NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety
Washington, DC 20594

May 24, 2006

AIR TRAFFIC CONTROL FACTUAL REPORT

DCA06MA009

A. AIRCRAFT ACCIDENT

Location: Chicago, Illinois
Date/Time: December 8, 2005 / 1914 Central Standard Time
December 9, 2005 / 0114 Coordinated Universal Time[1]
Aircraft: N471WN, Boeing 737-700, Southwest Airlines Flight 1248

B. AIR TRAFFIC CONTROL GROUP

Ms. Sandy Rowlett, National Transportation Safety Board (NTSB), Washington, D.C.
Mr. Barry Anshell, National Air Traffic Controllers Association (NATCA), Chicago, Illinois
Mr. Dan Diggins, Federal Aviation Administration (FAA), Washington, D.C.
Captain Stan Humphrey, SWAPA, Houston, Texas
Mr. Patrick Dempsey, SWA, Dallas, Texas

C. SUMMARY

On December 8, 2005, 1914 central standard time, Southwest Airlines flight 1248, a Boeing B-737-7H4 registered as N471WN, overran runway 31C at Chicago Midway Airport in Chicago, Illinois, during the landing rollout. The airplane departed the end of the runway, rolled through a blast fence, a perimeter fence, and onto a roadway. The airplane came to a stop after impacting two automobiles. Instrument meteorological conditions prevailed at the time. The airplane was substantially damaged. The flight was conducted under 14 CFR Part 121 and had departed from the Baltimore/Washington International Thurgood Marshall Airport, Maryland.

[1]All times in this report are expressed in Coordinated Universal Time (UTC) except for the controllers' work schedule, which is in local time.

D. DETAILS OF THE INVESTIGATION

1. Group Activities

The ATC Group met at Chicago Midway Airport (MDW) Tower on Friday, December 9, 2005 and met with the Greg Hayden, MDW Air Traffic Manager, Chris Beyer, MDW Staff Specialist, and Michelle Behm, the Hub Manager who provided a briefing regarding the sequence of events. The group was advised that the facility is not equipped with an Airport Movement Area Safety System (AMASS), and it does not have a ground radar system although the facility is scheduled to receive an ASDE-X. The group provided Mark Olsen, ATO-S, with a request list for information, reviewed training records, recorded voice communications and the radar playback of the accident sequence. On December 10, the group interviewed the local controller, supervisor and two ground controllers. On Sunday, December 11, 2005, the group completed the field notes and finished the field portion of the investigation.

2. History of Flight

Radar data for this accident was obtained from the Federal Aviation Administration (FAA) Chicago Terminal Radar Approach Control (TRACON), (C90), Chicago, Illinois. The radar data used for this report came from the ASR-9 (QXM) radar antenna that is located at latitude/longitude N41- 37-17.38 / W 087-46-10.12, elevation 669.7 feet, magnetic variation 2 degrees west. The radar antenna supplies data to an Automated Radar Terminal System (ARTS) IIIA at C90.

The "History of Flight" begins with the C 90 Sector 1 approach controller who provided services to SWA1248 inbound to MDW.

At 0103:36, the pilot of SWA1248 made initial contact with the sector one controller who instructed the crew "…[ATIS [2]] Victor current, intercept ILS runway three one center, RVR[3] 5500." The crew acknowledged and advised they would get the ATIS. A few seconds later the C90 controller said, "Southwest twelve forty-eight is eighteen miles from Gleam, cross Gleam at four thousand, cleared ILS 31 Center approach [4]," and confirmed the crew was maintaining 210 knots. The crew confirmed their speed and the approach clearance.

At 0104:30, C90 advised the crew, "…braking action reported fair except at the end where it's poor." The SWA1248 crew acknowledged.

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[2] Automatic Terminal Information Service is defined in the Aeronautical Information Manual (AIM) Pilot/Controller Glossary as: "The continuous broadcast of recorded non-control information in selected terminal areas. Its purpose is to improve controller effectiveness and to relieve frequency congestion by automating the repetitive transmission of essential but routine information."

[3] Runway Visual Range. For further information about RVR, see section 8.

[4] See figure 1 for the MDW ILS Z RWY 31C approach plate.

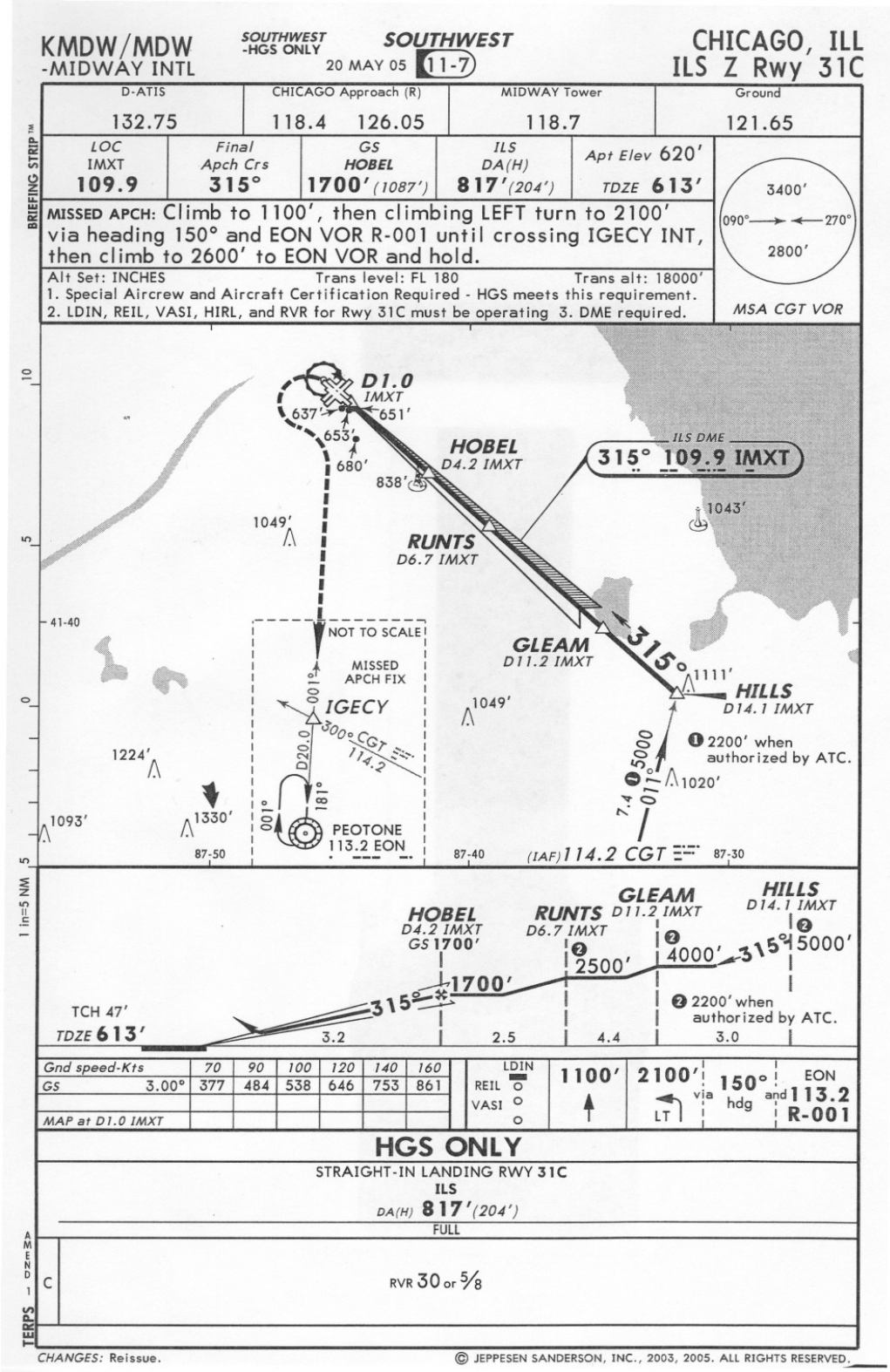

Figure 1. MDW ILS Z RWY 31C approach plate

During the next minute, the MDW tower controller and the C90 controller discussed the possibility of permitting the snowplows on runway 31C to remove the snow.

At 0106:26, the C90 controller instructed the SWA1248 crew, "…reduce speed to 170 to Runts, contact tower at Runts." The crew acknowledged.

At 0109:52, the crew of SWA1248 contacted the MDW tower local controller. The local controller said, "…Continue for three one center, the winds zero nine zero at nine braking action reported good for the first half poor for the second half." The crew acknowledged.

At 0110:44, the previous arrival, N603KF, a Gulfstream 4, reported braking action as "fair to poor".

At 0112:25, the SWA1248 requested a landing clearance. The local controller said, "…runway three one center cleared to land, wind zero nine zero at nine braking action fair to poor." The SWA1248 crew replied, "kay."

Because of the falling snow, the local controller stated in his interview that he could not see the departure end of the runway thus asked the SWA1248 crew if they were "clear of three one center". At 0113:50, the crew responded, "We went over the end". Once the controller determined they had gone off the end of the runway and needed the emergency equipment, the Supervisor activated the crash, fire, and rescue phone to notify the appropriate personnel.

