



Federal Aviation Administration

Memorandum

Date: FEB 14 2012

To: David Grizzle, Chief Operating Officer, AJO-0 

From: H. Clayton Foushee, Director, Office of Audit and Evaluation, AAE-1

Subject: Whistleblower Allegations at Detroit Metropolitan Terminal Radar Approach Control (D21)

The purpose of this memorandum is to report on the Office of Audit and Evaluation's (AAE) investigation and findings stemming from March 2011 allegations of continued safety concerns at the Detroit Metropolitan Terminal Radar Approach Control (TRACON) disclosed by Tim Funari, then, acting Support Manager at the Detroit TRACON (D21). These allegations were previously investigated and partially substantiated by the DOT Office of Inspector General (OIG) as a result of a U.S. Office of Special Counsel (OSC) referral to the Secretary of Transportation in 2010. With our oversight, employees of the Air Traffic Safety Oversight Service (AOV) conducted this review.

Specifically, the complainant asserted that despite knowledge of its non-compliance with the requirements set forth in FAA Order JO 7110.65, *Air Traffic Control*, Paragraph 5-9-7, *Simultaneous Independent ILS/MLS Approaches - Dual & Triple*, D21 management continued to falsely report 100% compliance with all requirements in required weekly audits (and supplemental reviews) conducted by D21 staff. These audits were the result of an FAA commitment to the OIG in 2010, based upon the OIG's investigative finding that controllers at D21 were selectively adhering to the requirements contained in the Order.

FAA Order JO 7110.65 5-9-7 sets forth multiple, required conditions, which controllers must comply with, in order for a facility to conduct simultaneous, independent parallel approaches. According to the complainant, controllers at D21 continue to fail to provide one-mile straight flight prior to final approach course intercept, as required in Paragraph 5-9-7 subparagraph b. 4, in violation of the Order. However, because D21 managers regard all instances of non-compliance with Paragraph 5-9-7 b. 4 solely as individual controller performance issues, the non-compliances are not reviewed or identified as operational errors.

Further, because Mr. Funari continues to advocate for training, accountability and appropriate ATO oversight of D21, he asserts that his ongoing efforts have resulted in being subject to various retaliatory actions by his supervisors and alienation from his peers. OSC, which has principal statutory responsibility for investigating whistleblower reprisal claims, has an open investigation into Mr. Funari's complaint of unlawful reprisal.

Findings

First, we found that 62% of the audits conducted by the D21 QA office to determine the facility's compliance with 5-9-7 b. 4 during the sampled period were actually completed during times when the facility was not running dual or triple ILS approaches and thus had no data to audit. Second, we found that the audits performed by both D21 and the QCG were done in a cursory, almost careless manner, without due diligence paid to obtaining accurate results. As such, these audits did not meet the intent implied in FAA's 2010 commitment to the OIG. More specifically, we found that QCG and D21 each performed separate audits of different dates and times, issuing separate reports, however, QCG's results were neither further reviewed for corrective action or follow-up in the facility, nor did QCG verify the accuracy of D21's audits.

We found that both audits were conducted in a perfunctory manner, without a consistent methodology for identifying, measuring and reporting non-compliance. Such shortcomings included both QCG and D21 performing their audits of radar data with the player set on fast forward, and QCG's issuance of results months late. When the reports were issued, they often lacked specific details (e.g., date, time and position), contained inaccurate or missing information such as incorrect mathematical calculations, and inconsistent, incorrect or missing dates. Because the QCG kept no records other than its final memoranda reports, we had no way to evaluate the sufficiency of the audits, and we could not confirm that the audits accurately identified and reported all instances of non-compliance.

We also found that D21 management and the CSA QCG have continued to interpret non-compliance with FAA Order JO 7110.65 5-9-7 b. 4 as controller performance issues, not potential operational errors. As such, non-compliance events associated with this order are not further reviewed by ATO personnel for the purpose determining potential loss of separation or risk to the National Airspace System (NAS). Despite the interpretation that these non-compliances were solely controller performance issues, the QCG audits often did not contain details sufficient to identify which controller was non-compliant. Therefore, we do not see how it would be possible for D21 to identify and correct specific controller performance issues.

Beginning in June 2011, we sought to verify the validity of this interpretation through officials at Headquarters. In response, we received a series of contradictory, verbal and written interpretations from officials in Terminal Services and ATO-Safety. These contradictory interpretations, in our view, reflect disagreement within the ATO as to whether non-compliance with the requirements of JO 7110.65 Paragraph 5-9-7 b. 4 may

constitute a loss of separation requiring the filing of an Operational Error (OE). Likewise, these divergent interpretations raise questions as to how the operation is conducted and non-compliance is managed throughout the rest of the NAS.

We could not verify through any source in the ATO that the interpretation of 5-9-7 b. 4 used by D21 and the CSA QCG is, in fact, an official interpretation issued by ATO personnel responsible for providing official guidance. Absent an official interpretation, coordinated and distributed throughout the ATO which specifically clarifies the intent of 5-9-7 b. 4, we are unable to illustrate how a facility's non-compliance of the requirements of 5-9-7 b. 1, 2, 3, 5 or 6 would constitute an operational error¹; however, non-compliance with b. 4 would not.

Details

In response to the OIG's 2010 report, FAA initiated two different audits conducted by CSA QCG and D21's QA Office, related to D21's compliance with the requirements of FAA Order 7110.65, 5-9-7- b. 4. In addition, a third review was conducted by a D21 Operations Manager assessing individual controller performance. Despite these multiple audits/reviews to review D21's compliance with 5-9-7- b. 4, the methodology and reporting techniques for determining the compliance were inconsistent or undocumented, leading to possible instances of underreporting the non-compliance.

Central Service Area Audits

We determined that for the period of mid-April 2010 through February 28, 2011, the CSA QCG conducted random audits of D21's compliance with the requirements of FAA Order 7110.65 5-9-7 b. 4. While these audits identified instances of non-compliance by D21 controllers, we found that beyond a summary memorandum, no system of records existed to document the specific results of the audits.

Moreover, we determined that the information contained in the audits varied, depending on which QCG specialist prepared the memorandum. For instance, audits conducted April 13, 2010, through October 31, 2010, contained the dates of non-compliance, the aircraft call sign and the time. However, audits conducted from November 1, 2010, to February 28, 2011, contained a brief write up identifying the total instances of non-compliance for the month, without dates/times or call signs. In addition, these later audits contained numerous mathematical errors, incorrect dates in the text of the report, and a traffic volume figure which never varied from month to month. It was determined the figure was an estimate from several months prior which was copied and pasted into the reports. At a minimum, these reports demonstrate a lack of attention to detail. However, all these reports were signed by QCG supervisors and transmitted to the then Director of Terminal Operations, Central Services Area.

¹ Identified through an examination of previously filed operational errors and interpretations issued by the ATO related to 5-9-7b.

All of the signed audit reports contain a variety of date stamps which is not consistent with timely preparation and transmittal of results. For instance, while a copy of the signed April-May 2010 audit was date stamped January 21, 2011, the signed June 30, 2010, audit was stamped June 30, 2010. The July 30, 2010, signed audit was dated January 20, 2011; the signed August through October 2010 audit reports were dated December 1, 2010, and the November and December 2010 audits were dated January 20, 2011. Without documentation related to what was audited, or any means to verify the findings reported in the audits, we cannot determine when the audits were conducted, or the accuracy of such reports.

When we asked the QCG staff whether they share the results with the facility, we were told that the audit memoranda were reports for the CSA Director of Terminal Operations, to demonstrate that an audit occurred. In addition, they told us the discrepancy in reporting styles was based on instruction from a technical advisor to the CSA Director. The advisor instructed the specialists to change the format so that the reports only included the total numbers of non-compliance rather than specific dates and aircraft, in order to keep the reports at a higher level. The specialists told us they copied management at D21 when they emailed the memoranda to the Director; however, it "was not their job" to provide the specific instances of non-compliance to D21. The specialists told us that if the facility wanted to know more information regarding the non-compliance listed in the memoranda to the Director, then the personnel at D21 could pull the data and review it. However, because it appears that some of the audit reports were not signed until well after the 45-day window in which radar and voice data are retained, we are uncertain as to how the facility would have been able to determine which controller was non-compliant in order to address performance.

Further, all specialists told us they conducted their audits by reviewing data on the National Offload Program (NOP), but that they had the NOP data file player set on fast forward for the entirety of the audit. If the specialist saw something that looked "funny" or looked like non-compliance, they would slow the player down and review in real time - at the speed the controller would have seen while conducting the procedure. Absent any atypical aircraft activity seen while the NOP data file was in fast forward mode, the data were not further reviewed. The specialists told us they audited the facility in such a manner for two hours a week, during pre-defined peak traffic (1100z-1300z). One demonstrated his methodology for review during our November 8, 2011, visit. It took approximately 15 minutes to review, and the specialist said that such a length of time was typical.

We found that none of the specialists kept data such as NOP files or other documents to demonstrate the data they reviewed or which aircraft/dates/times/positions at D21 were actually non-compliant. While several said they would have taken notes, and that such notes were likely in a notebook, they could not produce notes specific to these audits at D21. All acknowledged that they did not keep or store the radar data reviewed. Their findings were as follows:

April/May 2010: 7 instances of non-compliance
July 2010: 2 instances of non-compliance
August 2010: 5 instances of non-compliance
September 2010: 3 instances of non-compliance
October 2010: 3 instances of non-compliance
November 2010: 1 instance of non-compliance
December 2010: 13 instances of non-compliance

QCG staff stopped conducting audits of D21's compliance with 5-9-7 b. 4 in March 2011, as a result of a February 1, 2011, memorandum from the Acting Director of Terminal Safety and Operations Support to the Acting Director of Quality Assurance (Acting AJS-3), and a March 21, 2011, memorandum from FAA's Office of Audit and Evaluation (AAE) to the OIG. Specifically, Terminal Safety reviewed the audit reports from D21 and CSA QCG for nine months April 2010 to December 2010, determining that D21 demonstrated it had achieved an acceptable and consistent level of performance. Terminal Safety also considered the matter closed, requesting concurrence from Acting AJS-3.

This concurrence appears to have been granted as a March 21, 2011, memorandum from FAA to OIG noted that the item was closed. Given this memo and lack of instruction by Headquarters to continue the audits, the QCG staff ceased auditing D21's compliance with 5-9-7 b. 4 in March 2011.

D21 Audits

In preparation for an on-site visit, a random sample of audit reports was requested. Of the documents we reviewed over a thirteen week period from December 7, 2010, to March 9, 2011, 62% of the audits were conducted at times when the facility was not operating dual or triple simultaneous ILS approaches.

The QA Manager told us that the time period during which the audit is conducted is pre-selected and provided by CSA QCG staff. In addition to auditing for compliance with 5-9-7 b. 4, the QA office is required to audit other activities. If the facility was conducting dual ILS approaches during the time identified by QCG, the review was conducted with the data on NOP data file playing on fast forward while the reviewer "eyeballed it," stopping or slowing the replay data only if something looked amiss with an arrival. The QA specialist then prepared a weekly audit report which was reviewed by the QA Manager and forwarded to D21 senior management. Any identified controller performance issues were noted on the reports. A version redacting specific controller information was also sent to QCG.

We showed the QA Manager several screen shots of instances identified by the complainant as non-compliance on March 15, 2011, along with a report to QCG declaring 100% compliance for the day. He said it "was possible" that they "missed one" during their review; however, he insisted that the reviews were done to monitor controllers' overall performance, and are not specific attempts to review screen by screen

data to identify all instances of non-compliance. He added that measuring compliance with the one-mile condition in 5-9-7 b. 4 is subjective and nearly impossible to accurately measure, and that workload would not allow for QA to review the NOP file on normal speed, given the number of items the facility audits and reports to QCG.

He acknowledged that the complainant was technically right in pointing out that certain conditions, including 5-9-7- b. 4 are requirements for minimum separation on adjacent dual or triple ILS courses. He said he understands technically why the complainant would assert that non-compliance was an operational error; however, he disagrees that instances of non-compliance are equivalent to operational errors. He based his opinion in part on verbal guidance from QCG and Terminal Operations that any non-compliance with 5-9-7 b. 4 is always a performance issue and is not considered a potential operational error.

Additional Review

An OM told us that from mid-October 2010 through December 2010, he conducted his own independent review of controller performance related to compliance with 5-9-7- b. 4. He stated that he and the other OM believed that they were not getting the controller performance results they needed from the QA audits, thus they initiated their own independent review.

