of runway and/or takeoff course intersection. When applicable, apply the procedure in para 3-9-5, Anticipating Separation. (See FIG 5-8-5 and FIG 5-8-6.)

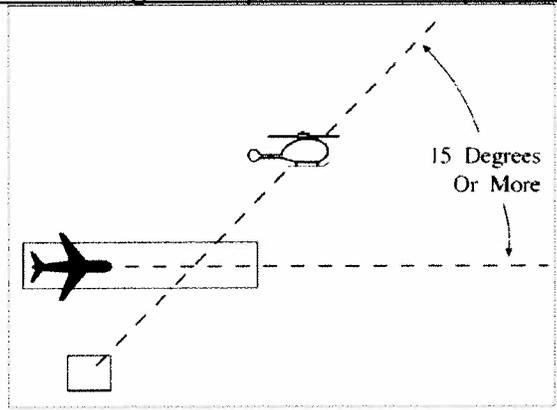
FIG 5-8-5
Intersecting Runway Departures



NOTE-

This procedure does not apply when aircraft are departing behind a heavy jet/B757.

FIG 5-8-6
Intersecting Helicopter Course Departures



c. Between aircraft departing in the same direction from parallel runways/helicopter takeoff courses. Authorize simultaneous takeoffs if the centerlines/takeoff courses are separated by at least 2,500 feet and courses diverge by 15 degrees or more immediately after departure. (See FIG 5-8-7 and FIG 5-8-8.)

FIG 5-8-7
Parallel Runway Departures

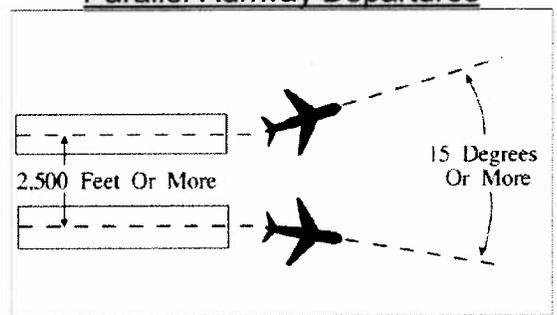
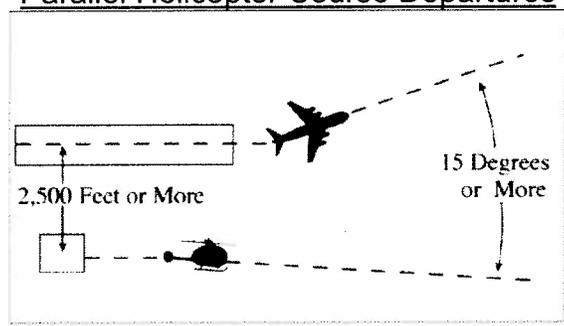


FIG 5-8-8
Parallel Helicopter Course Departures



5-8-4. DEPARTURE AND ARRIVAL

TERMINAL. Except as provided in para 5-8-5, Departures and Arrivals on Parallel or Nonintersecting Diverging Runways, separate a departing aircraft from an arriving aircraft on final approach by a minimum of 2 miles if separation will increase to a

minimum of 3 miles (5 miles when 40 miles or more from the antenna) within 1 minute after takeoff.

NOTE-

1. This procedure permits a departing aircraft to be released so long as an arriving aircraft is no closer than 2 miles from the runway at the time. This separation is determined at the time the departing aircraft commences takeoff roll.
2. Consider the effect surface conditions, such as ice, snow, and other precipitation, may have on known aircraft performance characteristics, and the influence these conditions may have on the pilot's ability to commence takeoff roll in a timely manner.

5-8-5. DEPARTURES AND ARRIVALS ON PARALLEL OR NONINTERSECTING DIVERGING RUNWAYS

TERMINAL. Authorize simultaneous operations between an aircraft departing on a runway and an aircraft on final approach to another parallel or nonintersecting diverging runway if the departure course diverges immediately by at least 30 degrees from the missed approach course until separation is applied and provided one of the following conditions are met:

NOTE-

When one or both of the takeoff/landing surfaces is a helipad, consider the helicopter takeoff course as the runway centerline and the helipad center as the threshold.

- a. When parallel runway thresholds are even, the runway centerlines are at least 2,500 feet apart.

(See [FIG 5-8-9](#) and [FIG 5-8-10](#).)

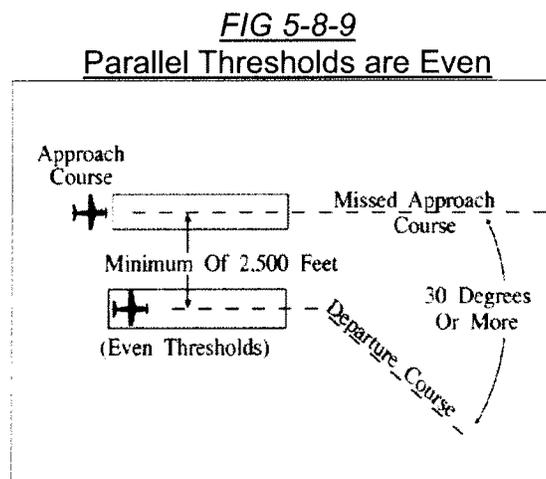
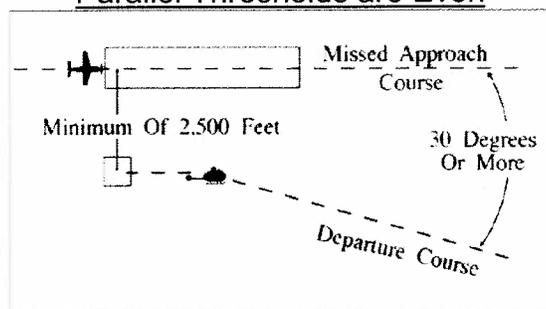


FIG 5-8-10
Parallel Thresholds are Even



b. When parallel runway thresholds are staggered and:

1. The arriving aircraft is approaching the nearer runway: the centerlines are at least 1,000 feet apart and the landing thresholds are staggered at least 500 feet for each 100 feet less than 2,500 the centerlines are separated. (See FIG 5-8-11 and FIG 5-8-12.)