3. D-ATIS [5] Information

> Chicago Midway Airport information victor zero zero five three zulu, wind one zero zero at one one, visibility one half snow freezing fog, ceiling four hundred broken one thousand four hundred overcast, temperature minus three, dew point minus five, altimeter three zero zero six. I L S runway three one center approach in use, landing and departing runways three one also departing runway four right. Notices to airmen: runway three one right one three left closed, runway four left two two right closed, runway three one left one three right closed. All fixed wing departures contact clearance delivery on one two one point eight five. V F R departures indicate type aircraft, field location, and requested heading.

[5] Digital ATIS DIGITAL-AUTOMATIC TERMINAL INFORMATION SERVICE (D-ATIS) is defined in the AIM Pilot/Controller Glossary as "The service provides text messages to aircraft, airlines, and other users outside the standard reception range of conventional ATIS via landline and data link communications to the cockpit. Also, the service provides a computer-synthesized voice message that can be transmitted to all aircraft within range of existing transmitters. The Terminal Data Link System (TDLS) D-ATIS application uses weather inputs from local automated weather sources or manually entered meteorological data together with preprogrammed menus to provide standard information to users. Airports with D-ATIS capability are listed in the Airport/Facility Directory."

Readback all runway hold short instructions. Advise on initial contact you have information victor.[6]

4. Runway Visual Range (RVR)[7]

The MDW Tower Local controller did not issue RVR information to any inbound or outbound flightcrew.

5. Braking Action Reports[8]

Local Time	Call Sign	Type Aircraft	Controller Issued Braking Action for Runway 31C	Pilot Reported Braking Action for Runway 31C
1847:05	United 1446	EA320	Fair to poor	
1850:11	United 1446	EA320		Fair
1850:22	Southwest 2920	B737	Fair by an Airbus that just landed	
1853:10	Southwest 2920	B737		Fair and it's poor at the end here
1857:42	Southwest 321	B737	Fair and then poor at the end by your company a couple minutes ago	
1859:53	Southwest 2947	B737	Fair and then poor at the end	None provided
1901:15	Southwest 321	B737		Braking action at the far end of the runway is poor
1901:33	Southwest 321	B737		Good first half of 31 Center, poor the second half
1901:52	Southwest 1830	B737	Good for the first half, poor for the second half reported by your company	None provided

[6] When asked why ATIS "V" did not contain braking advisory information, facility management responded: "The Supervisor and controller working the Flight Data position failed to recognize that the criteria for braking action advisories had been met. It is the Supervisor's responsibility to recognize the requirement and ensure they are put on the ATIS. He did not remember to do it."

[7] RVR is defined in the AIM Pilot/Controller Glossary as: "An instrumentally derived value, based on standard calibrations, that represents the horizontal distance a pilot will see down the runway from the approach end. It is based on the sighting of either high intensity runway lights or on the visual contrast of other targets whichever yields the greater visual range. RVR, in contrast to prevailing or runway visibility, is based on what a pilot in a moving aircraft should see looking down the runway. RVR is horizontal visual range, not slant visual range. It is based on the measurement of a transmissometer made near the touchdown point of the instrument runway and is reported in hundreds of feet. RVR is used in lieu of RVV and/or prevailing visibility in determining minimums for a particular runway. 1. Touchdown RVR - The RVR visibility readout values obtained from RVR equipment serving the runway touchdown zone. 2. Mid-RVR - The RVR readout values obtained from RVR equipment located midfield of the runway. 3. Rollout RVR - The RVR readout values obtained from RVR equipment located nearest the rollout end of the runway."

[8] Obtained from recorded voice communications at the local control position.

1906:44	N565CC	C500	Good for the first half, poor for the second half	
1907:50	N603KF	GLF4	Good for the first half, poor for the second half	
1909:08	N565CC	C500		It's poor right now (crew indicated they were passed taxiway A)
1909:56	Southwest 1248	B737	Good for the first half poor for the second half	
1910:44	N603KF	GLF4		Fair to poor
1912:26	Southwest 1248	B737	Fair to poor	
1913:50	Southwest 1248	B737		Reported off the runway

6. Runw ay Use

Bruce Metz was the MDW Tower Supervisor on duty on Decem ber 8, 2005, at 2047 UTC when the decision was m ade to use runw ay 31C for arrival aircraft. He provided the following information in a written statement:

> "I was the Supervisor on duty in the control tower. The winds were favoring runway 4R. At 1940Z, the w eather began to deteriorate and by 2004Z the visibility had reduced to ¾ m ile, below m ost user m inimums. At 2020Z, C90 requested approval to se nd a few aircraft to runway 31C because of the reduced RVR m inimums. I advised them to watch the winds and approved the request. At 2031Z, runway 31C braking action was poor and we stopped arrivals due to snow plowing. Snow was heavy at that time. At 2046Z, C90 requested to change to runway 31C. I stated that I didn't know if anyone would take runway 31C considering the winds but that we would m ake the official change to runway 31C. Runways 13C and 4R were still below minimums. Runway 31C reopened at 2100Z and by 2109Z the RVR was 3000 and braking action was poor. The option to change to runway 13C was not viable because the visibility was below user minimums."

Chicago TRACON was asked to explain how the traffic flow at MDW impacted ORD, or vice versa. The Safety Board received this reply:

> O'Hare International Airport (ORD) and Midway International Airport (MDW) both reside in airspace c ontrolled by Chicago TRACON (C90). The two airports are just over 13 m iles apart. The airspace surrounding these airports was designed prim arily for ORD. All other airports within the C90 airspace arrive separated by ORD arrivals using vertical separation, arriving at a lower altitude.

MDW has three primary configurations: ILS 31C, ILS 4R, ILS 13C. When utilizing the ILS 31C, MDW will also circle to runway 22L. The only arrival configuration at MDW that has an impact on ORD is the ILS 13C approach. Because of the proximity to ORD and the final approach course for 13C at MDW, ORD cannot utilize runway 22L for arrivals or departures. This restricts the number of arrivals and departures that can be accommodated at ORD.

MDW departures to the east and to the west normal[ly] do not interact with ORD departures. MDW departures to the north and south are blended together by C90 prior to be [ing] delivered to ZAU [Chicago Air Route Traffic Control Center].

The C90 Traffic Management Unit (TMU) Log for December 8, 2006 indicated that beginning at 2010 UTC, ORD was landing runways 14L and 14R and departing runways 4L and 4R.[9]

7. Training Records

Luis Garcia (LC)	Local	Control
Entered on duty (EOD) FAA:		August 2, 1991
ATW ATCT:	December	20, 1991
CGX ATCT:	October	5, 1992
MDW ATCT:	September	29, 1996
CTO:	November	18, 1991
LAWRS:	June	23, 1992
Facility rated, MDW:	June	18, 1998

Medical certificate was current with no waivers or restrictions.

Michael Julius (ZT)	Supervisor	
EOD FAA:	September	3, 1985
Cleveland Center:	September	3, 1985
Lunken ATCT:	September	17, 1987
Munsie ATCT:	October	17, 1988
Indianapolis ATCT:	June	2, 1991
Indianapolis Center:	January	21, 1996
MDW:	January	25, 1997
CTO:	January	17, 1989
Facility rated, MDW:	July	31, 1997

[9] See section 13 for the C90 Traffic Management Unit's Log Summary for December 8, 2005.

Medical certificate was current with a limitation to wear corrective lenses for distant vision while performing ATC duties. He was also required to have glasses for near vision in his/her immediate possession while performing ATC duties.

8. Interviews[10]

Mr. Luis Garcia (LG) Local Control
Represented by Ron Adamski, NATCA

Mr. Garcia was interviewed by the ATC Group on December 10, 2005. In response to questions, he provided the following information:

He entered on duty with the FAA in August 1981 at the FAA Academy. His first facility was in Appleton, WI, in December 1991. He stayed at Appleton for 9-10 months then transferred to Meigs Field until September 1996 when he transferred to Midway ATCT.

Mr. Garcia was qualified as a Controller-in-Charge (CIC) and an on-the-job instructor (OJTI). He stated that his medical certification was current with no restrictions or waivers.

Mr. Garcia was not in the military and was not a pilot.

Mr. Garcia had rotating days off from week to week and his days off prior to the accident day were Sunday/Monday followed by 1500-2300 shifts on Tuesday and Wednesday. On the day of the accident, Mr. Garcia was assigned a 1400-2200 swing shift and arrived at the facility at about 1245. (He noted that he could flex the shift 30 minutes and earn 1 hour credit time.) He reported the weather at that time as cloudy but not yet snowing – "snow on the grass from previous storms but no snow on the pavement."

Mr. Garcia had reviewed the RAPTOR and listened to the recorded voice communications prior to the interview with the ATC Group. He reported that he signed on position by 1300 local time and recalled working ground control (GC). He reported traffic was steady the whole day but could not remember if it snowed while he was working GC.

Mr. Garcia recalled signing on the LC position approximately 35 minutes before the accident and reported the weather as "snowing heavily". He stated that two GC's, (one working aircraft and the other working airport vehicles), FD/CD combined, and LC were open. LC was responsible for aircraft departing runway 4R and landing runway 31C as well as aircraft within a 5-mile ring around the airport.