This OM reported that he reviewed all of D21's dual simultaneous ILS approach operations from October 20, 2010, through December 28, 2010, to specifically identify which controllers were having difficulty with the procedure in order to improve their proficiency in complying with 5-9-7- b. 4. During this time, he worked to identify daily instances of controller performance issues, stopping his review when the overall average facility performance rate reached 90%.

He told us his goal was an overall facility performance of 90% consistent compliance with 5-9-7- b. 4, as he believed achieving 100% compliance was unrealistic given human error factors. As part of his efforts to boost proficiency, the OM told us he worked with the simulator contractor to develop additional skills training for the one-mile requirement and was constantly coaching controllers and front line managers to slow down and perform the procedure correctly.

This OM said his reviews were also done with the NOP file data player set on fast forward. At the end of the sessions of dual ILS approaches, he would send an email to multiple levels of management announcing that day's percentage of compliance. He contended that his reviews were not the official audits required of the facility, and that he was interested only in individual controller performance. He provided nearly 200 pages of documentation related to his daily reviews and the monitoring and tracking of individual controller performance, including emails and spreadsheets identifying specific controllers and their compliance.

We showed this OM specific screen shots from the NOP file identified by the complainant as containing obvious non-compliances occurring on December 7, 2010, along with an email sent by this OM proclaiming that all 56 aircraft involved in dual ILS approaches for December 7th met all requirements, and that the controllers working those aircraft were “100%” for the day. The OM denied any attempt to falsify reports or efforts to underreport non-compliance, insisting that despite using the word compliance in his emails, he was not monitoring for facility compliance. He said he did not review individual screen shots or snapshots of NOP data, just the sum total of the controllers’ performance for the periods in which the operation was in use (looking for broad general performance) on this and other dates.

The OM told us he supplied his documentation to ATO-Safety in February 2011. Based upon our review of documentation from numerous offices within the ATO, it appears that a decision to close FAA’s corrective action plan regarding this area was initiated, in large part, based on the OM’s documentation, emails and spreadsheets. However, despite the OM’s efforts to review and identify individual performance trends, it is not clear, when he did identify instances of non-compliance, what type of actions were undertaken to increase performance and thus improve non-compliance. We are also not sure why the OM would indicate individual compliance and total numbers of aircraft in daily reports, but that such work was not a true daily review of the facility’s actual compliance.

The OM’s use of the words “compliant” and “non-compliant” in daily emails posted on facility bulletin boards and sent to management demonstrate these reviews became a de facto third audit. As his reviews did not accurately identify all instances of non-compliance, his emails and reports, at times, wrongly proclaimed the percent of compliance (e.g., 100%) or non-compliance to D21 employees and managers. In addition, because the D21 QA office was auditing only two hours a week, the QA office never audited the same time or date that the OM did.

Last, because we found no specific records at QCG, we could not determine whether the QCG audits identified, or also failed to identify, instances of non-compliance during the period of the OM’s review.

Divergent Interpretations

When interviewed, CSA QCG staff confirmed to us that the ATO has interpreted any non-compliance with paragraph 5-9-7, b. 4 in particular, as strictly a controller performance issue which does not constitute a potential operational error. Further, they stated that so long as standard separation was maintained until both aircraft in question were established on the localizer, then at no point during the approach would separation be lost.

In order to corroborate this interpretation, we requested documentation which would demonstrate the type of separation in place should a controller fail to comply with all requirements contained in 5-9-7 b. 4 to include any specific guidance that QCG were to interpret non-compliance solely as controller performance issues. Despite the assurance

that written guidance from ATO-Safety and Terminal Services existed, CSA QCG personnel were unable to produce any documents demonstrating that their interpretation comported with an official ATO interpretation of 5-9-7.

In an effort to validate the CSA QCG interpretation, we requested copies of such documentation from personnel at ATO-Safety and Terminal Services. In response to our inquiry, the Acting Director for Terminal Operations Support (AJT-2) sent a June 24, 2011, memorandum to the then-Acting Director, Quality Assurance for ATO-Safety (Acting AJS-3), which discussed our request for evidence to validate the information we received from CSA QCG. AJT-2's memorandum to ATO-Safety states:

We specifically did not reference the requirement in 5-9-7b4 in our response [to D21] since the 1-mile level flight intercept requirement is for stability of flight and not for separation purposes... We consider any non-compliance on any individual controller's part regarding the 1-mile level flight requirement as a performance issue and not a loss of separation.

On July 22, 2011, Acting AJS-3 (ATO-Safety) countered Acting AJT-2's (Terminal Operations) interpretation, writing in pertinent part:

JO 7110.65, Paragraph 5-9-7b, levies multiple conditions on ATC to conduct simultaneous independent parallel approaches. If these conditions are not met, such operations are not allowed. Not ensuring 1-mile straight and level flight prior to final approach course intercept increases the risk of an overshoot, thus increasing the risk of conflict with aircraft on a parallel approach course. In addition, failure to provide the 1-mile straight and level segment prior to final approach course intercept precludes ATC from employing the separation standards associated with simultaneous independent parallel approaches. As a result, other separation standards would have to be applied under those circumstances."

Acting AJS-3's memorandum also reminded recipients that one of the top 5 hazards identified in the ATO's Top 5 Risk Corrective Action Plan occurs due to angle of intercept assigned by the controller causing an aircraft to overshoot the final approach and conflict with an aircraft on a parallel approach course.

However, one week later, we received a July 28, 2011, memorandum from Acting AJS-3 requesting that AOV disregard the interpretation contained in the July 22, 2011, memorandum.² This July 28, 2011, memorandum stated that AJS and AJT were jointly developing a policy interpretation to satisfy both operational needs and safety requirements. This new interpretation would be forthcoming. On August 12, 2011, AOV received the joint AJS/AJT policy interpretation which declared that, with the exception

² During this period, AJS underwent a personnel change at the Director level within the Quality Assurance Office of ATO-Safety.

of 5-9-7 b. 4, the prerequisite conditions that must be in place to operate simultaneous independent ILS approaches (dual or triple) are clearly defined and measurable.

The memorandum goes on to state, "*Paragraph 5-9-7 b4 does not meet the same standard of clarity and measurability and therefore should not be included as a precondition for conducting simultaneous independent ILS approaches.*" It continues, advising AOV that compliance with 5-9-7b. 4 has been "*difficult to measure objectively*" because of localizer locations, dimensions and varying wind conditions. "*Notwithstanding these difficulties with measurement and compliance, instances of non-compliance, when identified, must be addressed and corrected to ensure pilots are consistently provided stable transitions between flight segments and to reduce the likelihood of NTZ blunders.*"

We understand that environmental and instrumentation issues make complying with the requirement of 5-9-7 b. 4 difficult, but it also appears that both facility management and some elements of ATO management have taken it upon themselves to minimize the importance of the requirement, and that significant disagreement appears to exist within the ATO. However neither negates the fact that, as currently written, all elements of the paragraph are required in order to apply the procedure.

FAA Notice N JO 7110.554 provides information and guidance on air traffic interpretations and identifies the only valid air traffic control interpretations for FAA Order JO 7110.65 Air Traffic Control. According to the Notice, "all other interpretations issued by headquarters, regional offices or service centers...are cancelled." We reviewed the Notice and all official interpretations in order to confirm the contents of the above quoted memoranda. While JO 7110.554 contained an official interpretation pertaining to 5-9-7, that interpretation did not include any clarification or other explanation of subparagraph b. 4.

In addition, FAA recently issued Notice N JO 7110.569 (effective November 26, 2011) which updated section 5-9-7. This Notice specifically notes that there is "no change" in 5-9-7 Subparagraph b. 4. Therefore, we cannot determine how CSA QCG and D21 interpretation's of 5-9-7 b. 4 comports with the Order. Moreover, although AJS's memorandum purportedly contains official ATO policy, we cannot validate this information as we found no evidence that the interpretation was disseminated to facilities throughout the NAS, or that it was posted to the ATO's official "valid interpretation" website.³

The ATO needs to decide if the condition is necessary in order to perform the operation. Such a decision should include a thorough safety risk management review in accordance with their Safety Management System to ensure that removing the condition, or suggesting, but not mandating the condition, would not introduce an increased risk at facilities across the NAS which perform the operation.

³ As of December 9, 2011.

If JO 7110.65 5-9-7 b. 4 is officially determined to contain elements which the ATO interprets as unclear or inconsistent and difficult to measure, the ATO needs to add clear, consistent guidance to JO 7110.65 5-9-7, and ensure that any such changes are communicated and coordinated nationally and with internal and external stakeholders.

Hostile Management Actions

OSC's ongoing retaliation investigation notwithstanding, during our review of Mr. Funari's safety disclosures, we noted a series of antagonistic actions taken by D21 management which, in our view, were not in the agency's best interests, and which raise disturbing questions. For instance, as recently as January 13, 2012, after Mr. Funari brought forward what he believed was an unreported, uninvestigated operational error, Mr. Funari was ordered by his manager to stop reviewing radar data via the National Offload Program (NOP), unless specifically instructed to do so by a first line supervisor. This action to restrict the access of an employee to a database essential to his duties creates the strong appearance of attempting to suppress the complainant's ability to raise safety issues to appropriate levels within the FAA. This order was later retracted after AAE questioned the action.

In addition, after media reports pertaining to Mr. Funari's whistleblower allegations surfaced, D21 management directed Mr. Funari to submit to a psychological evaluation. Mr. Funari agreed to this examination and received a clean bill of health, which he provided to this office recently. Again, this action has the strong appearance of retaliation because of the complainant's history of reporting safety issues and procedural non-compliance.

On December 8, 2011, after Mr. Funari raised concerns related to noncompliance and possible operational errors occurring on December 3, 2011, specifically noting widespread issues during Operation Good Cheer, the facility manager sent Mr. Funari requests for aircraft call signs, times and positions. When Mr. Funari again explained that the problems occurred at multiple times throughout the period of the operation, the manager responded with an email advising Mr. Funari that the Human Resource Policy Manual (HRPM) Standards of Conduct (ER-4.1) requires all employees to immediately report known or suspected violations of law, regulations or policy. He goes on, "If you have evidence of any operational errors or deviations that occurred, you need to provide all necessary information for the event to be investigated or you are not meeting the requirements above."

HRPM ER 4.1 refers to FAA's Standards of Conduct, which defines acceptable and unacceptable behavior and conduct. It specifically outlines conduct which does not comport with FAA standards. Notably absent from the ATM's email was any reference to FAA Orders related to air traffic control, quality assurance, or other documents which assist management in defining, investigating and determining safety events.

Finally, during an on-site visit on December 22, 2011, the facility manager's back credenza/desk held multiple manila folders, in plain sight of any individual speaking to

the manager, labeled with Mr. Funari's name. No other files labeled with other employee names or topics were displayed, despite other ongoing whistleblower safety investigations, findings and corrective actions.

These actions, directed solely at Mr. Funari, at a minimum, foster the appearance of retaliation for repeated "whistleblowing" activities. Both individually and collectively, D21 management responses to Mr. Funari are not consistent with actions designed to reinforce and improve FAA's safety culture. Specifically, these actions demonstrate a reluctance or refusal to adhere to the principals of strengthening organizational transparency and encouraging the free flow of information. As such, managements' actions may have a chilling effect on the whistleblowing activities of other D21 or ATCT employees.

Despite the continued validation of safety allegations at Detroit, we found no evidence demonstrating substantive corrective action remediating these concerns. The ATO's oversight of operations at Detroit appear to allow, rather than mitigate, recurring safety violations and demonstrates that the ATO has not adequately corrected the identified issues. To date, six whistleblowers have brought forth nearly 25 safety allegations pertaining to both D21 and the Detroit Air Traffic Control Tower (ATCT), nearly 65% of which were substantiated from 2008 to present.

Air traffic controllers, managers and other FAA employees must be free to raise safety and security concerns, and management who engage in activities which undermine or diminish those rights through intimidation and retaliation will not be tolerated.

