Testimony of

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Subcommittee on Aviation

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Runway Safety: An Update

Background

In November of 2007, the Government Accountability Office (GAO) issued a report that warned of "a high risk of a catastrophic runway collision occurring in the United States."[1] The GAO's study found that, in 2007, runway incursions had reached an alarming rate - nearly as high as the previous peak in 2001. Shortly thereafter, the Aviation Subcommittee of the House Transportation and Infrastructure Committee held an investigative hearing on how best to address this serious and growing threat to runway safety. NATCA presented a number of recommendations for improving runway safety at that February 2008 hearing[2].

These recommendations included:

- Establishing local committees for runway incursion prevention. These committees, structured on the level of the individual airport, would be composed of representatives of local stakeholders, including pilots, air traffic controllers, airport management and airport vehicle drivers, as well as a national representative from the FAA. Through their first hand experience these local professionals would be able to identify runway incursion "hot spots" where they have witnessed breakdowns of communication, inadequate procedures, failures of airport markings, or terrain-related difficulties in order to develop strategies for addressing these facility-specific safety issues.
- Ensuring that air traffic control towers are properly staffed. The first step towards proper staffing requires the FAA to return to the bargaining table to reach a mutually agreeable contract with NATCA. This would stem the flow of qualified controllers from the workforce by making the job more attractive for individuals at all stages of their careers, including newly-hired controllers as well as those eligible for retirement.
- Re-establishing a collaborative working relationship between the FAA and NATCA to identify the technological needs of the air traffic system and effectively develop and employ technology to meet those needs. There currently exists technology that, if properly implemented, could help to improve runway safety. These technologies include Surface Radar (both ASDE-X or lower cost surveillance systems), runway status lights, data link systems, and taxiway monitoring systems.
- Constructing and fully utilizing End Around Taxiways to avoid runway crossings.

Deteriorating Runway Safety

Runway safety has not improved in the months since this subcommittee last convened to address this issue. According to internal FAA documents, as of September 4, 2008 there were 921 runway incursions in FY 2008, 106 more than during the same period in FY 2007. Runway incursions have also exceeded the limit placed by FAA performance standards, which allows no more than 769 runway incursions during the entire fiscal year.

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[1] November 2007 GAO report number GAO-08-29 "Aviation Runway And Ramp Safety: Sustained Efforts to Address Leadership, Technology, and Other Challenges Needed to Reduce Accidents and Incidents"

[2] Forrey, Patrick "Runway Safety: Testimony of Patrick Forrey, President National Air Traffic Controllers Association, AFL-CIO Before the House Transportation and Infrastructure Subcommittee on Aviation" February 13, 2008

Figure 1

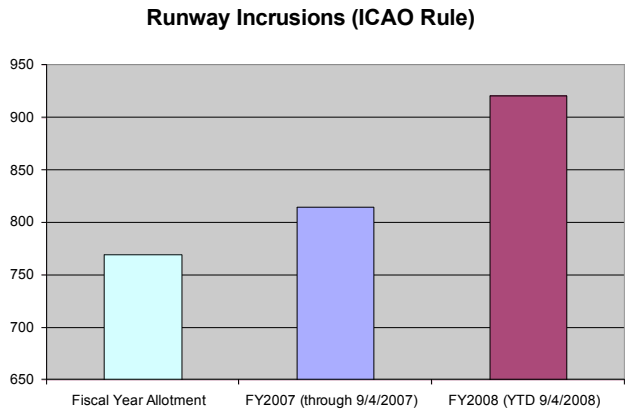
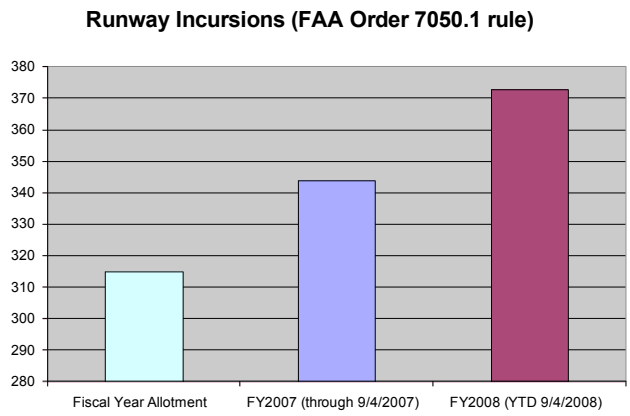