Mr. Garcia reported that when he assumed LC, the traffic was "pretty busy" and there was sufficient spacing between arrivals on final.

[10] See section 9 for the controllers' statements.

When asked what he remembered about the accident flight, Mr. Garcia reported the following:

He recalled seeing SWA1248's radar target on the bright radar indicator tower equipment (BRITE) at about a 10-mile final and he monitored the flight's progress while on final. On initial radio communication with the crew, he issued the wind speed and direction, and braking action. He then stated he was coordinating with another tower controller for snow removal, obtaining braking action reports, and approving runway crossings. He recalled asking preceding pilots for braking action reports and recalled coordinating with airport personnel/vehicles. He stated that coordination with airport personnel/vehicles was not accomplished on the intercom. Mr. Garcia did not recall the ground speed or altitude of the accident flight and reported nothing abnormal about the approach. He recalled the flight paths of the two aircraft that landed before SWA1248 and reported that he lost sight of both of them on runway 31C as they passed runway 4R. Mr. Garcia said that while he could see aircraft lights, he could not see the actual aircraft. He recalled asking the Gulfstream IV (G-IV) for a braking action report and inquired if the G-IV could make taxiway A – which the pilot reported he could. As he was about to issue a landing clearance to SWA1248, the pilot asked for a landing clearance, which he then provided as well as the braking action of "fair to poor". He recalled seeing SWA1248's lights as the flight passed over the runway and cross runway 4R. He then cleared an aircraft for takeoff from runway 4R.

He became concerned that he didn't receive a position report from SWA1248 after landing because he thought he had sufficient time to exit the runway. He then asked SWA1248 if he was clear of runway 31C to which the pilot reported that he was off the end of the runway. Mr. Garcia asked the pilot if they need the emergency equipment and the pilot reported "yes". He advised the supervisor who activated the crash phone.

When asked how he kept track of braking action reports, Mr. Garcia reported that he normally writes them down on his pad but did not recall if he did in this case because everyone was reporting the same information. When asked if he passed these reports on to anyone, Mr. Garcia said he shouted it out to everyone in the cab. When asked if anyone acknowledged his reports he said he could not remember. When asked if he ever confers with the city guy [11] in the cab, Mr. Garcia said "not usually" but remembered trying to create a gap on final for the snow removal equipment.

After SWA1248, C90 planned to build a gap in arrivals to allow the plows to clear the runway.

In response to the question of what conditions are required for the city to plow the runway, Mr. Garcia said that per a city memo, anytime a braking action report was "poor" the city would close the runway. He did not recall if they closed the runway prior to the accident.

[11] City Operations assigns a person to the tower cab during snow removal procedures.

He reported that all tower equipment, including RVR, was working properly.

Mr. Garcia provided the requirements to issue RVR values (prevailing visibility of 1 mile or less or a RVR of 6000 feet or less), but did not know why he failed to issue the RVR to SW A1248 even though there was a reportable value. He stated he was "very busy" and had no other explanation for not issuing the information.

He did not know where SW A1248 touched dow n on runway 31C, but stated probably between taxiways K and Y. He could not see wheels, just lights. When asked to describe the lights, Mr. Garcia stated that he saw bright white lights from SW A1248 that illuminated the sides of the runway.

Mr. Garcia said he believed the runway li ghts were on their highest setting and reported that he usually does not have any say in th e runway configuration (arrival and departure runways) as that is a supervisor's job.

He was working local control from the LC2 position in the cab[12] and reported that he had good visibility towards runway 31C with no obs tructions to vision. He could see the runway lights but not the actual runway surface and did not ask to re-position.

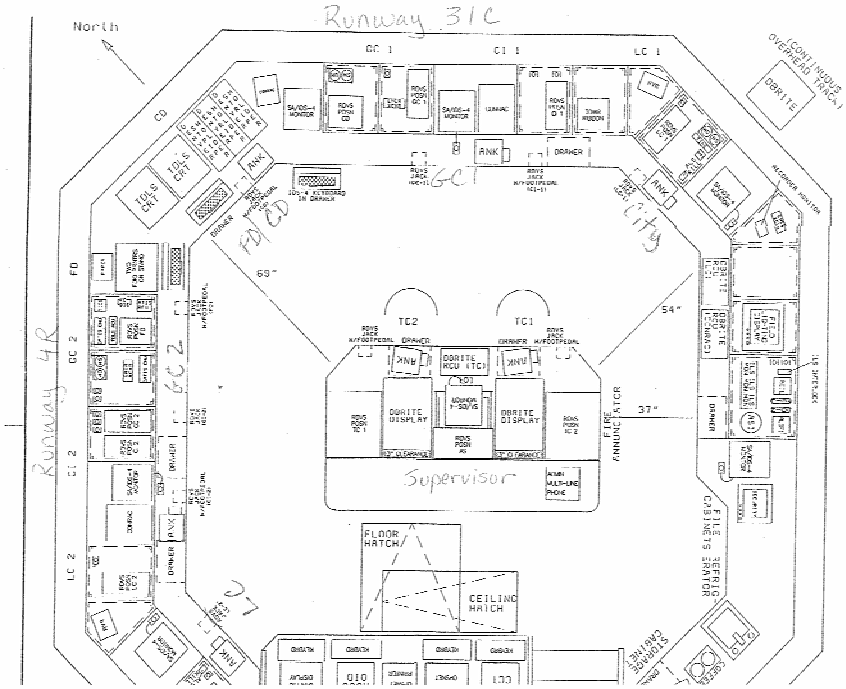

Figure 2. Midway Tower Diagram

He reported that GC1 was responsible fo r vehicles operations and that GC2 was responsible for aircraft operations.

[12] See figure 2 for the MDW Tower diagram.

While Mr. Garcia knew at the time of the interview, he said he did not know at the time if anyone had declined an approach to runway 31C due to the wind and/or weather and said, "no one mentioned it".

He reported that he could see the lights of plows going down the runways but not the actual equipment. He did not recall having vehicles other than friction tester on runway 4R prior to the accident. He did not remember seeing the airport vehicle "sweep" runway 31C while he was on LC.

Mr. Garcia did not recall anyone complaining about the ILS or glideslope and did not recall hearing the ILS/GS alarm activate.

He said that SWA1248 looked "normal" on final approach and that all he saw was lights and did not recall if a friction test was done on runway 31C.

Mr. Garcia configures the BRITE range to "no more than 10-15 miles".

He recalled hearing someone yell out "snow is coming down fast".

He couldn't recall where N5CC touched down on the airport. When asked if anything triggered his thought process when a Citation rolled to the end of the runway, he replied, "no", he was worried about the next arrival. "Sometimes Citations roll to the end, some exit on taxiway Y some to the end." When asked for a braking action report, the pilot reported "poor here".

He didn't recall where N3KF touched down. The landing "looked normal". He allowed enough time for the plane to "come out of reverser" to ask if the pilot could exit at taxiway A. Because he was concerned about the Citation on taxiway F, he instructed N3KF to hold short of that taxiway and contact GC. Typically he can hear the reversers on aircraft as they land but because of the noise in the tower he couldn't and just calculated in his mind when to ask.

He didn't hear SW A1248's reversers because he wasn't listening for them and it was very noisy in the cab.

He stated that pilots have declined a runway because of the tailwind component. For example: if a pilot experienced a windshear on final they would go-around on their own; aircraft 40-50 miles out ask for different runways and they try to accommodate them. He didn't know the 7110.65 requirements for the tailwind component and runway assignment requirements.

He stated that he lost sight of the aircraft (they could only see the lights of the airplane---not the airplane) while the airplane was on landing roll because of the snow.

He did not ask the operations person or supervisor to conduct a runway check. He stated that is usually between the supervisor and city. There was no friction test conducted on

runway 31C while he was signed on LC; they had done one earlier on 31C while he was on GC. While he was on LC they did a friction test on runway 4R.

Mr. Garcia stated that the supervisor ac tivated the crash phone and the response by the emergency personnel was "quick". They went out and down runway 31C.

At 2047 UTC, they changed to runway 31C because it dropped below landing minimums.

Snow was com ing down very fast. They were building a gap between arrivals to sweep the runway because ExecJet needed be tter runway conditions. SW A1952, arrival following SWA1248, would be last before they did the snow removal operations.

When asked what kind of a gap is needed on final to allow the vehicles to clear the runway, Mr. Garcia said about a 35-mile gap or 20 - 25 minutes.

He was wearing a headset m onitoring frequencies 118.7 and 119.45 (arrival frequency). Frequency 121.5 is m onitored off to the right and behind him through a speaker. W hen asked whether he was standing or sitting on position, Mr. Garcia said both and said he was standing and sitting because he has to sta nd to see arrivals on runway 31C. He was most likely standing for SW A1248 because he was watching the intersection so he could depart runway 4R.

Mr. Garcia stated that the snow plows would never plow half the runway, they always do the entire runway. They would not exit at taxiway A unless they were doing a loop to cover the entire runway.

He said that MDW ATCT m akes the runw ay determ ination and did not recall any pressure from outside sources.

He said that when the winds are over 10 knots they will go to ILS RWY 31C with a circle to runway 22R – "pilots love 31C".

The only PIREP's Mr. Garcia solicited were for braking action.