Recommendations

1. The ATO needs to determine whether all conditions listed in FAA Order 7110.65 5-9-7 b. 4 are necessary in order to perform the operation. This determination should include a thorough safety risk management review in accordance with the ATO Safety Management System to ensure that removing the condition, or suggesting, but not mandating the condition, would not introduce an increased risk at facilities across the NAS which perform the operation.
2. Initiate appropriate personnel changes in management, operations and quality assurance in light the findings of repeated and long-term, non-compliance at D21 in this and other OSC-initiated investigations.
3. Consider appropriate administrative action for D21 managers for their failure to ensure that the corrective actions implemented were performed in a careful manner which addresses the underlying issues; and for facilitating a management culture which refused to seriously address Mr. Funari's repeated safety disclosures. Instead, management's failures demonstrate careless disregard for the OIG's findings and Secretary LaHood's commitment to the OSC to implement appropriate corrective actions.

4. Relocate Mr. Funari to a QA position acceptable to him given the history of retaliation against him by D21 management. Mr. Funari's track record of providing accurate and consistently substantiated safety disclosures demonstrate his excellent qualifications to serve as a QA specialist. There is reason to suspect that Mr. Funari is not being fairly considered ("blackballed") for positions within AJS—positions that he is certainly qualified for, because of his history as a "whistleblower." If true, such actions would be both a violation of law and would also be retaliatory in nature.

Please provide a written response, outlining proposed corrective actions to AAE within 60 days of receipt. If we can answer any questions or be of further assistance, please contact me at (202) 267-9440, or Erika Vincent, at (202) 267-8585.



Federal Aviation Administration

Memorandum

Date: MAY 02 2012

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

From: *J. David Grizzle*
J. David Grizzle, Chief Operating Officer, Air Traffic Organization

Subject: Follow-up Review of Whistleblower Allegations at Detroit Metropolitan TRACON (D21), ref: your memo dated Feb. 14, 2012 & OSC Case No. DI-08-3138

This memorandum is in response to your Feb. 14, 2012 memorandum regarding whistleblower allegations at Detroit Metropolitan TRACON (D21), specifically Office of Special Counsel (OSC) Case number DI-08-3138.

In response to concerns raised in your memorandum, the ATO conducted a comprehensive review of prior audits and follow-up actions (attached). Our review included an in depth evaluation of corrective actions already taken and undertook additional actions in response to the findings.

Specific responses to your recommendations:

Recommendation 1: *"Determine whether all conditions listed in FAAO JO 7110.65 paragraph 5-9-7b4 are necessary in order to perform the operation."* The complainant alleged he observed aircraft flying approaches to Detroit Metro Wayne County Airport (DTW) that were not operating in compliance with FAA JO 7110.65, paragraph 5-9-7b4 and that instances of non-compliance may occur at other airports with similar operations. Specifically, the sub-paragraph policy states: "...following conditions are required when applying the minimum separation on adjacent dual or triple ILS/MLS courses. . . provide at least 1 mile of straight flight prior to the final approach course intercept."¹

The ATO issued an interpretation of this air traffic policy on Mar. 12, 2012 to establish a common understanding of "one-mile straight flight," (attached).

The ATO has also drafted a document change proposal (DCP) (attached) to include the content of the interpretation in FAAO JO 7110.65 paragraph 5-9-7b4. The FAA policy change process requires that DCPs be considered through the safety risk management process, and be vetted through the operational and support staffs, including the three

¹ Excerpts from FAAO JO 7110.65, paragraph 5-9-7b

major service area/center offices and Headquarters. We estimate the policy changes will be ready to publish in February 2013.

Recommendation 2: *“Initiate appropriate personnel changes.”* ATO’s internal evaluation revealed issues in process, internal communications, and follow-up in response to the OSC referral and the OIG ROI. During the two years that corrective actions have been underway at D21, the ATO made personnel changes to improve organizational strength and performance in multiple areas including quality assurance, quality control and compliance monitoring. The personnel in the following positions associated with the 2009-2011 reviews at D21 and audits of information used to support closure of the corrective action plan have changed in the interim:

- a. Detroit TRACON (D21)
 1. Acting Air Traffic Manager (ATM) ²
 2. Quality Assurance Manager
 3. Support Manager
- b. Central Service Center Quality Control Group (QCG) (Fort Worth, TX)
 1. Group Manager
 2. North Team Manager
- c. Central Service Area (Fort Worth, TX)
 1. Director, Terminal Operations
- d. Terminal Services (Washington, DC)
 1. Vice President
 2. Executive Director
- e. Safety & Technical Training (Washington, DC)
 1. Vice President
 2. Director, Quality Assurance
 3. Quality Assurance Manager
 4. Quality Assurance Specialist

In addition, in early 2010, ATO Safety & Technical Training added a small staff of quality assurance specialists to each of the three Service Area offices: Atlanta, Fort Worth, and Seattle. These offices established an independent review capability at each of the Service Area locations in anticipation of the policy changes rolled out with the new ATO safety orders in January 2012.

Safety & Technical Training

1. Quality Assurance Team Manager (new)
2. Quality Assurance Supervisor (new)
3. Quality Assurance Specialists (new)

Recommendation 3: *“Consider appropriate administrative action.”* To determine if there is evidence that, the actions of certain employees were retaliatory; the Office of Special Counsel (OSC) has opened an investigation of the prohibited personnel practices (PPP) allegations. We will respond to the OSC report once it is available.

² We have begun the process to select a permanent air traffic manager at the D21 facility, and we estimate the new manager will be in place by October 2012.

Recommendation 4: *“Relocate the complainant.”* The ATO has entered into discussions with the complainant regarding available openings best suited to the complainant’s knowledge and experience.

If you desire additional information regarding this matter, please contact Joseph Teixeira, Vice President, ATO Safety & technical Training at (202) 267-3341.

Atch: Interpretation of 5-9-7b4

DCP on 5-9-7b4

ATO investigation report of 2010-2011 CAP dated Apr. 23, 2012

cc: Administrator



Federal Aviation Administration

Memorandum

Date: **APR 23 2012**
To: David Grizzle, Chief Operating Officer, Air Traffic Organization, AJO-0
From: *Joseph Teixeira* Joseph Teixeira, Vice President, ATO Safety and Technical Training, AJI-0
Subject: Investigation into Office of Audit and Evaluation Findings Regarding Whistleblower Allegations, Audits and Documentation at Detroit Terminal Radar Approach Control (D21)

Executive Summary:

The February 14, 2012 memorandum from the Director, Office of Audit and Evaluation (AAE-1), regarding whistleblower allegations at Detroit Terminal Radar Approach Control (D21) stated that despite continued validation of safety allegations at Detroit, no evidence was found demonstrating substantive corrective action remediating these concerns. Air Traffic Organization (ATO) Safety and Technical Training's Compliance Services Group (CSG) conducted an investigation into the associated allegations and findings, and conducted a thorough review of ATO's follow-up actions and commitments to the Office of the Inspector General (OIG) and the US Office of Special Counsel.

The investigative team was comprised of representatives from ATO Safety and Technical Training as well as Terminal Services. The scope of the investigation was the ATO's actions in response to the allegation regarding D21's compliance with the requirements of FAA JO 7110.65, *Air Traffic Control*, Paragraph 5-9-7, *Simultaneous Independent ILS/MLS Approaches – Dual & Triple*, specifically subparagraph b.4, which requires that controllers provide 1 mile straight flight prior to final approach course intercept. Noncompliance with this requirement was cited in the partial substantiation of Allegation 4 in the OIG's February 22, 2010 Report of Investigation.

ATO investigators collected and reviewed all documentation associated with Allegation 4, covering a 3-year time period from D21, the Central Service Center (CSC) Quality Control Group (QCG), Terminal Services (AJT), and Safety and Technical Training (AJI). All available radar and audio data used in associated audits was thoroughly reviewed. A total of 9 interviews were conducted with D21 and CSC QCG personnel regarding the audit process, associated documentation, and efforts to address instances of noncompliance with procedures through performance management. These interviews included facility and QCG management as well as the specialists that conducted audits.

ATO investigators validated the majority of the findings identified in the February 14, 2012 AAE-1 memorandum including that most of the audits were conducted during time periods in which there was no requirement for providing 1 mile of straight flight. D21 and CSC QCG performed separate audits that were not consistent in methodology and were not further reviewed for corrective actions or follow-up in the facility – reports lacked specific details and contained inaccurate or missing information. The CSC QCG did not retain the data relied upon in completing their audits, did not maintain a system of records regarding their audits, and had correspondence control issues in delivering their monthly reports in a consistent and timely manner.

Investigators partially validated the finding that D21 and QCG audits were conducted in a cursory, almost careless manner without due diligence paid to obtaining accurate results. The managers providing oversight of the specialists conducting the audits were aware of the processes that the specialists were using and signed or otherwise endorsed and forwarded limited and sometimes inaccurate data. All concerned were aware that the designated audit times were not capturing simultaneous operations the majority of the time and yet no one considered amending the audit times. Each auditor at both D21 and the QCG conveyed a sincere interest in detecting instances of noncompliance. Auditors articulated how they were measuring compliance consistently in their own manner while making it known that they had nothing to gain by not reporting noncompliance. It was established that D21 QA and CSC QCG personnel did not develop or agree upon a common methodology and they did not consistently utilize all of the measurement tools available to them (range rings, quick analysis) in the radar playback tool set.

ATO investigators analyzed the available audit data on the play-back tool in both real time and fast forward. They found fast forward to be an acceptable practice until such time as the aircraft were turning to final. Investigators would then pay close attention to the history trails, 1-mile-range rings, and the quick analysis box on the tool to determine whether or not the aircraft had been provided 1 mile of straight flight.

Additionally, ATO investigators found that the ATO did not fully meet the commitments made in the Administrator's March 8, 2010 memorandum response to the OIG regarding Allegation 4. First, ATO Safety and Technical Training QA personnel using the Performance Data Analysis and Reporting System (PDARS) tool would complete their independent reports of ILS course intercepts. QA personnel provided one independent report of D21's ILS course intercepts based upon PDARS analysis on January 24, 2011. This report indicated that D21 was among the best in providing course intercepts in compliance with the provisions of FAA JO 7110.65. The PDARS data did not provide any data associated with the actual allegation, and as programmed at the time, PDARS could not analyze the 1 mile straight flight requirement.

Second, the March 8, 2010 Administrator's memorandum indicated that Terminal Services would provide the Chief Operating Officer (COO) with monthly reports on D21's compliance with final approach course intercepts. ATO investigators have been

unable to find any record within the applicable correspondence control offices that such reports were issued.

ATO investigators confirmed that D21 did complete their review of their Standard Operating Procedures (SOP) and provided additional training for all D21 operational personnel that communicated the safety of flight requirements for stabilized approaches.

It is important to note that the performance of D21 personnel in meeting the requirement to provide 1 mile of straight flight has improved significantly. Investigators were unable to find a direct link between the official audits and performance improvement. As noted in the AAE-1 memorandum, a D21 Operations Manager (OM) initiated his own review of D21 performance on this subject, targeting times that simultaneous approaches were actually in use. The OM stated that he did this because limited information was being communicated to operational personnel as part of the existing audits. Over a 3-month time period, the D21 OM established a common methodology with the QA staff and the Front Line Managers (FLMs), and measured performance in almost every session of simultaneous operations. The OM then directed performance reviews and discussions through the FLMs and kept records of his initiatives in email format. ATO investigators concluded that the OM's proactive performance management initiatives are directly responsible for improving D21's performance in this area.

Methods of Investigation:

The ATO investigative team conducted 8 face-to-face interviews and 1 phone interview during the time period of April 2-6, 2012. Those interviewed included the D21 Acting Air Traffic Manager, the Quality Assurance (QA) Manager, a D21 OM and a QA support specialist. The CSC QCG personnel that were interviewed included the former QCG Group Manager (GM), a former QCG Team Manager (TM), and 3 QCG support specialists. The current QCG TM has been in place for most of the D21 issues and initiatives, but was unavailable during the investigation due to serious injury caused by an automobile accident.

The Office of Safety Services (AJI-151) conducted reviews of weekly audits performed by Detroit TRACON (D21) during the time period of April 14, 2010 to March 9, 2011. The reviews were done from archived voice recordings and Radar data received from D21. Three individuals from AJI-151 reviewed the data and worked together collaboratively, especially when the results of the audits in review were questionable. Tools used in the review included Continuous Data Recording Player Plus (CDRPP) to view the Radar data and the Voice Recording System (VRS) to listen to the voice files synchronized with the Radar data. Each D21 weekly audit was reviewed to ensure accuracy and to verify whether or not simultaneous approaches were being conducted during the time period audited. When facility logs lacked indication, voice recordings were used to verify whether or not simultaneous approaches were in use. Indicators of simultaneous approaches included when aircraft turned to final and communications were switched prior to the duals bar. If aircraft were cleared prior to this or if the frequency change was made closer in to the airport, it could reasonably be assumed that dependent,

visual, or other types of approaches were being utilized, and 1 mile of straight flight was not required.