Figure 2



It must be noted that on October 1, 2007 the FAA adopted the International Civil Aviation Organization (ICAO) definition of runway incursion, abandoning the standard that had been laid out in FAA Order 7050. Most significantly, this new standard changed the definition of a runway incursion. A runway incursion is now defined as "any unauthorized intrusion onto a runway,"[3] regardless of the likelihood of conflict. In the past, for example, if an aircraft crossed an empty runway without authorization, the incident was classified by the FAA as a "surface incident" rather than runway incursion. Under the new terms, the same incident would be considered a Category C or D runway incursion. The FAA maintained records of "surface incidents," allowing us to make meaningful comparisons. Using either the old FAA rule or the new ICAO rule, there has been an undeniable and significant increase in runway incursions in FY 2008 as demonstrated figures one and two.

The number of severe (Category A and B) runway incursions thus far this fiscal year is similar to that at the same time last year. As of September 16, 2008 there were 23 Category A and B runway incursions[4], while last year at this time there had been 24[5]. However, the number of airport operations has decreased during that same time period. Therefore the rate of serious incursions has actually increased. As of July 31, 2008[6] the rate of Category A and B runway incursions in FY 2008 is 0.39 per one million airport operations, an increase of nine percent from the 0.35 last year.[7]

Particularly alarming to NATCA is the 2008 increase in operational errors in the terminal environment. According to internal FAA sources, terminal operational errors have increased by 20 percent thus far in FY 2008 over the same period in 2007. This year number of errors allotted by FAA performance standards has also been exceeded. This increase suggests that human factors affecting air traffic controllers – understaffing, training, fatigue, stress and workload – are having an increasingly harmful effect on safety in the terminal environment.

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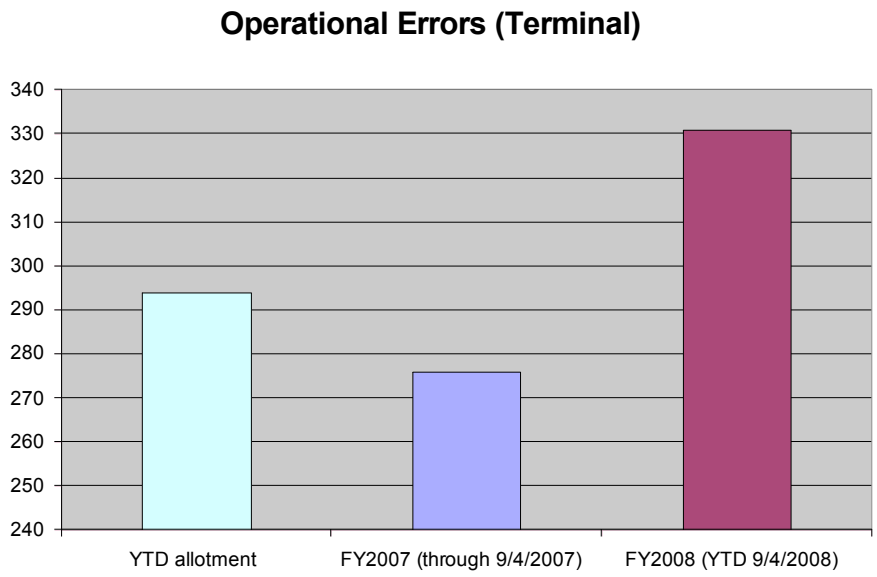
[3] Takemoto, Paul. FAA Press Release, "FAA Adopts ICAO definition for Runway Incursions," October 1, 2007
[4] From "FAA Today" September 16, 2008
[5] From "FAA Today" September 14, 2007 and September 17, 2007
[6] July 31 is the last date for which the FAA has posted traffic counts on the Air Traffic Activity Systems Database.
[7] Rates are calculated based on the number of runway incursions (as published in FAA today) and the number of airport operations (as published in the FAA's Air Traffic Activity Systems Database (ATADS)) for the same time period.

Figure 3



Limited Progress on NATCA's Recommendations

NATCA has been very disappointed by the lack of meaningful attention the FAA has given to addressing the issue of runway safety. Although the Agency has have made some nominal gestures, it has done little of value to address NATCA's concerns or implement our recommendations.