Michael A. Julius (ZT) Supervisor
Represented by Mark Tomicich, FAA Legal

Mr. Julius was interviewed by the ATC Group on Decem ber 10, 2005. In response to questions, he provided the following information:

He started with the FAA in 1985; he's worked for the FAA for 20 years. He started as a co-op at Cleveland Hopkins (up/down facility), transferred to Lunken; Muncie, IN; Indianapolis Approach; ZID TMU. Transf erred to MDW in January 1997. He is a certified professional controller (C PC), Supervisor, as well as an OJTI. In January he'll have 9 years experience as a Supervisor at MDW. He had no pilot experience and no military ATC experience.

His days off were Tuesday and W ednesday prior to the accident. Thursday, the day of the accident, he was assigned the 1400-2200 shift. He came in 1330 worked in the office then went to the tower cab about 1600 and st ated that it began to snow "a little". He couldn't recall the accumulation.

He described the traffic as "m oderate"; th ey were landing runway 31C and departing runway 4R. The decision to use that runw ay configuration was m ade by the previous supervisor but it seem ed to be logical b ecause of the possibility of the decreasing visibility and moving the most aircraft. He said that it seemed the best setup.

All the tower equipment was working.

Mr. Julius didn't recall any flightcrews declining the approach to runway 31C.

Weather conditions and traffic determine the runway configuration.

He didn't recall the arrival rate.

He arranged a gap to get plows on the runway. Braking action reports or friction tests are done regularly. City Operations keep a l og of when these are accom plished. City Operations advises him if the friction test numbers are going down (mu meter) or if pilots report the decreasing braking action and they m ay express concerns on how they will operate.[13]

He first recalled SW A1248 when the aircraft wa s 10 miles out. He stated that it seem ed like a norm al approach based on observations he m ade using the BRITE. Discussed making another gap after 1 or 2 aircraft behind it landed. Seem ed like a norm al approach. The BRITE was set on 20 miles. He never saw aircraft itself.

After SW A1248 landed, the localizer "went into alarm" (which is an audible alert and a red light).

He heard the local controller question SW A1248 about its whereabouts. The controller said that the aircraft went off the runway and he activated the crash phone less than 30 seconds after he was notified. The vehicles came out on taxiway P and up runway 31C. He lost sight of the vehicles between r unways 4L and 4R. He saw the Gulfstream (N603KF) land and did not see that aircraft around the same area.

He did not monitor any frequencies.

Runway lights were at the highest intensity.

City operations advised that the aircraft left the field. They were closer to the accident

[13] See Survival Factors Factual Report for this information.

site so they found the airplane first. Because of the accident, he decided to close the airport.

Mr. Julius determines the best runway configuration to accommodate the users based on weather and the arrival rate. They find the runway most aligned with the wind. ORD traffic is taken in consideration when 13C is requested. It impacts ORD traffic by reducing their arrival rate from 100 to 70 aircraft per hour. C90 does not override the runway configuration decision. "If we need it, we get it."

The 4R/31C configuration is not common but it's not uncommon either. They use the crossing runway configuration periodically.

Use they runway most aligned with the wind. That night runway 4 was most aligned with the wind but the RVR (5000 feet) was not as good as the runway 31C (4000 feet).

There is no runway use program.

Tailwind component threshold: typically at or about 10 knots, tailwind/quartering tailwind (more than 90 degrees) and that threshold was learned from his past experience at the airport.

He stated that the wind was 090/9 at the time of the accident. When asked, "Does the runway condition change your thoughts on runway configuration? " he stated that thunderstorms or snow would and if they "had the ability" to use another runway, they would have. They didn't have the RVR on another runway. They have to balance wind and RVR and make a decision. He looks at trends to determine if a different runway would be beneficial.

Many departures didn't want to use runway 31C because of the wind and weather.

Could not see aircraft on the runway end. He only knew their position from their position report. When asked if he would change the runway configuration because pilots were using full length he stated that he asks controllers and controllers would advise him if pilots did use full length. Not sure if it occurred that night.

City Operations plowed many times that evening. He said the last time was about 30-45 minutes prior to the arrival of SWA1248.

Height of the tower is about 137 feet.

RVR was passed to arrival aircraft all evening.

He wasn't monitoring the LC per se because he was watching the entire operation. He was watching aircraft crossing the intersections, vehicles stopping when they said they would.

Typically, City Operations would call the supe rvisor who would coordinate with C90 to build a gap to allow plows on the runway.

He started using runway 4R because for departures because spacing on runway 31C wouldn't allow departures also.

There is no traffic management unit at MDW.

Mike Dreger (Mark Tomicich, Representative) GC1, responsible for aircraft
Bob Mischke (Ron Adamski, Representative), GC2, responsible for vehicle operations

Mr. Dreger and Mr. Mischke were intervie wed by the ATC Group together on Decem ber 10, 2005, to explain snow removal operations from the tower perspective.

Mr. Dreger had been assigned to MDW ATCT since 1987. Mr. Mischke was first assigned to MDW in 1979 when he worked at MDW for 1.5 years before transferring to C90. He returned in 2002.

Neither recalled seeing SWA 1248 arrival or landing.

Mr. Dreger stated snowplow equipment was holding in northwest corner. The snow plow operator stated that they were waiting for th eir relief and wouldn't be doing another run. Brooms were in southeast corner, getting cleaned.

CIC is involved in coordinating break in traffic to clear runway.

City advises of need to clean runway, excep t when braking actions reports are poor, then ATC advises them.

Coordinate with City only in respect to get word on runway being clear.

City doesn't monitor FAA frequencies, just their own.

The GC1 controller stated that brooms swept the runway prior to him signing on position, but he was not sure how long prior. He stat ed that there are 3 team s involved: Broom Team, Plow Team , and Deice Team but usually the Sweep and Deice team s work together.

They never observed the glideslope antenna being cleaned.

9. FAA Order 7110.65P, Air Traffic Control

This order, effective February 19, 2004, prescribes air traffic control procedures and phraseology for use by personnel providing air traffic control services. Controllers are required to be familiar with the provisions of this order that pertain to their operational responsibilities and to exercise their best judgment if they encounter situations not covered by it.

Pilot/Controller Glossary

Runway Visual Range (RVR) - An instrumentally derived value, based on standard calibrations, that represents the horizontal distance a pilot will see down the runway from the approach end. It is based on the sighting of either high intensity runway lights or on the visual contrast of other targets whichever yields the greater visual range. RVR, in contrast to prevailing or runway visibility, is based on what a pilot in a moving aircraft should see looking down the runway. RVR is horizontal visual range, not slant visual range. It is based on the measurement of a transmissometer made near the touchdown point of the instrument runway and is reported in hundreds of feet. RVR is used in lieu of RVV and/or prevailing visibility in determining minimums for a particular runway.
1. Touchdown RVR - The RVR visibility readout values obtained from RVR equipment serving the runway touchdown zone.
2. Mid-RVR - The RVR readout values obtained from RVR equipment located midfield of the runway.
3. Rollout RVR - The RVR readout values obtained from RVR equipment located nearest the rollout end of the runway.

Chapter 2, General Control, Section 8, Runway Visibility Reporting- Terminal
2-8-1. FURNISH RVR/RVV VALUES
Where RVR or RVV equipment is operational, irrespective of subsequent operation or nonoperation of navigational or visual aids for the application of RVR/RVV as a takeoff or landing minima, furnish the values for the runway in use in accordance with para 2-8-3, Terminology.

2-8-3. TERMINOLOGY
a. Provide RVR/RVV information by stating the runway, the abbreviation RVR/RVV, and the indicated value. When issued along with other weather elements, transmit these values in the normal sequence used for weather reporting.
EXAMPLE-
"Runway One Four RVR Two Thousand Four Hundred."
"Runway Three Two RVV Three Quarters."
b. When two or more RVR systems serve the runway in use, report the indicated values for the different systems in terms of touchdown, mid, and rollout as appropriate.
EXAMPLE-

"Runway Two Two Left RVR Two T housand, rollout One Thousand Eight Hundred."
"Runway Two Seven Right RVR One Thous and, mid Eight Hundred, rollout Six Hundred."
c. W hen there is a requirem ent to issue an RVR or RVV value and a visibility condition greater or less than the reportable values of the equipm ent is indicated, state the condition as "MORE THAN" or "LESS THAN" the appropriate minimum or maximum readable value.
EXAMPLE-
"Runway Three Six RVR more than Six Thousand."
"Runway Niner RVR One Thousand, rollout less than Six Hundred."
d. When a readout indicates a rapidly varying visibility condition (1,000 feet or more for RVR; one or m ore reportable va lues for RVV), report the current value followed by the range of visibility variance.
EXAMPLE-
"Runway Two Four RVR Two Thousand, va riable One Thousand Six Hundred to Three Thousand."
"Runway Three One RVV Three-quarters, variable One-quarter to One."
REFERENCE-
FAAO 7110.65, Furnish RVR/RVV Values, Para 2-8-1.

Section 9. Automatic Terminal Information Service Procedures

2-9-1. APPLICATION

Use the ATIS, where available, to pr ovide advance noncontrol airport/term inal area and meteorological information to aircraft.
a. Identify each ATIS m essage by a phonetic letter code word at both the beginning and the end of the m essage. Automated systems will have the phonetic letter code automatically appended. Exceptions may be made where omissions are required because of special programs or equipment.