D21 audits conducted during periods that simultaneous approaches were not in use were reviewed in an accelerated viewing mode to verify that simultaneous approaches were not in use. If there were any doubts whether simultaneous approaches were in use, the voice file was also reviewed to verify accuracy. When viewing periods that simultaneous approaches were in use, the replay was viewed in normal speed mode with the 1-mile-range rings displayed in order to accurately determine 1 mile. The quick analysis tool, which displays the track of an aircraft in degrees, was also used to reduce some of the subjectivity of the review. Investigators recorded each arriving aircraft during periods of simultaneous operations and documented whether or not each was compliant with the 1 mile of straight flight requirement. A comparison analysis was then conducted with the instances of noncompliance recorded in the D21 audit.

The CSC QCG did not use audio data and did not retain radar data in support of their daily audits conducted during the time period of April 13, 2010 –December 31, 2010. Each audit report issued by D21 and the CSC was analyzed and compared with D21 facility logs and actual traffic counts. An analysis was conducted to determine how many audits were conducted during periods in which simultaneous approaches were not in use and therefore, there was no 1 mile straight flight requirement. The results were then compared with D21 facility log information that indicated instances in which the audits could have captured simultaneous operations if the audit times had been adjusted.

All available correspondence and emails regarding Allegation 4 and subsequent follow-up actions were collected and analyzed. Each commitment made by ATO entities in correspondence, both internally and externally, were tracked and measured in comparison to subsequent documents, analysis, and reports.

Investigative Findings:

The Administrator's March 8, 2010 memorandum to the OIG stated that the FAA would conduct a series of corrective actions regarding Allegation 4 that included a review of procedures and current training as well as additional training for all D21 operational personnel that would communicate the safety of flight requirements for stabilized approaches. The memorandum also communicated 3 actions similar to control measures that would continue until the approach course intercepts at D21 reached a consistent performance level. Among them: CSC QCG would continue weekly audits of ILS course intercepts, QA personnel (then ATO Safety) would complete independent reports of ILS course intercepts utilizing the PDARS tool, and that Terminal Services would provide the COO with monthly reports on D21's compliance with final approach course intercepts. Below is an accounting of the investigative findings regarding each ATO commitment and actions in response to Allegation 4.

The AAE-1 February 14, 2012 memorandum also indicated concern with the lack of specific written guidance regarding whether or not noncompliance with the requirement

for 1 mile straight flight is considered to be a loss of separation or a performance issue. It also stated that the ATO needed to decide if the condition (1 mile straight flight) is necessary to perform the operation, which should be made through a safety risk management review. On March 12, 2012, Terminal Services issued an interpretation that 1 mile straight flight is not a separation requirement. Additional consideration for any clarifying language or changes to the requirements is being worked by Terminal Services and will be addressed in a separate report.

D21 SOP and Training Review/Update

In response to the OIG findings, the FAA committed to review:

1. The existing SOP at DTW and identify improvement(s) needed to the SOP (if appropriate);
2. Review and update current training utilized for controlling dual and triple ILS approaches at DTW; and
3. Ensure that all D21 operational personnel are trained on the correct application of approach course intercept procedures, specifically when dual or triple ILS configurations are in use. This training would include an explanation of the basis for these procedures in the safety of flight requirements for stabilized approaches.

ATO investigators obtained evidence that these actions were completed. The SOP was reviewed by the facility and the CSC QCG and no reference changes were needed. Training was updated to ensure operational personnel were trained on the correct application of controlling dual and triple approaches, the application of course intercept procedures and the flight requirements for stabilized approaches. The following series of face-to-face Mandatory Briefing Items (MBI) and read and initial Awareness Bulletins (AB) were completed:

MBI-D21-09-047	Review 7110.65 paragraph 5-9-7 b.4
MBI-D21-10-014	Class B and Straight Flight
MBI-D21-10-021	D21 N7110.83, D21 N7710.184 and FAA Order 7110.65, paragraphs 5-5-10a and 7-744a (2).

AB-D21-09-12	Final Approach Course Interception
AB-D21-09-13	Radar Vectors for Stable Approaches
AB-D21-10-01	Vectors to Final Approach Course per FAA Order 7110.65

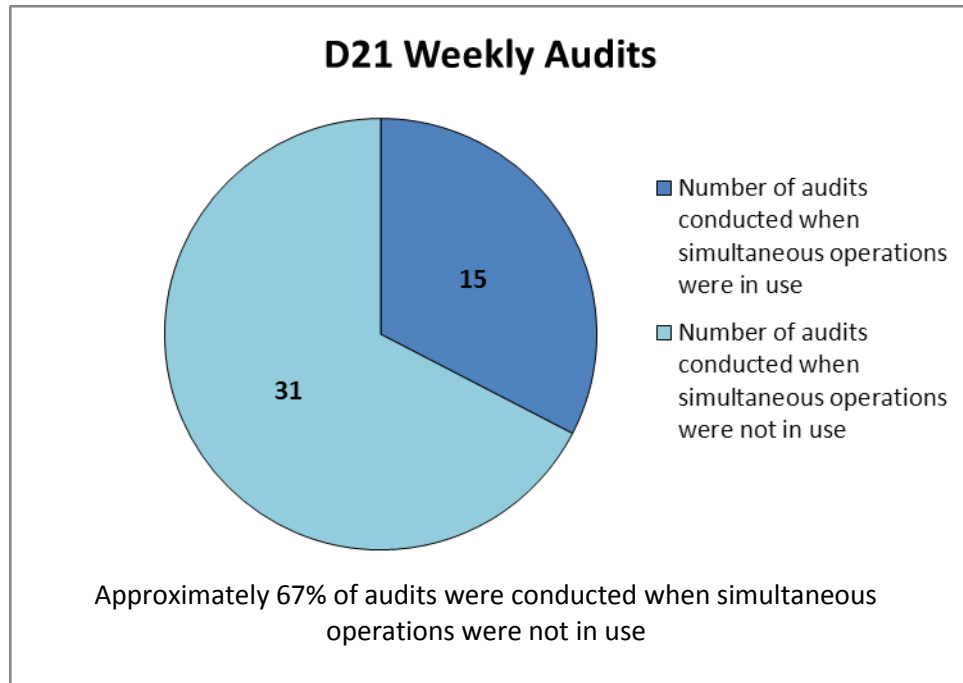
D21 issued a refresher briefing item, MBI-D21-10-021, D21 N7110.83, D21 N7710.184 and FAA Order 7110.65, paragraphs 5-5-10a and 7-7-44c (2). The briefing covered topics: Flight Plan Filing, Simultaneous ILS Approaches at D21, Adjacent Airspace Separation, and Approaches to Multiple Runways. The training was presented as a face-to-face briefing by operations managers. Emphasis was placed on the reason for these procedures and safety of flight requirements for stabilized approaches.

Audits of D21 Performance in Providing 1 Mile Straight Flight

In response to Allegation 4, 3 audits were established to monitor and measure D21's compliance with the 1 mile straight flight requirement. The first was a weekly audit conducted by the D21 QA staff during random time periods assigned by the CSC QCG. The CSC QCG was to then conduct a second audit of the audit performed by D21 and would report any discrepancies. The third audit was conducted by the CSC QCG wherein they audited D21's compliance with the 1 mile straight flight requirement on a daily basis during pre-established "peak traffic period" time frames.

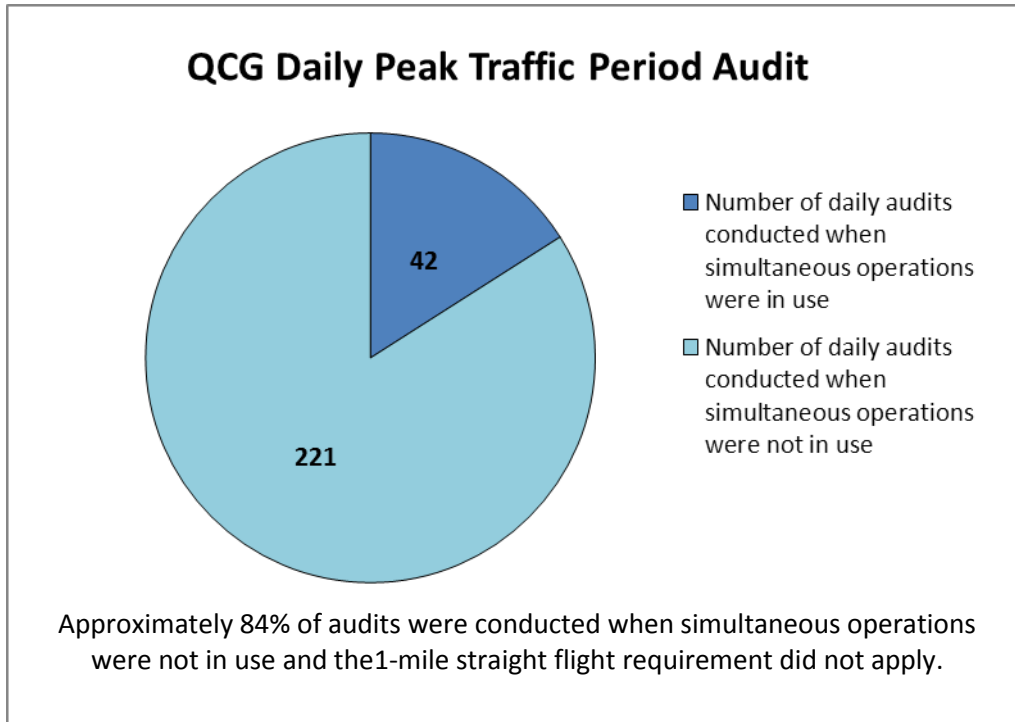
The AAE-1 memorandum identified several issues regarding both the D21 and QCG audits of D21's compliance with the 1 mile straight flight requirement. These included AOV findings that the majority of the audits were not conducted during timeframes in which 1 mile of straight flight was required, audits were performed in a cursory and careless manner, QCG audit results were not further reviewed for corrective action or follow up in the facility, QCG did not verify the accuracy of D21's audits, and CSC QCG did not retain the data to substantiate the results of their audits. The memorandum also made note that all audits were performed using the fast forward feature on the replay tool.

The CSC QCG had been providing random times for D21 to perform weekly, 2-hour Traffic Analysis and Review Program (TARP) audits. These audits were used to address the alleged non-reporting of losses of separation. D21 conducted its audits of the 1 mile straight flight requirement during the same time frame as the TARP audit even though that time frame might not be during simultaneous operations. The D21 Acting Air Traffic Manager stated that the decision to conduct these audits during the same time period was made in a phone call or email with the QCG TM. Investigators did not find any evidence of this guidance in writing. The QCG specialist that was responsible for communicating the TARP audit times was unaware that an audit of 1 mile straight flight requirements was also being conducted and did not take into consideration whether or not simultaneous approaches were in use while selecting the audit time periods. D21 personnel recognized that the majority of weekly audits were not capturing simultaneous operations, but personnel did not consider asking for the times to be adjusted because they assumed there must be a reason why the times were being selected that way.



The AAE-1 memorandum stated that 62 percent of the audits conducted by the D21 QA department were actually completed during times when the facility was not running dual or triple ILS approaches and thus had no data to audit. ATO investigators found that 67 percent of D21 weekly audits for the time period of April 13, 2010 – March 11, 2011 were conducted during periods that the facility was not running dual or triple ILS approaches.

The CSC QCG daily audits of 1 mile straight flight requirements were conducted during the same 2-hour time frame (1100-1330GMT) each day for the period of April 13, 2010 – December 31, 2010. The CSC QCG specialist that designed and conducted the audit explained to investigators that he contacted the Traffic Management Unit (TMU) at Cleveland Air Route Traffic Control Center (ZOB) and asked for the peak traffic period at Detroit Metropolitan Wayne County Airport (DTW). He was told that it was the early morning period of 1100-1330GMT (1200-1400GMT during daylight-saving time) and used this one time frame for all QCG audits regardless of the type of operation in use. Each individual interviewed at D21 confirmed that their busiest arrival periods were in the afternoons or evenings. This resulted in 84 percent of the CSC QCG audits on the 1 mile straight flight requirement being conducted during periods in which simultaneous approaches were not in use, and therefore, the requirement to provide 1 mile of straight flight did not apply.