Proper Staffing of Air Traffic Control Facilities

The FAA has taken no meaningful steps toward returning to the bargaining table to bargain with air traffic controllers. As a result, job dissatisfaction remains high and controllers continue to flee the profession at alarming rates through retirement (less than two percent of those that left reached their mandatory retirement age)[8], resignations, and promotions to management. Although the FAA has put into place several incentive programs, these stop-gap measures have proven very limited in their efficacy and do not address the problem at its root.

As NATCA has testified before this subcommittee,[9] understaffing forces many controllers to work frequent overtime shifts contributing to fatigue in the workforce. Even with many controllers working extra hours, shifts remain short-staffed – forcing controllers to work combined positions and affording them fewer opportunities for rest and recovery during the shift itself, exacerbating problems with workload and fatigue. Furthermore, the outflow of experienced personnel from the air traffic controller ranks has created an unmanageable ratio of

[8] Based on payroll data provided by the FAA to NATCA

[9] Testimony of Patrick Forrey, President, National Air Traffic Controllers Association before the House Transportation and Infrastructure Committee Subcommittee on Aviation Wednesday, "Air Traffic Control Facility Staffing" June 11, 2008

trainees, forced trainees into busy facilities, and contributed to an unacceptable lack of experience in the workforce at large.

In March 2008, the FAA released the annual "Controller Workforce Plan" which updated the FAA's staffing ranges for each air traffic control facility. These staffing ranges are designed to give the misleading appearance that facilities are adequately staffed by designing ranges that are deliberately skewed low. In its 2007 workforce plan, the FAA justifies these ranges by averaging the following numbers. [10]

1. The results of a scientific assessment of acceptable staffing levels, details of which they have not provided.
2. Current staffing at peer facilities: As the entire system is suffering the same staffing shortage, peer facilities will be equally understaffed.
3. Past staffing lows: The FAA misleadingly refers to this comparison as the past year of "highest productivity." However, they define productivity as the highest number of operations per controller – the year when the fewest controllers were relied upon to control the largest amount of traffic – without taking into account error rates, delays, or the effect on the workforce.
4. Managers' advice: The FAA misleadingly refers to this as "service unit input" however, this did not include input from NATCA representatives.

In order to best ensure the safety of the flying public, the FAA must work with NATCA and the National Academy of Sciences, or other independent third party, to re-establish scientifically-based staffing ranges for each facility.

Local Runway Committees

NATCA is not aware of any FAA initiative to create local runway safety committees that address the unique runway safety issues of each airport, has the union been asked to participate in such a program.

NATCA is aware of runway incursion workgroups that are being held at the regional level, and we are involved in some, but not all, of these work groups. NATCA should be afforded a position on all agency workgroups dealing with runway safety throughout the country, and our representatives should be granted official duty time to attend these meetings.

Technology and Modernization

Progress has been slow on our recommendations for effective use of technology and modernization. Of particular concern is the FAA's indication that it is not interested in re-establishing the liaison program. NATCA's Safety Director has met with the FAA's Rick Ducharme, Director of Terminal Mission Support for the Air Traffic Organization, who has made it clear that the FAA had no desire to work with NATCA representatives for this purpose. As indicated in the February 13 testimony, some of the most effective technological changes to air traffic control grew out of the liaison program, because the FAA was able to draw upon the

[10] Federal Aviation Administration, "A Plan For the Future: 2007-2016" March 2007

expertise of front-line air traffic controllers to determine useful features and strategies for successful integration of new technology. NATCA reaffirms its position that our inclusion is critical to the success of new technologies in the air traffic control environment. With the aviation community justifiably focused on NextGen, we must be more vigilant than ever to ensure that users are included early on so that cost overruns and delays can be avoided.

The FAA has begun to take steps toward implementing the Low Cost Ground Surveillance System (LCGS) program referenced in our testimony; it has begun testing the system at Spokane International Airport (GEG). This system provides information on vehicles on the runway and at low altitudes around the airport, providing an additional tool for controllers, particularly during periods of low visibility. Because LCGS does not have the built-in safety logic of the ASDE surveillance programs, it is an inferior tool. However, NATCA supports the implementation of LCGS at medium to small sized airports, where implementation of ASDE-X is not feasible. Again, collaboration with NATCA during the implementation process is crucial for the success of this program.