2-9-2. OPERATING PROCEDURES

Maintain an ATIS m essage that reflects the m ost current arrival and departure information.
a. Make a new recording when any of the following occur:
1. Upon receipt of any new offici al weather regardless of whether there is or is not a change in values.
2. W hen runway braking action reports are received that indicate runway braking is worse than that which is included in the current ATIS broadcast.
3. W hen there is a change in any other pertinent data, such as runway change, instrum ent approach in use, new or canceled NOTAMs/PIREPs/HIWAS update, etc.
b. W hen a pilot acknowledges that he/she has received the ATIS broadcast, controllers may omit those item s contained in the broadcasts if they are current. Rapidly changing conditions will be issued by ATC, and the ATIS will contain the following:

EXAMPLE-
"Latest ceiling/visibility/altim eter/wind/(other conditions) will be issued by approach control/tower."

c. Broadcast on all appropriate frequencies to advise aircraft of a change in the ATIS code/message.

d. Controllers shall ensure that pilo ts receive the m ost current pertinent information. Ask the pilot to confirm receipt of the current ATIS information if the pilot does not initially state the appropriate ATIS code. Controllers shall ensure that changes to pertinent operational in formation is provided af ter the initial confirmation of ATIS information is established. Issue the current weather, runway in use, approach inform ation, and pertin ent NOTAMs to pilots who are unable to receive the ATIS.

EXAMPLE-
"Verify you have information ALPHA."
"Information BRAVO now current, visibility three miles."
"Information CHARLIE now current, Ceiling 1500 Broken."
"Information CHARLIE now current, advise when you have CHARLIE."

2-9-3. CONTENT

Include the following in ATIS broadcast as appropriate:

a. Airport/facility nam e, phonetic letter code, tim e of weather sequence (UTC). Weather inf ormation consisting of wi nd direction and velocity, visibility, obstructions to vision, present weather, sky condition, tem perature, dew point, altimeter, a density altitude advisory when appropriate and other pertinent rem arks included in the official weather obs ervation. W ind direction, velocity, and altimeter shall be reported f rom certified direct reading instrum ents. Temperature and dew point should be re ported from certified direct reading sensors when available. Always include weather observation rem arks of lightning, cumulonimbus, and towering cumulus clouds.

NOTE-
ASOS/AWOS is to be considered the pr imary source of wind direction, velocity, and altim eter data f or weather observation purposes at those locations that are so equipped. The ASOS Operator Interface De vice (OID) displays the m agnetic wind as "MAG WND" in the auxiliary data location in the lower left-hand portion of the screen. Other OID displayed winds are true and are not to be used for operational purposes.

d. Instrum ent/visual approach/s in us e. Specify landing runway/s unless the runway is that to which the instrument approach is made.

e. Departure runway/s (to be given only if different from landing runway/s or in the instance of a "departure only" ATIS).

f. Taxiway closures which affect the entrance or exit of active runways, other closures which im pact airport operations, other NOTAMs and PIREPs pertinent to operations in the term inal area. Inform pilots of where hazardous weather is occurring and how the inform ation may be obtained. Include available inform ation of known bird activity.

g. Runway braking action or friction re ports when provided. Include the tim e of the report and a word describing the cause of the runway friction problem.
PHRASEOLOGY-
RUNWAY (num ber) MU (first value, sec ond value, third value) AT (tim e), (cause).
EXAMPLE-
"Runway Two Seven, MU forty-two, forty-one , twenty-eight at one zero one eight Zulu, ice."
j. A statem ent which advises the pilot to read back instructions to hold short of a runway. The air traffic manager may elect to remove this requirement 60 days after implementation provided that rem oving the statem ent from the ATIS does not result in increased requests from aircraft for read back of hold short instructions.
k. Instructions for the pilot to acknow ledge receipt of the ATIS m essage by informing the controller on initial contact.

Pilot/Controller Glossary
BRAKING ACTION ADVISORIES - W hen to wer controllers have received runway braking action reports which in clude the term s "poor" or "nil," or whenever weather conditions are conducive to deteriorating or rapidly changing runway braking conditions, the tower w ill include on the ATIS broadcast the statement, "BRAKING ACTION ADVISORI ES ARE IN EFFECT." During the time Braking Action Advisories are in e ffect, ATC will issue the latest braking action report for the runway in use to each arriving and departing aircraft. Pilots should be prepared for deteriorating brak ing conditions and should request current runway condition inform ation if not volunt eered by controllers. Pilots should also be prepared to provide a descriptive r unway condition report to controllers after landing.

Chapter 3, Airport Traffic Control, Section 3, Airport Conditions
3-3-4. BRAKING ACTION
Furnish quality of braking action, as received from pilots or the airport management, to all aircraft as follows:
a. Describe the quality of braking acti on using the term s "good," "fair," "poor," "nil," or a com bination of these term s. If the pilot or airport m anagement reports braking action in other than the foregoing terms, ask him/her to categorize braking action in these terms.
NOTE-
The term "nil" is used to indicate bad or no braking action.
b. Include type of aircraft or vehicle from which the report is received.
EXAMPLE-
"Braking action fair to poor, reported by a heavy D-C Ten."
"Braking action poor, reported by a Boeing Seven Twenty-Seven."
c. If the braking action report affect s only a portion of a runway, obtain enough information from the pilot or airport m anagement to describe the braking action in terms easily understood by the pilot.
EXAMPLE-

"Braking action poor first half of runway, reported by a Lockheed Ten Eleven."
"Braking action poor beyond the intersection of runway two seven, reported by a Boeing Seven Twenty-Seven."
NOTE-
Descriptive terms, such as the first or th e last half of the runway, should norm ally be used rather than landm ark descriptions, such as opposite the fire station, south of a taxiway, etc. Landm arks extraneous to the landing runway are difficult to distinguish during low visibility, at night , or anytim e a pilot is busy landing an aircraft.

d. Furnish runway friction m easurement readings/values as received from airport management to aircraft as follows:

1. Furnish inform ation as receive d from the airport m anagement to pilots on the ATIS at locations where friction m easuring devices, such as MU-Meter, Saab Friction Tester (SFT), and Skiddometer are in use only when the MU values are 40 or less. Use the runway followed by the MU num ber for each of the three runway segm ents, tim e of report, and a word describing the cause of the runway friction problem . Do not issue MU values when all three segm ents of the runway have values reported greater than 40.
EXAMPLE-
"Runway two seven, MU forty-two, forty-one , twenty-eight at one zero one eight Zulu, ice."

3-3-5. BRAKING ACTION ADVISORIES

a. W hen runway braking action reports are received from pilots or the airport management which include the term s " poor" or "nil" or whenever weather conditions are conducive to deteriorating or rapidly changing runway conditions, include on the ATIS broadcast the statem ent "Braking Action Advisories are in effect."
REFERENCE-
FAAO 7210.3, Automatic Terminal Information Service (ATIS), Para 10-4-1.

b. During the tim e Braking Action Advisori es are in effect, take the following action:

1. Issue the latest braking action report for the runway in use to each arriving and departing aircraft early enough to be of benefit to the pilot. W hen possible, include reports from heavy jet aircraft when the arriving or departing aircraft is a heavy jet.

2. If no report has been received for the runway of intended use, issue an advisory to that effect.
PHRASEOLOGY-
NO BRAKING ACTION REPORTS RECEIVED FOR RUNW AY (runway number).

3. Advise the airport management that runway braking action reports of "poor" or "nil" have been received.
REFERENCE-
FAAO 7210.3, Letters of Agreement, Para 4-3-1.

4. Solicit PIREPs of runway braking action.

REFERENCE-
FAAO 7110.65, PIREP Information, Para 2-6-3.
c. Include runway friction measurement/values received from airport management on the ATIS. Furnish the information when requested by the pilot in accordance with para 3-3-4, Braking Action.
REFERENCE-
FAAO 7110.65, Content, Para 2-9-3.
FAAO 7110.65, Departure Information, Para 3-9-1.
FAAO 7110.65, Landing Information, Para 3-10-1.
FAAO 7110.65, Airport Conditions, Para 4-7-12.