FIG 5-8-11
Parallel Thresholds are Staggered

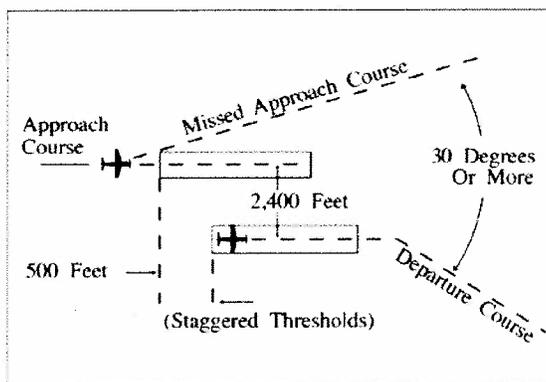
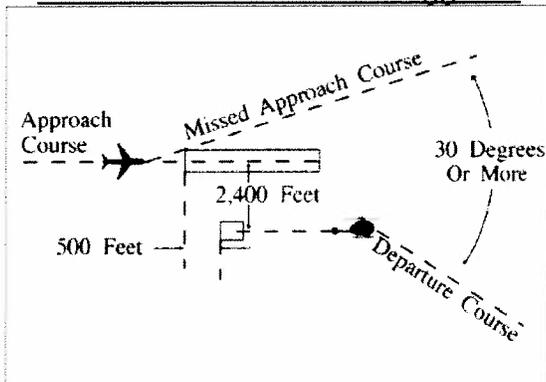


FIG 5-8-12
Parallel Thresholds are Staggered

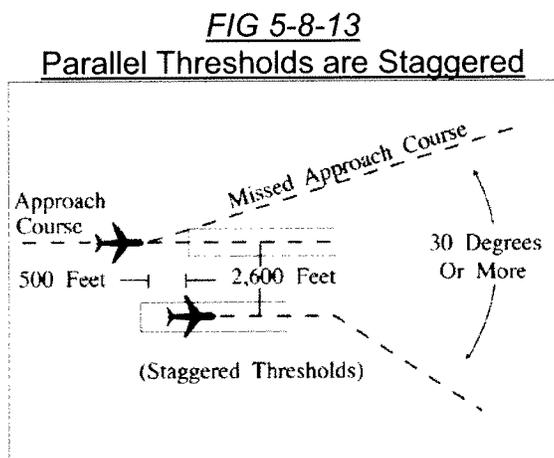


NOTE-

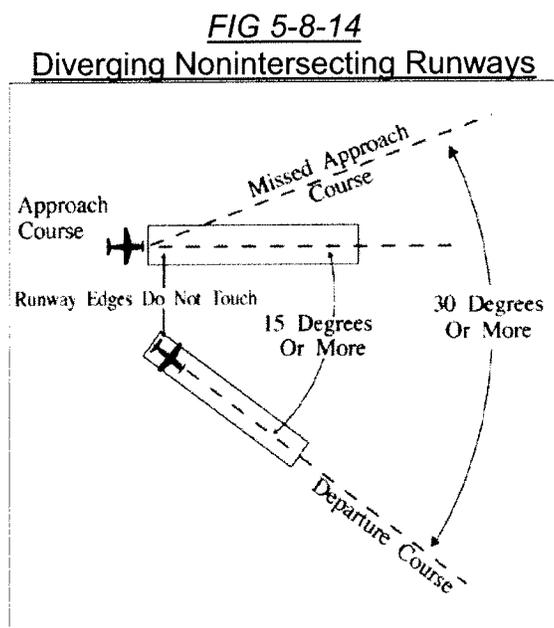
In the event of a missed approach by a heavy jet/B757, apply the procedures in para 3-9-6, Same Runway Separation, or para 3-9-8, Intersecting Runway Separation, ensure that the heavy jet does not overtake or cross in front of an aircraft departing from the adjacent parallel runway.

2. The arriving aircraft is approaching the farther runway: the runway centerlines separation exceeds 2,500 feet by at least 100 feet for each 500 feet the landing thresholds are staggered.

(See FIG 5-8-13.)



c. When nonintersecting runways diverge by 15 degrees or more and runway edges do not touch. (See FIG 5-8-14.)



d. When the aircraft on takeoff is a helicopter, hold the helicopter until visual separation is possible or apply the separation criteria in subparas a, b, or c.

REFERENCE-

FAAO JO 7110.65, Para 5-8-4, Departure and Arrival.

ISSUES

The core issue concerning the correct application of 7110.65 standards is the arrival/departure classification of an arrival aircraft conducting a missed approach procedure during IFR conditions and its influence upon separation standards for departures off a parallel runway. Included in this issue are the application of passing and diverging radar separation, and immediate divergence of courses.

Clarification of Aircraft Status While Conducting a Missed Approach Procedure

The application of paragraphs 3-8-3, 5-5-7, 5-8-3, and the definition of Missed Approach to the DTW arrival/departure scenario of December 25, 2009 require further clarification. Specifically, at what point, if any, may an aircraft conducting a missed approach procedure be considered a departure aircraft instead of an arrival aircraft?

Paragraph 3-8-2, TOUCH-AND-GO OR STOP-AND-GO OR LOW APPROACH, states *“consider an aircraft cleared for touch-and-go, stop-and-go, or low approach as an arriving aircraft until it touches down (for touch-and-go), or makes a complete stop (for stop-and-go), or crosses the landing threshold (for low approach), and thereafter as a departing aircraft.”* Although not specifically mentioned, an aircraft conducting a missed approach procedure could easily be considered a low approach depending when the aircraft initiates the missed approach procedure. The pilot controller glossary defines Missed Approach as *“A maneuver conducted by a pilot when an instrument approach cannot be completed to a landing.”* Although not specifically mentioned in this definition, the primary reason for a missed approach is that the required flight visibility prescribed in the Instrument Approach Procedure (IAP) being used does not exist or the required visual references for the runway cannot be seen upon arrival at the DA, DH, or MAP. In accordance with FAA-H-8261-1A, Instrument Procedures Handbook, a missed approach procedure *“is also required upon the execution of a rejected landing for any reason, such as men and equipment or animals on the runway, or if the approach becomes unstabilized and a normal landing cannot be preformed.”* As such, a low approach is automatically authorized with an instrument approach clearance. Thus, a missed approach aircraft, in accordance with paragraph 3-8-2, is considered a departing aircraft after crossing the landing threshold.

