THE SECRETARY OF TRANSPORTATION

WASHINGTON, D.C. 20590

October 14, 2009

William E. Reukauf
Associate Special Counsel
U.S. Office of Special Counsel
1730 M Street, NW, Suite 218
Washington, DC 20036

Re: OSC File No. DI-08-2225

Dear Mr. Reukauf:

This is in response to a letter of September 19, 2008, from former Special Counsel Scott Bloch concerning whistleblower allegations of unsafe air traffic configurations at the Federal Aviation Administration's (FAA) Newark Air Traffic Control Tower (ATCT) in Newark, New Jersey. The complainant, Raymond Adams, an Air Traffic Controller and current facility president for the National Air Traffic Controllers Association (NATCA), raised concern regarding two simultaneous arrival procedures, involving intersecting runways 22-Left and 11, and 29 and 4-Right. Such configurations, he asserted, pose a safety hazard if two aircraft arrive at the same time on the intersecting runways, and one of the aircraft is required to abort its landing and execute a go-around, potentially taking that aircraft into the path of other aircraft. Further, Mr. Adams raised concern that FAA failed to uphold its commitment to conduct a safety analysis of the 22-Left and 11 runway configuration in response to an April 2008 Office of Inspector General (OIG) audit recommendation.

The former Secretary of the U.S. Department of Transportation, Mary Peters, delegated responsibility for investigating Mr. Adams' concerns jointly to the Department's Inspector General and then-Acting Federal Aviation Administrator Robert Sturgell, specifying a further delegation to FAA's Air Traffic Safety Oversight Service (AOV). The OIG-AOV investigation is complete, and the Inspector General has provided me with the enclosed memorandum report presenting the findings and recommendations.

In short, the investigation found that while neither runway configuration violates an FAA regulation or policy, Mr. Adams raised valid concerns about the safety of these configurations. Such concerns have also been echoed in the OIG's April 2008 audit report, and by Members of Congress.

The investigation concluded that FAA was slow to respond to Mr. Adams' concerns, creating an appearance that the agency summarily dismissed them without due consideration. Contributing to this perception is that, until recently, FAA did not undertake a safety analysis of potential measures to enhance the safety of the runway 22-Left and 11 configuration, as it committed to in response to the OIG's April 2008 audit recommendation, and that FAA's Air Traffic Organization (ATO) was slow to identify and implement corrective measures to enhance the safety of air traffic operations at Newark.

FAA is now proceeding with measures designed to mitigate inherent safety risks in response to these concerns. In particular, FAA has worked to resolve previously identified technical issues precluding use of the automated spacing tool, Converging Runway Data Aid (CRDA). In addition, the ATO has announced that Newark's intersecting runways 22-Left and 11 will operate as a "staggered," rather than simultaneous, approach configuration, and that the New York Terminal Radar Approach Control (TRACON) facility will retain responsibility for staggering aircraft arriving on the 22-Left and 11 runway configuration.

Lastly, the investigation found that Mr. Adams and other controllers, including supervisors, raised a valid concern that the runways 29 and 4-Right configuration inherently creates little margin for error by relying too heavily on visual separation. Due to this concern, this configuration has seldom been utilized in 2009. Mr. Adams expressed his belief that a special area navigation (aka, RNAV) approach procedure and/or a charted visual approach procedure would resolve this concern. Accordingly, OIG facilitated a meeting on September 16, 2009, between Mr. Adams, Edward Kragh (former NATCA facility president), and ATO officials. During this meeting, the parties agreed that the impending implementation of aircraft staggering and CRDA should effectively remedy the safety issues for the runways 22-Left and 11 configuration. The ATO officials committed to establishing a working group for the runways 29 and 4-Right configuration, to include Newark ATCT representatives, to examine options for resolving the safety concerns.

Based on the investigative findings, OIG and AOV recommended to FAA that (a) it complete a safety analysis of aircraft staggering and CRDA procedures for the runways 22-Left and 11 configuration prior to the scheduled implementation of these measures; (b) AOV review the adequacy of aircraft staggering, CRDA and any related safety enhancements for the runways 22-Left and 11 configuration at 90 and 180-day intervals following implementation of such measures; and (c) it discontinue the runways 29 and 4-Right approach pattern until the safety issues are addressed by the above-referenced working group and appropriate remedial measures are implemented.

By the enclosed memorandum, the FAA Administrator concurred with the investigative findings and recommendations, and provided an implementation schedule for the appropriate corrective actions in this matter.

I appreciate Mr. Adams' diligence in raising his concerns.

Sincerely yours,

Ray LaHood

Enclosures

Memorandum

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

Subject: ACTION: OIG Investigation #I09000005SINV, Re: Newark Air Traffic Control Tower

Date: September 28, 2009

For: [signature] DIG

From: Calvin L. Scovel III
Inspector General

Reply to Attn of:

To: The Secretary

In accordance with the statutory requirements of the U.S. Office of Special Counsel (OSC), this memorandum presents our investigative results stemming from whistleblower concerns raised by Raymond Adams, an Air Traffic Controller at Newark International Airport (EWR) Air Traffic Control Tower (ATCT) in Newark, NJ.[1] Specifically, Mr. Adams raised concerns regarding the safety of two separate flight approach configurations involving intersecting runways at Newark.

Mr. Adams made his disclosures to OSC, which, in turn, referred his concerns to then-Secretary Mary Peters on September 19, 2008 (OSC File No. DI-08-2225). Secretary Peters delegated investigation of Mr. Adams' disclosures jointly to our office and then-Acting FAA Administrator Sturgell, specifying further delegation to FAA's Air Traffic Safety Oversight Service (AOV).

If you accept the results of our investigation, we recommend that you transmit this report to OSC, along with the FAA Administrator's statement of appropriate corrective actions in response to our findings and recommendations.

[1] Mr. Adams also serves as facility president for the National Air Traffic Controllers Association (NATCA).

Specifically, Mr. Adams raised the following concerns to OSC:

1. A simultaneous arrival configuration involving intersecting runways 22-Left and 11 creates a safety hazard if two aircraft arrive at the same time on the intersecting runways and one of the aircraft is required to abort its landing and execute a go-around, thereby taking that aircraft into the path of the other landing aircraft. FAA officials committed to conducting a safety analysis of this approach configuration at Newark in response to an April 24, 2008, OIG audit recommendation (**Attachments 1 and 2**); to date, however, FAA has not completed the analysis or implemented any corrective measures.

2. The runway 29 and 4-Right overhead approach pattern leaves little margin for error and has resulted in at least two near mid-air collisions. Specifically, runway 29 operates as an arrival runway for aircraft landing in a westbound direction and runway 4-Right operates as an arrival runway with aircraft landing in the northbound direction. The flight pattern for runway 29 requires aircraft arriving from the west to fly over runway 4R and circle back around, in order to approach runway 29 in the westbound direction. This pattern takes aircraft designated for runway 29 directly through the flight path of air traffic in final approach to runway 4R.

Results in Brief

Although our investigation found that neither the runway 22L-11 nor the 29-4R approach configurations violate any FAA regulation or policy, Mr. Adams raised valid concerns about the safety of these configurations, echoed by an audit report we issued in April 2008 and also by Members of Congress. Underscoring these concerns is that 57% (4 of 7) of Newark ATCT's reported controller operational errors (OE)[2] in 2008, and 33% (4 of 12) of those in 2009 to present, were either surface OEs[3] (i.e., runway incursions) resulting from aircraft arriving on runway 22L being incorrectly spaced with aircraft simultaneously arriving on intersecting runway 11; or occurring while Newark was operating the runway 29-4R approach pattern.

[2] An *operational error* (OE) occurs when an air traffic controller allows aircraft to come too close together, in violation of prescribed separation standards.

[3] A surface OE is a controller operational error that is considered a form of runway incursion. FAA defines a runway incursion as "any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take off of aircraft."

We concluded that FAA was slow to respond to Mr. Adams' concerns, creating an appearance that the agency summarily dismissed them without due consideration. Contributing to this perception is that, until recently, FAA did not undertake a safety analysis of potential measures to enhance the safety of the runway 22L-11 configuration, as it committed to in response to our April 2008 audit recommendation. We found FAA inaction attributable to internal disagreement within the Air Traffic Organization (ATO) over whether to rely on an existing informal study in lieu of conducting a more formal safety analysis. We also found that ATO-Terminal Services (ATO-T) did not sufficiently respond to identified safety concerns in a timely manner, and that the ATO in general was slow to identify and implement corrective measures to enhance the safety of air traffic operations at Newark.

Because a safety analysis has not been completed, questions about the safety of the runway 22L-11 approach configuration at Newark persist. FAA is now moving forward with measures designed to mitigate inherent safety risks in response to the concerns of Mr. Adams and other controllers, along with an associated safety analysis of those measures. In particular, FAA has worked to resolve previously identified technical issues precluding use of the automated spacing tool, Converging Runway Data Aid (CRDA).[4] In addition, the ATO has announced that the intersecting runways 22L and 11 will operate as a "staggered"[5], vice simultaneous, approach configuration, and that the New York Terminal Radar Approach Control (TRACON) facility will retain responsibility for staggering aircraft arriving on the 22L-11 configuration at Newark. The ATO has announced its intent to implement both aircraft staggering and CRDA at Newark on October 26, 2009. Letters of Agreement (LOAs) between the Newark ATCT and New York TRACON facilities have been prepared and are under negotiation with National Air Traffic Controllers Association (NATCA) representatives at both facilities.

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[4] Converging Runway Display Aid (CRDA) is an automated tool for air traffic controllers to precisely establish and stagger (equally space the distance) between two arriving aircraft approaching the airport on different runways. The basic function of CRDA is to visually project position information of an aircraft approaching one runway onto the final approach course of the other runway (known as "ghost" targets). This tool enables controllers to better judge the space between aircraft approaching convergent or intersecting runways, and minimizes go-arounds.

[5] A "staggered" arrival occurs when a distance relationship is maintained between aircraft on opposite approaches so that aircraft may not arrive at some point of conflict (e.g., the "missed approach point") simultaneously. The possibility of collision during a simultaneous missed approach to converging runways (such as 22L and 11) is one of the most significant safety issues regarding converging runway approaches. Staggering, along with automated tools (e.g., CRDA), enables controllers to provide proper spacing between aircraft and can prevent aircraft from arriving at missed approach points simultaneously.

Regarding the runway 29-4R overhead approach configuration, we found that this configuration also does not violate any FAA regulation or policy. However, Mr. Adams and other controllers, including supervisors, have raised concern that this configuration inherently creates little margin for error by relying too heavily on visual separation. As such, this configuration has been seldom utilized in 2009. Mr. Adams believes that a special area navigation (aka, RNAV) approach procedure and/or a charted visual approach procedure would resolve this concern and thus standardize the use of the procedure, ensuring consistency among pilots arriving on this approach.

To help ensure that FAA fully understands the scope of Mr. Adams' concerns and the exact nature of his proposed corrective actions, as well as to ensure that Mr. Adams is aware of the ATO's perspectives on the subject runway configurations, we facilitated a meeting between Mr. Adams, Edward Kragh (former NATCA facility president), and ATO-Terminal and ATO-Safety officials. During the September 16, 2009, meeting, which both parties considered productive, they agreed that the impending implementation of aircraft staggering and CRDA should effectively remedy the safety issues for the runway 22L-11 configuration. Further, the ATO officials expressed that Mr. Adams' concerns about the runway 29-4R pattern are valid and his proposed remedial actions appear reasonable and viable for implementation. They committed to establishing a working group for the runway 29-4R configuration, to include Newark ATCT representatives, to examine options for resolving the safety concerns.

Based on our findings, we recommended the following to FAA:

1. Consistent with our April 2008 audit recommendation, complete a safety analysis of aircraft staggering and CRDA procedures for the runway 22L-11 approach configuration, prior to the scheduled implementation of these measures on October 26, 2009.

2. AOV review the adequacy of aircraft staggering, CRDA, and any related safety enhancements for the runway 22L-11 configuration at 90 and 180-day intervals following implementation of such measures.

3. Discontinue the use of the runway 29-4R overhead approach pattern until such time as the safety issues identified by Mr. Adams are addressed by the above-referenced working group and appropriate remedial measures are implemented (e.g., a special area navigation (aka, RNAV) approach procedure and/or a charted visual approach procedure.)

By memorandum dated September 25, 2009 **(Attachment 12),** the FAA Administrator concurred with our findings and recommendations, and provided an implementation schedule for the specified corrective measures. We consider FAA's actions responsive to our findings and recommendations.

Methodology

To address Mr. Adams' concerns, our investigation included an examination of Newark ATCT's (EWR) operation of the runway 22L and 11 and 29 and 4R air traffic approach configurations. The OIG-led investigative team included an OIG supervisory investigator and two air traffic control inspectors from AOV. The team conducted interviews and reviewed records at Newark and at FAA headquarters. Our investigation included interviews and discussions with the following individuals:

- Raymond Adams, Air Traffic Controller, Newark ATCT (complainant) and current National Air Traffic Controller's Association (NATCA) President for Newark ATCT
- Edward Kragh, Air Traffic Controller and former NATCA President for Newark ATCT
- Lyle "Tony" Mello, Manager, Quality Assurance, Air Traffic Organization-Terminal (ATO-T)
- Joseph Teixeira, Director, Safety Programs, Air Traffic Organization-Safety (ATO-S)
- James Bedow, Director, Quality Assurance, ATO-S
- Ed Masterson, former Air Traffic Manager, Newark ATCT
- Leo Prusak, New York District Manager
- Analysts and managers from OIG's Aviation and Special Program Audit Division, which issued the above-referenced audit report on April 24, 2008.

Further, the team reviewed numerous documents, including applicable memoranda, orders, emails, airport diagrams, a white paper on Air Traffic Procedure Deficiencies at the Newark Airport (authored by the complainant), 20 hours of radar and applicable voice data, applicable FAA Regulations and Orders, Letters of Agreement, Facility Log of Operations (FAA Form 7230-4), OIG's April 24, 2008, Audit report and supporting documentation, all Newark ATCT operational error packets from 2008 and 2009, and safety analysis documents regarding intersecting runways 29 and 4R.

Last, AOV contributed to this memorandum report and has concurred in the findings and recommendations.

Findings in Detail

Allegation 1: ***Despite not violating any FAA regulation or policy, the runway 22L-11 simultaneous approach configuration nonetheless poses safety issues. FAA has been slow to implement measures to enhance safety and decrease risk, and has yet to complete an associated safety analysis of this configuration.***

Background:

In response to a June 11, 2007, request from then-Senator Hillary Rodham Clinton, we conducted a review of five Near Mid-Air Collisions (NMACs) which occurred during May 2007. **(Attachment 1)** As part of this review, we identified an unresolved issue between the Newark ATCT and New York TRACON concerning which facility should assume responsibility for staggering arrivals when the runway 22L-11 configuration is in use at Newark. To address this issue, we made the following recommendation to FAA in our April 24, 2008, audit report:

> *FAA should conduct a safety analysis of the simultaneous arrival procedures at Newark Liberty International Airport when the runway 22L and 11 configuration is in use to identify measures needed to enhance safety and reduce go-arounds. That analysis should also designate responsibility for staggering approaches when that runway configuration is in use.*

In its response to our recommendation, FAA stated that the ATO-Safety office will work with ATO-Terminal, New York TRACON, and Newark ATCT to "complete an initial safety assessment of the simultaneous arrival procedure at Newark Liberty International Airport by May 1, 2008." FAA further stated that if the assessment determines that changes are required, the process will be completed by July 1, 2008. **(Attachment 2)**

Under this configuration, aircraft arrive on runway 22L landing in a southwest direction. runway 11, which intersects runway 22L at the end of the field, operates as an arrival runway for aircraft landing in an eastbound direction. (See Newark Liberty International Airport runway diagram. **(Attachment 3)** Mr. Adams reported that go-arounds using this approach procedure are common, and increase risk to the National Airspace System (NAS).

Findings:

Specifically, with regard to the operation of simultaneous arrivals on 22L-11, we found that this configuration does not violate any FAA regulation or policy; however,

Mr. Adams and other controllers, along with Members of Congress, have continued to raise valid concerns regarding the safety of this operation.

In addition, we found no evidence that FAA conducted a safety analysis or other form of safety assessment until well after the dates that FAA committed to had passed. Moreover, the only assessment we found was a memorandum, dated August 21, 2008, from Jeffrey Rich, Safety Investigations, ATO-S, to James Bedow, Acting Director, Safety Assurance, ATO-S. Mr. Rich's Memorandum indicates that his investigative team was reviewing go-around procedures at several of the New York Metropolitan Airports to follow-up on concerns identified by OIG in the April 24, 2008 report addressing NMACS. The report indicated that the team reviewed FAA Form 7230-4 (facility log of operations) from June 1, 2008 to July 28, 2008, noting 104 go-arounds logged by facility managers. **(Attachment 4)**

In response to Mr. Rich's report, Robert Tarter, Vice President of ATO-Safety, notified Bruce Johnson, then-Vice President of FAA's ATO-Terminal (ATO-T) Office via a September 23, 2008, memorandum that, "The number of go-arounds at Newark Liberty Airport (EWR) is particularly troubling." He noted that the team reviewing data at Newark did not identify a single airport configuration resulting in a higher go-around rate than any other configuration; however, their analysis showed that the most frequent cause of go-arounds was inadequate spacing provided between arrivals and runway occupancy time preceding arrivals. Mr. Tarter's memorandum suggested that Newark appeared to conduct operations in accordance with all national, local, and regional orders and requirements, however, "both safety and efficiency would benefit from enhancements." His memorandum further identified operational and automated tools in use by other facilities in FAA (such as CRDA), to enhance operations and reduce the number of go-arounds at Newark. **(Attachment 5)**

In a November 24, 2008, response memorandum, Mr. Johnson advised Mr. Tarter, "Our comparative analysis failed to show a 'particularly troubling' number of go-arounds at EWR, in-fact, the data above shows the EWR operation to be on par with even the most modern operations in the National Airspace System (NAS)." Mr. Johnson's memorandum included a chart identifying the top ten airports nationwide with the number of go-arounds compared to the total number of air traffic operations. (**Attachment 6**) This analysis concluded that the number of go-arounds at EWR was .14%, and was therefore considered "excellent productivity" by Mr. Johnson, who added, "In closing...we stand committed to follow through with these recommended actions as quickly as the safety process allows," but advised Mr. Tarter that his recommendations would require further research, capacity impact studies, and Safety Risk Management processes prior to implementation.