The timeframes for both the D21 and QCG audits were determined by the CSC QCG and each person interviewed at the facility and QCG confirmed that no consideration was given to adjusting the audit times to occur during actual simultaneous operations.

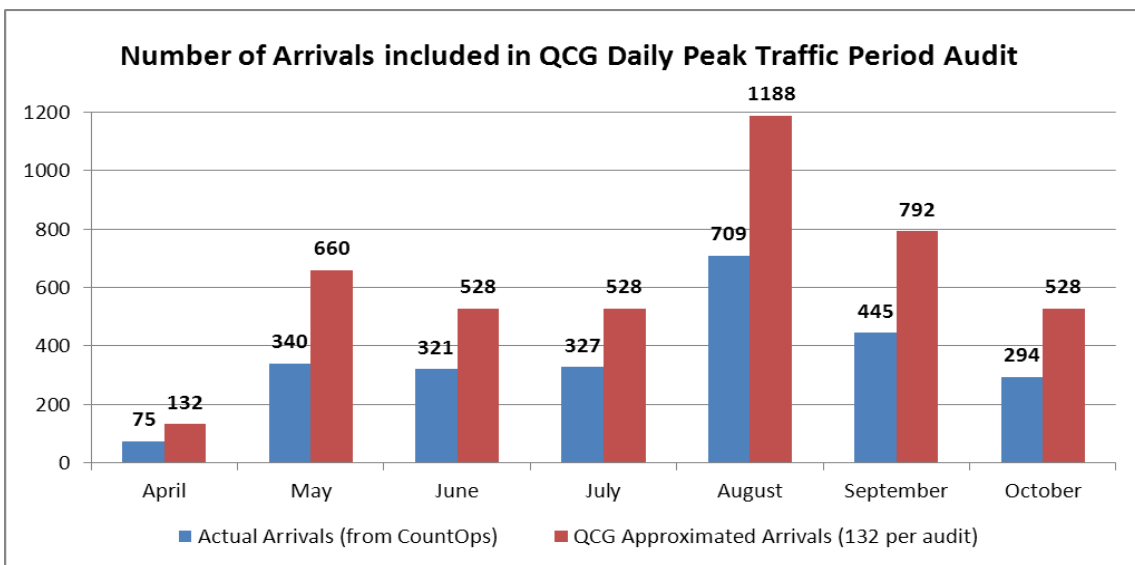
D21 did not always log when simultaneous independent approaches were being conducted and the total number of opportunities to audit simultaneous operations are unknown. Beginning on October 21, 2010, D21's OM directed that log entries be made indicating the first and last aircraft pairs during simultaneous operations. In its report regarding their November 2010 daily audits, the CSC QCG stated that there were 4 days in the month of November in which simultaneous operations were in use. Using D21's logs, ATO investigators found that there were a total of 19 days in November 2010 in which simultaneous approaches were in use. If the audit times had been adjusted, potentially only 37 percent of their audits would have been during periods in which simultaneous approaches were not in use. The December QCG report indicates that simultaneous approaches were in effect for 5 of their daily audits while D21 logs indicate that simultaneous approaches were in use on 25 days. Had the audit times targeted actual simultaneous operations, potentially only 19 percent of the audits would have occurred when simultaneous approaches were not in use.

In a May 28, 2010 memorandum to the Acting Director of Terminal Safety and Operations Support, the Acting Director of Terminal Operations, Central Service Area, reported that the QCG identified 7 aircraft that were not provided the period of 1 mile straight flight during their April 13, 2010 to May 13, 2010 daily audits. The memorandum states that feedback was provided to the facility for follow-up performance management action. Investigators confirmed with both D21 management and the QCG

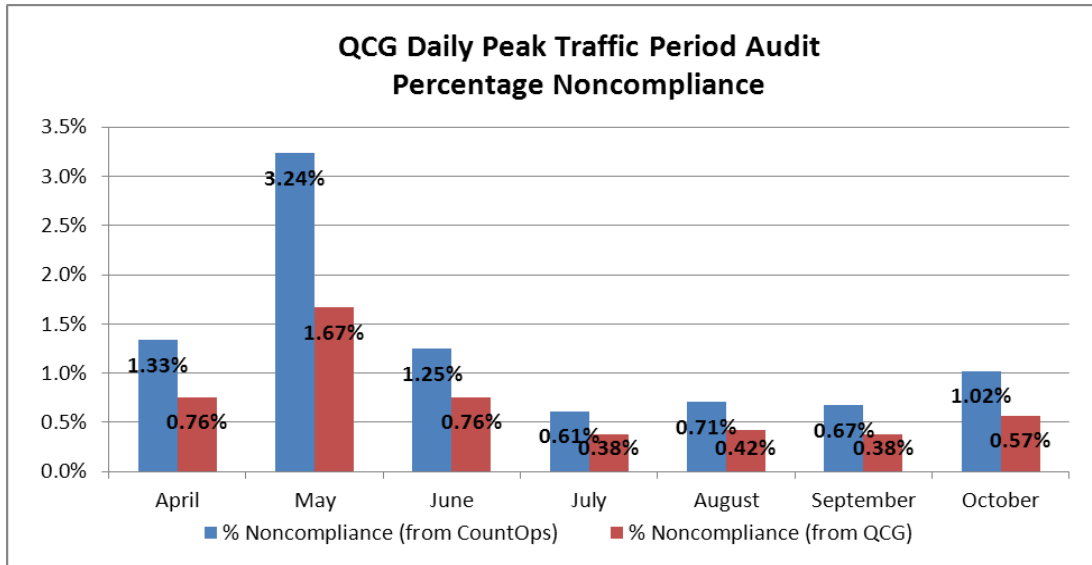
specialists who performed the audits that detailed results of the daily QCG audits were not communicated to D21 and specific performance issues identified in QCG audits were not addressed. Both described the exchange as a phone call in which general information was passed to the facility on how they were doing.

CSC QCG did not utilize audio data and did not retain radar data relied upon to substantiate their daily audits. The lack of data retention resulted in the inability for oversight and regulatory entities to validate the results of the QCG audits.

In their monthly reports to the Director of Terminal Operations, Central Service Area, the CSC QCG reported the specific number of instances of noncompliance with the 1 mile straight flight requirement; however, it was provided in contrast to an approximate number of arrivals that never varied (132 aircraft per audit).



Investigators confirmed that this comparison number was the DTW arrival rate of 66 per hour that had been obtained in the original phone call to ZOB TMU and not the actual amount of aircraft that landed during the audit and not the amount of aircraft that actually required the 1 mile of straight flight. The actual traffic count during the audit sessions conducted from April 13 through October 31, 2010 averaged 43 percent less than the stated arrival rate. The result was an inaccurate portrayal regarding the level of compliance.



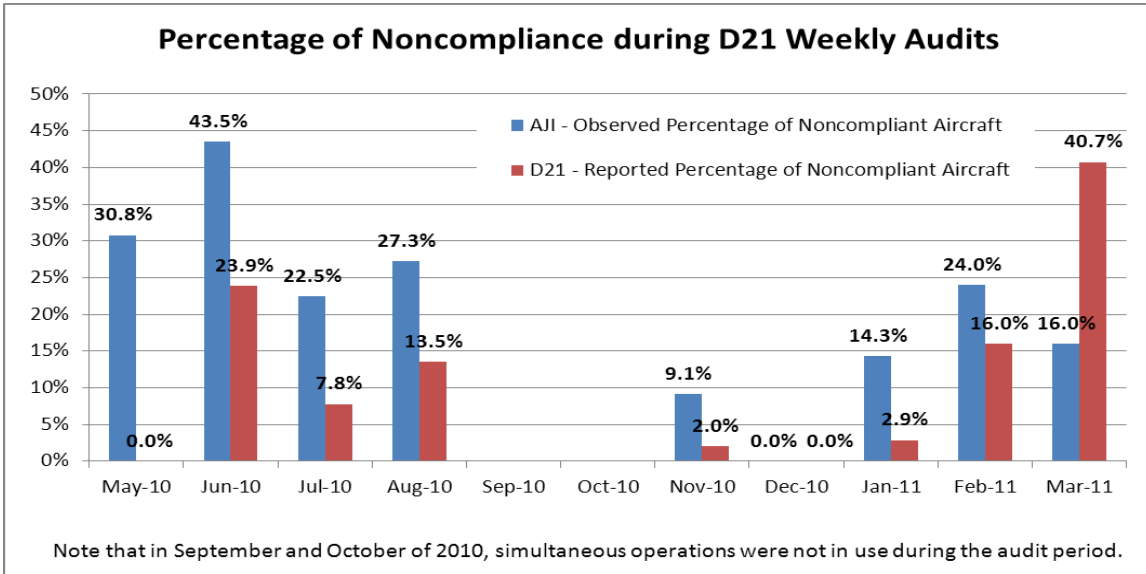
The CSC QCG changed their reporting format starting in November of 2010, and it is unknown exactly which day's audits were performed during periods of simultaneous operations for the months of November and December 2010.

In multiple memorandums, ATO officials including the Director of Terminal Operations and the QCG GM state that the QCG audits the results of the D21 weekly audits regarding the 1 mile of straight flight requirement. ATO investigators confirmed that the CSC QCG did not conduct these audits of the D21 weekly audits with the exception of the July 2010 D21 weekly audits. In an August 5, 2010 memorandum, the CSC QCG stated that they did not discover any instances of noncompliance with the 1 mile straight flight requirement that had not already been identified by D21. D21 and presumably the CSC QCG reported 7 instances of noncompliance during the July 2010 weekly audits. The investigative team reviewed the same data for the July 2010 audits and discovered 20 instances of noncompliance.

One mile of straight flight is subjective when not using any specific measurement tools on CDRPP, which is how the auditors described their actions, and it is understandable that not all instances of noncompliance are readily recognizable and agreed upon unless a common methodology is established. Those interviewed stressed that they did not use these measurement tools – to include 1-mile-range rings and the quick analysis box – because they are not available to controllers while providing ATC services. ATO investigators used a consistent methodology with measurement tools that were available to the auditors as described in the Investigative Methods section of this report.

Because the D21 QA staff and the CSC QCG did not discuss or mutually develop an agreed upon methodology and did not use all measurement tools available to them, their independent results were not validated or communicated effectively to all concerned. Each auditor at both D21 and the QCG conveyed a sincere interest in detecting instances of noncompliance and articulated how they were measuring compliance consistently in their own manner while making it known that they had nothing to gain by not reporting

noncompliance. Managers at both D21 and the CSC QCG were aware of the processes and documentation utilized by the specialists conducting the audits. They also signed or otherwise approved and forwarded the resulting reports that contained limited and sometimes inaccurate data. If the QCG had conducted the required audits of the D21 audits, they may have discussed the differences in their findings and developed a common methodology. In reviewing the data of the D21 weekly audits, ATO investigators noted several unreported instances of noncompliance. Below is the comparison of audit results by month.



The use of the fast forward feature in playing back National Offload Program (NOP) radar data through CDRPP is not uncommon, and all personnel at D21 and the CSC QCG indicated that they did so during their audits. Each individual articulated that they would utilize track history on the display, would be zoomed-in to a close up of the final, and would slow it down if they saw something that appeared to be noncompliant. The investigative team reviewed the available data both in real time and while using fast forward. Investigators found that the use of fast forward was appropriate until aircraft were at a point when the 1 mile of straight flight was required. Investigators would then slow to real time, with track histories enabled, 1-mile-range rings displayed, and actual headings displayed in the quick analysis box of the playback tool to assess compliance with the 1 mile straight flight requirement. The investigative team concluded that the use of fast forward on playback tools for audits is appropriate at times.

Based upon the amount of audits that were conducted during periods when there was no requirement for 1 mile of straight flight; the lack of data retention and detailed documentation, the missing nexus between QCG audits and D21 performance follow-up, the misrepresentation of the percentage of compliance, the lack of QCG validating the results of the audits conducted by D21; and the number of undetected instances of noncompliance, both the D21 and CSC QCG audits were not the most accurate portrayal of D21's compliance with the requirement to provide 1 mile straight flight during simultaneous independent approaches. The QCG audits were cited in the Agency's

March 21, 2011 memorandum to the OIG in closing out the Agency's response to Allegation 4.