When considering the application of paragraph 3-8-2, paragraph 5-8-3, SUCCESSIVE OR SIMULTANEOUS DEPARTURES, should apply to missed approach aircraft that have crossed the landing threshold to a parallel runway. The paragraph states *“Separate aircraft departing from the same airport/heliport or adjacent airports/heliports in accordance with the following minima provided radar identification with the aircraft will be established within 1 mile of takeoff runway end/helipad and courses will diverge by 15 degrees or more.”* The parallel runway application for DTW Runways 4L and 4R is covered by subparagraph c by stating *“Between aircraft departing in the same direction from parallel runways/helicopter takeoff courses. Authorize simultaneous takeoffs if the centerlines/takeoff courses are separated by at least 2500 feet and courses diverge by 15 degrees or more immediately after departure.”* Consequently, application of the required 15 degrees of separation authorized in Paragraph 5-8-3 may be utilized to comply with the initial criteria of Paragraph 5-8-5 which states *“...until separation is applied”*.

Application of Passing and Diverging

ATSAP report AIR-088 requested an interpretation of paragraphs 5-8-4 and 5-8-5, and the relationship to the requirements in 5-5-7 as it relates to the runway configurations at DTW. Paragraph 5-5-7 does not appear to apply to the operation cited on 12/25/09. The paragraph states "**a. TERMINAL.** *In accordance with the following criteria, all other approved separation may be discontinued, and passing or diverging separation applied when: 1. Aircraft are on opposite/reciprocal courses and you have observed that they have passed each other; or aircraft are on same or crossing courses and one aircraft has crossed the projected course of the other and the angular difference between their courses is at least 15 degrees.*" The initial requirement of Paragraph a. cannot be met as initial separation of the two aircraft has not been obtained through the application of Paragraph 5-8-5, and therefore, it cannot be discontinued.

Additionally, the stipulations of paragraph a.1. cannot be satisfied if the missed approach aircraft is turning away from the departure as one aircraft has not crossed the projected course of the other. Therefore, paragraph 5-5-7 does not relate to the application of Paragraphs 5-8-4 and 5-8-5 in any form.

Immediate Divergence of 30 Degrees

There are several key elements in the application of paragraphs 5-8-4 and 5-8-5. Paragraph 5-8-4 is the default criteria which stipulates the separation of a departing aircraft from an arriving aircraft on final approach by a minimum of 2 miles if separation will increase to a minimum of 3 miles within 1 minute after takeoff, and the note adds that the 2 mile requirement is measured at the time the departure aircraft starts departure roll. It is important to recognize that the paragraph starts with the phrase "*Except as provided in paragraph 5-8-5,...*". In other words, if we don't meet the criteria of 5-8-5, the controlling paragraph is 5-8-4 for single runway operations and parallel runway operations.

The initial paragraph of 5-8-5 stipulates that Air Traffic may authorize simultaneous operations between an aircraft departing on a runway and an aircraft on final approach to another parallel runway if the departure course diverges immediately by at least 30 degrees from the missed approach course until separation is applied and provided one of the subsequent conditions is met. Please note that courses are not headings. "Course" is defined in the Pilot Controller Glossary (PCG) as "*The intended direction of flight in the horizontal plane measured in degrees from north.*" Runways 4R and 4L are considered parallel runways (035.8 degrees) and thus the first condition is satisfied. However, the second criteria stipulated in the paragraph may not be completely satisfied by the primary missed approach procedure for the Z approaches because of a "*climb to 1300*" requirement, and the Z and Y approaches because of the subjective nature of the missed approach point before the runway threshold.

The published missed approach for the ILS Z or LOC RWY 4L (CAT I, II, and III) is "*Climb to 1300 then climbing left turn to 3000 direct SVM VORTAC and hold*" (See attachment A for the ILS Z or LOC RWY 4L SIAP). This climb restriction limits the application of 5-8-5 because of the variability of the geographic location at which a turn can commence toward the SVM VOR and the additional 255' altitude requirement over normal departure climb requirements (1300' – 645' [airport elevation] = 655' – 400' [FAAO 8260.19, Flight Procedures and Airspace, establishes guidelines for IFR departure turning procedures which assumes a climb to 400 feet above the airport elevation before a turn is commenced] = 255').

Since each approach uses the same glideslope equipment, the missed approach point distance is calculated from the same starting point but varies with the Decision Height (DH) of the specific approach. For instance, the DH for the ILS Z 4L (Cat I) is 200' AGL. At 318' per nautical mile on a glideslope of 3 degrees, the MAP is approximately 2756' from the approach end of Runway 4L ($200'/318' \times 6076'$ [nautical mile] = $3821' - 1065'$ [distance from the glideslope antennae array to the approach end of the runway] = 2756'). The DH for the ILS Z 4L (Cat II) is 100' AGL. Again, at 318' per nautical mile, the MAP is approximately 845' from the approach end of Runway 4L ($100'/318' \times 6076'$ [nautical mile] = $1910' - 1065' = 845'$). Thus, the missed approach points change depending on the specific approach DH, or in the case of a localizer only approach, the MAP as listed on the approach plate. (Note: The LOC RWY 4L approach MAP is 5.9 NM from the Final Approach Fix (FAF) or approximately over the runway threshold.) Because the straight in Z approaches require an additional climb component of 255' before starting a turn to SVM, and variable missed approach points may include a geographic point over the runway, the climb to 1300' AGL is possibly achieved beyond normal departure climb gradient expectations, and "immediate" course diversion by 30 degrees, the second provision of the first paragraph, may or may not be satisfied with the current primary published missed approach procedure for the straight in approaches. However, since arrival aircraft airspeed is significantly higher, the additional 255' climb requirement may be insignificant.