In response to concerns raised, we analyzed 20 hours of EWR's air traffic radar and voice data for periods during which the ATCT operated this configuration, and

identified one unreported operational error, which occurred on November 12, 2008. The event – a surface OE (i.e., a runway incursion) – occurred when U.S. Coast Guard Flight #102 (C102) was cleared to land on runway 11 and America West 307 (AWE307), was cleared to land on intersecting runway 22L. AWE307 overflew the intersection of runway 22L-11 prior to C102 turning off the runway or holding short of runway 22L in violation of FAA Order 7110.65 3-10-4 *Intersecting Runway Separation.* The event was classified as a category "C" operational error. **(Attachment 7)**

In addition to the above-referenced operational error, we identified multiple instances in which two aircraft were so close to a loss of required separation that it is only through our obtaining and reviewing computerized AMASS[6] data that we were able to definitively state that the events observed were not operational errors. We found that, overall, the majority of controllers operated this configuration in a manner consistent with national policy. We noted some individual performance issues, observing that not all controllers performed at the same skill level, resulting in several go-arounds, including one in which the controller sent the same aircraft around twice due to improper application of speed control methods. Such go-arounds may have been avoided by the use of spacing tools such as CRDA. CRDA likely would have reduced the number of surface operational errors (i.e., runway incursions) occurring in 2008 and 2009. Our investigation found that 43% (3 of 7) of Newark ATCT's reported operational errors in 2008, and 33% (4 of 12) of those reported in 2009 to present were the result of controllers incorrectly spacing aircraft arriving on runway 22L with other aircraft simultaneously arriving on intersecting runway 11.

Further, we found that FAA has been slow to respond to concerns first raised by Mr. Kragh in 2005 to Newark ATCT Manager Ed Masterson that a safety hazard exists when this configuration is in use. The concerns continued to be raised by Mr. Adams after FAA implemented dispersal headings[7], on December 17, 2007, for aircraft departing 22R at Newark. As evidenced by multiple letters of concern to then-Acting FAA Administrator Robert Sturgell from the New Jersey Congressional delegation (and as echoed in our April 24, 2008 audit report), safety concerns arise

[6] The Airport Movement Area Safety System (AMASS) is a software enhancement to air traffic ground radar that provides controllers with aural and visual alerts to potential collisions on the runway.

[7] Dispersal headings, addressed in FAA Order 7110.65, Ch. 5 section 8, allows controllers to apply one mile separation (versus the standard 3 miles) on successive departures on the same runway, but the aircraft must diverge by 15 degrees or more immediately upon departure. Dispersal headings for Newark were developed as part of FAA's New York Metropolitan Area Airspace Redesign Plan. This procedure was intended to reduce departure delays at Newark and allow for greater departure efficiency.

delegation (and as echoed in our April 24, 2008 audit report), safety concerns arise when two aircraft are simultaneously landing on the intersecting runway and one of the aircraft is required to abort its landing and go-around, bringing it directly into the path of the other landing aircraft.

The study referenced in Mr. Johnson's November 24, 2008, memorandum to Mr. Tarter compared the number of go-arounds at Newark and LaGuardia with those occurring at Denver and Las Vegas, finding roughly equal numbers. We concluded that such comparison is not valid because of the difference in airspace complexities between these geographic locales, and thus the safety implications. In particular, unlike Denver and Las Vegas airports, Newark and LaGuardia have intersecting runways and are located in a large metropolitan area with terrain obstacles and other air traffic facilities with adjoining airspace.

We found no evidence of further action by FAA regarding these concerns until May 11, 2009, when Michael McCormick, Director of ATO-Terminal Safety and Operations Support, issued a memorandum to James Bedow, ATO-Safety's Acting Director of Quality Assurance. Mr. McCormick's memorandum stated that ATO-Terminal considered OIG's recommendation in its April 2008 audit report and has "studied the effectiveness of implementing Converging Runway Display Aid (CRDA) as a tool to increase safety and efficiency of intersecting runway operations [for runways 22L and 11] at Newark Liberty international Airport." In addition, Mr. McCormick's memorandum stated that it will be the responsibility of the New York TRACON to stagger the approaches for the Newark ATCT, further stating, "This process will also be analyzed through the Safety Management System (SMS) to ensure that this new procedure doesn't introduce new risk into the National Airspace System [NAS]." Mr. McCormick indicated that ATO-Terminal would provide an update in 60 days to include a timeline of the implementation schedule for CRDA use at Newark. **(Attachment 8)**

On July 29, 2009, ATO requested that OIG's audit division revise its recommendation target action date to October 26, 2009, in order to allow Mitre Corporation the opportunity to develop corrective actions concerning CRDA,[8] in response to a July 9,

[8] Mitre Corporation developed CRDA nearly 20 years ago. This tool, an automated computer program displays a "ghost" of one aircraft (offset to add the necessary separation spacing) onto the flight path of another aircraft. This enables the controller to achieve the required spacing as the two flights converge. However, due to terrain obstacles (e.g., bridges), the technology was inaccurately projecting the ghost aircraft's location in the flight path, or would cause the "ghost" to jump around (forwards and backwards) on the controller's radar display, resulting in the controller's inability to accurately determine the actual physical location of the aircraft, and to verify its proximity with the aircraft arriving on the intersecting runway. Therefore, the tool was undergoing a technical repair, and has

2009, memorandum report that Mr. Bedow received from Mr. McCormick. This memorandum advised that the New York TRACON will be implementing CRDA for runways 22L and 11 on October 26, 2009, and that the steps for implementation include assessing the need for a dedicated controller position to stagger the approaches to Newark, conduct a safety analysis for this new position, identify any changes required in the Standard Operating Procedures, Letters of Agreement, and develop a training plan which will include a training schedule. **(Attachment 9)**

In order to assist in our evaluation of FAA's efforts regarding this matter, we requested a copy of the study referenced in Mr. McCormick's May 11, 2009, memorandum; however, were advised that no formal written study was completed. Instead, we found the decisions about aircraft staggering and CRDA were based upon informal analysis of previously compiled data. Moreover, as also referenced in Mr. McCormick's July 9, 2009, update memorandum to Mr. Bedow, Letters of Agreement between the Newark ATCT and the New York TRACON facilities have been prepared and are under negotiation with NATCA representatives from both facilities.

FAA is also in the process of implementing other key steps identified in Mr. McCormick's July 9, 2009, memorandum, to include finally conducting the needed safety analysis; development of new standard operating procedures; and implementation of a training plan and schedule. FAA expects these measures to be completed by the end of October 2009.

While we recognize that the ATO is now taking important steps to address the concerns raised by Mr. Adams and other controllers regarding the runway 22L-11 configuration, FAA's original commitment was to conduct our recommended safety analysis and implement any appropriate corrective actions by July 1, 2008. Accordingly, we have concluded that FAA was slow to respond to the long-standing controller safety concerns about this configuration.

Allegation 2: ***While not violating any FAA regulation or policy, the runway 29-4R overhead approach pattern nonetheless poses safety issues. Moreover, though not presently required, there is no published visual approach plate for pilots to follow for this configuration, which would mitigate risk.***

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not been used by Newark controllers. Mitre has made the necessary programming adjustments and CRDA is being tested at Newark. Per ATO-Terminal and Safety officials, CRDA will be fully implemented at Newark ATCT on October 26, 2009.

Background:

The runway 29-4R overhead approach procedure is a visual approach procedure which occurs when runway 29 operates as an arrival runway for aircraft landing in a westbound direction and runway 4R operates as an arrival runway with aircraft landing in the northbound direction. The flight pattern for runway 29 requires aircraft arriving from the west to fly over runway 4R and circle back around, in order to approach runway 29 in the westbound direction. This pattern takes aircraft designated for runway 29 directly through the flight path of traffic in final approach to runway 4R.

Mr. Adams told us that the current configuration of this procedure allows for the runway 29 arrival aircraft to approach the airport from almost any angle and at any point in airspace west of Newark, creating a lack of consistency. This lack of consistency creates problems for Newark controllers in that the aircraft randomly appear from the west on a visual approach, at various, unknown points without prior coordination with air traffic controllers along the approach path.

According to Mr. Adams, pilots are instructed by controllers to aim for a point at the airport over the runway 4R numbers (large, painted digits that appear at the approach end of the runway). He indicated that while this seems reasonable, the reality is that pilots vary in their positions, often by one or more miles either south or north of the correct position. Such inaccuracy, he maintains, causes a potential collision hazard with other aircraft either on the runway 4R approach, or with aircraft departing runway 4-Left.

Mr. Adams is also concerned that the runway 4R approach procedure relies too heavily on visual separation[9] with no built in separation space for contingent events; he also cites a lack of effective transfer of communications and control, telling us pilots must fly "an unorthodox, unstabilized approach, increasing the risk of missed approaches." In addition, he indicates that the routine descent profile is outside the normal approach procedure parameters, and that missed approaches (go-arounds) conflict directly with Teterboro Airport's runway 6 arrivals.

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[9] Visual separation is a means used by controllers to separate aircraft in terminal areas; either the tower controller: (a) sees the aircraft involved and issues instructions, as necessary, to ensure that the aircraft avoid each other; or (b) a pilot sees the other aircraft involved and upon instructions from the controller provides his/her own separation by maneuvering his/her aircraft as necessary to avoid the other aircraft (aka, "see and avoid")

Findings:

We found that there is no requirement for a published approach plate, therefore one does not exist. However, this procedure, operated without published course guidance, approach minima, or a published missed approach procedure, has the potential to create a lack of consistency and unnecessary flight hazards. Mr. Adams is also correct that aircraft fly an unorthodox, unstabilized approach,[10] which increases the risk of go-arounds.

As referenced in the OSC referral, an operational error occurring on January 16, 2008, evidences Mr. Adams' and other controllers' concern about this procedure, although the ultimate root cause of the event was attributed to a New York TRACON controller who failed to switch an Embraer 145 (operating as Continental Express 2614) to the Newark ATCT. Instead, the TRACON controller switched the aircraft to the Teterboro ATCT. Specifically, Continental Flight 536 (a Boeing B-737) and Continental Express Flight 2614 came within 600 feet and 1.24 miles of each other while arriving on the runway 29-4R overhead approach procedure. **(Attachment 10)** In addition, we found two other operational errors, occurring in 2008 and 2009, which were the result of issues regarding this approach.

By using the 29-4R overhead approach procedure, aircraft approach Newark from the west and must fly over the airport's main runways to turn to line up for landing on runway 29. In doing so, the planes cross air traffic from the south just as those planes set up to land on the main runway, leaving little margin for error. In the January 16, 2008 event, while the aircraft was switched to the wrong airport, the closeness of the two aircraft evidences a narrow margin for safety. By the time Newark ATCT controllers were able to gain communication with Continental Express #2614 to apply visual separation, there was already a loss of lateral separation.

[10] In the approach pattern for runway 29, arriving aircraft approach the airport from almost any angle and any space west of Newark, operating under visual flight rules (VFR). The pilot descends while making a left 180 degree turn to align with the landing runway. This descent pattern gives pilots approximately four miles to descent from 2000 feet to "touchdown" at 500 feet per mile, while engaged in a banking left turn. According to FAA Order 8260.3B, Change 18, Chapter 2, paragraph 252, Descent Angle/Gradient, the optimum rate of decent on final approach is 318 feet per mile, with a maximum of 400 feet per mile.

Mr. Adams and Mr. Kragh have both stated that a Special Area Navigation (RNAV)[11] procedure or visual approach plate for this arrival would solve this safety concern by standardizing the use of the procedure and ensuring consistency by pilots. We learned that John F. Kennedy International Airport (JFK) has at least two different visual approach plates which arriving pilots operating under VFR conditions are required to follow. Therefore, we believe there is precedent, particularly in the New York metropolitan airspace, for such a procedure to be established. FAA has also reported to us that, in conjunction with the air carriers, they are in the process of developing an RNAV procedure for this approach; however, one has not been finalized.

On October 15, 2008, Newark Air Traffic Manager Ed Masterson issued Notice EWR ATCT N7110.14, which stated, in pertinent part, "in order to maintain our current operational efficiency and enhance operational safety at Newark, a waiver to FAA Order 7110.65...regarding Intersecting Runway Separation was issued to allow simultaneous landings on runway 29 and runway 4R." The Notice then detailed procedures for the Newark ATCT to follow, indicating that the overhead approaches to runway 29 are terminated when three or more go-arounds, due to wind shear, occur in a 60-minute period. In addition, it states, "all go-around events associated with the separation standard identified in the waiver will be analyzed, reviewed quarterly, and maintained on file at the facility..." We asked for copies of these events and subsequent analysis, however, no such documents could be located. Therefore, we do not know whether the facility has failed to maintain such a file, as was required, or whether there were no go-around events which met the criteria specified in the Notice. Given such a lack of further analysis, we cannot conclude that the operation is conducted in a manner fully comporting with FAA Order 7110.65. **(Attachment 11)**

We were told, anecdotally, that most supervisors at Newark are uncomfortable running the procedure, and therefore do not direct controllers to run this arrival procedure during their shifts. We reviewed Newark's yearly runway usage report data from 2008 and 2009, and determined that in 2009, the runway 29-4R overhead approach procedure was used by Newark for a total of 11 hours, or .22% of the airport's overall operations. This compares to 108 hours or 1.97% in 2008. While this data shows that the 29-4R approach pattern has not comprised a significant proportion of Newark's arrival traffic, we note there was a significant decrease in its use from 2008 to 2009.

To ensure both FAA's awareness of the full scope of Mr. Adams' concerns regarding this runway configuration, and Mr. Adams's awareness of ATO's perspective on the

[11] Special Area Navigation (aka, RNAV) flight procedures are a method of navigation designed to transition aircraft between an airport and the en route portion of airspace. RNAV procedures are designed to reduce dependence on radar vectoring, altitude, and speed assignments, and are considered to be a more efficient use of airspace.

subject, we facilitated a meeting between Mr. Adams, Edward Kragh (former NATCA facility president), and ATO-Terminal and ATO-Safety officials on September 16, 2009. During this meeting, which both parties considered productive, the ATO officials expressed that Mr. Adams' concerns about the runway 29-4R pattern are valid and his proposed remedial actions appear reasonable and viable for implementation. They committed to establishing a working group for the runway 29-4R configuration, to include Newark ATCT representatives, to examine possible options for resolving the safety concerns at issue without permanently discontinuing the procedure.

Recommendations

Based on our findings, we recommended the following to FAA:

1. Consistent with our April 2008 audit recommendation, complete a safety analysis of aircraft staggering and CRDA procedures for the runway 22L-11 approach configuration, prior to the scheduled implementation of these measures on October 26, 2009.

2. AOV review the adequacy of aircraft staggering, CRDA, and any related safety enhancements for the runway 22L-11 configuration at 90 and 180-day intervals following implementation of such measures.

3. Discontinue the use of the runway 29-4R overhead approach configuration until such time as the safety issues identified by Mr. Adams are addressed by the above-referenced working group and appropriate remedial measures are implemented (such as a special area navigation (aka, RNAV) approach procedure and/or a charted visual approach procedure.)

By memorandum dated September 25, 2009 **(Attachment 12),** FAA Administrator Randy Babbitt concurred with our findings and recommendations, and provided an implementation schedule for the specified corrective measures. We consider FAA's actions responsive to our findings and recommendations.

If I can answer any questions, please contact me at 202-366-1959, or my Deputy, David Dobbs, at 202-366-6767.

Attachments (12)

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Attachments

1. OIG Audit report, *Review of Reported Near Mid-Air Collisions in the New York Metropolitan Airspace and Recommendations, dated April 24, 2008.*

2. FAA Response to OIG recommendations, dated April 1, 2008.

3. Newark Liberty International Airport runway diagram.

4. Memorandum from Jeff Rich, Safety Investigations, ATO-S, to James Bedow, Director of Quality Assurance, ATO-S, dated August 21, 2008.

5. Memorandum from Robert Tarter, Vice-President of ATO-Safety to Bruce Johnson, then Vice-President of FAA's ATO-Terminal Services (ATO-T), dated September 23, 2008.

6. Memorandum of response from Bruce Johnson, ATO-T to Robert Tarter, ATO-S, dated November 24, 2008.

7. EWR ATCT Operational Error Packet, dated November 12, 2008.

8. Memorandum from Michael McCormick, Director of ATO-Terminal Safety and Operations Support to James Bedow, ATO-Safety's Acting Director of Quality Assurance, dated May 11, 2009.

9. Memorandum from Michael McCormick, ATO-Terminal, to James Bedow, ATO-Safety, dated July 9, 2009.

10. New York TRACON Operational Error Packet, dated January 16, 2008.

11. FAA Notice EWR ATCT 7110.14, effective October 15, 2008.

12. Memorandum from FAA Administrator Randy Babbitt to Rick Beitel, Assistant Inspector General for Special Investigations and Analysis, dated September 25, 2009.

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Attachments to 9/28/09 OIG Memorandum Investigative Report
Re: Newark Air Traffic control Tower
(OIG Investigation #I09000005SINV)

Attachment 1

Memorandum

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

Subject: ACTION: Review of Reported Near Mid-Air Collisions in the New York Metropolitan Airspace Federal Aviation Administration Report Number AV-2008-050

Date: April 24, 2008

From: David A. Dobbs
Principal Assistant Inspector General for Auditing and Evaluation

Reply to Attn. of: JA-1

To: Acting Federal Aviation Administrator

This report provides the results of our review of reported near mid-air collisions (NMACs) in the New York metropolitan airspace. The review was initiated in response to a June 11, 2007, letter from Senator Hillary Rodham Clinton. In her letter, Senator Clinton expressed concern regarding five reported NMACs involving commercial aircraft in the New York metropolitan airspace during May 2007 and requested that we investigate the incidents. A copy of Senator Clinton's request can be found at exhibit D.

The objectives of our review were to address the following questions posed by Senator Clinton: (1) What is the root cause of the near misses in May 2007 in the New York airspace? (2) How is the Federal Aviation Administration (FAA) addressing these problems and what measures has the FAA taken to prevent repeat occurrences? (3) Do any of the New York area airports practice a similar type of procedure that FAA ordered a halt to at the Memphis airport where FAA allowed planes to simultaneously land and depart from nearby runways that have intersecting flight paths? Additionally, Senator Clinton's staff requested that we determine if air traffic controller staffing may have been a contributing factor to the incidents.

We conducted the review between June 2007 and January 2008. Our scope and methodology can be found at exhibit A. Exhibit B lists the organizations we contacted or visited.

Attachment 1 (21 pages)

FAA defines a NMAC as "an incident associated with the operation of an aircraft in which a possibility of collision occurs as a result of proximity of less than 500 feet to another aircraft, or a report is received from a pilot or flight crewmember stating that a collision hazard existed between two or more aircraft."

Only a pilot or flight crew member may report a NMAC. The preliminary report is filed with FAA's Air Traffic Organization (ATO) and submitted to the Flight Standards line of business. Flight Standards inspectors conduct the NMAC investigation in response to the preliminary NMAC report. They determine the cause and hazard classification and then create the final NMAC report. Flight Standards inspectors classify each NMAC according to the following collision hazards.