D21 OM's Initiative to Improve 1 Mile Straight Flight Performance

As noted in AAE-1's February 14, 2012 memorandum, D21 OM [REDACTED] began conducting his own independent audits of facility compliance with the 1 mile straight flight requirement in September 2010. During his interview, [REDACTED] stated that the facility's weekly QA audits were providing a brief snapshot of some controllers' performance and lacked specific detailed information needed to address the issue through performance management. [REDACTED] explained that conducting a random, weekly, 2-hour session was not capturing simultaneous operations most of the time and did not provide an accurate picture of the entire workforce's performance.

The 2 D21 OMs began a process that would audit each and every simultaneous independent approach session and accurately measure each controller's performance regarding the procedure. [REDACTED] began by performing an audit of a simultaneous approach session in which he was the OM on duty. He then asked the QA department and the on-duty FLM to each perform an independent audit of the same session. [REDACTED] held a meeting in which they compared their results and then watched the replay of the session together to ensure they were each using the same methodology in determining whether or not each operation was in compliance with the 1 mile straight flight requirement. The 2 OMs then briefed each of the FLMs face-to-face on the requirements and their operational expectations. They then used the same replay to educate FLMs on how to identify whether aircraft were compliant or not. The OMs also discussed with the FLMs how changes in speed control and vectoring techniques could be used to aid in achieving compliance. In September and October 2010, the FLMs used the same replay during weekly team briefings to educate the workforce on how to comply with the 1 mile straight flight requirement.

During the period of October through December 2010, [REDACTED] reviewed each simultaneous independent approach session, identified instances of noncompliance, then emailed direct instructions to each respective FLM to conduct performance discussions with their employees. The performance management actions included informal discussions, reviews of playbacks with the FLM and controller, coaching of operational techniques to include proactive speed control and better vectoring, and formal discussions when necessary. OM [REDACTED] retained and provided ATO investigators with his emails documenting his performance management actions. The performance management system time period associated with these actions has passed, so any supervisory notes regarding performance management discussions are no longer retained.

ATO investigators concluded that D21's performance regarding the provision of 1 mile straight flight when required has improved significantly and that the only documented nexus between instances of noncompliance and performance management is the actions of OM [REDACTED] and the FLMs. This was not an official audit in response to an OIG

commitment but a proactive performance management initiative of the operational leadership in the facility.

Independent Performance Data Analysis and Reporting System (PDARS) Analysis

The Administrator's March 8, 2010 memorandum response to the OIG regarding Allegation 4 stated that QA personnel (ATO Safety and Technical Training) using the Performance Data Analysis and Reporting System (PDARS) tool would complete their independent reports of ILS course intercepts.

ATO investigators noted that the angle of ILS course intercepts was not cited in any of the OSC or OIG allegations. Allegation 4 specifically expressed concern with adherence to the requirement that controllers "descend to the appropriate [glideslope] intercept altitude soon enough to provide a period of level flight prior to dissipate excess speed" and "provide at least 1 mile of straight flight prior to final approach course intercept."

ATO Safety and Technical Training QA personnel provided 1 independent report of D21's ILS course intercepts based upon PDARS analysis on January 24, 2011. The report measured D21 arrivals in comparison to the other 33 Operational Evolution Plan (OEP) airports in the categories of 30- and 20-degree intercepts as well as aircraft exceeding 800 feet of the final approach course (blunder). The PDARS report did not provide any data associated with the actual allegation, and as programmed at the time, PDARS could not analyze the 1 mile straight flight requirement.

This report indicated that D21 was among the best in providing course intercepts in compliance with the provisions of FAA JO 7110.65 and was cited in the March 21, 2011 AAE-1 memorandum to the OIG in closing out Allegation 4. The PDARS report appears to be out of context both as a control measure and in a direct response to the allegation.

Documentation, Correspondence, and Reports

The February 14, 2012 AAE-1 memorandum identified an issue regarding documentation and correspondence. ATO investigators found that both the D21 and QCG audit reports did not provide a sufficient amount of detailed information to address specific instances of noncompliance through performance management. The method of documentation and reporting of audits conducted by the QCG was inconsistent, and several reports were delayed in their actual issuance by up to 3 months. The QCG also had difficulty producing correspondence documentation in a timely or accurate manner to both AOV and ATO investigators. Additionally, investigators were unable to find any record that Terminal Services provided the COO with monthly reports regarding D21's compliance with procedures in accordance with the commitment made to the OIG.

Attachments: ATO Investigative Team Members
D21 Weekly Random Audit Results
CSC QCG Peak Traffic Period Audit Results

Attachment 1

The ATO Investigative Team was composed of the following members:

Tim Arel
Manager, Air Traffic Investigations
ATO Safety and Technical Training
Washington, DC

Charles Dickinson
Support Manager
Denver ATCT
Denver, CO

Angela Hawkins
Quality Assurance Specialist
ATO Safety and Technical Training
Washington, DC

Kurt Casper
Quality Control Specialist
Safety Services Group
Washington, DC

**Attachment 2
D21 Weekly Random Audit Results**

Including QA Department Results				
Date from NOP File	Simultaneous Operations during NOP Period?	NOP File Audit Period (hours reviewed by QA)	Total Minutes of Simultaneous Operations during Audit Period	QA Results
4/14/2010	No	1500-1700	0	N/A - VA
4/19/2010	No	1600-1800	0	N/A - VA
4/27/2010	No	2100-2300	0	N/A - VA
5/5/2010	No	1400-1600	0	N/A - VA
5/11/2010	Yes	2000-2200	40	Procedures complied with
5/19/2010	No	1700-1900	0	N/A - VA
5/23/2010	No	2000-2200	0	N/A - VA
6/2/2010	No	1800-2000	0	N/A - Sim. Dep ILS
6/7/2010	No	1300-1500	0	N/A - VA
6/15/2010	Yes	1900-2100	15	West Final (A) [REDACTED] complied with 14 of 17 East Final (B) [REDACTED] complied with 10 of 18
6/20/2010	No	2200-0000	0	N/A - VA
6/27/2010	Yes	1500-1700	10	Procedures complied with
7/7/2010	No	2100-2300	0	N/A - VA
7/12/2010	No	1600-1800	0	N/A - Parallel Dep (Staggered) ILS & VA
7/20/2010	Yes	2300-0100	28	West Final (A) [REDACTED], complied with 19 of 20 East Final (B) [REDACTED], complied with 16 of 18
7/25/2010	Yes	1400-1600	57	West Final (A) [REDACTED], complied with 29 of 29 East Final (B) [REDACTED], complied with 19 of 23
8/3/2010	Yes	1700-1900	37	West Final (A) [REDACTED], complied with 25 of 26 ([REDACTED] missed the last one) East Final (B) [REDACTED] complied with 20 of 24
8/9/2010	Yes	1300-1500	14	West Final (A) [REDACTED] complied with 6 of 7 East Final (B) [REDACTED] complied with 4 of 5
8/15/2010	Yes	1600-1800	19	West Final (A) [REDACTED] complied with 11 of 11 East Final (B) [REDACTED], complied with 11 of 11
8/23/2010	Yes	2000-2200	33	West Final (A) [REDACTED] complied with 19 of 21 ([REDACTED] 1 of 2) East Final (B) [REDACTED], complied with 13 of 21 (PT/GS 0 of 1)
8/30/2010	No	1500-1700	0	N/A - VA
9/8/2010	No	1800-2000	0	N/A - VA
9/12/2010	No	2200-0000	0	N/A - VA
9/20/2010	No	1900-2100	0	N/A - VA
Date from NOP File	Simultaneous Operations during NOP Period?	NOP File Audit Period (hours reviewed by QA)	Total Minutes of Simultaneous Operations during Audit Period	QA Results

Attachment 2
D21 Weekly Random Audit Results

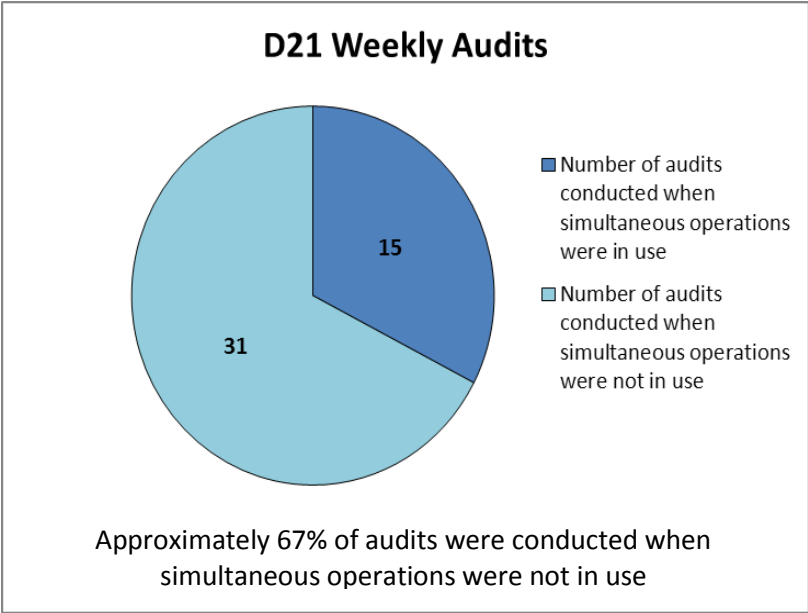
9/24/2010	No	1600-1800	0	N/A - Parallel Dep (Staggered) ILS & VA
10/3/2010	No	2100-2300	0	N/A - Parallel Dep (Staggered) ILS & VA
10/10/2010	No	2000-2200	0	N/A - Parallel Dep (Staggered) ILS & VA
10/19/2010	No	1400-1600	0	N/A - VA
10/27/2010	No	1700-1900	0	N/A - VA
10/31/2010	No	1300-1500	0	N/A - VA
11/8/2010	No	2300-0100	0	N/A - VA
11/14/2010	Yes	2100-2300	47	West Final (A) [REDACTED] complied with 25 of 25 East Final (B) [REDACTED] complied with 24 of 25 (FLG4186 @ 2136Z was not)
11/29/2010	No	1500-1700	0	N/A - VA
12/7/2010	No	1800-2000	0	N/A ILS 4L and VA 3R
12/12/2010	No	1600-1800	0	Single rwy due to snow removal. Only 15 mins of Parallel Dep ILS app to 4R/3R
12/12/2010	Yes	2100-2300	10	
12/26/2010	No	1400-1600	0	N/A - Simul Dep (Staggered) ILS
1/5/2011	Yes	1900-2100	8	West Final (A) [REDACTED] complied with 7 of 8 (COM1425) East Final (B) [REDACTED] complied with 7 of 7
1/10/2011	No	2000-2200	0	N/A - There were no Simult Indep ILS during this time period
1/18/2011	Yes	1700-1900	17	West Final (A) [REDACTED], complied with 10 of 10 East Final (B) [REDACTED] complied with 10 of 10
1/23/2011	No	2200-0000	0	N/A - VA
2/6/2011	No	1300-1500	0	N/A - Parallel Dep ILS to Rwy 22R and 22L
2/14/2011	No	2300-0100	0	N/A - VA to Rwy 4L and 3R
2/22/2011	No	1500-1700	0	N/A - VA to Rwy 4L/R and 3R
2/28/2011	Yes	1800-2000	22	West Final (A) [REDACTED] complied with 11 of 13 (FLG4011 & DAL276 did not) East Final (B) [REDACTED], complied with 10 of 12 (CHQ6030 & ASQ5001 did not)
3/9/2011	Yes	1600-1800	26	West Final (A) [REDACTED], complied with 8 of 8 East Final (B) [REDACTED] complied with 7 of 8 (FLG4296 did not) West Final (A) [REDACTED] complied with 3 of 4 (DAL2588 did not) East Final (B) [REDACTED] complied with 6 of 7 (COM1492 did not)

**Attachment 2
D21 Weekly Random Audit Results**

Breakdown	
Number of audits conducted when simultaneous operations were in use	15
Number of audits conducted when simultaneous operations were not in use	31
Total number of audits	46
Percentage of D21 audits conducted when simultaneous operations were not in use	67.4%

Note that these are approximate times, in minutes:

Amount of time during which simultaneous operations were in use	383
Amount of time during which simultaneous operations were not in use	5137
Total amount of time possible	5520
Percentage of audit time containing simultaneous operations	6.9%