The primary published missed approach procedures for the ILS Y approaches (See Attachment B) including the PRM approaches are slightly different in that they instruct the aircraft to perform a "*Climbing left turn to 3000 direct SVM VORTAC and hold.*" This procedure, as well as the procedures for the Z approaches as they relates to 5-8-5, is somewhat subjective because the turn to the SVM VOR may be prior to the runway threshold. Utilizing the D21 STARS equipment, we have calculated that the SVM VOR is the 330 course at 15.54 miles from the approach end of Runway 04L. Except for the ILS Z CAT III approach whose MAP is 1065' from the runway end on the runway side, each Y and Z approach's missed approach point calculated from the DH is before the aircraft reaches the approach end of the runway. Thus, any turn commencing toward SVM prior to the runway threshold could not predictably ensure the 330 course. It would be somewhat more towards north thus creating an unpredictable variable in comparison to the course of a departure off Runway 4R whose ground track is adjusted to a 360 course. Departure headings adjusted to provide a 360 course track after departure would need to be adjusted east to ensure the immediate course divergence of 30 degrees, but objective adjustment criteria based on the imaginary course of a missed approach may or may not be similar because of winds aloft differences.

SUMMARY

It is clear that the plethora of missed approach procedure nuances, including varied missed approach points, climb restrictions, aircraft performance, and weather conditions effect consistent application of the 30 degree course divergence requirement between an arrival and departure utilizing parallel runways if applied to predicted course. Paragraph 5-8-5 does not indicate that the 30 degrees is a separation standard. In fact, the final sentence states "*...until separation is applied and provided one of the following conditions are met:*". Therefore, for practical application, the course of the missed approach should be calculated from the approach end of the runway. After that, the application of 5-8-3 may be applied in conjunction with Paragraph 3-8-2 utilizing the runway threshold as the determining point an arrival aircraft changes to a departure aircraft.

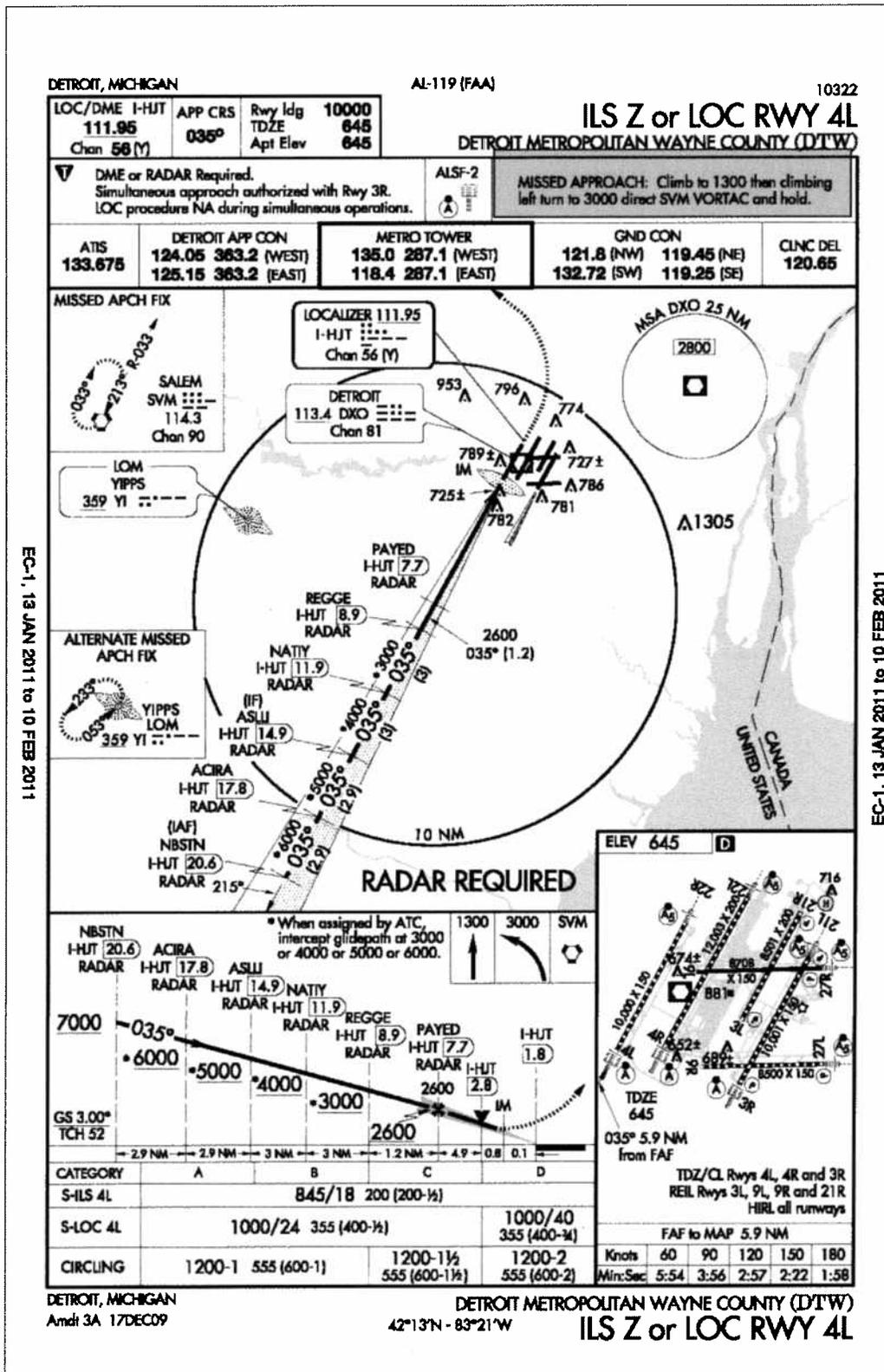
In recognizing the relationships of Paragraphs 3-8-2, Touch-And-Go Or Stop-And-Go Or Low Approach, 5-8-3, Successive Or Simultaneous Departures, 5-8-4, Departure And Arrival, and 5-8-5 Departures And Arrivals On Parallel Or Nonintersecting Diverging Runways, it appears that during IFR conditions, departure aircraft from Runway 04R should be initially protected from arrival aircraft to Runway 04L by either apply paragraph 5-8-4 –OR- applying a heading to the departure aircraft that would protect 30 degrees course divergence from the missed approach course of the arrival aircraft up to the approach end of the runway. The 30 degree separation requirement could be reduced to 15 degrees once the missed approach aircraft has crossed the landing threshold of its arrival runway or is perpendicular to it while commencing a missed approach procedure.