- Critical—a collision was barely avoided by chance rather than pilot actions with less than 100 feet separation.
- Potential—a collision was avoided due to pilot action with less than 500 feet separation.
- No Hazard—a collision was improbable regardless of any evasive action taken.

NMAC reports are not reclassified or omitted from the NMAC system, regardless of the final hazard classification. For example, a NMAC report determined by Flight Standards to be "no hazard" remains in the NMAC system, counted and referred to as a "near mid-air collision."

Four of the five NMAC events in the New York area, during May 2007, involved incidents between commercial aircraft and unidentified general aviation aircraft. In these incidents, the commercial aircraft were operating under instrument flight rules (IFR), and were under direction of controllers at the New York Terminal Radar Approach Control (TRACON) (N90). The unidentified general aviation aircraft were operating under visual flight rules (VFR) and using "see and avoid" techniques, meaning they were not under direction of controllers.

The fifth NMAC event involved two commercial aircraft (one operating under IFR and one operating under VFR); both were under control of the tower at John F. Kennedy International (JFK) Airport.

Table 1. Five Reported NMACs During May 2007 in New York Airspace

Date	Facility/NMAC Number	Reporting Aircraft/Flight Rules	2nd Aircraft/Flight Rules	Hazard Classification
5/1/07	N90-003	JetBlue/IFR	Unidentified/VFR	No Hazard
5/5/07	N90-004	JetLink/IFR	Unidentified/VFR	Potential
5/8/07	N90-005	JetBlue/IFR	Unidentified/VFR	No Hazard
5/21/07	N90-006	Continental/IFR	Unidentified/VFR	No Hazard
5/17/07	JFK-001	American Eagle/IFR	US Helicopter/VFR	No Hazard

As shown in table 1, four of the five incidents were classified as no hazard. Only one incident (N90-004) was classified as a potential hazard. This incident involved a glider that did not have a transponder, which provides controllers with data on the location, altitude, speed, and type of aircraft. When the commercial pilot saw the glider directly ahead of him, he initiated an immediate descent to avoid a collision. The 2 aircraft came within approximately 200 feet of each other.

While the other four incidents were determined to be no hazard, they will continue to be classified and counted as a NMAC under FAA's current reporting system for NMACs. In our opinion, the lack of a procedure for reclassifying no-hazard events may contribute to misperceptions regarding the actual safety risk posed by an incident.

RESULTS IN BRIEF

Overall, we found that the five NMACs were independent, unrelated events with no obvious common root causes. Four of the five events were later determined to be no hazards; only one was classified as "potential." These NMACs were reported by commercial IFR pilots who may have been initially "surprised" by the location of the VFR aircraft in nearby airspace, but the incidents actually posed no risk to safety regardless of any actions taken by the pilots. However, the four no-hazard incidents continue to be classified and counted as "near mid-air collisions," a term that we believe misrepresents the actual safety risk posed by an incident.

While we found no common root causes among the five events, there were similar characteristics associated with four of the five NMACs while the aircraft were under direction of controllers at the New York TRACON (NMACs N90 003 though 006). These included the following:

- The type of airspace in which the NMAC occurred—all four events were in airspace that allows both commercial IFR aircraft (under direction of air traffic controllers) and general aviation VFR aircraft (operating under "see and avoid" techniques and not under direction of controllers) to operate simultaneously.
- A change in the type of airspace—three of the four events occurred near the boundary of airspace that is less restrictive (where VFR aircraft are not under direction of controllers), and more restrictive airspace (where commercial aircraft operate under direction of controllers), for aircraft departing from or arriving at New York area airports.
- A change in the controller responsible for directing the aircraft—three of the four events occurred near the time when the responsibility for directing the commercial IFR aircraft was in the process of being "handed off" from one controller to another.

To address vulnerabilities associated with the existing airspace, the current routes used by commercial aircraft over New York would need to be altered or restricted. FAA has an ongoing project to redesign the airspace in the New York/New Jersey/Philadelphia metropolitan areas. The intent of the project is primarily to accommodate growth in aviation operations while enhancing safety and reducing delays.

As part of the review and development of new or revised air traffic procedures implemented under airspace redesign, FAA must evaluate whether commercial IFR arrival and departure routes into and out of the New York metropolitan area should be redesigned or restricted to minimize potential conflicts with general aviation VFR air traffic.

FAA also determined that better Air Traffic services could have been provided by the controllers in two of the four N90 NMACs by alerting the commercial IFR pilots that an unidentified VFR aircraft was in their vicinity. As a result of those events, Air Traffic management issued an Air Traffic Bulletin in September 2007 to remind all controllers of procedures for merging targets and the importance of providing traffic advisories to pilots.

The NMAC at JFK (JFK 001) differed from the other four N90 NMACs as it occurred at the airport near the runway surface. While the incident did not pose a safety risk, FAA took action to prevent a reoccurrence by changing a departure procedure for helicopters. At the time of our site visit, the new departure procedure was only agreed upon verbally between JFK Air Traffic management and that particular helicopter operator. We recommended that JFK formalize the new procedure by amending the existing written Letter of Agreement (LOA) between the helicopter operator and the tower that outlines the standard operating

procedures and coordination actions used by the two parties. In response to our recommendation, FAA and the helicopter operator revised the LOA in November 2007.

None of the five NMACs were the result of a controller operational error (when a controller fails to maintain required separation between two aircraft). In the four N90 NMACs, only the commercial aircraft were under the direction of air traffic controllers at the time of the incidents. The other aircraft involved were operating under VFR. In the NMAC at JFK, the two aircraft were being directed by different controllers; however, in the final NMAC report the inspector determined there was no loss of separation between the two aircraft.

None of the New York metropolitan area airports use an Air Traffic procedure similar to the procedure that FAA discontinued at Memphis International Airport. FAA determined that the former procedure at Memphis (which allowed aircraft to land on a runway while overflying an aircraft that landed on a nearby runway with an intersecting flight path) violated Air Traffic procedures.

While Newark Liberty International Airport does not use that specific procedure, there is an unresolved issue between the New York TRACON and the Newark tower. The issue involves which facility should assume responsibility for staggering arrivals when a certain runway configuration is in use at the airport. FAA should conduct a safety analysis of this runway configuration to identify measures needed to enhance safety and reduce the potential for "go-arounds."[1] The analysis also should designate responsibility for staggering approaches when that configuration is in use.

Finally, since events determined to be no hazard remain classified as a NMAC, there may be significant misperceptions regarding the proximity and the risk to safety of reported mid-air events. FAA should restructure the existing NMAC reporting process so that the actual safety risks posed by reported events are accurately reflected. Actions to better reflect actual safety risk could include developing a procedure to reclassify no-hazard events, redefining the NMAC criteria, or revising the term "NMAC."

Our recommendations, listed on page 16, include the following:

[1] A "go around" is when a pilot decides—or a controller instructs an arriving aircraft—to abort its landing and go around for a second attempt.

- Evaluating, as part of the review and development of new or revised air traffic procedures under airspace redesign, whether commercial IFR routes into and out of the New York area should be redesigned or restricted to minimize potential conflicts with VFR air traffic.

- Restructuring the existing NMAC reporting process so that the actual safety risks posed by reported events are accurately reflected.

FAA's comments and our response are discussed on pages 16 and 17.

FINDINGS

Four of the Five NMACs Had Similar Characteristics

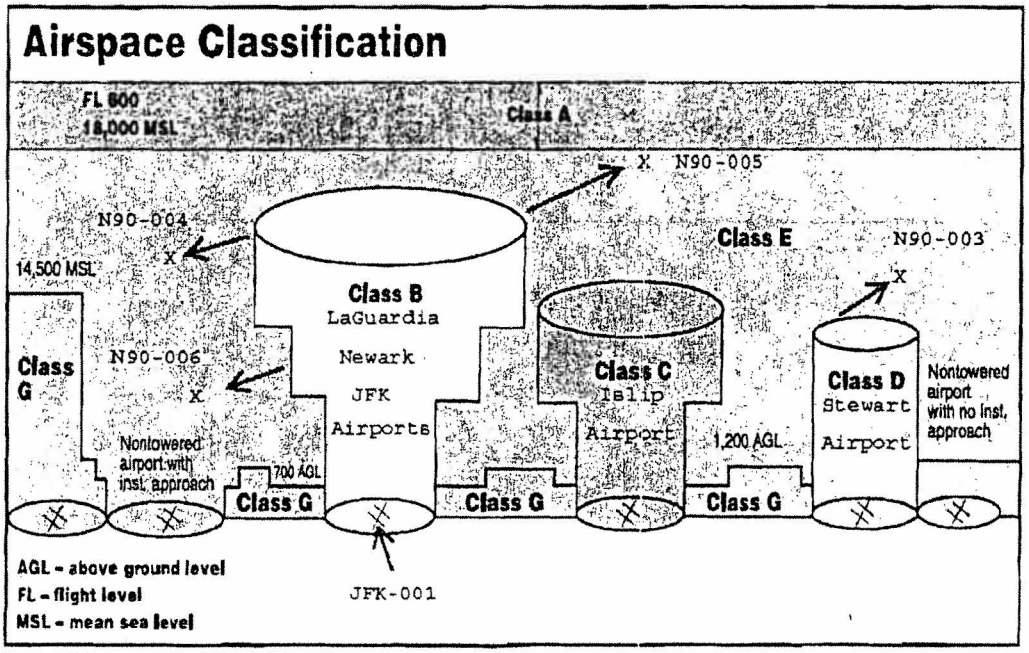
We found that the five NMACs that occurred in May 2007 in the New York metropolitan airspace were independent, unrelated events with no obvious common root causes. However, our review of the four N90 NMACs found three similar characteristics that may have contributed to the events. Those are: (1) the nature of Class E airspace, (2) the proximity to a change in the class of airspace, and (3) the proximity to change of Air Traffic Control responsibility. Table 2 depicts which characteristics were evident in each of the four N90 NMACs.

Table 2. Similar Characteristics of the Four N90 NMACs

Date	Facility & NMAC Number	Nature of Class E Airspace	Proximity to Change of Airspace	Proximity to Transfer of Control
5/1/07	N90-003	Yes	Yes	No
5/5/07	N90-004	Yes	Yes	Yes
5/8/07	N90-005	Yes	No	Yes
5/21/07	N90-006	Yes	Yes	Yes

Airspace is divided into various classes with varying entry requirements. For example, in Class A airspace (high altitude), and Class B, C, and D airspace (near airports), all aircraft must establish two-way communications with Air Traffic Control before entering that airspace. In Class E airspace, however, VFR aircraft can operate *without* establishing communication or receiving direction from Air Traffic Control, and they are responsible for ensuring separation from other aircraft by simply applying "see and avoid" techniques. Class B is the most restrictive airspace while Class E is the least restrictive. Figure 1 represents various classes of airspace in the New York metropolitan area and the locations of the four N90 NMACs and the NMAC at JFK.

Figure 1. Various Classifications of New York Airspace



Note: Not to scale, NMAC locations are not actual representations.

Nature of Class E Airspace

As shown in figure 1, each of the four N90 NMACs occurred in Class E airspace. The four NMACs occurred between a commercial aircraft (operating under IFR and in communication with Air Traffic Control) and an aircraft operating under VFR using "see and avoid" techniques (not in communication with Air Traffic Control). In each event, both aircraft were legally operating in Class E airspace.

Proximity to a Change of Airspace Class

In three of the four N90 NMACs (N90 003, 004, and 006), the incidents occurred near the boundary of Class E airspace and Class B or D airspace where commercial aircraft are departing from or arriving at New York area airports. This may have contributed to the pilots' "surprise factor," thus leading to the pilots' decision to report a NMAC. Commercial pilots leaving one class of airspace and entering another may not maintain an awareness of the transition in airspace and may be surprised when encountering an unidentified VFR aircraft in Class E airspace. Conversely, VFR pilots in Class E are more likely to maintain an awareness of the boundary of Class E airspace, as VFR pilots entering another class of airspace could result in a violation (i.e., a pilot deviation).

Proximity to the Time of a Transfer of Control

For three of the four N90 NMACs (N90 004, 005, and 006), the proximity to a transfer of control was a shared characteristic. These NMACs occurred near the time when the control responsibility for the commercial IFR aircraft was transferred (handed off) from one controller to another.

To adequately address these three issues, the existing airspace used by commercial aircraft over New York would need to be altered. FAA has an ongoing redesign project for the New York/New Jersey/Philadelphia metropolitan airspace. The primary intent of the project is to accommodate growth in aviation operations while enhancing safety and reducing delays. As part of the review and development of new or revised air traffic procedures implemented under airspace redesign, FAA must evaluate whether commercial IFR arrival and departure routes into and out of the New York metropolitan area should be redesigned or restricted to minimize potential conflicts with general aviation VFR air traffic. Further details on the four N90 NMACs follow.

- NMAC N90-003: The controller issued traffic advisories to the pilot and instructed the pilot to turn so that the commercial aircraft would pass behind the unidentified VFR aircraft. This incident occurred in Class E airspace shortly after the IFR aircraft transitioned from Class D to Class E airspace.

- NMAC N90-004: This incident occurred with a glider that did not have a transponder, which provides controllers with data on the location, altitude, speed, and type of aircraft. When the Continental Express pilot saw the glider directly ahead of him and within 200 feet, he initiated an immediate descent to avoid collision with the glider. The pilot stated that a collision would have been imminent had he not taken evasive action.

  Since the glider was not visible on radar until the last second, the controller was unable to provide traffic advisories regarding the glider; however, the air route traffic control center controller advised the pilot of glider activity before handing the aircraft off to the New York TRACON.

  The FAA inspector responsible for investigating the incident told us that gliders legally operate in the major arrival corridor in Class E airspace for Stewart Airport, John F. Kennedy Airport, La Guardia Airport, Teterboro Airport, and Newark Liberty Airport. The inspector also suggested that the airspace be changed or restricted. This incident occurred in Class E airspace shortly after the IFR aircraft was handed off from one controller to another.

- NMACs N90-005 and N90-006: Both NMACs occurred in Class E airspace near the time when the IFR aircraft were handed off from one controller to another. FAA determined that the controller alerting the pilots of unidentified general aviation aircraft in their vicinities could have provided better Air Traffic Control services (e.g., a traffic advisory). Those actions may have prevented the NMAC by eliminating the pilots' surprise factor. FAA issued an Air Traffic Bulletin in September 2007 to remind controllers of the importance of providing safety alerts and traffic advisories to pilots.

One NMAC Was Unique to Circumstances Related to JFK Airport

The NMAC at JFK (JFK 001) differed from the four N90 NMACs in that it occurred at the airport near the runway surface. The NMAC occurred when a helicopter operated by U.S. Helicopters (operating under VFR) took off from a controlled helipad and made a *right* turn towards runway 13R. The helicopter did not enter or cross runway 13R. Nevertheless, a departing American Eagle pilot (operating under IFR) was surprised by the location of the helicopter and subsequently filed the NMAC. The report investigation revealed, however, that the helicopter had the departing jet in sight and maintained visual separation with that aircraft.

As shown in figures 2 and 3 below, the helipad is behind the terminal; once a helicopter lifts off from the pad, it appears close to runway 13R at the point where some aircraft begin to lift off. Additionally, under the previous procedures used, departing helicopters were not restricted from turning towards runway 13R.

Figure 2. Helicopter Departing Helipad at JFK

Figure 3. Aircraft Departing Runway 13R

A contributing factor to the incident was that the helicopter operation had relocated just 7 days prior to the NMAC from American Airline's terminal on the north side of the airport to Delta's terminal on the south side of the airport; therefore, the pilot may not have been accustomed to seeing a helicopter in the area adjacent to the runway. In addition, the helicopter departure was being controlled by a different controller than the one working the American Eagle departure; therefore, the American Eagle pilots would not have been aware of the departure instructions issued to the helicopter on another frequency.

FAA management at JFK and the helicopter operator agreed to change the helicopter departure procedure to a *left* turn when Runway 13R is in use. We observed the revised helicopter departure procedure in use at JFK and found that it eliminates the potential conflict between departing helicopters and aircraft departing runway 13R.

At the time of our site visit, however, this verbal agreement and the preceding change of helicopter departure location were not formalized in the LOA that exists between JFK Air Traffic management and the helicopter operator. In response to our recommendation to formalize the procedure, FAA and the helicopter operator revised their LOA in November 2007.

None of the NMACs Resulted From Controller Error or Staffing

We also reviewed the five NMACs to determine if controller actions (or inactions) may have contributed to the incident. We found that none of the five NMACs were the result of a controller operational error (when a controller fails to maintain required separation between two aircraft) or staffing levels.

In the four N90 NMACs, only the commercial aircraft were under the direction of air traffic controllers at the time of the incident. The other aircraft involved were operating under VFR and were not being directed by controllers. In the NMAC at JFK, the two aircraft were being directed by different controllers; however, in the final NMAC report the inspector determined that there was no loss of separation between the two aircraft.

While operational errors did not contribute to any of the five NMACs, controller staffing has been a concern for many FAA stakeholders, given the high number of projected controller retirements during the next 10 years. For example, at the New York TRACON, overall staffing (the number of fully certified controllers) decreased by 16 percent, from 213 in October 2001 to 178 in October 2007.

Because of controller staffing concerns, we analyzed controller staffing during the five NMACs to determine whether that issue contributed to the incidents. We determined that controller staffing did not appear to contribute to any of the five NMACs, based on the information shown in table 3.

Table 3. Controller Staffing at the Time of the N90 NMACs

Date	Facility & NMAC Number	Scheduled Staffing	Actual Staffing	Number of Controllers Off Position (Percentage of Staffing for that Shift)	Position Combined?
5/1/07	N90-003	11	12	7 (58 percent)	No
5/5/07	N90-004	13	11	3 (27 percent)	No
5/8/07	N90-005	11	10	4 (40 percent)	No
5/17/07	JFK-001	12	10	5 (50 percent)	No
5/21/07	N90-006	17	16	5 (31 percent)	No

As shown in table 3, the actual staffing (fully certified controllers reporting to work) was slightly less than the scheduled staffing (fully certified controllers scheduled to work) when four of the NMACs occurred. However, between 27 percent and 50 percent of the controllers working that shift were not working an operational position at the time of those events (i.e., they were on meal breaks, in training, etc.). Further, none of the controllers were working combined positions of operation when the NMACs occurred.

We are monitoring FAA's efforts on controller staffing. In a separate audit, we are evaluating FAA's progress in implementing key staffing and training elements of its Controller Workforce Plan. We will report the results of our review in early 2008.

As a result of the August 2006 Comair accident in Lexington, Kentucky, the National Transportation Safety Board (NTSB) identified controller fatigue as a safety concern. NTSB recommended that FAA revise work schedule policies and

practices to provide sufficient controller rest. Because of this recommendation, we reviewed rest periods and shift rotations for controllers working on position during the reported New York NMACs. We determined that controller fatigue did not appear to be a contributing factor to the five NMACs.