Section 10. Arrival Procedures and Separation
3-10-1. LANDING INFORMATION
Provide current landing information, as appropriate, to arriving aircraft. Landing information contained in the ATIS broadcast may be omitted if the pilot states the appropriate ATIS code. Runway, wind, and altimeter may be omitted if a pilot uses the phrase "have numbers." Issue landing information by including the following:
NOTE-
Pilot use of "have numbers" does not indicate receipt of the ATIS broadcast.
a. Specific traffic pattern information (may be omitted if the aircraft is to circle the airport to the left).
PHRASEOLOGY-
ENTER LEFT/RIGHT BASE.
STRAIGHT-IN.
MAKE STRAIGHT-IN.
STRAIGHT-IN APPROVED.
RIGHT TRAFFIC.
MAKE RIGHT TRAFFIC.
RIGHT TRAFFIC APPROVED. CONTINUE.
b. Runway in use.
c. Surface wind.
d. Altimeter setting.
REFERENCE-
FAAO 7110.65, Current Settings, Para 2-7-1.
e. Any supplementary information.
f. Clearance to land.
g. Requests for additional position reports. Use prominent geographical fixes which can be easily recognized from the air, preferably those depicted on sectional charts. This does not preclude the use of the legs of the traffic pattern as reporting points.
NOTE-
At some locations, VFR checkpoints are depicted on sectional aeronautical and terminal area charts. In selecting geographical fixes, depicted VFR checkpoints are preferred unless the pilot exhibits a familiarity with the local area.
h. Ceiling and visibility if either is below basic VFR minima.
{New-2004-12 3-10-1i Revised February 19, 2004}

i. Low level wind shear or microburst advisories when available.
{New-2004-19 Reference Revised August 5, 2004}
REFERENCE-
FAAO 7110.65, Low Level Wind Shear/Microburst Advisories, Para 3-1-8.
j. Issue braking action for the runway in use as received from pilots or the airport management when Braking Action Advisories are in effect.
REFERENCE-
FAAO 7110.65, Braking Action Advisories, Para 3-3-5.

3-10-3. SAME RUNWAY SEPARATION
a. Separate an arriving aircraft from another aircraft using the same runway by ensuring that the arriving aircraft does not cross the landing threshold until one of the following conditions exists or unless authorized in para 3-10-10, Altitude Restricted Low Approach.

1. The other aircraft has landed and is clear of the runway. Between sunrise and sunset, if you can determine distances by reference to suitable landmarks and the other aircraft has landed, it need not be clear of the runway if the following minimum distance from the landing threshold exists.

Chapter 4. IFR
Section 8. Approach Clearance Procedures
4-8-1. APPROACH CLEARANCE
a. Clear aircraft for "standard" or "special" instrument approach procedures only. To require an aircraft to execute a particular instrument approach procedure, specify in the approach clearance the name of the approach as published on the approach chart. Where more than one procedure is published on a single chart and a specific procedure is to be flown, amend the approach clearance to specify execution of the specific approach to be flown. If only one instrument approach of a particular type is published, the approach needs not be identified by the runway reference. An aircraft conducting an ILS/MLS approach when the glideslope/glidepath is reported out of service shall be advised at the time an approach clearance is issued. Standard Instrument Approach Procedures shall commence at an Initial Approach Fix or an Intermediate Approach Fix if there is not an Initial Approach Fix. Where adequate radar coverage exists, radar facilities may vector aircraft to the final approach course in accordance with para 5-9-1, Vectors to Final Approach Course.
PHRASEOLOGY-
CLEARED (type) APPROACH.
(For a straight-in-approach- IFR),
CLEARED STRAIGHT-IN (type) APPROACH.
(To authorize a pilot to execute his/her choice of instrument approach),
CLEARED APPROACH.
(Where more than one procedure is published on a single chart and a specific procedure is to be flown),
CLEARED (specific procedure to be flown) APPROACH.

(To authorize a pilot to execute an ILS/MLS approach when the glideslope/glidepath is out of service),
CLEARED (type) APPROACH, GLIDESLOPE/GLIDEPATH UNUSABLE.
EXAMPLE-
"Cleared Approach."
"Cleared V-O-R Approach."
"Cleared V-O-R Runway Three Six Approach."
"Cleared F-M-S Approach."
"Cleared F-M-S Runway Three Six Approach."
"Cleared I-L-S Approach."
"Cleared Localizer Back Course Runway One Three Approach."
"Cleared R-NAV Runway Two Two Approach."
"Cleared GPS Runway Two Approach."
"Cleared BRANCH ONE R-NAV Arriva l and R-NAV Runway One Three Approach."
"Cleared I-L-S Runway Three Six Approach, glideslope unusable."
"Cleared M-L-S Approach."
"Cleared M-L-S Runway Three Six Approach."
"Cleared M-L-S Runway Three Six Approach, glidepath unusable."
NOTE-
1. Clearances authorizing instrum ent appro aches are issued on the basis that, if visual contact with the ground is m ade before the approach is com pleted, the entire approach procedure will be followed unless the pilot receives approval for a contact approach, is cleared for a visual approach, or cancels their IFR flight plan.
2. Approach clearances are issued base d on known traffic. The receipt of an approach clearance does not relieve the p ilot of his/her responsibility to com ply with applicable Parts of Title 14 of th e Code of Federal Regulations and the notations on instrument approach charts which levy on the pilot the responsibility to comply with or act on an instruction; e.g., "Straight-in minima not authorized at night," "Procedure not authorized when g lideslope/glidepath not used," "Use of procedure lim ited to aircraft authorized to use airport," or "Procedure not authorized at night."
3. The nam e of the approach, as published, is used to identify the approach, even though a com ponent of the approach aid, othe r than the localizer on an ILS or the azimuth on an MLS is inoperative. W here m ore than one procedure to the sam e runway is published on a single chart, each m ust adhere to all final approach guidance contained on that chart, even though each procedure will be treated as a separate entity when authorized by ATC. For exam ple, Instrum ent Approach Procedures published on a chart as either HI-VOR/DME or TACAN 1 would be stated as either "HI V-O-R/ D-M-E 1 Runway Six Left Approach" or "HI TACAN 1 Runway Six Left Approach." The use of num erical identifiers in the approach name, or alphabetical identifiers with a letter from the end of the alphabet; e.g., X, Y, Z, such as "HI TACAN 1 Rwy 6L or HI TACAN 2 Rwy 6L," or "RNAV (GPS) Z Rwy 04 or RNAV (GPS) Y Rwy 04," denotes m ultiple straight-in approaches to the sam e runway that use the sam e approach aid. Alphabetical suffixes with a letter from the beginning of the alphabet; e.g., A, B, C, denote a

procedure that does not meet the criteria for straight-in landing minimums authorization.
4. 14 CFR Section 91.175(j) requires a pilot to receive a clearance for a procedure turn when vectored to a final approach fix or position, conducting a timed approach, or when the procedure specifies "NO PT."
5. An aircraft which has been cleared to a holding fix and prior to reaching that fix is issued a clearance for an approach, but not issued a revised routing; i.e., "proceed direct to. . ." may be expected to proceed via the last assigned route, a feeder route (if one is published on the approach chart), and then to commence the approach as published. If, by following the route of flight to the holding fix, the aircraft would overfly an IAF or the fix associated with the beginning of a feeder route to be used, the aircraft is expected to commence the approach using the published feeder route to the IAF or from the IAF as appropriate; i.e., the aircraft would not be expected to overfly and return to the IAF or feeder route.
6. Approach name items contained within parenthesis; e.g., RNAV (GPS) Rwy 04, are not included in approach clearance phraseology.
REFERENCE-
FAAO 8260.3, United States Standard for Terminal Instrument Procedures (TERPS).

9. Controllers' Statements

PERSONNEL STATEMENT
FEDERAL AVIATION ADMINISTRATION
CHICAGO MIDWAY AIRPORT TRAFFIC CONTROL TOWER

ACTION: Complete in accordance with FAA Order 8020.11, Paragraph 75 Personnel Statements.

BACKGROUND: Much of the information concerning the circumstances surrounding this **accident** can be retrieved via some type of recorded data source. However, some of the facts concerning what you saw what and what you did may not have been completely captured. The purpose of this statement is to provide any facts within your personal knowledge that you believe will provide a more complete understanding of the circumstances surrounding this accident. Therefore, speculations, hearsay, opinions, conclusions, and/or extraneous data are not to be included in this statement. Additionally, this statement may be released to the public through FOIA or litigation activities including pretrial discovery, depositions, and actual court testimony.

INSTRUCTIONS: This statement is to be **printed and signed by you,** and your signature below certifies the accuracy of this statement. It will neither be edited nor typed and, once signed, will constitute your original statement.

This statement concerns the accident involving SWA1248
On 12/8/05 at 0114 (UTC). My name is Michael A. Julius (ZAU).
I am employed as an air traffic control specialist by the FAA at the Chicago Midway Airport Traffic Control Tower. I was working the ASCIC position from 2150 / 0145 (UTC).

Text of Statement:

While on ILS Rwy 31C Approach SWA1248 was cleared to land by LC. After SWA1248 passed through the intersection of Rwy 4R & Few seconds later I notice the Localizer for Rwy 31C in alarm. I asked the GCI controlling about the vehicles and was there any trucks near the Localizer? Then the local controller advised me SWA1248 reported he went off the end of Rwy 31C and needed assistance. I immediately called CFD to the departure end of Rwy 31C. The end of the Rwy was not visible from the tower

[redacted]
Signature

12/8/05
Date

AccidentState.doc

PERSONNEL STATEMENT
FEDERAL AVIATION ADMINISTRATION
CHICAGO MIDWAY AIRPORT TRAFFIC CONTROL TOWER

ACTION: Complete in accordance with FAA Order 8020.11, Paragraph 75 Personnel Statements.

BACKGROUND: Much of the information concerning the circumstances surrounding this **accident** can be retrieved via some type of recorded data source. However, some of the facts concerning what you saw what and what you did may not have been completely captured. The purpose of this statement is to provide any facts within your personal knowledge that you believe will provide a more complete understanding of the circumstances surrounding this accident. Therefore, speculations, hearsay, opinions, conclusions, and/or extraneous data are not to be included in this statement. Additionally, this statement may be released to the public through FOIA or litigation activities including pretrial discovery, depositions, and actual court testimony.