INTERPRETATION/CLARIFICATION REQUEST

In accordance with the information presented above, Detroit Air Traffic Control Tower requests interpretation/clarification for which JO 7110.65 Paragraphs 3-8-2, 5-5-7, 5-8-3, 5-8-4, and 5-8-5 to the application of arrivals to runway 04L and departures from 04R during IFR conditions. This interpretation request includes:

- Verify the missed approach aircraft is considered a departure aircraft after crossing or perpendicular with the arrival runways threshold.
- Verify 30 degrees may be reduced to 15 for the missed approach aircraft after crossing the arrival runway threshold or being perpendicular with it.
- Verify the 30 degree requirement is determined by the calculated course from the approach end of the arrival runway.
- Verify the climb requirement in the DTW published missed approach procedure for the RWY 04L Z approaches does not influence the point at which an estimated missed approach course is calculated.
- Verify Paragraph 5-5-7 does not apply to departure/departure or departure/arrival operations.

Attachment A
ILS Z or LOC RWY 4L SIAP



Attachment B
ILS Y RWY 4L SIAP

DETROIT, MICHIGAN

AL-119 (FAA)

| | | | |
|--|-----------------|--|-------|
| LOC/DME I-ALA 111.75 Chan 54 (Y) | APP CRS 037° | Rwy ldg TDZE 845 Apt Elev 845 | 10000 |
|--|-----------------|--|-------|

ILS Y RWY 4L

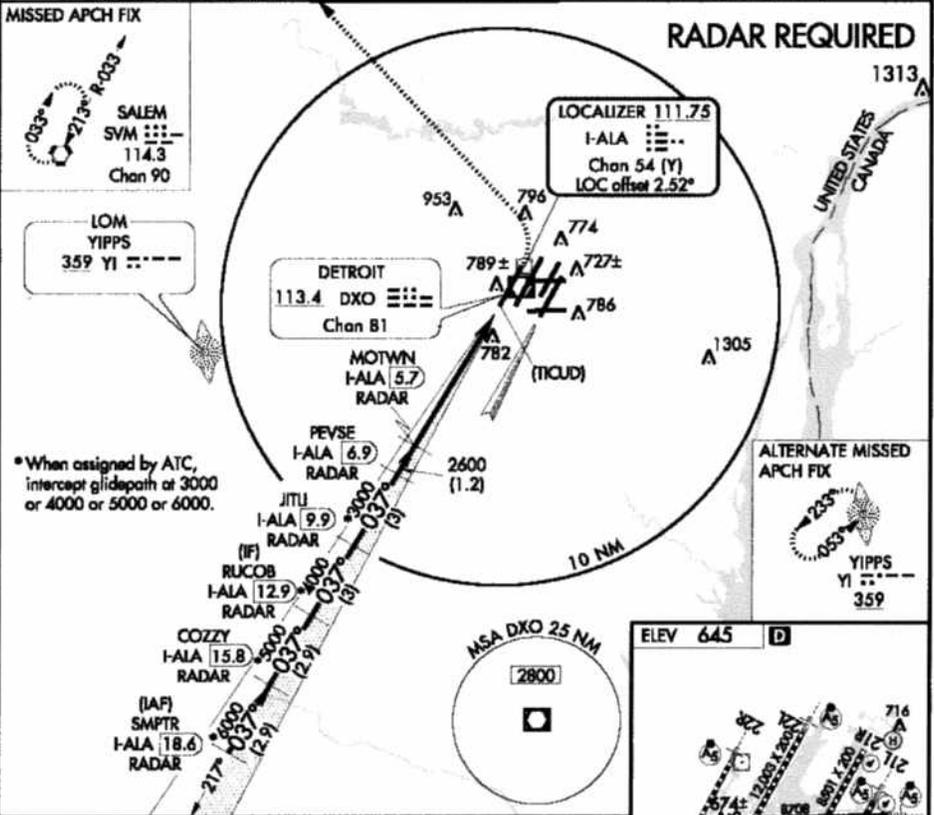
DETROIT METROPOLITAN WAYNE COUNTY (DTW)

▽ DME or RADAR REQUIRED. LOC procedure NA during simultaneous operations. Simultaneous approach authorized with Rwy 3R. Procedure NA when glide slope not available.

ALSIF-2

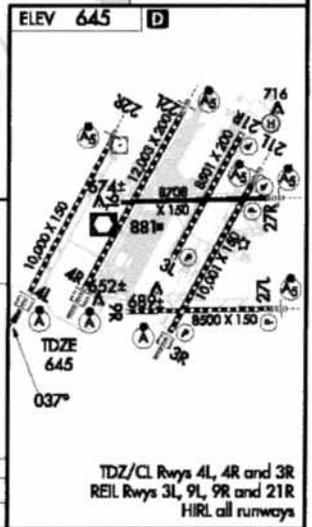
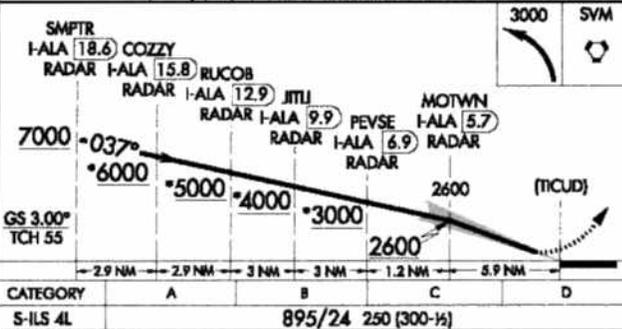
MISSED APPROACH: Climbing left turn to 3000 direct SVM VORTAC and hold.

| | | | | |
|-----------------|---|---|--|--------------------|
| ATIS 133.675 | DETROIT APP CON 124.05 363.2 (WEST) 125.15 363.2 (EAST) | METRO TOWER 135.0 287.1 (WEST) 118.4 287.1 (EAST) | GND CON 121.8 (NW) 119.45 (NE) 132.72 (SW) 119.25 (SE) | CLNC DEL 120.65 |
|-----------------|---|---|--|--------------------|