The FAA also continues to move forward – without NATCA involvement – on the runway status lights program, a program that began as a NATCA initiative at Dallas Fort Worth. Details regarding the status of this program or intentions to expand the program to other airports have not been provided to NATCA. Most of the work on Data Link Systems recommended in our February testimony is being done by the industry groups associated with NextGen. There is no viable Data Link program at this time that could be implemented prior to 2016. Taxiway monitoring systems are already available through the Sensis Corporation with their upgraded ASDE program. This technology would allow a controller to input a coded taxi route into the monitoring system and would alert the controller if the pilot deviated from the assigned route. However, the FAA is not purchasing this software upgrade and the technology will not be available on the LCGS.

Minimizing Runway Crossings

The FAA has not designated any additional airports for the construction of end-around taxiways. Even at airports that have such taxiways, many pilots avoid these routes because the companies they work for are reluctant to burn the extra fuel required to use them.

For airports where end-around taxiways simply are not feasible, there needs to be a genuine effort to develop taxi procedures to reduce runway crossings. Coded taxi routes should be seriously considered at any airport which has more than two taxiways required from the terminal or parking to the runway.

Perpendicular Runways

For many years, Air Traffic Controllers at John F Kennedy Airport (JFK) in New York have warned the FAA of the safety risk posed by simultaneous utilization of the airport's perpendicular runways without staggering flights. The FAA refused to heed this warning and continued to require controllers to utilize the runways in this way. In a memo dated September 25, 2000 the Air Traffic Division Manager informed the managers of New York TRACON and

JFK Tower that there was "No wake turbulence separation requirements for the following operations: 1. An aircraft arriving behind a heavy aircraft arriving on an intersecting runway [and] 2. An arriving aircraft that is not expected to cross the flight path of a departing heavy aircraft from an intersecting runway."[11] In other words, prior to these incidents there was no procedure to ensure safe separation in the event that an aircraft aborts a landing and crosses the flight path of an aircraft departing or aborting a landing on an intersecting runway.

In April the Air Traffic Organization's Office of Aviation Oversight found that similar operations at Detroit Metropolitan Wayne County Airport (DTW) were unsafe because of "procedural and wake turbulence issues." In a memo dated April 4, 2008 the Operations Manager at DTW ordered a suspension of the "Southwest Flow Configuration (Land Runways 27L/22R; Depart Runways 21R/27L)…pending corrective action."[12] Despite clear indication that the FAA was aware that such a configuration was unsafe, no action was taken on a national level.

This July, there were two near collisions in the span of a week at JFK airport both caused by unsafe usage of perpendicular runways.

On July 5, 2008 a Cayman Airways pilot aborted a landing and executed a go-around causing it to intersect with the flight path of an LAN Chile jet that was taking off from a perpendicular runway. The aircraft came within 200 feet and a half-mile horizontally of one another. On July 12th, Delta Flight 123 aborted its landing and executed a go-around, causing it to intersect with the flight path of Comair Flight 1520, taking off from a perpendicular runway. The two flights, and a third, Bombardier CRJ9, all came within 600 feet of one another.[13]

The FAA continues to claim that these were non-incidents as they did not violate existing FAA rules. FAA reacted to negative press attention however, by temporarily changing certain flight procedures. According to the memo announcing the new rule, JFK tower personnel are authorized to conduct operations "that will allow an aircraft to begin departure roll on Runway 13 R once the preceding arriving aircraft on Runway 22L has crossed the landing threshold of 22L."[14] This new procedure calls for the staggering of departures and arrivals on intersecting runways, protecting an aircraft that aborts a landing from conflict with a departing aircraft on an intersecting runway. The new procedure, however, fails to protect two aircraft arriving on intersecting runways from conflict with one another if both decide to abort their landings, in addition to the fact that it does not address the reciprocal operation (arrivals on 4R and 13R, departures on 13L).