**Attachment 2
D21 Weekly Random Audit Results**

AJI and D21 Audit Results Comparison

Audit Date	NOP File Audit Period	Simuls during Audit Period?	Approx. Minutes of Simuls	AJI Number of A/C Observed	AJI Number of Compliant A/C	AJI Compliance Percentage	D21 Number of A/C Observed	D21 Number of Compliant A/C	D21 Compliance Percentage
4/14/2010	1500-1700	No							
4/19/2010	1600-1800	No							
4/27/2010	2100-2300	No							
5/5/2010	1400-1600	No							
5/11/2010	2000-2200	Yes	40	39	27	69%	39	39	100%
5/19/2010	1700-1900	No							
5/23/2010	2000-2200	No							
6/2/2010	1800-2000	No							
6/7/2010	1300-1500	No							
6/15/2010	1900-2100	Yes	15	35	17	49%	35	24	69%
6/20/2010	2200-0000	No							
6/27/2010	1500-1700	Yes	10	11	9	82%	11	11	100%
7/7/2010	2100-2300	No							
7/12/2010	1600-1800	No							
7/20/2010	2300-0100	Yes	28	34	28	82%	38	35	92%
7/25/2010	1400-1600	Yes	57	55	41	75%	52	48	92%
8/3/2010	1700-1900	Yes	37	47	34	72%	50	45	90%
8/9/2010	1300-1500	Yes	14	12	7	58%	12	10	83%
8/15/2010	1600-1800	Yes	19	22	18	82%	22	22	100%
8/23/2010	2000-2200	Yes	33	40	29	73%	42	32	76%
8/30/2010	1500-1700	No							
9/8/2010	1800-2000	No							
9/12/2010	2200-0000	No							
9/20/2010	1900-2100	No							
9/24/2010	1600-1800	No							
10/3/2010	2100-2300	No							

Attachment 2
D21 Weekly Random Audit Results

Audit Date	NOP File Audit Period	Simuls during Audit Period?	Approx. Minutes of Simuls	AJI Number of A/C Observed	AJI Number of Compliant A/C	AJI Compliance Percentage	D21 Number of A/C Observed	D21 Number of Compliant A/C	D21 Compliance Percentage
10/10/2010	2000-2200	No							
10/19/2010	1400-1600	No							
10/27/2010	1700-1900	No							
10/31/2010	1300-1500	No							
11/8/2010	2300-0100	No							
11/14/2010	2100-2300	Yes	47	44	40	91%	50	49	98%
11/29/2010	1500-1700	No							
12/7/2010	1800-2000	No							
12/12/2010	1600-1800	No							
12/12/2010	2100-2300	Yes	10	9	9	100%	unknown	unknown	unknown
12/26/2010	1400-1600	No							
1/5/2011	1900-2100	Yes	8	15	13	87%	15	14	93%
1/10/2011	2000-2200	No							
1/18/2011	1700-1900	Yes	17	20	17	85%	20	20	100%
1/23/2011	2200-0000	No							
2/6/2011	1300-1500	No							
2/14/2011	2300-0100	No							
2/22/2011	1500-1700	No							
2/28/2011	1800-2000	Yes	22	25	19	76%	25	21	84%
3/9/2011	1600-1800	Yes	26	25	21	84%	27	16	59%
		Totals:	383	433	329		438	386	

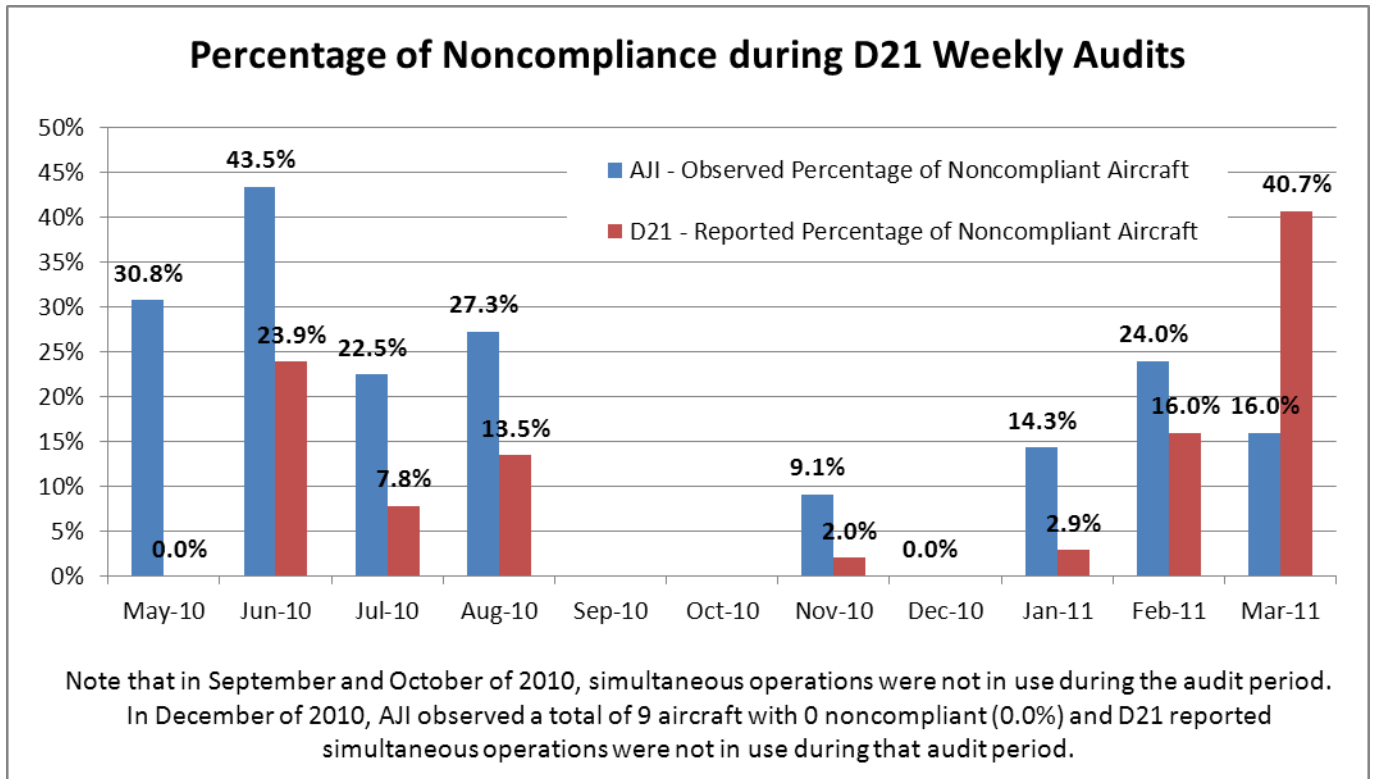
Notes:

- 46 audit periods
- 15 periods audited where simultaneous approaches were in use
- 31 periods audited where simultaneous approaches were not in use (**67%**)
- Of 5520 minutes of audited time, only 383 minutes (**7%**) were when simultaneous approaches were being conducted.

**Attachment 2
D21 Weekly Random Audit Results**

AJI-D21 Audit Results Comparison - Combined by Month:

AJI - D21 Audit Results Comparison						
Month	AJI Number of Noncompliant A/C	D21 Number of Noncompliant A/C	AJI Number of A/C Observed	D21 Number of A/C Observed	AJI % Noncompliance	D21 % Noncompliance
Apr-10	0	0	0	0	-	-
May-10	12	0	39	39	30.8%	0.0%
Jun-10	20	11	46	46	43.5%	23.9%
Jul-10	20	7	89	90	22.5%	7.8%
Aug-10	33	17	121	126	27.3%	13.5%
Sep-10	0	0	0	0	-	-
Oct-10	0	0	0	0	-	-
Nov-10	4	1	44	50	9.1%	2.0%
Dec-10	0	0	9	0	0.0%	-
Jan-11	5	1	35	35	14.3%	2.9%
Feb-11	6	4	25	25	24.0%	16.0%
Mar-11	4	11	25	27	16.0%	40.7%



**Attachment 3
CSC QCG Peak Traffic Period Audit Results**

Results from QCG audits conducted when simultaneous operations were in use (33 total)					
Time Period: 4/13/2010 - 10/31/2010					
Date	Local Time	Total Arrivals from Count Ops	Number of A/C Noncompliant	% Noncompliance (calculated from CountOps)	QCG Estimated % Noncompliance (based on rough 132 rate)
4/26/2010	0700-0900	75	1	1%	1%
5/2/2010	0700-0900	62	3	5%	2%
5/8/2010	0700-0900	56	1	2%	1%
5/11/2010	0700-0900	80	2	3%	2%
5/12/2010	0700-0900	77	0	0%	0%
5/22/2010	0700-0900	65	5	8%	4%
6/1/2010	0700-0900	69	0	0%	0%
6/12/2010	0700-0900	81	0	0%	0%
6/16/2010	0700-0900	84	4	5%	3%
6/17/2010	0700-0900	87	0	0%	0%
7/9/2010	0700-0900	79	2	3%	2%
7/21/2010	0700-0900	88	0	0%	0%
7/25/2010	0700-0900	64	0	0%	0%
7/28/2010	0700-0900	96	0	0%	0%
8/3/2010	0700-0900	85	0	0%	0%
8/4/2010	0700-0900	82	0	0%	0%
8/8/2010	0700-0900	68	1	1%	1%
8/9/2010	0700-0900	82	1	1%	1%
8/12/2010	0700-0900	82	3	4%	2%
8/13/2010	0700-0900	87	0	0%	0%
8/23/2010	0700-0900	71	0	0%	0%
8/24/2010	0700-0900	74	0	0%	0%
8/28/2010	0700-0900	78	0	0%	0%
9/3/2010	0700-0900	81	0	0%	0%
9/12/2010	0700-0900	66	0	0%	0%
9/19/2010	0700-0900	67	1	1%	1%
9/23/2010	0700-0900	74	0	0%	0%
9/24/2010	0700-0900	82	0	0%	0%
9/28/2010	0700-0900	75	2	3%	2%
10/2/2010	0700-0900	65	0	0%	0%
10/24/2010	0700-0900	84	0	0%	0%
10/26/2010	0700-0900	73	0	0%	0%
10/28/2010	0700-0900	72	3	4%	2%

Note that because the CSC QCG changed their reporting format starting in November of 2010, it is unknown exactly which days were audited for the months of November and December.