EC-1, 13 JAN 2011 to 10 FEB 2011

EC-1, 13 JAN 2011 to 10 FEB 2011



DETROIT, MICHIGAN
Orig 10322

DETROIT METROPOLITAN WAYNE COUNTY (DTW)
42°13'N - 83°21'W
ILS Y RWY 4L

#111A003SINV

**ATTACHMENT 4: RESPONSE FROM ACTING DIRECTOR,
TERMINAL SAFETY AND OPERATIONS SUPPORT, JULY 15, 2011**



Federal Aviation Administration

Memorandum

Date: JUL 15 2011

To: Paul J. Sheridan
Director, Central Terminal Operations

From: 
for Tony Mello
Acting Director, Terminal Safety and Operations Support

Subject: Request for Interpretation to FAA Order 7110.65T, Paragraphs 3-8-2, 5-5-7, 5-8-3, 5-8-4, and 5-8-5; Your Memo dated February 16, 2011

We have reviewed your request for an interpretation to FAA Order JO 7110.65, Air Traffic Control, Paragraphs 3-8-2, 5-5-7, 5-8-3, 5-8-4, and 5-8-5 and offer the following:

With regard to Item 1 in which you assert that a missed approach aircraft is considered a departure aircraft after crossing or perpendicular with the arrival runway threshold, your assertion is correct with one exception. A missed approach aircraft (like an aircraft cleared for a low approach) is considered a departing aircraft once it crosses that landing threshold. There is no requirement for an aircraft to be perpendicular with the arrival runway threshold.

Regarding Item 2 and your assertion that 30-degree separation may be reduced to 15 degrees for the missed approach aircraft crossing the arrival runway or being perpendicular to it is incorrect. One form of separation must exist at all times and may be discontinued only after a different form of approved separation is attained.

Regarding Item 3 in which you assert that the 30-degree requirement is "determined by the calculated course from the approach end of the runway" is incorrect. The 30-degree requirement is calculated from the missed approach point or the point of arrival at decision height and/or the missed approach fix at a prescribed altitude.

Regarding Item 4 in which you ask, "Verify the climb requirement in the DTW published missed approach procedure for the RWY 04L Z approaches do not influence the point at which the estimated missed approach course is calculated." This assertion is incorrect. The DII on RWY 4L is published as 845 and the approach course is 035. The requirement to climb an additional 455 feet prior to turning certainly influences the missed approach course by insuring additional altitude separation (ROC) and subsequently, additional separation.

Finally, regarding Item 5, we agree with your assertion of "Verify Paragraph 5-5-7 does not apply to departure/departure or departure/arrival operations" with one exception. There is no requirement that an aircraft be a departure/departure or departure/arrival operation to apply this paragraph. However, Paragraph 5-5-7, Passing or Diverging, is an approved form of separation and may be applied to replace a different form of separation until such time as another approved for separation exists.

If you have any questions or desire further information, please contact Robert Law, Terminal Operations and Procedures, at (202) 385-8793.

#111A003SINV

**ATTACHMENT 5: REQUEST FOR INTERPRETATION FROM
DTW AIR TRAFFIC MANAGER, AUGUST 23, 2011**



Federal Aviation Administration

Memorandum

Date: August 23, 2011
To: Paul J. Sheridan, Director of Terminal Operations, Central Service Area
Thru: Anthony D. Roetzel, Manager, Operations Support Group, ATO Central Service Center

Gay Owens

From: DTW/D21 Air Traffic Manager
Subject: Interpretation Request

As the result of an operational error from December 25, 2009 and a recent DOT Office of the Inspector General (OIG) Investigation, DTW ATCT is requesting interpretations of the following issues.

1. What is the correct application of FAAO 7110.65, paragraphs 5-8-4 and 5-8-5 in the following traffic flow configurations:
 - a. Landing Runways 4L and 3R, departing Runways 4R and 3L.
 - b. Landing Runways 22R and 21L, departing Runways 22L and 21R
 - c. Landing and departing Runways 27L and 27R.
 - d. Landing Runways 27L and 27R, departing Runway 22R.
2. How does FAAO 7110.65, paragraph 5-5-7 apply in each of the above departure configurations?
3. At what point does the application of the 30 degrees from the missed approach course begin and end in paragraph 5-8-5?
4. When visual separation cannot be applied between simultaneous departing and arriving aircraft on final to another parallel runway, should separation on final be increased to ensure three miles between the arrival and departure in the event of a missed approach to comply with 5-8-5 and 5-8-4?

5. When visual separation cannot be applied between simultaneous departing and arriving aircraft on final to another parallel runway, should DTW reduce their arrival and departure flow to one arrival and one departure runway to comply with 5-8-5 and 5-8-4?
6. Are paragraphs 5-8-4 and 5-8-5 able to be applied at facilities where more than two parallel or nonintersecting diverging runways are in use?

We will await your response.

#111A003SINV

**ATTACHMENT 6: RESPONSE FROM ACTING DIRECTOR,
TERMINAL SAFETY AND OPERATIONS SUPPORT,
NOVEMBER 7, 2011**

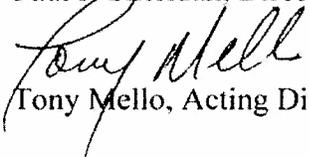


Federal Aviation Administration

Memorandum

Date: NOV 07 2011

To: Paul J. Sheridan, Director, Central Terminal Operations

From: 
Tony Mello, Acting Director, Terminal Safety and Operations Support, AJT-2

Subject: Response to Interpretation Request

We have reviewed your Interpretation Request from August 23, 2011, and offer the following:

With regard to items one through six, wherein you request interpretation to FAA Order JO 7110.65, Paragraphs 5-5-7, 5-8-4, and 5-8-5, we refer you to our attached response dated July 15, 2011. This memo provided information in response to your February 16, 2011, Request for Interpretation to FAA Order JO 7110.65T, Paragraphs 3-8-2, 5-5-7, 5-8-3, 5-8-4, and 5-8-5. The information provided in our response remains unchanged and applicable to items one through six of your Interpretation Request dated August 23, 2011.

If you have any questions or need further information, please contact Caroline Moran, Terminal Operations and Procedures, AJT-2A3, at (202) 385-8219.