Table 4. Individual Controller Shift Metrics When the NMACs Occurred

Date	Facility and NMAC Number	Number of Hours Off Duty Prior to NMAC Shift	Number of Consecutive Minutes Worked at Time of NMAC	Overtime Scheduled Week of NMAC?	Hours of Overtime Worked Week of NMAC
5/1/07	N90-003	39	37	No	0
5/5/07	N90-004	15	67	No	0
5/8/07	N90-005	16	36	No	0
5/17/07	JFK-001	14	56	No	2
5/21/07	N90-006	16	61	No	8

As shown in table 4, all five controllers had rest periods ranging from 14 to 39 hours (a 20-hour average) before the NMAC shift, indicating there was ample time for rest between shifts. Further, the five controllers worked between 36 and 67 consecutive minutes (averaging 51.4 minutes on position) when the NMACs occurred, well below the goal of no more than 2 hours.[2]

In addition, the five controllers were scheduled for 5-day work weeks with 8-hour shifts and no scheduled overtime (OT) shifts during the week of the NMACs. However, two of the five controllers incurred OT during the week of the NMACs, one of whom worked the OT shift during the portion of the work week prior to the incident. The controller working the position on May 17 during the NMAC at JFK incurred 2 hours of overtime the previous day but was allotted a 14-hour available rest period between the two shifts.

New York Area Airports Do Not Have Standard Operating Procedures Similar to the Simultaneous Arrival Procedure FAA Discontinued at Memphis

Prior to April 2007, controllers at Memphis International Airport used a local standard operating procedure to clear an aircraft to land on a runway while overflying another aircraft that had landed on a separate intersecting runway and was taxiing off the runway.

The Air Traffic Control manual, FAA Order 7110.65, paragraph 3-10-4, Intersecting Runway Separation, establishes Air Traffic procedures for arriving

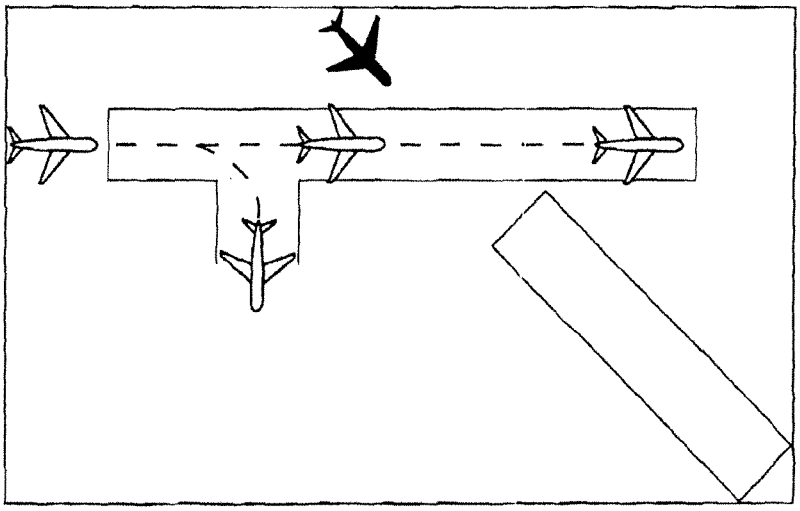
[2] Per the FAA contract with NATCA, controllers can work a maximum of 2 hours on position before receiving a break.

aircraft with intersecting paths (see figure 4 below). The order requires that Air Traffic:

> Separate an arriving aircraft using one runway from another aircraft using an intersecting runway or a nonintersecting runway when the flight paths intersect by ensuring that the arriving aircraft does not cross the landing threshold or flight path of the other aircraft until [a] preceding arriving aircraft is clear of the landing runway, completed landing roll and will hold short of the intersection/flight path, or has passed the intersection/flight path.

This order sets the parameters for ensuring proper runway separation to protect the intersection (or runway flight paths' intersection).

Figure 4. Diagram of Arriving Aircraft With Intersecting Paths



Methods of complying with this requirement include but are not limited to: speed control, spacing techniques, staggering approaches, and use of radar displays to establish cut-off points.

In April 2007, Air Traffic Oversight Services group (part of FAA's Safety line of business) halted the Memphis overflight procedure, citing a violation of FAA Order 7110.65 paragraph 3-10-4. The Oversight Services group determined that to conduct the Memphis procedure, a legitimate waiver for Order 7110.65 paragraph 3-10-4 would be required. The Memphis tower began complying with those requirements, and the Memphis TRACON began using equipment designed to stagger simultaneous arrivals.

We observed operations at JFK, Newark, LaGuardia, and Stewart Air Traffic Control towers and found that none of those conduct an overflight procedure

similar to the procedure discontinued at Memphis. However, we found that there is an unresolved dispute over application of FAA Order 7110.65 paragraph 3-10-4 procedures in regard to arrivals on Runways 22L and 11, when that runway configuration is in use at the airport.

The local National Air Traffic Controllers Association (NATCA) official at Newark tower told us that while controllers apply procedures to comply with those provisions of Order 7110.65 when using the 22L-11 runway configuration, the New York TRACON, which hands off arrivals to Newark, should assume responsibility for staggering simultaneous arrivals to ensure compliance with paragraph 3-10-4. The NATCA official expressed safety concerns about using go-arounds for landing aircraft when this runway configuration is in use.

In another circumstance, officials from the Air Traffic Organization worked with Newark Air Traffic management and on October 5, 2007, FAA's Air Traffic Oversight Services granted a waiver to paragraph 3-10-4 in conducting a specific operation using Runways 4R and 29. Officials from Safety Services stated that this procedure increases safety and reduces go-arounds of landing aircraft.

We met with officials from the Air Traffic Organization, and they agreed to commit resources to conduct a similar review of the Newark Runway 22L and 11 arrival configuration to see what procedures could be implemented to increase safety and reduce go-arounds. Those plans are clearly steps in the right direction; however, the analysis should also designate responsibility for staggering simultaneous arrivals. In addition, local NATCA representatives should be afforded the opportunity to provide input.

FAA's Current Process for Reporting NMACs May Lead to Misperceptions Regarding the Level of Safety Risk Posed by NMAC Events

The lack of a procedure for reclassifying no-hazard events, the term "near mid-air collision," and the definition of a NMAC may contribute to misperceptions regarding the actual safety risk posed by a NMAC event. We found that FAA's current reporting process for NMACs does not allow no-hazard events to be reclassified, which can exaggerate the historical perspective of NMACs. For example, four of the five New York NMACs were subsequently determined to be no hazard, i.e., a collision was improbable regardless of evasive actions taken. However, the four events will continue to be classified and counted as NMACs, potentially masking early recognition of a trend in the highest risk NMACs.

FAA, union, and industry officials we spoke with agreed that the term "near mid-air collision" is misleading. One top airline official stated that the public is misled by the use of this term to describe an event where there was no danger. Since

events determined to be no hazard remain classified as NMACs, aviation users may greatly misunderstand the proximity and the risk to safety of reported NMAC events. For example, in FY 2007, 16 of the 66 total NMACs (or 24 percent), where a collision hazard was identified, were determined to be no-hazard events—yet they are still considered to be NMACs.

FAA's criteria for defining a NMAC also may contribute to misperceptions regarding events where no collision hazard existed. As defined by FAA, a NMAC happens when either an actual collision hazard between two aircraft occurs or when a pilot reports his or her *perception* that a collision hazard existed. Therefore, when the outcome of the NMAC investigation reveals that there was no collision hazard, the reported pilot perception of a collision hazard still meets the near mid-air collision criteria as defined by FAA. The no-hazard event is therefore still classified as a NMAC, and users may erroneously view the event as a collision risk.

FAA must take action to mitigate misperceptions of safety risks posed by a NMAC event. FAA's Director of Air Traffic Safety Oversight Services stated that he would like FAA to review the terminology of all air proximity events, including NMACs, operational errors, and pilot deviations. He also stated that if all proximity events, such as NMACs, remained unclassified until FAA completed an investigation, they could be accurately classified. The ATO Safety Services officials we spoke with concurred that NMAC reporting processes need to be revised.

Accordingly, FAA should restructure the existing NMAC reporting process so that the actual safety risks posed by reported events are accurately reflected. Actions to better reflect actual safety risks could include developing a procedure to reclassify no-hazard events, redefining the NMAC criteria, or revising the term "NMAC."

RECOMMENDATIONS

We recommend that FAA:

1. As part of the review and development of new or revised air traffic procedures under airspace redesign, evaluate whether commercial IFR arrival and departure routes into and out of the New York TRACON's airspace should be redesigned or restricted to minimize potential conflicts with general aviation VFR air traffic.

2. Conduct a safety analysis of the simultaneous arrival procedures at Newark Liberty International Airport when the runway 22L and 11 configuration is in use to identify measures needed to enhance safety and reduce go-arounds. That analysis also should designate responsibility for staggering approaches when that runway configuration is in use.

3. Restructure the existing NMAC reporting process so that the actual safety risks posed by reported events are accurately reflected. Actions to better reflect actual safety risks could include developing a procedure to reclassify no-hazard events, redefining the NMAC criteria, or revising the term "NMAC."

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

We provided FAA with a draft of this report on January 30, 2008, and received FAA's reply on April 1, 2008. FAA's full response is included in the appendix to this report. FAA concurred with each of our recommendations and provided appropriate planned actions and target dates.

- **Recommendation 1:** FAA stated that as it reviews and develops new or revised air traffic procedures under airspace redesign, it will conduct the recommended evaluation to minimize potential conflicts with general aviation VFR air traffic.

- **Recommendation 2:** FAA stated the ATO Safety office will work with the ATO Terminal office, New York TRACON, and Newark tower to complete an initial safety assessment of the simultaneous arrival procedure at Newark Liberty International Airport by May 1, 2008. The managers of the New York TRACON and the Newark tower are already working this issue, and results of this initial work will be included in the assessment. If the assessment determines that changes are required, the process will be completed by July 1, 2008.

- **Recommendation 3:** FAA stated the ATO Safety office will work with the Air Traffic Safety Oversight office and consult with ATO Systems Operations, ATO Enroute and Oceanic Safety, as well as ATO Terminal Safety to research the history behind the existing NMAC definition and, if appropriate, will initiate the proposed change to the definition. By May 30, 2008, the appropriate groups will meet to determine required changes. No later than October 1, 2008, the appropriate groups will write the change proposal to the definition of a NMAC, request comments from interested parties, and implement the change through the appropriate office.

ACTIONS REQUIRED

FAA's response and planned actions address the intent of our recommendations. We therefore consider these recommendations resolved.

We appreciate the courtesies and cooperation of FAA representatives during this audit. If you have any questions concerning this report, please contact Lou Dixon, Assistant Inspector General for Aviation and Special Program Audits, at (202) 366-0500 or Dan Raville, Program Director, at (202) 366-1405.

#

cc: FAA Acting Deputy Administrator
Anthony Williams, ABU-100
Martin Gertel, M-1

EXHIBIT A. SCOPE AND METHODOLOGY

We conducted this performance audit in accordance with generally accepted Government Auditing Standards prescribed by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence that provides a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusion based on our audit objectives. We conducted this review between June 2007 and January 2008 using the following methodology.

To determine the root cause of the near misses in May 2007 in the New York airspace and FAA's measures to address these problems, we visited FAA Headquarters in Washington, D.C., and the New York area air traffic facilities in which the five near misses occurred. These included the New York TRACON and John F. Kennedy, Newark, LaGuardia, and Stewart Airports. We interviewed key FAA officials from the Air Traffic Organization Safety and Terminal Services Offices and the Air Traffic Oversight Services division to discuss possible root causes and the status of any FAA actions. We reviewed FAA's investigation report of the five NMACs to identify any recommended actions.

At each air traffic facility where a NMAC occurred, we interviewed Air Traffic management and union representatives to obtain their view of possible root causes and actions taken at the local level in response to the NMACs. We examined controller staffing, time on position, workload, and work schedules at the time of each incident to determine if staffing or fatigue were contributing factors. We reviewed radar data associated with each incident and analyzed each of the five NMAC preliminary reports. We interviewed Safety Inspectors that investigated the NMACs and reviewed each of five NMAC final investigation reports.

To determine if any of the New York airports allow arriving aircraft to fly directly over aircraft on another runway—a procedure that FAA halted at Memphis Airport in April 2007—we interviewed FAA officials from the Air Traffic Organization Safety Office, Air Traffic Organization Terminal, and the Air Traffic Oversight Services division to obtain a detailed explanation of the halted Memphis procedure and the reason it was halted. We met with Air Line Pilots Association headquarters officials to obtain their concerns regarding the Memphis procedure. We also interviewed management and union representatives and observed the operations at Newark, John F. Kennedy, LaGuardia, and Stewart Airports to determine if a similar procedure was in use.

We did not rely on automated databases as part of this audit.

EXHIBIT B. AGENCIES VISITED OR CONTACTED

- FAA officials from Safety Services and Terminal within the Air Traffic Organization.
- FAA officials from the Air Traffic Safety Oversight Services group within FAA's Safety line of business.
- Air Line Pilots Association, International (ALPA) Headquarters officials in Herndon, VA.
- Facility management and National Air Traffic Controllers Association (NATCA) facility representatives from the New York TRACON (N90), and Kennedy, LaGuardia, and Newark Air Traffic Control towers.
- Facility management from Stewart Air Traffic Control tower.
- Local Flight Standards District Offices (FSDO) representatives responsible for investigating the NMACs.
- JetBlue Headquarters officials (2 of the NMACs were from this airline).
- Continental and Express Jet (Jetlink) airline officials (1 NMAC each from these airlines).
- Program Manager for the New York/New Jersey/Philadelphia metropolitan Area Airspace Redesign.

EXHIBIT C. MAJOR CONTRIBUTORS TO THIS REPORT

THE FOLLOWING INDIVIDUALS CONTRIBUTED TO THIS REPORT.

Daniel Raville	Program Director
Mary (Liz) Hanson	Project Manager
Annie Glenn	Senior Analyst
Mark Gonzales	Senior Analyst
Ben Huddle	Analyst
Amy (Tasha) Thomas	Analyst
Andrea Nossaman	Writer-Editor
Jean Diaz	Writer-Editor

EXHIBIT D. REQUEST FROM SENATOR CLINTON

HILLARY RODHAM CLINTON
NEW YORK
SENATOR
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SUITE 476
WASHINGTON, DC 20510-3204
202-224-4451

United States Senate

WASHINGTON, DC 20510-3204

COMMITTEES:
ARMED SERVICES
ENVIRONMENT AND PUBLIC WORKS
HEALTH, EDUCATION, LABOR, AND PENSIONS
SPECIAL COMMITTEE ON AGING

June 11, 2007

The Honorable Calvin L. Scovel III
Inspector General
United States Department of Transportation
400 Seventh Street, S.W.
Washington, D.C. 20590

Dear Mr. Scovel:

I write in regard to the disturbing reports that in the month of May, there were five near-misses involving commercial aircraft In the New York metropolitan area. This is especially shocking in light of the fact that there were only three such occurrences in all of 2006.

The New York metropolitan region is the busiest, most complex and compact airspace in the country. There is no room for error. Safe and efficient operations are critical to the traveling public and the economy of the New York metropolitan area. It is imperative that this pattern is corrected before the onset of the busy summer travel season.

I understand that the Federal Aviation Administration (FAA) has begun its internal investigation; however these incidents call for a broader investigation into the safety of our nation's busiest system and our ability to avoid catastrophic airline collisions. I request that you immediately conduct an investigation into the root causes for these near misses in the New York region and the actions the FAA is taking to resolve these issues.

Specifically, I would ask that your investigation review the following questions:

- What is the root cause of the near misses in May of 2007 in the New York airspace?
- How is the FAA addressing these problems and what measures has the FAA taken to prevent repeat occurrences?
- In April of this year, the FAA ordered a halt to the practice at Memphis International Airport that allowed arriving aircraft to fly directly over planes on another runway that had nearly resulted in a midair collision. Do any of the airports in the New York area practice this type of procedure?

I look forward to your response and thank you for attention to this matter.

Sincerely yours,

Hillary Rodham Clinton

Hillary Rodham Clinton

Attachment 2

APPENDIX. AGENCY COMMENTS

Federal Aviation Administration

Memorandum

Date: April 1, 2008

To: Lou E. Dixon, Assistant Inspector General for Aviation and Special Program Audits

From: Ramesh K. Punwani, Assistant Administrator for Financial Services/CFO

Prepared by: Anthony Williams, x79000

Subject: OIG Draft Report: Review of Reported Near Mid-Air Collisions in the New York Metropolitan Airspace

Thank you for the opportunity to review and comment on the findings and recommendation of the subject draft report dated January 30. FAA concurs with each of your recommendations and the agency's planned actions for each is as follows:

OIG Recommendation 1: As part of the review and development of new or revised air traffic procedures under airspace redesign, evaluate whether commercial instrument flight rules (IFR) arrival and departure routes into and out of the New York Terminal Radar Approach Control's (TRACON) airspace should be redesigned or restricted to minimize potential conflicts with general aviation visual flight rules (VFR) air traffic.

FAA Response: Concur. As we review and develop new or revised air traffic procedures under airspace redesign, we will conduct the recommended evaluation.

OIG Recommendation 2: Conduct a safety analysis of the simultaneous arrival procedures at Newark Liberty International Airport when the runway 22L and 11 configuration is in use to identify measures needed to enhance safety and reduce go-arounds. That analysis should also designate responsibility for staggering approaches when that runway configuration is in use.

FAA Response: Concur. The Air Traffic Organization (ATO) Safety office will work with ATO-Terminal office, N90 and EWR ATCT to complete an initial Safety assessment. This initial assessment will be completed by May 1 and if further safety analysis is required, the ATO-Terminal office will be asked to complete with whatever assistance from the ATO-Safety office is requested. Although this issue stems from issues other than the original near mid-air collision (NMAC) investigation, we feel that its inclusion in the report is appropriate due to the possibility of go-arounds and missed approaches at the Newark Airport which affects the New York Area Airspace. The Manager of the New York TRACON and the Manager of Newark ATCT are already working this issue and initial work will be included in the assessment. If the assessment determines that changes are required we will encourage that process to be concluded by July 1.

Attachment 2
(Page 1 of 2)

OIG Recommendation 3. Restructure the existing near mid-air collision (NMAC) reporting process so that the actual safety risks posed by reported events are accurately reflected. Actions to better reflect actual safety risk could include developing a procedure to reclassify no-hazard events redefining the NMAC criteria, or revising the term "NMAC."

FAA Response: Concur. The ATO Safety office will work with the Air Traffic Safety Oversight Office and consult with ATO Systems Operations, ATO-Enroute and Oceanic Safety, as well as ATO-Terminal Safety to research the history behind the existing definition and if appropriate will initiate the Change Proposal. We will meet with the appropriate groups referred to by May 30 and determine the requirements and accept all input. Following May 30, we will write the change proposal, accept all comments and implement through the appropriate office if necessary. Final date will be no later than October 1.