This procedural change also applies only to operations at JFK airport despite similar runway configurations causing similar problems at several other airports. On June 11th, there was a

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[11] Memorandum dated September 25, 2000 signed by F.D. Hatfield from Manager Air Traffic Division AEA-500 to Manager, New York TRACON with the subject line "Information: Wake Turbulence Separation"

[12] Memorandum dated April 4, 2008 by John Guth Manager, System Operations DTW/D21 with subject line "Impact Statement and Brief: Suspension of the Southwest Flow Configuration"

[13] Lowy, Joan, *Associated Press* "2nd near collision occurs at JFK airport in week" July 12, 2008

[14] Memorandum dated August 8, 2008 To Director, Easter Terminal Operations, From Raul C. Trevino, Director, Terminal Safety and Operations Support with the subject "Request to Waiver FAA Order 7110.65S, Paragraph 3-9-8 b2, Intersecting Runway Operations: your Memo Dated July 22, 2008."

similar incident at Memphis International Airport, where, in order to avoid conflict with a SF34 which had not yet exited the runway, a controller issued go-around instructions to a Flagship CRJ approaching in sequence behind the SF34 on Runway 27. This go-Around route put the CRJ in the flight path of an aircraft arriving on perpendicular runway 18R, resulting in a near collision. Other airports with similar problematic configurations include, among others (see appendix for airport maps): DTW, Boston Logan International Airport (BOS), Newark International Airport (EWR), Washington Dulles International Airport (IAD), Las Vegas McCarron Airport (LAS), and Houston International Airport (IAH)

NATCA believes that the new rule at JFK should be made permanent. An additional rule should also be made requiring staggered arrivals into intersecting runways, in order to protect both aircraft in the event that both pilots abort the landing. These rules should also be put in place for other airports with similar configurations including those previously listed.

Conclusion and Recommendations

NATCA is disappointed by the lack of attention the FAA has given to meaningfully improving runway safety. Therefore the Union reiterates the recommendations from our earlier testimony.

1. Local Airport Committees for Runway Incursion Prevention

It is imperative that each airport has the opportunity to employ a set of solutions that address specific local issues. NATCA recommends that Runway Incursion Prevention Committees be established for each airport throughout the country that would be run and structured on the level of the individual airport. These groups would be composed of representatives of the local stakeholders, including pilots, air traffic controllers, airport management, and airport vehicle drivers as well as a national representative from the FAA.

2. Proper Staffing of Air Traffic Control Towers

The first step to relieving the staffing shortage and alleviating controller fatigue is to stem the flow of Air Traffic Controllers leaving the FAA workforce. Therefore, NATCA recommends to this committee that the FAA be instructed to return to the bargaining and bargain in good faith with NATCA to produce a ratifiable agreement for the Air Traffic Controllers. This gesture of good faith will slow the rate of attrition by making staying in the FAA workforce more attractive to both newly hired Controllers and those eligible for retirement,. Additionally, The FAA must work with NATCA and the National Academy of Sciences, or other independent third party, to re-establish scientifically-based staffing ranges for each facility.

3. Technology and Modernization

- *Collaboration:*

When NATCA and the FAA worked collaboratively on modernization projects through the Liaison Program, they were able to successfully identify the technological needs of the air traffic system and develop and deploy the technology to meet those needs. Unfortunately this collaborative program was dissolved in 2003 by the FAA.

- *Surface Radar:*

NATCA recommends that ASDE-X be installed throughout the country at all airports with middle to high traffic density. For airports where implementation of ASDE technology is not

feasible, the Low Cost Ground Surveillance program should be utilized. Air Traffic Controllers should be given the opportunity to provide feedback and guidance on the local level during the implementation and deployment of the technology.

- *Additional Technologies:*

NATCA recommends that Runway Status Lights, Data Link Systems, and Taxiway Monitoring Systems be tested and adapted for use in the U.S. airport environment. Testing should be done swiftly, efficiently and cooperatively, and, once completed, the technologies should be implemented at all major airports.

4. Runway Crossing

Runway incursions commonly occur when the layout of taxiways force aircraft to cross a runway in route to a second runway or the gate. NATCA recommends to this subcommittee that end-around taxiways be constructed and utilized at all airports where such construction is possible.

In light of the recent incidents at JFK and at other facilities with intersecting runways, we would like to add an additional recommendation:

5. Intersecting Runways

The new rule at JFK, which staggers departures from arrivals on intersecting runways, should be made permanent. An additional rule should be made requiring staggered arrivals in to intersecting runways, in order to protect both aircraft in the event that both pilots abort the landing. These rules should also be put in place for other airports with intersecting runway configurations.