Attachment

#111A003SINV

**ATTACHMENT 7: EMAIL FROM OPERATIONS SUPPORT SPECIALIST,
CENTRAL SERVICE CENTER, NOVEMBER 8, 2011**

Uryga, Brian

From: Gary.F.Ancinec@faa.gov
Sent: Wednesday, November 09, 2011 3:50 PM
To: Uryga, Brian
Subject: Fw: ACTION: Response to Interpretation Request (DTW)
Attachments: Para 5-8-3 vs 5-8-5 Separation Final.doc; Request for Interpretation 7110.65T, 3-8-2, 5-5-7, 5-8-3, 5-8-4, and 5-8-5, Your Memo Dated February 16, 2011.pdf; DTW Clarification Request for 7-15-2011 Interp.doc; Response to Interpretation Request.pdf

Gary F. Ancinec
D21 Air Traffic Manager
Pho: 734-955-5004
Blackberry: 734-255-7926

----- Forwarded by Gary F Ancinec/AGL/FAA on 11/09/2011 03:49 PM -----

From: Gary F Ancinec/AGL/FAA
TCL-DTW, Detroit Metro ATCT, MI
To: John Whitehurst/AGL/FAA@FAA, Joseph Figliuolo/AGL/FAA@FAA
Date: 11/08/2011 02:23 PM
Subject: Fw: ACTION: Response to Interpretation Request (DTW)

Gary F. Ancinec
D21 Air Traffic Manager
Pho: 734-955-5004
Blackberry: 734-255-7926

----- Forwarded by Gary F Ancinec/AGL/FAA on 11/08/2011 02:23 PM -----

From: Susan Ruddy/ASW/FAA
AJV-C21, Airspace & Procedures North Team
To: Walter Tweedy/ASW/FAA@FAA
Cc: Gary F Ancinec/AGL/FAA@FAA
Date: 11/08/2011 01:51 PM
Subject: Fw: ACTION: Response to Interpretation Request (DTW)

Walter,

I reviewed the most recent HQ response for DTW and find that it does not address the questions submitted by the manager. I contacted Gary to let him know what we received and that I was going to elevate it. I added attachments below so you'll have the complete package, including Detroit's original request, HQ's first response, Detroit's follow-up request and the response received today. The attachments are in chronological order.

The original interpretation request was submitted at the request of the ERC after they contacted OSG for assistance. The ERC has been working an ATSAP report for an OE reported by DTW on December 25, 2009. The ERC indicated they hadn't received answers from HQ so they contacted us. At the ERC's request, DTW prepared an interpretation request in February 2011 and it was answered in July 2011. The response did not sufficiently answer the questions posed by DTW so they submitted a follow-up request for clarification in September 2011; the response was received today (last attachment). The response received today says, in essence, we've already answered your questions.

In my opinion, the first response had contradictory and confusing statements. I reviewed it personally with Ron Singletary and he said he agreed with my assessment. I'm not sure what happened in the interim, but the response today does not reflect our conversation. It would have been helpful for someone to discuss it with us or the Director.

A lack of response is not supportive of Detroit as they try to understand and clarify the rules for their workforce. I'm requesting assistance on how to proceed.

Thank you.

Susan D. Ruddy
Operations Support Specialist
FAA, ATO Central Service Center, Operations Support Group
Airspace and Procedures North Team, AJV-C21
817-321-7717 Office
817-321-7744 FAX

[Link to Central Service Center Website](#)

Feedback to Central Service Center: [9-ATO-CSC/ASW/FAA](#)

----- Forwarded by Walter Tweedy/ASW/FAA on 11/08/2011 09:00 AM -----

From: LaTanya CTR Fourth/AWA/CNTR/FAA
AJT-2, Terminal Safety & Ops Support Office

To: Paul Sheridan/ASW/FAA@FAA, Todd Lowry/ASW/FAA@FAA, Mark E Gordon/ASW/FAA@FAA, Jacque L Braziel/ASW/FAA@FAA, Gail Kasson <Gail.Kasson@faa.gov>, Rick Kervin/ASW/FAA@FAA, Rich Hall/ASW/FAA@FAA, Walter Tweedy/ASW/FAA@FAA, David P Medina/ASW/FAA@FAA, James L Powell/ASW/FAA@FAA, Dorothy Davis/ASW/FAA@FAA

Cc: Caroline Moran/AWA/FAA@FAA, Ron Singletary/AWA/FAA@FAA, Robert Law/AWA/FAA@FAA, Mike Prichard/ACT/FAA@FAA, Angela Nelson/AWA/FAA@FAA, J Garver/AWA/FAA@FAA, Lottie Perro/AWA/FAA@FAA, Paul Rinaldi/AWA/FAA@FAA, trish.gilbert@natca.net, kevin.peterson@natca.net, nearvp@natca.net, bzilonis@natca.net, mrobicheau@natca.net, et.smith@natca.net, hghaffari@natca.net, mmacdonald@natca.net, Jackie CTR Shackelford/AWA/CNTR/FAA@FAA, Ebonni CTR /FAA@FAA

Date: 11/08/2011 07:39 AM

Subject: Response to Interpretation Request

Attached is the above subject document signed by Tony Mello on November 7, 2011.

Thanks,

LaTanya Fourth
Terminal Safety & Operations Support, AJT-2
(202) 385-8981



Federal Aviation Administration

Memorandum

Date: **NOV 18 2011**

To: Ronald Engler, Director of Special Investigations,
Office of Inspector General

From: H. Clayton Foushee, Director, Office of Audit & Evaluation 

Subject: Air Traffic Management at Detroit Metropolitan Wayne County
Airport (DTW); ref: Office of Inspector General (OIG) Investigation
No. I11A003SINV, Office of Special Counsel Cases DI-11-1675/-1677

This memo provides our response to the latest referral from the Office of Special Counsel (OSC) and is in response to the Department of Transportation's Office of Inspector General (OIG) Report of Investigation dated Nov. 15, 2011. The following paragraphs summarize the changes planned to improve air traffic operations at DTW, and reduce any safety hazards described in the OIG report.