If you have any questions or need further information, please contact Anthony Williams, Budget Policy Division, ABU-100 on (202) 267-9000.

Attachment 2
Page 2 of 2

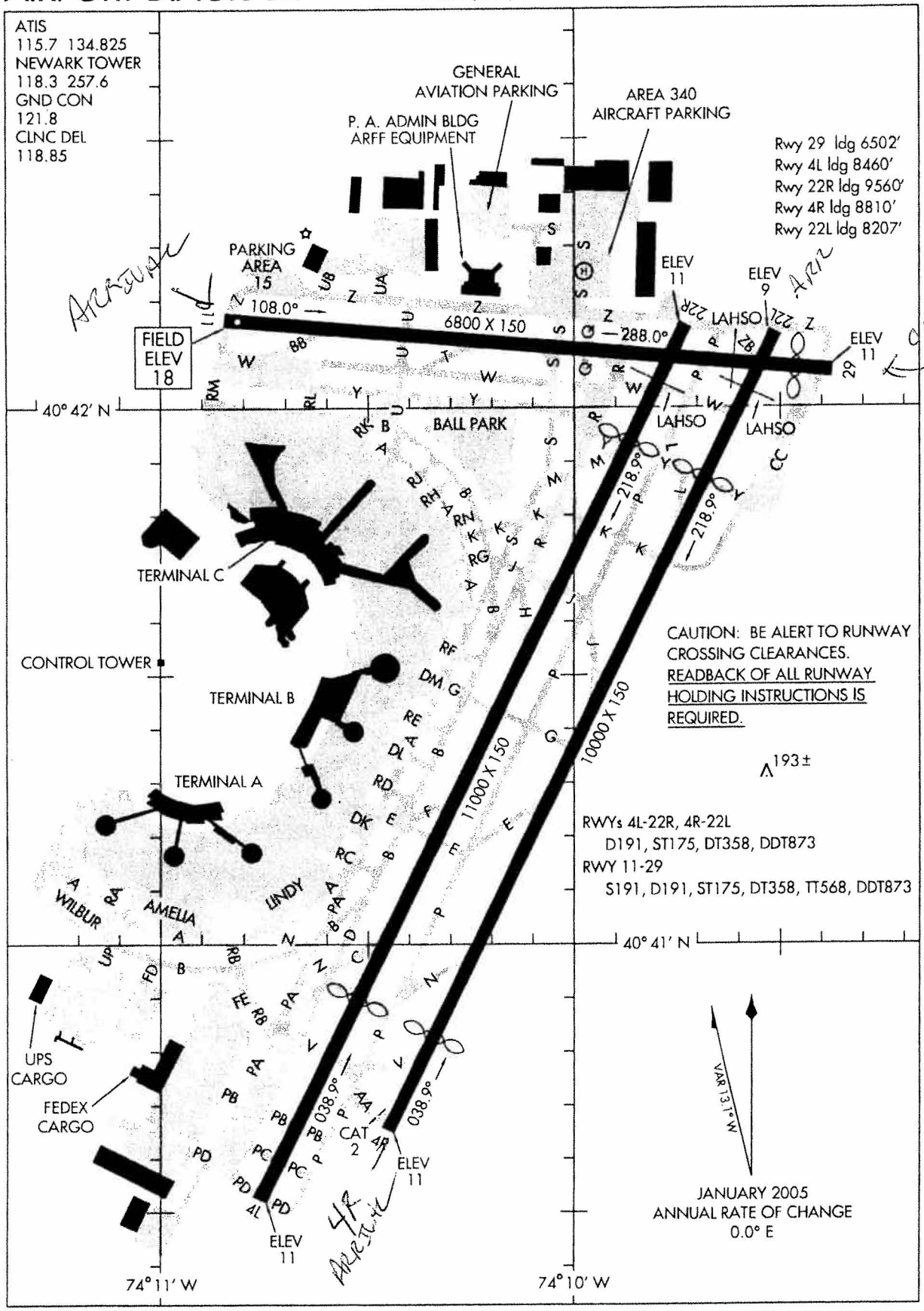
Attachment 3

08157

AIRPORT DIAGRAM

AL-285 (FAA)

NEWARK LIBERTY INTL (EWR)
NEWARK, NEW JERSEY



NE-2, 23 OCT 2008 to 20 NOV 2008

NE-2, 23 OCT 2008 to 20 NOV 2008

AIRPORT DIAGRAM
08157

NEWARK, NEW JERSEY
NEWARK LIBERTY INTL (EWR)

Attachment 3

Attachment 4

Federal Aviation Administration

Memorandum

Date: August 21, 2008

To: James Bedow, Acting Director, Safety Assurance

From: Jeffrey Rich, Safety Investigations

Subject: New York City Metropolitan Airports Go-Around and Minimum Vectoring Altitude Review

Background.

A review of air traffic services was conducted at five New York Metropolitan Airports on July 28-August 1, 2008 in response to a request by the Air Traffic Organization (ATO) Office of Safety Services, ATO-S. The onsite reviews were completed at New York La Guardia (LGA), Newark Liberty International (EWR), Teterboro (TEB), Caldwell/Essex County (CDW) and Morristown Muni (MMU) airports by Michael McFadyen, Jon Jones and Jeffrey Rich of ATO-S; Dennis Green of the Air Traffic Organization Terminal Service Unit (ATO-T); Nathan Enders of the Office of Air Traffic Safety Oversight (AOV); and Richard Derry of the Eastern Service Center Safety Assurance Group. The group conducted interviews of facility personnel and reviewed audio recordings, computer-generated replays and documentation related to go-around and missed approach procedures (MAP), helicopter operations, and areas of potential traffic conflicts related to a go-around or missed approach. In addition, the team reviewed instances of a go-around or missed approach aircraft issued an altitude below the minimum vectoring altitude (MVA) or MAP altitude.

Summary.

LGA.

The team reviewed FAA Forms 7230-4, Daily Record of Facility Operations, for the time period June 1 to July 28, 2008 and noted 100 go-around events logged. The group reviewed 95 of these events using Continuous Data Recording Player Plus (CDRPP). Additionally, the group reviewed eight Quality Assurance Reviews (QARs) resulting from go-around events in June and July, and obtained voice data from six of these events. One QAR event involving a pilot report of a Traffic Collision Avoidance System (TCAS) Resolution Advisory (RA) and subsequent go-around event did not contain sufficient information to close the QAR, and was referred to the LGA Operations Manager for further review.

Attachment 4
(5 Pages)

The team interviewed the Front Line Manager (FLM) on duty and monitored tower operations from the cab for four hours and noted no problem areas. The FLM indicated that go-around events were often caused by inadequate spacing on final, compression, aircraft approaching the airport at an altitude too high to make a successful landing, and conflicts with departing traffic. Three go-around events wherein the controller issued an initial altitude of 1000 feet were reviewed and summarized here:

> An air carrier aircraft on approach to Runway 31 executed a go-around and climbed to 1500 feet. The local controller (LC) issued a descent clearance to 1000 feet because of a helicopter operating under visual flight rules (VFR) orbiting in the area at 1500 feet. The air carrier aircraft was issued a higher altitude once clear of the conflict which occurred less than one mile from the departure end of the runway.
>
> An air carrier aircraft on approach to Runway 22 executed a go-around and climbed to 1200 feet. The aircraft subsequently descended to 1000 feet due to a TCAS RA that was generated by of a conflict with an overflight aircraft operating VFR at 1500 feet.
>
> An air carrier aircraft on approach to Runway 31 executed a go-around and was cleared to 1000 feet by the LC. After an inquiry by the flight crew, the LC issued a revised climb clearance to 2000.

The airspace delegation to the LC and Class B Airspace (CBA) positions was reviewed in the facility Standard Operating Procedures (SOP), Order LGA7110.1B. The LC position is responsible for operations from the airport surface to 1000 feet, and the CBA position is responsible for airspace from 1500 to 2000 feet. In the event of a go-around, the LC is required to coordinate with the CBA controller to enter the designated airspace. As illustrated in the above go-around event summaries, the LC may be restricted to climb go-around aircraft to 1000 feet which is below the MVA.

EWR.

The group reviewed FAA Forms 7230-4 from June 1 to July 28, 2008 and noted that 104 go-around events were logged. The group reviewed 95 of these events using CDRPP. Eight QARs from the same time period were reviewed, and five were selected for further analysis using audio data. In each of the five events, standard separation was maintained in accordance with FAA Order 7110.65, paragraph 3-9-8. The group monitored tower operations from the cab for six hours and noted no problem areas.

The group noted that in one go-around event, a VFR helicopter operating under the Runway 22R final approach course passed directly below an air carrier aircraft. The air carrier aircraft initiated the go-around in response to a TCAS RA.

The airspace delegation to the LC and CBA positions was reviewed in the facility SOP, Order EWRT 7210.17D. When the facility is configured to operate in the Southwest or Northeast Flows, the LC position has jurisdiction 1 ½ miles either side of the final approach course and the

departure zone up to and including 2000 feet as depicted in the New York Terminal Approach Control (N90) Letter of Agreement (LOA) The CBA controller has jurisdiction in all airspace not retained by LC, and is required to coordinate with LC prior to entering the Class Bravo Surface Area Ring (4 nautical miles). LC is aware of the position of traffic worked by the CBA controller in the event of a go-around.

MMU.

The group reviewed FAA Forms 7230-4 forms and four QARs from June 1 to July 29, 2008. There were zero go-around events in the logs and no go-around events listed in the QARs. The SOP and MMU/N90 LOA were both reviewed. The group monitored tower operations from the cab for two hours and noted no problem areas.

The primary standard instrument approach procedure to MMU is an Instrument Landing System (ILS) to Runway 23. The published missed approach procedure is a climbing left turn to 2500 direct CAT NDB to hold at 2500. The MMU SOP does not address missed approach or go-around procedures.

Facility management indicated that when a go around or a missed approach is initiated, the tower coordinates with N90 for instructions as required by the LOA. Missed approach instructions provided by N90 during coordination normally differ from those on the approach plate. N90 considers aircraft executing a missed approach as a departure since they potentially exit the arrival sector airspace and enter a different operating position (departure sector) at N90. Interviews with facility personnel indicate that altitude clearances were compliant with MVA requirements.

CDW.

The group reviewed FAA Forms 7230-4 from June 1 to July 29, 2008. One go-around event was investigated by the facility and documented as a QAR. The event resulted in an operational error at N90 (N90–R-08-E-023). No other go-around or missed approach events were logged. The group interviewed an FLM, monitored tower operations from the cab for two hours and noted no problem areas.

The primary standard instrument approach procedure to CDW is a Localizer Runway 22. The published missed approach procedure is a climbing right turn to the outer marker (SNAFU intersection) and hold at 2300 feet. The CDW SOP does not address missed approach or go-around procedures.

On July 7, 2008 CDW issued a go-around to N106MB while the aircraft was on a visual approach to Runway 22. The go around was issued due to other aircraft in the traffic pattern. An operational error occurred with the second aircraft on final approach to Runway 22.

N106MB was issued a frequency change to CDW on final for Runway 22 when approximately four miles from the airport. The N90/CDW LOA requires N90 to transfer communications when aircraft are eight to ten miles from the airport. Due to other traffic, the CDW LC controller

issued N106MB a go-around, a straight-out departure and an altitude clearance to 2000 feet. During subsequent coordination, the N90 controller instructed the CDW controller to issue a 290 heading and climb, but the CDW controller maintained control of N106MB and instructed the aircraft to enter a right downwind. The N90 controller attempted to break out a subsequent arrival on a 330 heading. The subsequent arrival was slow to respond and the aircraft conflicted with N106MB on the downwind leg.

The N90/CDW LOA requires N90 to "provide a position report to CDW prior to transfer of communications, not less than 8 miles from the respective airport," and "transfer communications to TOWERS 8 to 10 nm from the airport." The LOA also requires CDW tower to "advise of ATC instructions that will affect traffic under TRACON's control," and "instruct missed approaches to maintain 2000 feet."

The FLM stated during his interview that there was no defined missed approach or go-around procedure in the CDW SOP or LOA. With respect to aircraft operating under instrument flight rules executing a missed approach, the FLM stated that CDW would call N90 to find out "what they wanted to do with the aircraft," which was described as either a published or alternate missed approach. The FLM indicated that if N90 instructs CDW to issue the published MAP for a LOC 22 approach, the aircraft would climb to 2300. If N90 instructs CDW to issue 2000, the altitude clearance is in compliance with the LOA, but is below the MAP altitude specified in the approach procedure.

TEB.

The team reviewed FAA Forms 7230-4 for the time period June 1 to July 29, 2008 and noted that zero go-around events were logged. The group reviewed QARs for the time period and there were none associated with a go-around event. One go-around event was observed during a review of 36 hours of National Offload Program (NOP) data using CDRPP. The aircraft executing the go-around remained in the local traffic pattern. The group monitored tower operations from the cab for seven hours and noted no problem areas.

During an interview with an FLM, he stated that when an aircraft executes a missed approach, the LC routinely issues control instructions that mirror the TETERBORO 5 Standard Instrument Departure Procedure, and that these instructions are not defined in any local documentation. When asked how this information is passed to developmental controllers, he stated that it is passed verbally in the tower cab during on-the-job-training, and it might be taught in the class room. He also added that after the go-around is initiated, TEB coordinates further control instructions with N90 as required by the LOA. The FLM and the facility manager stated that go-around events were not routinely entered into the daily log.

Recommendations.

1. Towers should deconflict helicopter and VFR aircraft operations with arrival and departure aircraft to the extent possible.

2. LGA should consider re-designating altitude jurisdiction in airspace between the CBA and LC positions to allow LC access to 1500 feet.

3. Towers should, to the extent possible, restrict VFR aircraft from crossing the final approach course directly below air carrier aircraft on final approach so as to preclude a potential TCAS RA and subsequent go-around maneuver.

4. Modify the LOAs between MMU, CDW, TEB and N90 so that instructions issued to aircraft executing missed approach procedures include assigned headings and altitudes consistent with current operations at these facilities.

The team is also formulating a recommendation to ATO-T regarding the log entries of go-around events.

Attachment 5

Federal Aviation Administration

Memorandum

Date: SEP 2 3 2008

To: Bruce Johnson, Vice President, Terminal Services

From: Robert Tarter, Vice President, Office of Safety

Prepared by: James C. Bedow, Acting Director, Quality Assurance

Subject: Office of Inspector General's report (AV-2008-050, dated April 24, 2008) addressing near mid-air collisions (NMACs) in the New York Metropolitan airspace

Representatives of our Office of Safety Quality Assurance staff, AJS-3, conducted an on-site review of go-around procedures at the several New York Metropolitan airports. This review was conducted to determine whether go-around procedures at those airports are contributing to Operational Errors involving Minimum Vectoring Altitudes (MVAs), and to follow-up concerns identified in an Office of Inspector General's report (AV-2008-050, dated April 24, 2008) addressing near mid-air collisions (NMACs) in the New York Metropolitan airspace.

The number of go-arounds at Newark Liberty Airport (EWR) is particularly troubling. The team reviewed a period of slightly less than 2 months and found 104 go-arounds recorded in the facility's Daily Records of Facility Operations. While the group noted that no single airport configuration appeared to produce a higher go-around rate than the others, they did note that the most frequent cause of go-arounds cited was inadequate spacing provided between arrivals and runway occupancy time of preceding arrivals. Although the current operation at EWR appears to be conducted in accordance with all national, local and regional orders and requirements, both safety and efficiency would benefit from enhancements.

When EWR is arriving Runways 22L and 11, the New York Terminal Radar Approach Control (N90) normally provides 15 miles-in-trail spacing for arrivals to Runway 11. EWR tower controllers use speed control and turns to aircraft landing Runway 11 to affect proper spacing and ensure runway separation between the two arrival runways. N90 does not stagger the approaches in this configuration. EWR Tower controllers must formulate these control instructions using only their visual observations and Tower RADAR display equipment.

The Office of Safety has identified operational and automated tools in the National Airspace System that can enhance the operation and reduce go-around events. The tools can potentially increase the safety and efficiency of the operations at N90 and EWR. These tools include the

Converging Runway Display Aid, the Go-Around Spacing Tool, and advanced Area Navigation procedures. In addition to the specific recommendations contained in our attached report, we recommend that Terminal Services consider the use of CRDA, or other similar tools, to assist the EWR Local controllers to sequence arrivals between Runways 22L and 11. We also recommend that Terminal Services pursue development of additional RNAV approach procedures for this configuration, and that they evaluate the use of the Go-Around Spacing Tool which is currently under development by Las Vegas Airport Traffic Control Tower.

The FAA has committed to providing the Office of Inspector General with progress reports on our efforts to address the concerns identified in their report. Please provide the Office of Safety a response to these recommendations within 30 days that we may forward to the Office of Inspector General.

Attachments

Attachment 6

Federal Aviation Administration

Memorandum

Date: NOV 24 2008

To: Robert O. Tarter, Vice President, Office of Safety

From: David B. Johnson, Vice President, Terminal Services

Subject: Office of the Inspector General's Report, AV-2008-050; your memo dated September 23, 2008

This is in response to the above-referenced memo regarding safety concerns in the New York Metropolitan Airspace. The memo refers to an on-sight review of go-around procedures at several New York Metropolitan airports, conducted to determine if the go-around procedures contribute to operational errors involving minimum vectoring altitudes, and secondly to follow up on an Office of Inspector General report, AV-2008-050, concerning near mid-air collisions in the New York Metropolitan airspace.

First, to address the troubling number of go-arounds at Newark Liberty Airport (EWR) between the dates of June 1, 2008, and July 28, 2008. The memo you attached authored by Mr. Rich, dated August 21, 2008, indicated that in the above timeframe there were 104 go-arounds at EWR. We researched the total traffic for the same time period and found that EWR provided service to 73,541 aircraft. This equates to one go-around for every 707 operations worked or "point one four" of one percent. The same memo also states that during the same time period, La Guardia Airport (LGA) experienced 100 go-arounds. Our research indicates LGA provided service to 61,840 aircraft. This equates to one go around for every 618 operations worked, or one percent.

In an effort to compare national averages we sampled four other airports and present their data for the same June 1, 2008, through July 28, 2008, time period below.

Airport	Go Arounds	Operations	Average Operations between Go-Arounds	Percentage of total Operations executing Go-Arounds
EWR	104	73,541	707.13	0.14%
LGA	100	61,840	618.40	1.00%
LAS	152	94,604	622.39	0.16%
SAN	84	43,706	520.31	0.19%
DEN	100	105,537	1055.37	0.09%
LAX	50	106,370	2127.40	0.04%
BOS	93	66,163	711.43	0.14%
PHL	93	81,891	880.54	0.11%
MEM	41	57,847	1410.90	0.07%
SEA	74	46,503	628.41	0.16%

Attachment G (P1062)

As the table indicates, EWR and LGA have excellent productivity even when compared to airports like Denver which does not suffer from odd approach routes or other airports crowding their operation. Our comparative analysis failed to show a "particularly troubling" number of go-arounds at EWR, in fact, the data above shows the EWR operation to be on par with even the most modern operations in the National Airspace System (NAS).