INSTRUCTIONS: This statement is to be **printed and signed by you,** and your signature below certifies the accuracy of this statement. It will neither be edited nor typed and, once signed, will constitute your original statement.

This statement concerns the accident involving SWA1248
On 9Dec05 at 0113Z (UTC). My name is Mike Dreger (MD).
I am employed as an air traffic control specialist by the FAA at the Chicago Midway Airport Traffic Control Tower. I was working the GC1 position from 0018 / 0124 (UTC).

Text of Statement:

I was working / talking to City / Airport (Plows, Brooms, Deicers, etc) Vehicles, ~~I did not~~ do not recall anything about the approach or landing of SWA 1248 until I heard someone in the tower say that the aircraft had run off the end of the runway.

I reserve the right to amend this statement as more information becomes available.

[redacted]
_Signature

9 Dec 05
Date

AccidentState.doc

PERSONNEL STATEMENT
FEDERAL AVIATION ADMINISTRATION
CHICAGO MIDWAY AIRPORT TRAFFIC CONTROL TOWER

ACTION: Complete in accordance with FAA Order 8020.11, Paragraph 75 Personnel Statements.

BACKGROUND: Much of the information concerning the circumstances surrounding this **accident** can be retrieved via some type of recorded data source. However, some of the facts concerning what you saw what and what you did may not have been completely captured. The purpose of this statement is to provide any facts within your personal knowledge that you believe will provide a more complete understanding of the circumstances surrounding this accident. Therefore, speculations, hearsay, opinions, conclusions, and/or extraneous data are not to be included in this statement. Additionally, this statement may be released to the public through FOIA or litigation activities including pretrial discovery, depositions, and actual court testimony.

INSTRUCTIONS: This statement is to be **printed and signed by you,** and your signature below certifies the accuracy of this statement. It will neither be edited nor typed and, once signed, will constitute your original statement.

This statement concerns the accident involving SWA 1298
On 12/8/05 at 0114 (UTC). My name is BOB MISCHKE (MSE).
I am employed as an air traffic control specialist by the FAA at the Chicago Midway Airport Traffic Control Tower. I was working the GC 2 position from 0101 / 0154 (UTC).

Text of Statement:

working GC 2 AC IN QUESTION WAS NOT ON my Frequency. RUNWAY WAS CLEAR OF ALL VEHICLE AND A/C TRAFFIC WHEN SWA 1298 APPEARED OVER THE THRESHOLD. I did not see A/C AFTER MID FIELD, HEARD LC SAY A/C is off end of RUNWAY.

I reserve the right to amend this statement AT ANY TIME. [redacted] 12/8/05

_Signature Date

AccidentState.doc

10. Braking Action Letter of Agreement

CHICAGO MIDWAY ATCT AND
CITY OF CHICAGO DEPARTMENT OF AVIATION

LETTER OF AGREEMENT

EFFECTIVE DATE: **October 1, 1992**

SUBJECT: Exchange of Braking Action Reports at Chicago-Midway Airport.

1. **PURPOSE:** To establish procedures to ensure the exchange of information concerning braking action reports.

2. **SCOPE:** These procedures are applicable during periods when weather conditions are conducive to deteriorating or rapidly changing runway conditions or when runway braking action reports have been received from pilots or airport management which include the terms "poor" or "nil."

3. **RESPONSIBILITIES:** The Midway Air Traffic Control Tower shall notify Airport Management of significant changes in braking action as reported by pilots. Airport Management shall keep the Tower informed of significant changes in runway conditions, braking action, and friction measuring device readings when available.

4. **PROCEDURES:**

a. When the Midway Air Traffic Control Tower receives a braking action report from a pilot which is "poor" or "nil" they shall promptly notify Airport Management via telephone or ground control frequency. Notification shall include information as to aircraft type, runway reported, and time. When conditions have been reported as improved to "good" this braking report will also be passed.

b. During affected periods, Airport Management shall update and promptly notify Midway Tower of runway conditions as changing weather necessitates. Friction measuring device readings shall be promptly relayed to Midway Tower via ground control frequency or telephone. Friction measuring device readings shall include the name of the device followed by the number for each of three runway segments, a word describing the cause of the runway friction problem, and the time of the report.

[redacted]
Air Traffic Manager, Chicago Midway ATCT

[redacted]
Commissioner of Aviation, City of Chicago

11. National Safety and Operational Criteria for Runway Use Programs

ORDER DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

8400.9

11/9/81

SUBJ: NATIONAL SAFETY AND OPERATIONAL CRITERIA FOR RUNWAY USE PROGRAMS

1. PURPOSE. The purpose of this order is to provide safety and operational criteria for runway use programs. These criteria are applicable to all runway use programs developed for turbojet aircraft. This order provides parameters in the form of safety and operational criteria which must be used in the evaluation and/or approval of runway use programs.

2. DISTRIBUTION. This Order is distributed to selected offices in Washington and Regional Headquarters, Mike Monroney Aeronautical Center, and FAA Technical Center; Air Traffic Field Offices and Facilities; General Aviation and Air Carrier District Offices, Flight Standards District Offices, Flight Inspection District Offices, Field Offices and Groups, Airports District Offices, and interested aviation public.

3. BACKGROUND.

a. FAA has responsibility to provide the public right of freedom of transit through the navigable airspace of the United States and to regulate air commerce in such a manner as to best promote its development. FAA also has the responsibility for, and must maintain a detailed knowledge of, the safe operation of aircraft at our nation's airports. A primary function of this responsibility is determining under what conditions flight operations may be conducted without causing a degradation of safety.

b. Under ideal conditions aircraft takeoffs and landings should be conducted into the wind. However, other considerations such as delay and capacity problems, runway length, available approach aids, noise abatement, and other factors may require aircraft operations to be conducted on runways not directly aligned into the wind.

c. The Aviation Noise Abatement Policy of 1976 and Order 1050.11, Noise Control Plans, identify airport proprietors as responsible for taking the lead in local aviation noise control plans. Accordingly, airport proprietors may propose specific noise abatement programs to the FAA. Order 1050.11 assigns FAA responsibilities in relation to noise control plans. It requires the Air Traffic Service to "Provide guidance and administer programs for aircraft noise abatement procedures. . . ." Further, it requires that the Office of Flight Operations "Evaluate and make decisions in conjunction with the regional offices, as appropriate, concerning safety factors for flight operational procedures. . . ." The criteria in this order

Distribution: ZFS-840; ZAT-710 (minus field facilities); A-FAT-2,3,4,5,6,8 (STD); A-FFS-1,2,4,7 (STD); A-FAS-1 (STD)
Initiated By: AFO-210/AAT-320

will be utilized by Flight Standards personnel in evaluating the safety of proposed programs and by Air Traffic personnel in administering Formal and Informal Runway Use Programs.

d. This order is not intended to restrict a pilot's use of the full certificated capability of an aircraft. This order also does not limit a pilot in the use of instrument approach procedures or any other such factors. Applicable FAR's, flight and operations manuals and advisory material address the necessary safety aspects of aircraft operations for pilots and aircraft operators.

4. EFFECTIVE DATE. January 1, 1982.

5. DEFINITIONS.

a. Runway Use Programs. A noise abatement runway selection plan designed to enhance noise abatement efforts with regard to airport communities for arriving and departing aircraft. These plans are developed into runway use programs and apply to all turbojet aircraft 12,500 pounds or heavier; turbojet aircraft less than 12,500 pounds are included only if the airport proprietor determines that the aircraft creates a noise problem. Runway use programs are coordinated with FAA offices as outlined in Order 1050.11. Safety criteria used in these programs are developed by the Office of Flight Operations. Runway use programs are administered by the Air Traffic Service as "Formal" or "Informal" programs.

b. Formal Runway Use Program. An approved noise abatement program which is defined and acknowledged in a Letter of Understanding between Flight Standards, Air Traffic Service, the airport proprietor and the users. Once established, participation in the program is mandatory for aircraft operators and pilots as provided for in FAR Section 91.87.

c. Informal Runway Use Program. An approved noise abatement program which does not require a Letter of Understanding and participation in the program is voluntary for aircraft operators/pilots.

6. RESPONSIBILITIES.

a. Terminal Facility Chiefs.

(1) Provide technical assistance upon request of the airport proprietor in developing a runway use program.

(2) Before any runway use program is implemented, ensure coordination with, and encourage participation in the development of the program by the airport proprietor, the local community, and aircraft operators who regularly use the airport.

(3) Forward the completed runway use program to the Regional Air Traffic Division for review, further intra-agency coordination, and approval.

b. Regional Air Traffic Division.

(1) Review and coordinate all runway use programs with the regional Flight Standards and Airports Divisions, and the appropriate office for environmental/noise matters. When necessary as outlined in paragraph 8 of this order, or if concurrence cannot be reached within the region, forward the program with comments to the Air Traffic Service, AAT-1, for final approval.

(2) Upon completing proper coordination, return the runway use program to the facility with approval or disapproval and rationale.