Allegation 1: *"During simultaneous arrivals and departures on parallel runways at DTW, the air traffic control rule for protecting airspace in the event of a missed approach conflicts with the rule for maintaining radar separation between aircraft."*

FAA response: The FAA understands that this allegation stems from apparent misunderstandings among some DTW air traffic controllers as a result of complex, overlapping national policies pertaining to the use of simultaneous approaches to parallel runways. This confusion is the result of distinctions about when to apply (or not apply) certain aspects of national policy. The OIG found evidence that these policy distinctions are not clearly understood by some controllers as they pertain to the simultaneous operations at DTW. The following activities are being implemented in response to the findings of the OIG investigation:

- a) The FAA will review the published arrival and missed approach procedures at DTW to ensure the published procedures meet all appropriate criteria and consider the unique airspace, obstacles, and traffic patterns associated with DTW plus their satellite airports.
 - o Discrepancies, corrections, and improvements to the published arrival and missed approach procedures at DTW will be promptly submitted through the national flight procedures process (AJV-3) to update the necessary publications.

- b) The FAA will review the application of national air traffic policies (i.e., FAA Order 7110.65, paragraphs 5-8-3, 5-8-4, and 5-8-5) specifically at DTW and related to the complainant's disclosure to ensure that FAA policies are understandable and do not conflict with other policies necessary for safe operations at DTW.
 - o Discrepancies, corrections, and improvements to the published national air traffic policies (i.e., paragraphs 5-8-3, 5-8-4, and 5-8-5) necessary for the safe conduct of simultaneous operations using two or more parallel runways at DTW will be submitted through the publications development group (PDG).
- c) In addition, the FAA will review associated training materials related to simultaneous operations at DTW to ensure controller training materials are concise and understandable.
 - o Discrepancies, corrections, and improvements to the training materials associated with simultaneous operations at DTW will be promptly submitted through the technical training update process (AJL-x) for the necessary publications.

Allegation 2: *"DTW controllers have received inadequate guidance concerning the application of rules for protecting airspace in the event of a missed approach and maintaining radar separation during simultaneous arrivals and departures on parallel runways."*

FAA response: The FAA understands that the OIG findings highlight a potential lack of understanding among some air traffic controllers with regard to policies intended to ensure the safe conduct of simultaneous operations to/from multiple runways, and that training deficiencies/shortfalls require the agency's immediate attention. The following corrective actions are being implemented in response to the OIG's findings:

- a) DTW will develop training scenarios using their tower simulation tools to demonstrate and allow controllers to see how evolving simultaneous operations using two or more parallel runways can result in unsafe situations requiring local controller (LC) intervention (i.e., additional spacing between arrivals, delayed releases of departures, suspension of simultaneous operations, aircraft break-outs, go-arounds);
- b) DTW will commence retraining of LC qualified personnel no later than ten working days following receipt of this memo at DTW;
- c) DTW will retrain LC responsible for simultaneous operations on the proper application of air traffic policy paragraphs 5-8-3, 5-8-4, and 5-8-5;
- d) ATO Safety and Technical Training will ensure the training for simultaneous operations at all FAA facilities is consistent and reflects the latest policy changes; this will include an inspection of training conducted at Mike Monroney Aeronautical Center (MMAC), and follow-on training at all major facilities conducting simultaneous operations;

- e) DTW will offer to complete an in-depth briefing to the complainant regarding the event on Dec. 25, 2009 that resulted in a loss of separation; the briefing will include alternative methods of separation that were available as the event was evolving, and some possible responses the controller may have taken once it became apparent the two aircraft were in conflict with approved separation criteria; and
- f) Once training materials are prepared and approved, the Central Terminal Service Area will review and approve the scheduled implementation for DTW prior to training commencement.

Allegation 3: *"The conflicting rules for protecting airspace in the event of a missed approach and maintaining radar separation have resulted in unreported operational errors at DTW."*

FAA response: The FAA concurs that the OIG investigation substantiates the possibility that potential misunderstandings and inconsistent application of national air traffic policies at DTW may have contributed to undiscovered and unreported losses of separation. The following activities are being implemented in response to this allegation:

- a) DTW will ensure one front line manager (FLM) be assigned to oversee and visually supervise both arrivals and departures on the east-bank of runways (Runways 3L/3R or Runways 21L/21R) during all peak-hour periods when simultaneous operations are conducted in instrument meteorological conditions (IMC); likewise, DTW will ensure one FLM be assigned to oversee and visually supervise both arrivals and departures on the west-bank of runways (Runways 4L/4R or Runways 22L/22R) during all peak-hour periods when simultaneous IMC operations are conducted;
- b) DTW will ensure the FLM(s) assigned to oversee and visually supervise arrivals and departures provide timely feedback to all controllers (local controllers (LC) and on-the-job-trainee (OJT) controllers) working during peak-hour IMC periods; CEDAR entries will suffice as the records showing oversight and feedback took place;
- c) The Central Service Center Quality Control Group (QCG) will assign one tower observer to monitor all of DTW's simultaneous operations periods for a minimum of 14-days following release of this memorandum;
- d) The Central Service Center QCG will ensure the DTW management team receives feedback following every period of observed simultaneous operations under IMC; this feedback will be completed to the DTW management team as soon as feasible;
- e) The Central Service Center QCG will commence audits of DTW's simultaneous operations to include all IMC periods for a minimum of 60-days following commencement of LC retraining;
- f) The Central Service Center QCG will ensure the DTW management team receives weekly feedback following all audits of simultaneous operations; this feedback will be completed by the 10th calendar day following the audit beginning date unless the DTW ATM requests additional time to assemble his management team;

- g) The Central Service Center QCG will prepare a written report and then brief the Central Service Area Director of Operations and the Director of Terminal Safety & Operations Support on DTW's training and compliance progress after the 60-day period; and
- h) Central Service Area Director of Operations and the Director of Terminal Safety & Operations Support will jointly agree when the QCG audits may be suspended, and/or if additional retraining is required to improve safety at DTW; a written record of the Director's decision(s) will be submitted to ATO Safety.

We estimate the completion of our activities in response to Allegation 1 will take a minimum of 90-days, while completion of our activities in response to Allegations 2 and 3 may be completed in less time. We will provide your office an update to this initial response no-later-than Jan. 31, 2012. Quarterly updates will become necessary if the retraining and audits extend beyond our initial update.

If you desire additional information, please contact Joseph Teixeira, Vice President ATO Safety at (202) 267-3341.

cc: Vice President, Terminal Services
Vice President, Mission Support Services
Chief Operating Officer