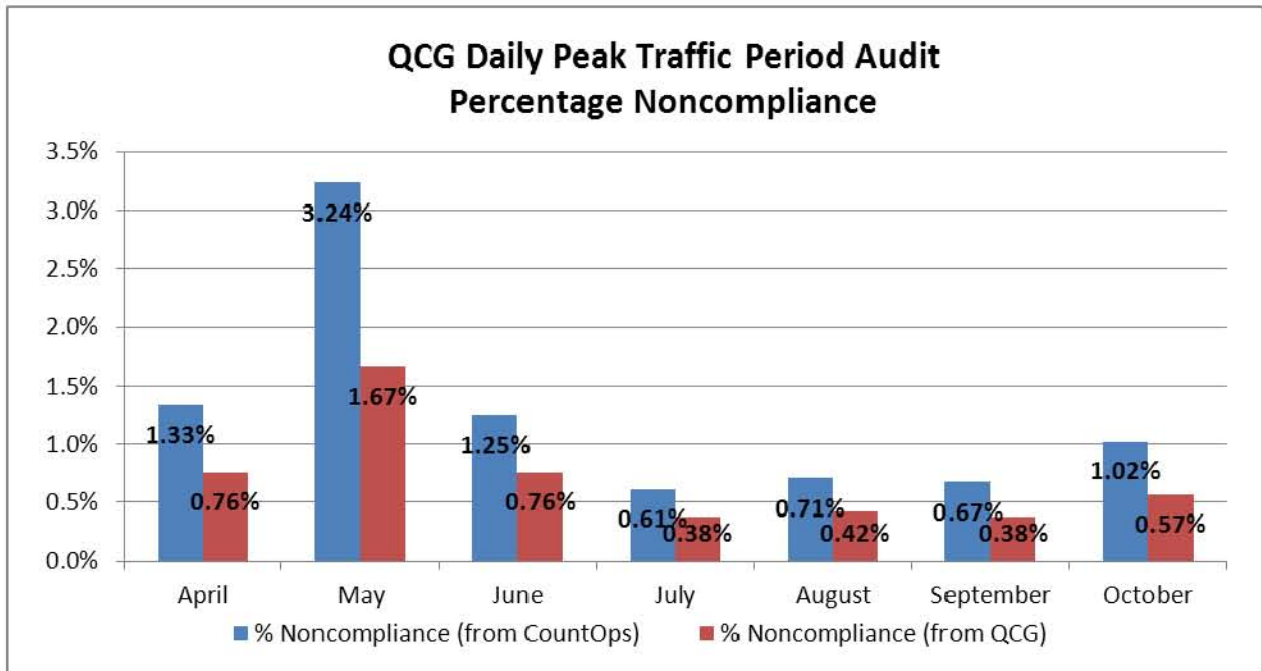
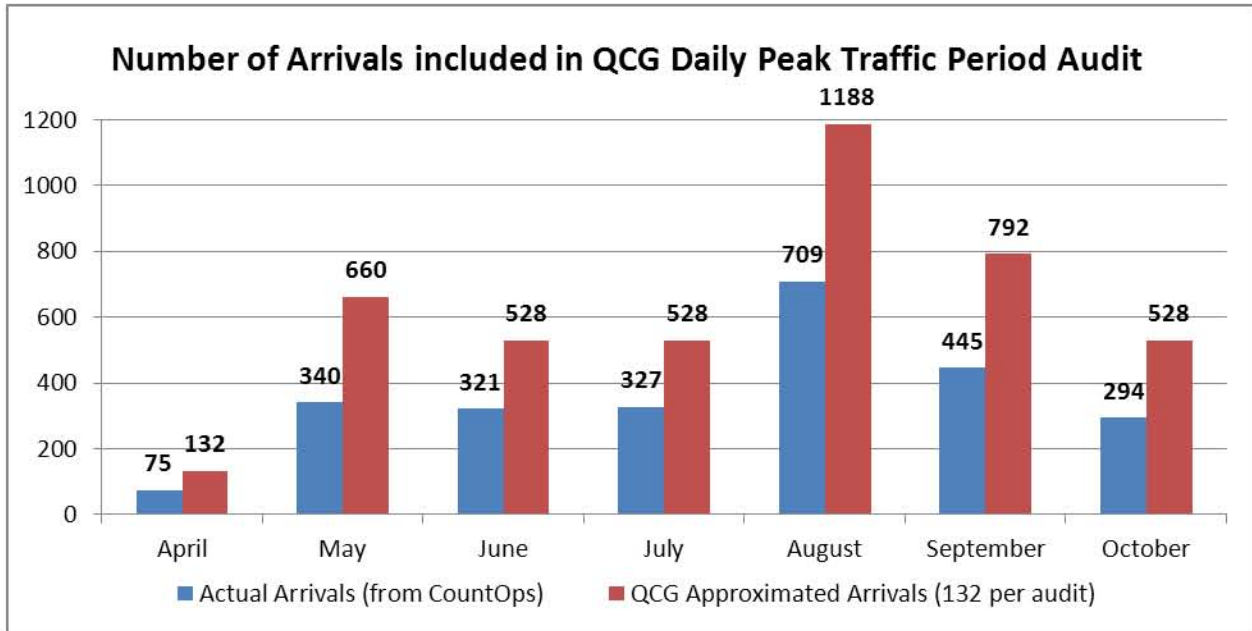
**Attachment 3
CSC QCG Peak Traffic Period Audit Results**

Results combined by Month							
Results from QCG audits conducted when simultaneous operations were in use (33 total) Time Period: 4/13/2010 - 10/31/2010							
Month	Number of Audits during Simultaneous Operations	Number of A/C Noncompliant	Total Arrivals (from CountOps)	QCG Estimated Arrivals (132 per audit)	% Noncompliance calculated from CountOps	QCG Estimated % Noncompliance	% Difference
April	1	1	75	132	1.33%	0.76%	0.58%
May	5	11	340	660	3.24%	1.67%	1.57%
June	4	4	321	528	1.25%	0.76%	0.49%
July	4	2	327	528	0.61%	0.38%	0.23%
August	9	5	709	1188	0.71%	0.42%	0.28%
September	6	3	445	792	0.67%	0.38%	0.30%
October	4	3	294	528	1.02%	0.57%	0.45%

Attachment 3 CSC QCG Peak Traffic Period Audit Results

Results Combined by Month – Graphical Representation:

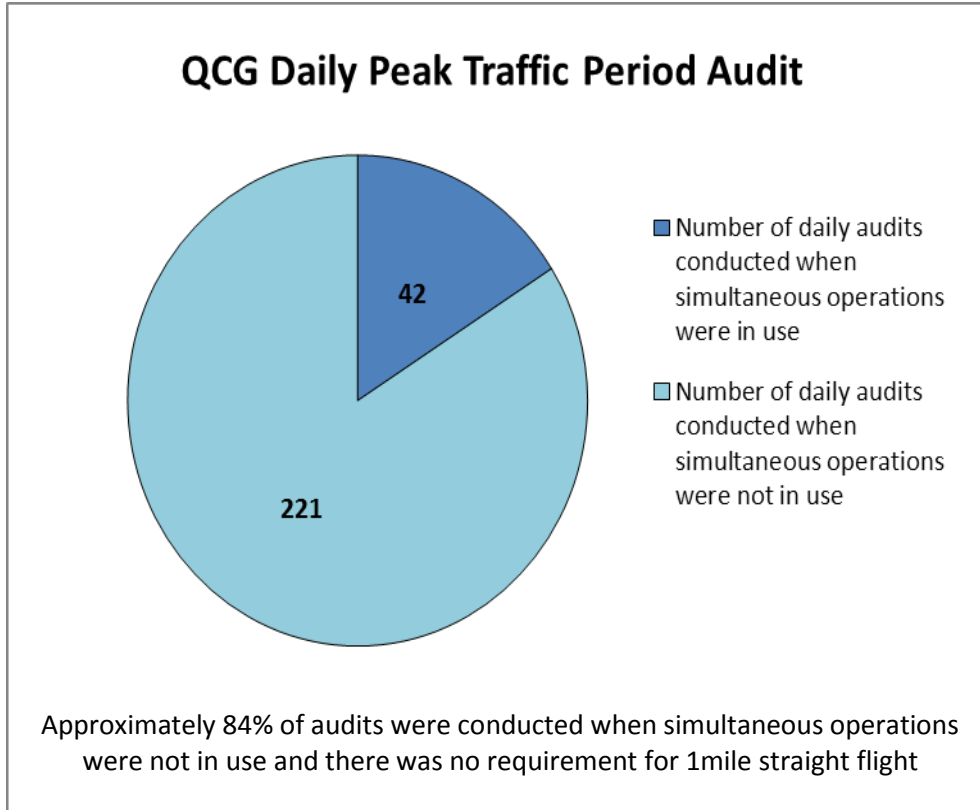
Time Period: 4/13/2010 – 10/31/2010



Attachment 3 CSC QCG Peak Traffic Period Audit Results

The breakdown below also includes audits conducted during November and December of 2010 (an additional 9 audits).

Breakdown	
Number of daily audits conducted when simultaneous operations were in use	42
Number of daily audits conducted when simultaneous operations were not in use	221
Total number of days in period (4/13/2010 - 12/31/2010)	263
Percentage of QCG daily audits conducted when simultaneous operations were not in use	84.03%



**Interpretation
of Air Traffic Control
Policy, JO 7110.65
Paragraph 5-9-7b4**

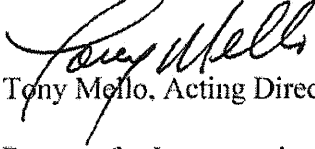


Federal Aviation Administration

Memorandum

Date: MAR 12 2012

To: Paul J. Sheridan, Director, Central Terminal Operations, AJT-C

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

Subject: Request for Interpretation of FAA Order 7110.65, Paragraph 5-9-7 b4,
SIMULTANEOUS INDEPENDENT ILS/MLS APPROACHES- DUAL &
TRIPLE

We have received your request for interpretation of FAA Order 7110.65, Air Traffic Control, Paragraph 5-9-7 b4 and the question, "Does not providing the one mile straight flight specified in the paragraph constitute a loss of separation?"

We have reviewed your question and offer the following:

Controllers ensure the application of specific separation minima. In order for there to be a loss of separation with the adjacent final approach course during the initial localizer intercept phase during operations on Simultaneous Independent ILS Approaches, there would have to be a loss of the vertical or lateral separation component specified in Section 5-9-7a1 of the Chapter (1000 ft. or 3 miles). The 1 mile straight flight provision is not a separation requirement.

If you have any questions or need further information, please contact Ronald Singletary, Manager, Terminal Operations and Procedures, at (202) 385-8558.

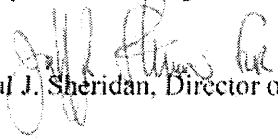


Federal Aviation Administration

Memorandum

Date: MAR 6 2012

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

From:  Paul J. Sheridan, Director of Terminal Operations, Central Service Area, AJT-C

Subject: Clarification Request: Federal Aviation Administration JO 7110.65,
Paragraph 5-9-7b(4)

In support of quality control duties and responsibilities in the Central Service Area, we are requesting a determination regarding separation requirements in the subject paragraph.

Federal Aviation Administration (FAA) JO 7110.65, Paragraph 5-9-7b, specifies several requirements when applying minimum separation during simultaneous independent ILS approaches. While we understand how to apply each of the requirements, the evaluation and assessment of non-compliance is in question. Specifically, if conditions in the subject paragraph are not accomplished, and the aircraft is allowed to continue a simultaneous approach, does this constitute a loss of separation? The paragraph is excerpted here for reference and the particular focus of our request is the second sentence of Paragraph 5-9-7b (4): "Provide at least 1 mile of straight flight prior to the final approach course intercept."

FAA JO 7110.65 Paragraph 5-9-7b:

- b. The following conditions are required when applying the minimum separation on adjacent dual or triple ILS/MLS courses allowed in subpara a:*
- 1. Straight-in landings will be made.*
 - 2. ILS, MLS, radar, and appropriate frequencies are operating normally.*
 - 3. Inform aircraft that simultaneous ILS/MLS approaches are in use prior to aircraft departing an outer fix. This information may be provided through the ATIS.*
 - 4. Clear the aircraft to descend to the appropriate glideslope/glidepath intercept altitude soon enough to provide a period of level flight to dissipate excess speed. Provide at least 1 mile of straight flight prior to the final approach course intercept.*

If you require additional information or have any questions, please contact Susan Ruddy, Support Specialist, Operations Support Group, ATO Central Service Center, at 817-321-7717.

**Document Change Proposal
(DCP) of Air Traffic Control
Policy, JO 7110.65
Paragraph 5-9-7**

CURRENT:

**5-9-7. SIMULTANEOUS INDEPENDENT
ILS/MLS APPROACHES- DUAL &
TRIPLE
TERMINAL**

b. The following conditions are required when applying the minimum separation on adjacent dual or triple ILS/MLS courses allowed in subpara a:

1. Straight-in landings will be made.
2. ILS, MLS, radar, and appropriate frequencies are operating normally.
3. Inform aircraft that simultaneous ILS/MLS approaches are in use prior to aircraft departing an outer fix. This information may be provided through the ATIS.
4. Clear the aircraft to descend to the appropriate glideslope/glidepath intercept altitude soon enough to provide a period of level flight to dissipate excess speed. Provide at least 1 mile of straight flight prior to the final approach course intercept.

NOTE-
Not applicable to curved and segmented MLS approaches.

PROPOSED:

**5-9-7. SIMULTANEOUS INDEPENDENT
ILS/MLS APPROACHES- DUAL &
TRIPLE
TERMINAL**

b. The following conditions are required when applying the minimum separation on adjacent dual or triple ILS/MLS courses allowed in subpara a:

1. Straight-in landings will be made.
2. ILS, MLS, radar, and appropriate frequencies are operating normally.
3. Inform aircraft that simultaneous ILS/MLS approaches are in use prior to aircraft departing an outer fix. This information may be provided through the ATIS.
4. Clear the aircraft to descend to the appropriate glideslope/glidepath intercept altitude soon enough to provide a period of level flight to dissipate excess speed. Provide at least 1 mile of straight flight prior to glideslope/glidepath intercept.

NOTE-
Not applicable to curved and segmented MLS approaches.