In the fourth paragraph of your memo dated, September 25, 2008, you state in part: "The Office of Safety has identified operational and automated tools in the NAS that can enhance the operation and reduce go-around events." "These tools include the Converging Runway Display Aid (CRDA), the Go-Around Spacing Tool (GAST), and advanced Area Navigation Procedures (RNP)."

CRDA is an approved system of the NAS. It is governed by FAA Order 7110.11A, Dependent Converging Instrument Approaches with Converging Runway Display Aid.

The New York District and the Newark Airport Traffic Control Tower managers have been involved in the research and development of RNP and CRDA procedures in excess of 2 years. In regards to EWR and LGA, the possibility exists to employ CRDA coupled with RNP procedures. However, in analyzing the immediate development and employment of these process tools, it was determined that a straight in final greater than the 12 miles available at EWR is required to develop a ghost target that is stable, accurate, and dependable. Requiring aircraft flight paths to be modified to accommodate a longer straight in final would change the "Noise Footprint" in New York Terminal Radar Approach Control (TRACON) airspace. This process falls under "Rulemaking" and would take several years to accomplish. Currently, CRDA is successfully employed by Memphis, Philadelphia, and St. Louis TRACONs.

The GAST is not an approved tool within the NAS. It was developed for Las Vegas by essentially employing trial and error methodology under simulated conditions. The GAST has been redefined as a go-around spacing process. The GAST provides simple go or no go decision box for a specific runway configuration. It is designed to increase capacity between an arrival and a departure runway. It was never intended to provide separation decision assistance between two arrivals.

In closing, the recommendations in your memo merit consideration. However, many will require further research, impact to capacity studies, and Safety Risk Management processes prior to implementation. We stand committed to follow through with these recommended actions as quickly as the safety process allows.

If you have any questions regarding this matter, please contact Howard Burnette, Quality Assurance Specialist, at (202) 385-8752.

Attachment 6 Cp. 2 of 2

Attachment 7

Final Operational Error/Deviation Report (ATQA)
PART I. INVESTIGATIVE DATA

Report Number: E W R T 0 8 E 0 0 5

1. Date and time of incident:
MM/DD/YYYY: 11/22/2008
Time (Local): 1530

2. Responsible facility: EWR
Classification Level: 10

3. Severity Index: points
- [ ] A
- [ ] B
- [x] Controlled
- [ ] Uncontrolled
- [ ] C
- [ ] D
- [ ] Converging, Opposite Flight Paths
- [ ] Converging, Crossing Flight Paths
- [ ] Same Flight Paths
- [ ] Diverging/Non-intersecting Flight Paths

4. Was weather a factor in the incident? [ ] Yes [x] No
(If yes, explain in Block 65, Summary of Incident.)

5. Altitude/flight level of incident:
Surface Incident

6. Type of airspace:
- [ ] Class A
- [ ] Class B
- [ ] Class C
- [ ] Class D
- [ ] Other
- [ ] Class E
- [ ] Class G
- [ ] Oceanic
- [x] Airport Surface

7. Location of Incident :
Fix:
Intersection: RY22L
Direction:
Runway: R11
Distance:
Taxiway:
Latitude:
Longitude:
Area/Sector or Position Designator: LC

8. Closest Proximity:
Vertical Feet: 5700
Lateral:
- [x] Feet
- [ ] Miles
- [ ] Minutes
- [ ] N/A

9. Number of aircraft for which the controller had control responsibility at the time of the incident: 9

10. Was training in progress?
- [x] Yes
- [ ] No

Complete blocks 11-36 for each employee

11. Enter P for primary or C for contributory: P

12. Number of personnel involved: 1

13. Employee's facility:

Three-letter Identification	Level	Type
EWR	10	T

14. Reserved:

15. Date of birth:
MM/DD/YYYY: 09/25/1969

16. Social Security Number:
Last six digits only: [redacted]

17. Indicate the performance level of the employee:
- [ ] Developmental
- [x] ATCS
- [ ] Supervisor
- [ ] Staff Specialist
- [ ] Other

If ATCS, how long since ATCS in current facility?
YY-MM: 05-01

18. Last date of certification or recertification on position:
MM/DD/YYYY: 03/07/2008
- [ ] Initial Certification
- [x] Recertification

19. Has training relevant to the incident been received within the last 12 months?
- [x] Yes
- [ ] No

If yes, list the type and the date of that training in this block:
6/11/08 - FAAH 7110.65, PAR. 3-10-4, INTERSECTING RUNWAY SEPARATION

19A. During the 2 1/2 years prior to the incident, in how many Operational Errors has the employee been found to be the primary cause? 1

19B. During the 2 1/2 years prior to the incident, in how many Operational Errors has the employee been found to be contributory? 0

Attachment 17 (13 Pages)

Final Operational Error/Deviation Report

Report Number: EWRT08E005

20. Is a medical certification issue related to the incident?

☐ Yes
☒ No

(If yes, explain in Block 65, Summary of Incident.)

21. Identify and describe the type of work schedule being worked at the time of the incident:

FIRST OF FIVE 8 HOUR EVENING SHIFTS

22. Current and previous shift:

Previous shift:
Sign in 1100 Sign out 1900

Current shift:
Sign in 1422 Sign out 2222

23. Area of specialization:

TOWER

24. Sector or position:

LC1/LC2

Number and Name

25. Time on position:

41

Minutes

26. What sectors or positions were combined at the position being staffed by the primary controller at the time of the incident?

LC2

27. Which associated positions were staffed at the time of the incident?

CAB COORDINATOR

28. Position function:

☐ Radar ☐ Radar Associate ☐ Hand-off ☒ Local Control ☐ Ground Control
☐ Flight Data ☐ Clearance Delivery ☐ Departure Position ☐ Arrival Position ☐ Supervisor
☐ Air Traffic Assistant ☐ Traffic Management Coordinator ☐ Tracker ☐ Other

29. Did the employee request assistance prior to the incident?

☐ Yes ☒ No

(If yes, explain in Block 65, Summary of Incident.)

30. Was the employee aware that an Operational Error/Deviation was developing?

☐ Yes ☒ No

(Explain in Block 65, Summary of Incident.)

31. Did the employee contemplate taking corrective action?

☐ Yes ☒ No

(Explain in Block 65, Summary of Incident.)

32. Did the employee try to take corrective action?

☐ Yes ☒ No

(Explain in Block 65, Summary of Incident.)

33. Employee was alerted to the incident by:

Equipment:	Personnel:	Non-facility Personnel:	Other:
☐ Conflict Alert	☐ Self-identified	☐ Pilot	
☐ MSAW/EMSAW	☒ Facility personnel	☐ Another facility	

34. Date and time employee became aware of the incident:

12/03/2008 (MM/DD/YYYY) 1100 (Time(local))

35. Was the Distance Reference Indicator (i.e., J-Ring) being used?

☐ Yes
☒ No

36. Were there any distractions or environmental conditions that may have influenced the incident?

☐ Yes ☒ No (If yes, explain in Block 65, Summary of Incident.)

(Distractions include construction, equipment installation, presence of visitors, loud or boisterous coworkers, equipment malfunction, and extraneous conversation with coworkers. Environmental conditions include ambient air, work area layout, temperature, noise, and lighting.)

Final Operational Error/Deviation Report

Report Number: E W R T 0 8 E 0 0 5

37. Identify the OSIC/CIC assigned at the time of the incident?

Enter A for OSIC
Enter C for CIC: A

[redacted] Last name | [redacted] First name | MI | [redacted] SSN (Last six digits)

38. Was the assigned OSIC/CIC present in the operational area at the time of the incident?

☒ Yes ☐ No

39. Did the employee require OSIC/CIC assistance prior to the incident?

☐ Yes ☒ No

40. Did the assigned OSIC/CIC provide assistance?

☐ Yes ☒ No

(Explain in Block 65, Summary of Incident.)

41. If sectors were combined, did the OSIC/CIC approve the combination?

☐ Yes ☐ No ☐ Not combined ☒ N/A

42. If the positions were combined, did the OSIC/CIC approve the combination?

☒ Yes ☐ No ☐ Not combined

43. In what activity was the assigned OSIC/CIC engaged at the time of the incident?

☒ General Supervision
☐ Direct operational supervision
☐ Working a position of operation
☐ Administering training
☐ Receiving training
☐ Other

44. Was the OSIC/CIC certified in the area of specialization where the incident took place?

☒ Yes ☐ No ☐ N/A (If no, explain here)

45. Traffic complexity? 4

1 2 3 4 5
Low Avg. High

46. Indicate which factors were associated with traffic complexity.

☐ Weather
☐ Terrain
☐ Airspace configuration
☒ Number of aircraft
☐ Experience level
☐ Emergency situation
☒ Runway configuration
☐ Runway condition
☐ Flow control
☐ Special Event
☐ Other

47. Type of Control Provided

☐ Radar ☐ AFSS/FSS
☒ Tower ☐ TFM
☐ Oceanic
☐ Non-radar

48. Required separation was by:

☒ FAA Order
☐ Facility Letter of Agreement (LOA) or Directive

FAA Order: 7110.65 Facility LOA/Directive:

Paragraph: 3-10-4 Paragraph:

49. Were any deficient procedures noted as a result of the incident?

☐ Yes ☒ No

(If yes, explain here)

50. Were any special procedures in effect at the time of the incident (e.g. Traffic Management Program)?

☒ Yes ☐ No

(If yes,explain here)

RWY11, ILS APPROACHES ONLY, B737-700 SERIES AND SMALLER, 15 MIT, SLOWED TO 170 KNOTS PRIOR TO THE TERMINAL ENTRY POINT.

Final Operational Error/Deviation Report

Report Number: EWRT08E005

(Complete additional sections if more than two aircrafts are involved)

51. Number of aircraft/vehicles involved in the incident: 2

	Aircraft/Vehicle No. 1	Aircraft/Vehicle No. 2
52. Identification	C102	AWE307
53. Prefix/type/suffix	CL60/Q	A320/Q
54. Flight/vehicle profile at time of time of incident	☐ Descending ☐ Making approach ☐ Touching down ☐ Radar vector ☐ Level flight ☐ Takeoff roll ☐ Taxiing-runway ☐ Landing roll ☐ Climbing ☐ Holding in position on runway ☒ Other SEE BLOCK #65	☐ Descending ☒ Making approach ☐ Touching down ☐ Radar vector ☐ Level flight ☐ Takeoff roll ☐ Taxiing-runway ☐ Landing roll ☐ Climbing ☐ Holding in position on runway ☐ Other
55. Aircraft ground speed	☒ N/A _____ Knots	☒ N/A _____ Knots
56. TCAS equipped	☒ Yes ☐ No ☐ Unknown	☒ Yes ☐ No ☐ Unknown
57. Evasive action	☐ Yes ☒ No ☐ TCAS ☐ Unknown	☐ Yes ☒ No ☐ TCAS ☐ Unknown
58. Did the pilot file a Near Midair Collision Report	☐ Yes ☒ No ☐ Unknown	☐ Yes ☒ No ☐ Unknown

59. Aircraft and Obstruction/Obstacles

☐ Terrain ☐ Vehicle(s) ☐ Personnel ☐ Obstruction ☐ Equipment ☐ Protected Airspace
☐ Airport Movement Area (explain) ☒ Not applicable ☐ Other (explain)

60. Was equipment layout or design a factor in the incident?

☐ Yes ☒ No (If yes, explain in Block 65, Summary of Incident.)

61. Was any pertinent equipment operated by the controller(s) reported as functioning unsatisfactorily before the incident?

☐ Yes ☒ No (If yes, explain in Block 65, Summary of Incident.)

62. System(s) in use:

☐ HOST	☐ CENRAP	☒ ARTS IIIE	☐ D-BRITE	☐ ASDE-X
☐ EBUS/HOST (FDP)	☐ ASR-9	☐ MEARTS	☐ BRITE IV	☐ Model 1
☐ EBUS	☐ ASR-11	☐ ACDs on ARTS	☒ AMASS	☐ OASIS
☐ URET	☐ ARTS IIE	☐ STARS on ARTS	☐ ASDE II	☒ Other:
☐ Mode S	☐ ARTS IIIA	☐ STARS	☒ ASDE III R-ACD	

63. Was radar transition from one system to another in progress?

☐ Yes ☒ No (if yes, explain here)

64. What was the status of the Conflict Alert at the time of the incident?

☐ Activated ☐ Not available ☒ Not activated
☐ Not Installed ☐ Suppressed

64a. What was the status of the AMASS or ASDE at the time of the incident?

☒ Active ☐ Limited Mode ☐ Off/OTS/NA

Final Operational Error/Deviation Report	Report Number	E	W	R	T	0	8	E	0	0	5

65. SUMMARY OF INCIDENT

C102 WAS CLEARED TO LAND ON RWY11 WITH AWE307 CLEARED TO LAND ON INTERSECTING RWY22L. AWE307 OVERFLEW THE INTERSECTION OF RWY11/22L PRIOR TO C102 TURNING OFF THE RUNWAY OR HOLDING SHORT OF RWY22L.

BOX 30-32. THE EMPLOYEE WAS NOT AWARE AN OPERATIONAL ERROR WAS DEVELOPING AND THEREFORE DID NOT CONTEMPLATE OR TAKE CORRECTIVE ACTION BECAUSE HE BELIEVED THE REQUIRED SEPARATION REQUIREMENTS WOULD BE MET BETWEEN THE INVOLVED AIRCRAFT.

BOX 40. THE FRONT LINE MANAGER WAS NOT AWARE AN OPERATIONAL ERROR WAS DEVELOPING AND THEREFORE DID NOT PROVIDE ANY ASSISTANCE.

BOX 54. BETWEEN THE LANDING THRESHOLD AND TOUCHDOWN.

Final Operational Error/Deviation Report	Report Number	E	W	R	T	0	8	E	0	0	5

65. SUMMARY OF INCIDENT (continued from page 5)

66. INVESTIGATORS

Date	Typed/Printed Name	Signature
01092009 MM/DD/YYYY	[redacted] First/MI/Last Name	Investigator-In-Charge
01092009 MM/DD/YYYY	[redacted] First/MI/Last Name	Team Member
MM/DD/YYYY	[redacted] First/MI/Last Name	Team Member
MM/DD/YYYY	First/MI/Last Name	Team Member
MM/DD/YYYY	First/MI/Last Name	Team Member
MM/DD/YYYY	First/MI/Last Name	Team Member
MM/DD/YYYY	First/MI/Last Name	Team Member
MM/DD/YYYY	First/MI/Last Name	Team Member
MM/DD/YYYY	First/MI/Last Name	Team Member

Final Operational Error/Deviation Report	Report Number	E	W	R	T	0	8	E	0	0	5

65. SUMMARY OF INCIDENT (continued from page 6)

Final Operational Error/Deviation Report	Report Number	E	W	R	T	0	8	E	0	0	5

Part II. FACILITY MANAGER ACTION

67. Select the classification of the OE/OD. (More than one category may be selected.)

☒ Human ATCS ☐ Manager/Supervisor/Other Personnel ☐ Procedural ☐ Equipment ☐ Other (Explain in Block 69)

68. Causal Factors	No	Yes(Employee)				
		A	B	C	D	E
A. Data Posting	☒					
(1) Computer Entry	☐					
Incorrect input		☐	☐	☐	☐	☐
Incorrect update		☐	☐	☐	☐	☐
Premature termination of data		☐	☐	☐	☐	☐
Input/Update not made		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐
(2) Flight Progress Strip	☐					
Not updated		☐	☐	☐	☐	☐
Interpreted incorrectly		☐	☐	☐	☐	☐
Posted incorrectly		☐	☐	☐	☐	☐
Updated incorrectly		☐	☐	☐	☐	☐
Prematurely removed		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐
B. Radar Display	☒					
(1) Misidentification	☐					
Failure to re-identify aircraft when the accepted target identity becomes questionable		☐	☐	☐	☐	☐
Overlapping data blocks		☐	☐	☐	☐	☐
Acceptance of incomplete or difficult to correlate position information		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐
(2) Inappropriate Use of Displayed Data	☐					
MODE C		☐	☐	☐	☐	☐
BRITE		☐	☐	☐	☐	☐
Conflict alert		☐	☐	☐	☐	☐
Failure to detect displayed data		☐	☐	☐	☐	☐
Failure to comprehend displayed data		☐	☐	☐	☐	☐
Failure to project future status of displayed data		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐
C. Aircraft Observation (Towers Only)	☐					
(1) Actual Observation of Aircraft		☒	☐	☐	☐	☐
(2) Improper Use of Visual Data	☐					
Landing		☒	☐	☐	☐	☐
Taking Off		☐	☐	☐	☐	☐
Ground Operation	☐					
Taxiing across runway		☐	☐	☐	☐	☐
Holding in position for takeoff		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐

Final Operational Error/Deviation Report	Report Number	E	W	R	T	0	8	E	0	0	5

	No	Yes(Employee)				
		A	B	C	D	E
D. Communication Error	☒					
(1) Phraseology		☐	☐	☐	☐	☐
(2) Transposition		☐	☐	☐	☐	☐
(3) Misunderstanding		☐	☐	☐	☐	☐
(4) Read back	☐					
Altitude		☐	☐	☐	☐	☐
Clearance		☐	☐	☐	☐	☐
Identification		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐
(5) Acknowledgement		☐	☐	☐	☐	☐
(6) Other (explain):		☐	☐	☐	☐	☐
E. Coordination	☒					
(1) Area of Incident	☐					
Intra-sector/position		☐	☐	☐	☐	☐
Inter-sector/position		☐	☐	☐	☐	☐
Inter-facility		☐	☐	☐	☐	☐
Facility type: _____ Level: _____ and facility ID: _____						
(2) Failure to use/comply with precoordination information		☐	☐	☐	☐	☐
(3) Improper use of information exchanged in coordination	☐					
Aircraft Identification		☐	☐	☐	☐	☐
Altitude/Flight Level		☐	☐	☐	☐	☐
Route of Flight		☐	☐	☐	☐	☐
Speeds		☐	☐	☐	☐	☐
APREQs		☐	☐	☐	☐	☐
Special Instructions		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐
(4) Failure to coordinate between ground and local control	☐					
Crossing active runway		☐	☐	☐	☐	☐
Vehicle, equipment, or personnel on active runway		☐	☐	☐	☐	☐
Use of runway other than active runway for arrival and departures		☐	☐	☐	☐	☐
Runway closure		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐
F. Position Relief Briefing	☒					
(1) Employee did not use position relief checklist		☐	☐	☐	☐	☐
(2) Employee being relieved gave incomplete briefing		☐	☐	☐	☐	☐
(3) Relieving employee did not make use of pertinent data exchanged at briefing		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐

Final Operational Error/Deviation Report	Report Number	E	W	R	T	0	8	E	0	0	5

69. FACILITY MANAGER'S RECOMMENDATIONS AND CORRECTIVE ACTIONS

AN INVESTIGATION WAS CONDUCTED BY AN FLM, QUALITY ASSURANCE SUPPORT SPECIALIST AND A NATCA REPRESENTATIVE. A REVIEW OF THE AMASS REVEALLED THE LOCAL CONTROLLER FAILED TO ENSURE RUNWAY INTERSECTION SEPARATION STANDARDS WERE MAINTAINED.

THIS EMPLOYEE WAS PRIMARY FOR EWR-T-08-E-002. BECAUSE THE SAME INFRACTION WAS REPEATED, THE EMPLOYEE WAS DECERTIFIED. THE FOLLOWING RETURN TO DUTY PLAN WAS DEVELOPED BY THE FACILITY AND APPROVED BY THE DIRECTOR OF AIR TRAFFIC SAFETY OVERSIGHT SERVICE:

1. REVIEW AND DISCUSSION OF THE TAPE CONCERNING EWR-T-08-E-005 WITH THE CONTROLLER AND FLM INVOLVED FOR THE PURPOSE OF IDENTIFYING LESSONS LEARNED AND WAYS TO AVOID SIMILAR OCCURENCES.
2. REVIEW AND DISCUSSION OF EMPLOYEE'S PREVIOUS OPERATIONAL ERROR TO BE CONDUCTED WITH THE EMPLOYEE AND FLM.
3. COMPLETE 20 HOURS OF LOCAL CONTROL OJT INSTRUCTION WITH INTERSECTING RUNWAY OPERATIONS. 10 HOURS MUST BE THE RWY22L AND RWY11 CONFIGURATION.
4. COMPLETE UP TO 4 HOURS OF CLASSROOM TRAINING WITH A FLM TO ENSURE A THOROUGH UNDERSTANDING OF:
+ FAA ORDER 7110.65, PARAGRAPH 3-10-4, INTERSECTING RUNWAY SEPARATION.
+ PROJECTING FUTURE STATUS OF DISPLAYED DATA.
+ DIRECT OBSERVATION/SCANNING OF AIRCRAFT.
5. COMPLETE CBI 57062, SITUATION AWARENESS REFRESHER TRAINING.
6. COMPLETE CBI 57054, REDUCING OPERATIONAL ERRORS.
7. AFTER SUCCESSFUL RECERTIFICATION, CONDUCT A 30 DAY, 60 DAY AND 90 DAY OPERATIONAL PERFORMANCE REVIEW/PERFORMANCE SKILL CHECKS TO ENSURE THE EMPLOYEE'S PERFORMANCE REMAINS AT OR ABOVE THE LEVEL ACHIEVED DURING CERTIFICATION.

Date	Typed/Printed Name of Facility Manager	Signature
02032009	JAMES D SWANSON	/S
MM/DD/YYYY	First/MI/Last Name	

Final Operational Error/Deviation Report	Report Number	E	W	R	T	0	8	E	0	0	5

69. FACILITY MANAGER'S RECOMMENDATIONS AND CORRECTIVE ACTIONS (continued from page 10)

Final Operational Error/Deviation Report	Report Number	E	W	R	T	0	8	E	0	0	5

Part III. SERVICE AREA DIRECTOR

70. SERVICE AREA DIRECTOR'S CONCLUSIONS AND RECOMMENDATIONS

This Block does not apply to OE/ODs attributed to contractor-operated Flight Servie Station.

☒ I concur with the recommendations and corrective actions of the facility manager.

Date	Typed/Printed Name of Service Area Director	Signature
02092009	JOHN G MCCARTNEY	/S
MM/DD/YYYY	First/MI/Last Name	

Final Operational Error/Deviation Report	Report Number	E	W	R	T	0	8	E	0	0	5

70. SERVICE AREA DIRECTOR'S CONCLUSIONS AND RECOMMENDATIONS (continued from page12)

Attachment 8

Federal Aviation Administration

Memorandum

Date: MAY 1 1 2009

To: James Bedow
Acting Director, Quality Assurance Office

From: Michael J. McCormick
Director, Terminal Safety and Operations Support

Subject: Office of Inspector General's Report (AV-2008-050, Dated April 24, 2008) Addressing Near Mid-Air Collisions (NMACs) in the New York Metropolitan Airspace

We appreciate the opportunity to update safety concerns and provide information on our progress aimed at increasing safety and efficiency in the New York Metropolitan Airspace. We have considered recommendation #2 as addressed in the "Review of Reported Near Mid-Air Collisions in the New York Metropolitan Airspace Federal Aviation Administration Report" and offer the following response. We have studied the effectiveness of implementing Converging Runway Display Aid (CRDA) as a tool to increase safety and efficiency of intersecting runway operations at Newark Liberty International Airport (EWR). The study evaluated the potential applicability of CRDA use for Runways 22L and 11 arrival configurations. This tool will provide targets that air traffic controllers can use to gage arrivals to intersecting runways with adequate runway separation. This will increase safety to the tower operations and reduce occasions for unplanned go around events that can occur without the automated tool.

The implementation of CRDA at EWR will include changing the operations to reflect CRDA for Runways 22L/11 which include the following: developing procedures and training, ensuring all appropriate directives reflect the new procedure, working with site adaptation to ensure the necessary automation requirements are met, creating Letter of Agreements between N90 and EWR and validating that the particular airspace around this configuration is not affected adversely. It will be the responsibility of N90 to stagger the approaches for EWR Tower. This process will also be analyzed through the Safety Management System (SMS) to ensure that this new procedure doesn't introduce new risk into the National Airspace System.

Attachment 8
2 pages (1 of 2)

The implementation of CRDA will require a modification to the local adaptation for N90 to use due to jumping ghost targets that render the tool unreliable. Newark Tower sometimes uses CRDA as an advisory tool to assist in determining the position of aircraft operating to intersecting runways. Newark Tower can issue instructions to ensure the appropriate separation exists before crossing the landing threshold.

We continue to study the benefits of CRDA use in other runway configurations at EWR, assessing the safety benefits of those configurations. It's expected we will implement CRDA for other configurations; however, more substantial changes to airspace and operations will need to be addressed before implementation. We will provide a status update within 60 days to include a timeline of the implementation schedule for CRDA use at EWR.

If you have any questions or desire further information, please contact Gary Norek, Manager, Terminal Airspace Group, at (202)-385-8510.

Attachment 8
2012

Attachment 9

Federal Aviation Administration

Memorandum

Date: JUL 0 9 2009

To: James C. Bedow
Acting Director, Quality Assurance

From: Michael J. McCormick
Director, Terminal Safety and Operations Support

Subject: Office of Inspector General's Report (AV-2008-050, Dated April 24, 2008), Addressing Near Mid-Air Collisions (NMACs) in New York Metropolitan Airspace

In response to your request for an update to address the Office of Inspector General's Report (AV-2008-050 dated April 24, 2008), we offer the following response to Recommendation #2 as addressed in the "Review of Reported Near Mid-Air Collisions in the New York Metropolitan Airspace FAA Report."

New York TRACON will be implementing Converging Runway Display Aid (CRDA) for Runways 22L and 11 on October 26, 2009. The steps for implementation will include accessing the need for a dedicated position to stagger the approaches to Newark Liberty International (EWR) tower, conduct a safety analysis for this new position, identify any changes required in the Standard Operating Procedures, Letters of Agreement, and develop a training plan which will include a training schedule. This is the primary configuration used by EWR. We are reviewing other configurations at EWR for CRDA use; however there will need to be internal airspace changes and some internal resectorizations to address other configurations.

If you have any questions or desire further information, please contact Gary A. Norek, Manager, Terminal Airspace, at (202) 385-8510.

Attachment 9

Attachment 10

Final Operational Error/Deviation Report (ATQA)
PART I. INVESTIGATIVE DATA

Report Number: N 9 0 R 0 8 E 0 0 1

1. Date and time of incident:
MM/DD/YYYY: 0 1 1 6 2 0 0 8
Time (Local): 1 4 1 0

2. Responsible facility: N90
Classification Level: 12

3. Severity Index: points
- [ ] A
- [x] B
- [ ] C
- [ ] D

- [x] Controlled
- [ ] Uncontrolled

- [ ] Converging, Opposite Flight Paths
- [x] Converging, Crossing Flight Paths
- [ ] Same Flight Paths
- [ ] Diverging/Non-intersecting Flight Paths

4. Was weather a factor in the incident? [ ] Yes [x] No
(If yes, explain in Block 65, Summary of Incident.)

5. Altitude/flight level of incident: 1200

6. Type of airspace:
- [ ] Class A
- [x] Class B
- [ ] Class C
- [ ] Class D
- [ ] Other
- [ ] Class E
- [ ] Class G
- [ ] Oceanic
- [ ] Airport Surface

7. Location of Incident :
Fix: EWR
Direction: W
Distance: 2.05
Latitude:
Longitude:
Area/Sector or Position Designator: EWR
Intersection:
Runway:
Taxiway:

8. Closest Proximity:
Vertical Feet: 600
Lateral: 1.24
- [ ] Feet
- [x] Miles
- [ ] Minutes
- [ ] N/A

9. Number of aircraft for which the controller had control responsibility at the time of the incident: 6

10. Was training in progress?
- [ ] Yes
- [x] No

Complete blocks 11-36 for each employee

11. Enter P for primary or C for contributory: P

12. Number of personnel involved: 1

13. Employee's facility:

Three-letter Identification	Level	Type
N90	12	R

14. Reserved:

15. Date of birth: MM/DD/YYYY 04/12/1962

16. Social Security Number: Last six digits only [redacted]

17. Indicate the performance level of the employee:
- [ ] Developmental
- [x] ATCS
- [ ] Supervisor
- [ ] Staff Specialist
- [ ] Other

If ATCS, how long since ATCS in current facility? YY-MM: 11-08

18. Last date of certification or recertification on position: MM/DD/YYYY 08/16/2006
- [ ] Initial Certification
- [x] Recertification

19. Has training relevant to the incident been received within the last 12 months?
- [x] Yes
- [ ] No

If yes, list the type and the date of that training in this block:
SEE BLOCK 65. SUMMARY

19A. During the 2 1/2 years prior to the incident, in how many Operational Errors has the employee been found to be the primary cause? 1

19B. During the 2 1/2 years prior to the incident, in how many Operational Errors has the employee been found to be contributory? 0

Attachment 10
(2 pages)

Final Operational Error/Deviation Report

Report Number: N 9 0 R 0 8 E 0 0 1

20. Is a medical certification issue related to the incident?

☐ Yes
☒ No

(If yes, explain in Block 65, Summary of Incident.)

21. Identify and describe the type of work schedule being worked at the time of the incident:

RDO; RDO; 1451-2251; 1341-2141; 1546-2346; 1446-2246; 0646-1446.

22. Current and previous shift:

Previous shift:
Sign in 1446 Sign out 2246

Current shift:
Sign in 0646 Sign out 1446

23. Area of specialization:

EWR AREA

24. Sector or position:

MUGZY (418)

Number and Name

25. Time on position:

41

Minutes

26. What sectors or positions were combined at the position being staffed by the primary controller at the time of the incident?

420

27. Which associated positions were staffed at the time of the incident?

400, 406, 408, 410, 412, 413, 414, 416, 425, 421.

28. Position function:

☒ Radar ☐ Radar Associate ☐ Hand-off ☐ Local Control ☐ Ground Control
☐ Flight Data ☐ Clearance Delivery ☐ Departure Position ☐ Arrival Position ☐ Supervisor
☐ Air Traffic Assistant ☐ Traffic Management Coordinator ☐ Tracker ☐ Other

29. Did the employee request assistance prior to the incident?

☐ Yes ☒ No

(If yes, explain in Block 65, Summary of Incident.)

30. Was the employee aware that an Operational Error/Deviation was developing?

☐ Yes ☒ No

(Explain in Block 65, Summary of Incident.)

31. Did the employee contemplate taking corrective action?

☒ Yes ☐ No

(Explain in Block 65, Summary of Incident.)

32. Did the employee try to take corrective action?

☒ Yes ☐ No

(Explain in Block 65, Summary of Incident.)

33. Employee was alerted to the incident by:

Equipment:	Personnel:	Non-facility Personnel:	Other:
☐ Conflict Alert	☐ Self-identified	☐ Pilot	
☐ MSAW/EMSAW	☒ Facility personnel	☐ Another facility	

34. Date and time employee became aware of the incident:

01/19/2008 (MM/DD/YYYY) 1600 (Time(local))

35. Was the Distance Reference Indicator (i.e., J-Ring) being used?

☐ Yes
☒ No

36. Were there any distractions or environmental conditions that may have influenced the incident?

☐ Yes ☒ No (If yes, explain in Block 65, Summary of Incident.)

(Distractions include construction, equipment installation, presence of visitors, loud or boisterous coworkers, equipment malfunction, and extraneous conversation with coworkers. Environmental conditions include ambient air, work area layout, temperature, noise, and lighting.)

Final Operational Error/Deviation Report

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37. Identify the OSIC/CIC assigned at the time of the incident?

Enter A for OSIC
Enter C for CIC: A

[redacted] Last name | [redacted] First name | MI | [redacted] SSN (Last six digits)

38. Was the assigned OSIC/CIC present in the operational area at the time of the incident?

☒ Yes ☐ No

39. Did the employee require OSIC/CIC assistance prior to the incident?

☐ Yes ☒ No

40. Did the assigned OSIC/CIC provide assistance?

☐ Yes ☒ No

(Explain in Block 65, Summary of Incident.)

41. If sectors were combined, did the OSIC/CIC approve the combination?

☐ Yes ☐ No ☐ Not combined ☒ N/A

42. If the positions were combined, did the OSIC/CIC approve the combination?

☒ Yes ☐ No ☐ Not combined

43. In what activity was the assigned OSIC/CIC engaged at the time of the incident?

☐ General Supervision
☒ Direct operational supervision
☐ Working a position of operation
☐ Administering training
☐ Receiving training
☐ Other

44. Was the OSIC/CIC certified in the area of specialization where the incident took place?

☒ Yes ☐ No ☐ N/A (If no, explain here)

45. Traffic complexity? 4

1 2 3 4 5
Low Avg. High

46. Indicate which factors were associated with traffic complexity.

☐ Weather
☐ Terrain
☒ Airspace configuration
☐ Number of aircraft
☐ Experience level
☐ Emergency situation
☒ Runway configuration
☐ Runway condition
☒ Flow control
☐ Special Event
☐ Other

47. Type of Control Provided

☒ Radar ☐ AFSS/FSS
☐ Tower ☐ TFM
☐ Oceanic
☐ Non-radar

48. Required separation was by:

☒ FAA Order
☐ Facility Letter of Agreement (LOA) or Directive

FAA Order: 7110.65R Facility LOA/Directive:

Paragraph: 5-5-4 Paragraph:

49. Were any deficient procedures noted as a result of the incident?

☐ Yes ☒ No

(If yes, explain here)

50. Were any special procedures in effect at the time of the incident (e.g. Traffic Management Program)?

☐ Yes ☒ No

(If yes,explain here)

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(Complete additional sections if more than two aircrafts are involved)

51. Number of aircraft/vehicles involved in the incident: 2

	Aircraft/Vehicle No. 1	Aircraft/Vehicle No. 2
52. Identification	BTA2614	COA536
53. Prefix/type/suffix	E145	B738
54. Flight/vehicle profile at time of time of incident	☐ Descending ☒ Making approach ☐ Touching down ☐ Radar vector ☐ Level flight ☐ Takeoff roll ☐ Taxiing-runway ☐ Landing roll ☐ Climbing ☐ Holding in position on runway ☐ Other	☐ Descending ☒ Making approach ☐ Touching down ☐ Radar vector ☐ Level flight ☐ Takeoff roll ☐ Taxiing-runway ☐ Landing roll ☐ Climbing ☐ Holding in position on runway ☐ Other
55. Aircraft ground speed	☐ N/A 175 Knots	☐ N/A 151 Knots
56. TCAS equipped	☒ Yes ☐ No ☐ Unknown	☒ Yes ☐ No ☐ Unknown
57. Evasive action	☐ Yes ☒ No ☐ TCAS ☐ Unknown	☐ Yes ☒ No ☐ TCAS ☐ Unknown
58. Did the pilot file a Near Midair Collision Report	☐ Yes ☒ No ☐ Unknown	☐ Yes ☒ No ☐ Unknown

59. Aircraft and Obstruction/Obstacles

☐ Terrain ☐ Vehicle(s) ☐ Personnel ☐ Obstruction ☐ Equipment ☐ Protected Airspace
☐ Airport Movement Area (explain) ☒ Not applicable ☐ Other (explain)

60. Was equipment layout or design a factor in the incident?

☐ Yes ☒ No (If yes, explain in Block 65, Summary of Incident.)

61. Was any pertinent equipment operated by the controller(s) reported as functioning unsatisfactorily before the incident?

☐ Yes ☒ No (If yes, explain in Block 65, Summary of Incident.)

62. System(s) in use:

☐ HOST	☐ CENRAP	☒ ARTS IIIE	☐ D-BRITE	☐ ASDE-X
☐ EBUS/HOST (FDP)	☒ ASR-9	☐ MEARTS	☐ BRITE IV	☐ Model 1
☐ EBUS	☐ ASR-11	☒ ADCs on ARTS	☐ AMASS	☐ OASIS
☐ URET	☐ ARTS IIE	☐ STARS on ARTS	☐ ASDE II	☐ Other:
☒ Mode S	☐ ARTS IIIA	☐ STARS	☐ ASDE III	

63. Was radar transition from one system to another in progress?

☐ Yes ☒ No (If yes, explain here)

64. What was the status of the Conflict Alert at the time of the incident?

☐ Activated ☐ Not available ☒ Not activated
☐ Not Installed ☐ Suppressed

64a. What was the status of the AMASS or ASDE at the time of the incident?

☐ Active ☐ Limited Mode ☒ Off/OTS/NA

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65. SUMMARY OF INCIDENT

BLOCK 19.
01/08/2007 ZDC RADAR; BULLETIN #06-100 MBI 06-156
01/24/2007 QA BULLETIN #06-11 MBI 06-154
01/24/2007 QA BULLETIN, #07-01 MBI 07-07
01/24/2007 HOT LAB; BULLETIN #07-05 MBI 07-04
01/24/2007 JO7610.4M MBI 06-157
02/24/2007 OE SEVERITY CLASSIFICATION MBI 07-25
03/07/2007 OE SEVERITY/PROXIMITY EVENTS; NJO721.645 MBI 07-29
03/07/2007 7110.65R CHG 2 MBI 07-27
03/07/2007 WEATHER ADVISORIES MBI 07-14
03/07/2007 7210.3U, CHG 2 MBI 07-21
03/07/2007 ROUTING EWR EASTBND CKS FLIGHTS; 07-007 MBI 07-13
03/07/2007 QA BULLETIN #01-02 MBI 07-16
03/07/2007 INTERN PROCEDURES FOR A380;N JO 7110.XX3 MBI 07-26
04/16/2007 QA BULLETIN #07-02 MBI 07-35
04/16/2007 TELEPHONY/ID ASSGNMNTS; GENS 07-04 & 06 MBI 07-33
04/16/2007 PHLBO STAR; BULLETINGS 07-017 & 020 MBI 07-32
04/16/2007 LGA RECONFIGURATION; BULLETIN #07-22 MBI 07-34
04/16/2007 HEAVY SET INDICATION; BULLETIN #07-023 MBI 07-39
04/18/2007 ANNUAL REFRESHER TRAINING MBI 07-00
04/18/2007 AIRSPACE FLOW PROGRAM CBI MBI 07-40
04/19/2007 N90/LGA TOWER LTA 07-1; BULLETIN #07-025 MBI 07-47
04/19/2007 CHANGE TO EWR SOP MBI 07-46
04/19/2007 CHECK DEPTR RLS N90 AIRSPACE; N7100.865 MBI 07-45
04/19/2007 NATNLI ARRIVAL TO DCA/ADW MBI 07-42
04/19/2007 QA BULLETIN #07-03 MBI 07-43
05/02/2007 EWR RWY 4/R/L FINAL TRAINING/CLASS&LAB MBI 07-48
05/18/2007 PROCEDURAL CHANGES/EWR AREA; BULL 07-029 MBI 07-49
05/24/2007 SECON ORANGE MBI 07-60
05/25/2007 FLEET WEEK MBI 07-61
05/25/2007 RECISSION/RTE CHGS TO NY TRACON AIRPORTS MBI 07-59
05/28/2007 THUNDERSTORMS - CBI MBI 07-62
06/19/2007 EMERGENCY PROCEDURES
06/19/2007 APPROACH PROCEDURES
06/19/2007 WAKE TURBULENCE VIDEO
06/19/2007 ESCAT
06/19/2007 MANPADS/BOMB THREATS/LASER ACTIVITY & SUSPICIOUS AIRCRAFTS
06/19/2007 STRIP MARKING
06/19/2007 HAND-OFF/POINT-OUT PROCEDURES
06/19/2007 ACD/RGW/ARTS REVIEW
06/19/2007 ADDITIONAL SERVICES
06/19/2007 WEATHER & CHAFF SERVICES
06/19/2007 SAFETY ALERTS/TCAS
06/19/2007 UNCONTROLLED AIRPORT PROCEDURES
06/19/2007 PILOT WEATHER REQUIREMENTS & AIRSPACE CATEGORIES
06/19/2007 SPECIAL FLIGHT ACTIVITY
06/19/2007 PARACHUTE JUMPING PROCEDURES

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65. SUMMARY OF INCIDENT (continued from page 5)

06/19/2007 IFR-VFR, VFR-IFR, SPECIAL VFR
06/19/2007 POSITION RELIEF BRIEFING
06/19/2007 TEMPORARY FLIGHT RESTRICTIONS (TFR)
06/22/2007 AIRBUS A380 INDICATOR; BULLETIN #07-34 MBI 07-54
06/24/2007 QUALITY ASSURANCE REVIEW (QAR) MBI 07-71
06/24/2007 AIRCRAFT ID ASSIGNMENTS; GENOT 7/15 MBI 07-75
06/24/2007 MOVEMENT/FALLEN SVC PERSNL; NJO7110.469 MBI 07-72
06/24/2007 CLASS B SERVICES MBI 07-73
06/24/2007 DEFNTN/"DIRECTLY BEHIND", NJ07100.465 MBI 07-56
06/24/2007 SEPARATION RESPONSIBILITY FINAL; 07-014 MBI 07-74
06/24/2007 CONNIE B747-100 FLIGHTS; BULLETIN #07-31 MBI 07-57
06/26/2007 LOSS OF FREQUENCY MBI 07-64
06/26/2007 MSAW RESPONSIBILITIES MBI 07-66
07/08/2007 AMENDED OE SEVERITY CLASSIFICATION - CBI MBI 07-67
08/22/2007 DISPLAYING FDBS; BULLETIN #07-061 MBI 07-93
08/22/2007 7110.65R, CHG 3 MBI 07-90
08/22/2007 7610.4M, CHG 1 MBI 07-94
08/22/2007 BRAKING ACTION ADVISORIES; N JO 7110.471 MBI 07-92
08/22/2007 DOUBLE TAGGING OF ARCFT; BULL #07-062 MBI 07-97
08/22/2007 AIRCRAFT ID CHANGE; GENOT: 7/20 MBI 07-81

66. INVESTIGATORS

Date	Typed/Printed Name	Signature
01232008 (MM/DD/YYYY)	[redacted] (First/MI/Last Name)	[redacted] (Investigator-in-Charge)
01232008 (MM/DD/YYYY)	[redacted] (First/MI/Last Name)	[redacted] (Team Member)
MM/DD/YYYY	First/MI/Last Name	Team Member
MM/DD/YYYY	First/MI/Last Name	Team Member
MM/DD/YYYY	First/MI/Last Name	Team Member
MM/DD/YYYY	First/MI/Last Name	Team Member
MM/DD/YYYY	First/MI/Last Name	Team Member
MM/DD/YYYY	First/MI/Last Name	Team Member
MM/DD/YYYY	First/MI/Last Name	Team Member

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65. SUMMARY OF INCIDENT (continued from page 6)

08/22/2007 FLM SHIFT WORKSHEET MBI 07-82
08/22/2007 7210.3U CHG 3 MBI 07-99
08/22/2007 YANKEE LOA; BULLETIN #07-067 MBI 07-102
08/22/2007 ARTS HNDOFF REDIRCT FUNCTN; BULL 07-052 MBI 07-86
09/05/2007 SPECIAL OPS MODULE 2; N90-21 - CBI MBI 07-104
09/13/2007 UNGA 2NM TRAFFIC BULLETIN 07-072 MBI 07-110
09/13/2007 UNGA 7NM & CLASS B BULLETIN 07-073 MBI 07-111
09/13/2007 ARTS H/O REDIRECT; BULLETIN #07-071 MBI 07-108
09/13/2007 ADIZ PROCED; NJO 7110.477 & NJO 7210.672 MBI 07-105
09/13/2007 INFO RE N51 & CDW; BULLETIN #07-069 MBI 07-106
09/13/2007 CONTINGENCY PLANS BULLETIN 07-074 MBI 07-112
10/12/2007 EWR AREA PROCEDURES; BULLETIN #07-079 MBI 07-120
10/12/2007 ATB #2007 - 3 MBI 07-117
10/12/2007 VSBP; BULLETIN #07-078 MBI 07-119
10/12/2007 INTERIM PROC/A380 PROVING/PROMO FLIGHTS MBI 07-116
11/06/2007 SUSPICIOUS AIRCRAFT DEN REPORTING - CBI MBI 07-127
11/24/2007 EWR 22L DISPERSAL HEADINGS/RWY 11 ARR MBI 07-136
12/21/2007 ASR PERFORMANCE CHECKS MBI 07-146
12/21/2007 CKS VIA BREZY; BULLETIN #07-095 MBI 07-147
12/21/2007 N90/ABE LOA; BULLETIN #07-094 MBI 07-139
12/21/2007 CLOSED RUNWAY OPERATIONS MBI 07-134
12/21/2007 AIR TRAFFIC BULLETIN #2007-04 MBI 07-138
12/21/2007 WESTBURY FD COORD.; BULLETIN #07-089 MBI 07-131
12/21/2007 NY AFSS; BULLETIN #07-088 MBI 07-132
12/28/2007 QA BULLETIN, #07-05 MBI 07-123
01/27/2007 TTD DECEMBER '06
04/14/2007 TAPE TALK APRIL '07
04/14/2007 TTD APRIL '07

BLOCK 29. THE EMPLOYEE DID NOT REQUEST ASSISTANCE PRIOR TO THE INCIDENT.

BLOCK 30, 31 & 32. THE EMPLOYEE WAS NOT AWARE THAT AN OPERATIONAL ERROR WAS DEVELOPING. WHEN THE PILOT OF BTA2614 ASKED IF HE SHOULD GO THE THE TOWER, THE EMPLOYEE INSTRUCTED BTA2614 TO CONTACT THE TOWER, BUT ISSUED THE TEB ATCT FREQUENCY INSTEAD OF THE EWR ATCT FREQUENCY. HOWEVER, SEPARATION BETWEEN BTA2614 AND COA536 WAS LOST.

BLOCK 39. THE EMPLOYEE DID NOT REQUIRE ASSISTANCE PRIOR TO THE EVENT.

BLOCK 40. THE FLM WAS PROVIDING DIRECT SUPERVISION TO THE EWR AREA. THE FLM DID NOT RECEIVE A REQUEST FROM THE EMPLOYEE FOR ASSISTANCE. THE FLM DID NOT PROVIDE ASSISTANCE TO THE EMPLOYEE PRIOR TO THE EVENT.

AT 1720 UTC, JANUARY 17, 2008, THE SMQA RECEIVED A CALL FROM THE EWR ATCT OM ASKING ABOUT BTA2614 BEING TURNED OVER LATE FOR THE VISUAL RUNWAY 29 APPROACH AT 2009 UTC, JANUARY 16, 2007. THIS WAS THE FIRST INDICATION THAT THERE WAS A SUSPECTED LOSS OF SEPARATION. THE SMQA CONDUCTED A REVIEW OF

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Part II. FACILITY MANAGER ACTION

67. Select the classification of the OE/OD. (More than one category may be selected.)

☒ Human ATCS ☐ Manager/Supervisor/Other Personnel ☐ Procedural ☐ Equipment ☐ Other (Explain in Block 69)

68. Causal Factors	No	Yes(Employee)				
		A	B	C	D	E
A. Data Posting	☒					
(1) Computer Entry	☐					
Incorrect input		☐	☐	☐	☐	☐
Incorrect update		☐	☐	☐	☐	☐
Premature termination of data		☐	☐	☐	☐	☐
Input/Update not made		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐
(2) Flight Progress Strip	☐					
Not updated		☐	☐	☐	☐	☐
Interpreted incorrectly		☐	☐	☐	☐	☐
Posted incorrectly		☐	☐	☐	☐	☐
Updated incorrectly		☐	☐	☐	☐	☐
Prematurely removed		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐
B. Radar Display	☐					
(1) Misidentification	☐					
Failure to re-identify aircraft when the accepted target identity becomes questionable		☐	☐	☐	☐	☐
Overlapping data blocks		☐	☐	☐	☐	☐
Acceptance of incomplete or difficult to correlate position information		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐
(2) Inappropriate Use of Displayed Data	☐					
MODE C		☐	☐	☐	☐	☐
BRITE		☐	☐	☐	☐	☐
Conflict alert		☐	☐	☐	☐	☐
Failure to detect displayed data		☒	☐	☐	☐	☐
Failure to comprehend displayed data		☐	☐	☐	☐	☐
Failure to project future status of displayed data		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐
C. Aircraft Observation (Towers Only)	☒					
(1) Actual Observation of Aircraft		☐	☐	☐	☐	☐
(2) Improper Use of Visual Data	☐					
Landing		☐	☐	☐	☐	☐
Taking Off		☐	☐	☐	☐	☐
Ground Operation	☐					
Taxiing across runway		☐	☐	☐	☐	☐
Holding in position for takeoff		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐

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	No	Yes(Employee)				
		A	B	C	D	E
D. Communication Error	☐					
(1) Phraseology		☐	☐	☐	☐	☐
(2) Transposition		☐	☐	☐	☐	☐
(3) Misunderstanding		☐	☐	☐	☐	☐
(4) Read back	☐					
Altitude		☐	☐	☐	☐	☐
Clearance		☐	☐	☐	☐	☐
Identification		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐
(5) Acknowledgement		☐	☐	☐	☐	☐
(6) Other (explain) FAILED TO TRANSFER RADIO COMM TO EWR ATCT		☒	☐	☐	☐	☐
E. Coordination	☒					
(1) Area of Incident	☐					
Intra-sector/position		☐	☐	☐	☐	☐
Inter-sector/position		☐	☐	☐	☐	☐
Inter-facility		☐	☐	☐	☐	☐
Facility type: _____ Level: _____ and facility ID: _____						
(2) Failure to use/comply with precoordination information		☐	☐	☐	☐	☐
(3) Improper use of information exchanged in coordination	☐					
Aircraft Identification		☐	☐	☐	☐	☐
Altitude/Flight Level		☐	☐	☐	☐	☐
Route of Flight		☐	☐	☐	☐	☐
Speeds		☐	☐	☐	☐	☐
APREQs		☐	☐	☐	☐	☐
Special Instructions		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐
(4) Failure to coordinate between ground and local control	☐					
Crossing active runway		☐	☐	☐	☐	☐
Vehicle, equipment, or personnel on active runway		☐	☐	☐	☐	☐
Use of runway other than active runway for arrival and departures		☐	☐	☐	☐	☐
Runway closure		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐
F. Position Relief Briefing	☒					
(1) Employee did not use position relief checklist		☐	☐	☐	☐	☐
(2) Employee being relieved gave incomplete briefing		☐	☐	☐	☐	☐
(3) Relieving employee did not make use of pertinent data exchanged at briefing		☐	☐	☐	☐	☐
Other (explain):		☐	☐	☐	☐	☐

Attachment 11

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

NOTICE
EWR ATCT
N7110.14

Cancellation Date:
October 14, 2009

SUBJ: Intersecting Runway Separation, Runway 4R and Runway 29

1. PURPOSE. The purpose of this notice is to describe procedures for implementing intersecting runway separation standard for runway 29 and runway 4R arrivals.

2. DISTRIBUTION. This notice is distributed to all Newark Tower Air Traffic Control Tower Personnel, R&I Binder, facility NOTICE Binder.

3. CANCELLATION. This Notice cancels Newark Tower Notice N7110.9, dated November 28, 2007.

4. EFFECTIVE DATE. October 15, 2008.

5. BACKGROUND. In order to maintain our current operational efficiency and enhance operational safety at Newark Airport a waiver to FAA Order 7110.65, Air Traffic Control, Paragraph 3-10-4a2, Intersecting Runway Separation, was issued to allow simultaneous landings on Runway 29 and Runway 4R.

6. PROCEDURES. Newark Tower:

a. Attachment 1 designates a reference line on Runway 4R, 5000' from the edge line of Runway29.

b. Separate an arrival aircraft using Runway 29 from an arriving aircraft to Runway 4R by ensuring that arriving aircraft does not cross the landing threshold of Runway 29 or the Runway 4R 5000' line until:

a preceding arrival is clear of the landing runway, completed landing roll and will hold short of the intersection, or has passed the intersection.

c. Broadcast through the Automatic Terminal Information Service (ATIS) the runways in use and that simultaneous procedures are being conducted. The broadcast will include the statement: "Simultaneous landings are being conducted to Runway 29 and Runway 4R"

d. The above Runway 29 and Runway 4R arrival separation standard will be conducted in VFR conditions, Ceilings at or above 2500 feet and visibility four (4) miles or greater are the lowest weather minimums for this configuration.

e. Traffic advisories shall be issued to all participating aircraft.

f. During the periods when simultaneous arrivals to Runway 29 and Runway 4R are being conducted, both runways will be designated "arrival only" runways. This will be recorded in the Daily Record of Facility Operations.

g. Overhead approaches to Runway 29 are terminated when three (3) or more go-arounds, due to wind shear, occur within a sixty (60) minute period. Over head approaches may resume after thirty (30) minutes with no aircraft go-arounds due to wind shear.

h. All go-around events associated with the separation standard identified in the waiver will be analyzed, reviewed quarterly, and maintained on file at the facility along with the SRMD file.

Edward T. Masterson
Air Traffic Manager
Newark Air Traffic Control Tower

ATTACHMENT

Attachment 11
page 2 of 2

Attachment 12

Federal Aviation Administration

Memorandum

Date: SEP 2 5 2009

To: Mr. Rick Beitel; Assistant Inspector General for Special Investigations and Analysis

From: J. Randolph Babbitt, Administrator

Prepared by: Steven M. Osterdahl, Vice President of Terminal Services, Air Traffic Organization

Subject: Response to Office of the Inspector General (OIG) Investigation Case no. #I09000005SINV, Sep. 21, 2009

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

1. Consistent with our April 2008 audit recommendation, complete a safety analysis of aircraft staggering and CRDA procedures for the runway 22L-11 approach configuration, prior to the scheduled implementation of these measures on October 26, 2009.

Response: Concur. The ATO will document application of our safety management system to the development of new CRDA procedures for the runway 22L/11 configuration prior to their implementation, scheduled for October 26, 2009

2. AOV review the adequacy of aircraft staggering, CRDA, and any related safety enhancements for the runway 22L-11 configuration at 90 and 180-day intervals following implementation of such measures.

Response: Concur.

3. Discontinue the runway 29-4R overhead approach pattern until such time as the safety issues identified by Mr. Adams are addressed by the above-referenced working group and appropriate remedial measures are implemented (e.g., a special area navigation (aka, RNAV) approach procedure and/or a charted visual approach procedure.)

Response: Concur with Qualifications. The runway 29-4R configuration does not violate any FAA regulations or policies. As noted in this report, over the current fiscal year, this configuration has been employed less than ¼ of 1% of the time and only when exigent circumstances call for its use. The facilities will execute a Letter of Agreement (LOA) that establishes a more consistent track and also builds in an additional layer of safety by requiring 25 miles-in-trail for arriving aircraft to this runway by October 8, 2009; and resume the seldom use of this configuration. The ATO will ensure that the above changes are fully incorporated in facility directives no later than December 30, 2009. In the interim, ATO will ensure the facilities reinforce these procedures through mandatory briefings to be completed by November 1, 2009.

To address concerns about the runway 29 go-arounds, the ATO will convene a panel that will be tasked with assessing current procedures and to identify and recommend procedural enhancements. The panel will also be tasked with evaluating arrival flight tracks to runway 29 to determine if additional procedures can be put in place to increase consistency. Both actions will be completed by November 16, 2009.

Finally, the ATO will continue to evaluate the development of new charted procedures to further enhance the operation. Expect completion of the assessment in 2010.

If additional information is needed, please contact Steven Osterdahl, Vice President of Terminal Services for the Air Traffic Organization at 202-385-8801.

cc: Senior Vice President, Operations, Air Traffic Operations
Chief Counsel (AAE-1)