(3) Maintain a current status of all runway use programs and periodically review for accuracy and completeness in accordance with this directive.

c. Regional Flight Standards Division. Coordinate with the regional Air Traffic Division on all runway use programs and review them for compliance with the criteria in this order. If the program is within the criteria of this order, return it to the Air Traffic Division with concurrence and supporting rationale. If it is not within the criteria in this order, return it to the Air Traffic Division with nonconcurrence and rationale. If a waiver is requested in accordance with paragraph 8, perform a safety analysis to evaluate the proposed alternate criteria and return the program to the Air Traffic Division with concurrence or nonconcurrence, recommendations, and supporting rationale (see Appendix 2).

7. OPERATIONAL SAFETY CRITERIA FOR RUNWAY USE PROGRAMS. Except as provided for in paragraph 8, the following criteria shall be applied to all runway use programs:

a. Wind Shear or Thunderstorms. There should be no significant wind shear or thunderstorms which affect the use of the selected runway(s) such as:

(1) That reported by an operating Low Level Wind Shear Alert System (LLWSAS), or

(2) Pilot report (PIREP) of wind shear, or

(3) No thunderstorms on the initial takeoff departure path or final approach path (within 5 nm) of the selected runway(s).

b. Visibility. In order to utilize landing runways associated with a runway use program, the reported visibility shall not be less than one statute mile (runway visual range [RVR] 5000).

c. Runway Braking Effectiveness. There should be no snow, slush, ice or standing water present or reported (other than isolated patches which do not impact braking effectiveness) on that width of the applicable runway or stopway (overrun) to be used. Braking effectiveness must be "good" (e.g., not "fair," "poor," or "nil") and no reports of hydroplaning or unusual slippery runway surfaces (e.g., as may occur on ungrooved new pavement or contaminated surfaces).

d. Winds.

(1) Clear and Dry Runways.

(a) Unless a greater crosswind component is approved by the applicable Flight Standards office considering local weather factors, facilities and characteristics of aircraft normally using the facility, the crosswind component for the selected runway (including gust values) must not be greater than 20 knots (Appendix 1, Table 1).

(b) Except for (c) below, the tailwind component must not be greater than 5 knots (Appendix 1, Table 4).

(c) Where anemometers are installed near the touchdown zone of the candidate runway for landings, or near the departure end for takeoffs, any tailwind component must not be greater than 7 knots (Appendix 1, Table 3).

(2) Runways Not Clear or Not Dry.

(a) The crosswind component (including gust values) must not exceed 15 knots (Appendix 1, Table 2), and

(b) No tailwind component may be present except the nominal range of winds reported as calm (0-3 knots) may be considered to have no tailwind component.

(c) Unless otherwise approved by the applicable FAA Flight Standards office based on runway available and field lengths required for aircraft normally using the runway, the runway must be grooved or have a porous friction course surface.

e. Other Safety Factors. Factors peculiar to a specific airport must also be considered to the extent that they have been identified. These factors may include: runway length, runway gradient, aircraft type and performance characteristics, approach aids, etc.

8. WAIVERS. When necessary to accommodate unique site-specific situations, requests for waivers to the criteria contained in this order shall be submitted with justification, a safety analysis, and supporting data to AAT-1 who shall coordinate with AFO-1 for concurrence before granting final approval.

9. APPLICABILITY.

a. This order applies to FAA personnel who may be called upon to advise, evaluate, or coordinate on specific noise abatement plans for runway use programs for particular airports.

b. This order does not require development or use of a runway use program where such a program has not been used or is not needed.

J. Lynn Helms
Administrator

APPENDIX 1. TABLE OF MAXIMUM WIND VALUES

The following table illustrates the maximum components for wind directions in 10-degree increments relative to a runway. No headwind component limitation is stated because strong headwinds would dictate use of a runway aligned into the wind due to the crosswind limitation. Velocity values are rounded down to the nearest whole number.

CROSSWIND COMPONENT TABLE 1
(DRY RUNWAY)

Wind Angle (Degrees) From Runway Heading	Wind Velocity (Knots)
10	114
20	58
30	40
40	31
45	28
50	26
60	23
70	21
80	20
90	20

CROSSWIND COMPONENT TABLE 2
(RUNWAY NOT DRY)

Wind Angle (Degrees) From Runway Heading	Wind Velocity (Knots)
10	86
20	44
30	30
40	23
45	21
50	19
60	17
70	16
80	15
90	15

TAILWIND COMPONENT TABLE 3
(WITH ANEMOMETERS)
DRY RUNWAY

Wind Angle (Degrees) From Runway Heading	Wind Velocity (Knots)
100	20
110	20
120	14
130	10
135	9
140	9
150	8
160	7
170	7
180	7

TAILWIND COMPONENT TABLE 4
(WITHOUT ANEMOMETERS)
DRY RUNWAY

Wind Angle (Degrees) From Runway Heading	Wind Velocity (Knots)
100	20
110	14
120	10
130	7
135	7
140	6
150	5
160	5
170	5
180	5

APPENDIX 2. EVALUATION OF REQUESTS FOR WAIVERS

When reviewing waiver requests in accordance with paragraph 8 of the order, Flight Standards personnel must consider the operational impact of the following factors when providing a safety analysis to support alternate criteria:

a. Are there significant occurrences of wind shear or thunderstorms?

b. Is a low level wind shear alert system (LLWSAS) installed?

c. Do runways significantly exceed critical field length for aircraft commonly using the airport?

d. Are runways grooved or do they have a porous friction course surface?

e. Are precision approach aids available to these runways?

f. Is a VASI present if these runways require a nonprecision approach?

g. Are 2 transmissometers installed?

h. Is runway slope a factor? If so, does it impact aircraft performance?

i. Is Maximum Brake Energy V_{MBE} a factor? If so, does it impact aircraft performance?

12. Copy of the Memorandum Requesting an Amendment to ILS RWY 31C at MDW, dated January 29, 2004

-04 16:36 From-AVN-1 405 954 3431 T-241 P.001/001 F-860

FEB 04 2004

AVN100
AVN101
100 → copies to Harmer Lucas

U.S. Department of Transportation
Federal Aviation Administration

Memorandum

Subject: **ACTION:** Request for Amendment to Instrument Landing System (ILS) Runway (RWY) 31C at Chicago Midway

Date: JAN 29 2004

From: Manager, Flight Technologies and Procedures Division, AFS-400

Reply to Attn. of:

To: Program Director, Aviation Systems Standards, AVN-1

We have reviewed the proposed amendment for the special instrument approach procedure for Chicago, IL Midway Airport ILS RWY 31C, along with obstacle data. The AFS-410/420 Procedures Review Board has determined that the decision altitude can be lowered to equate to a 204 height above touchdown. The proposed minimum visibility, 3000 runway visual range, should remain unchanged. Existing waivers will remain in effect, unchanged.

Please make the changes to the 8260-7, along with the original linked signatures, and to the 8260-9 with revisions accomplished as necessary, and forward to us for approval.

Please address any comments to Donald Pate, AFS-420, at (405) 954-4164.

[redacted]
John W. McGraw

U.S. Department of Transporation
Federal Aviation Administration

Memorandu

MIKE MONRONEY AERONAUTICAL CENTER
QUALITY AND OPERATIONS ASSURANCE BRAN
P.O. BOX 25082
OKLAHOMA CITY, OK 73125

Subject: **ACTION**: Waiver Request

Date: MAR 3 1 2004

From: Manager, Quality and Operations Assurance Branch, AVN-160

Reply to Attn. of: AVN-160B
(405)954-8976
Fax: (405)954-13

To: Manager, Flight Technologies and Procedures Division, AFS-400
THRU: Manager, Flight Procedure Standards Branch, AFS-420

The attached Waiver(s) for Chicago Midway Intl, Chicago, IL is forwarded for your review and approval.

Please return a signed copy for our files.

8260-1 ILS Z RWY 31C (3)
ILS or LOC/DME RWY 31C, ORIG, CANCEL (3)

ORIGINAL SIGNED BY

Rick A. Webb

Attachments

cc: AVN-100rf,AVN-130,AVN-140,AVN-250

File: AVN-160\Waivers (KMDW)
WP:Word\420.Waiver.ChicagoMidwayIntl.Chicago.IL
AVN-160:RWebb:cdn:(405)954-6669:03/30/2004

CONCURRENCE	
ROUTING SYMBOL	AVN-160B
INITIALS/SIG	cdn
DATE	3-30-04
ROUTING SYMBOL	AVN-160B
INITIALS/SIG	PDA
DATE	3/30
ROUTING SYMBOL	AVN-160B
INITIALS/SIG	JPannell
DATE	3/30
ROUTING SYMBOL	AVN-140
INITIALS/SIG	KGonzalez
DATE	8/31/04
ROUTING SYMBOL	AVN-130
INITIALS/SIG	TTurke
DATE	
ROUTING SYMBOL	AVN-130
INITIALS/SIG	DSmith
DATE	3/30/04
ROUTING SYMBOL	AVN-160
INITIALS/SIG	RWebb
DATE	3/31/04
ROUTING SYMBOL	AVN-160
INITIALS/SIG	NetMtg
DATE	

OFFICIAL FILE COPY

US Department of Transportation
Federal Aviation Administration

FLIGHT PROCEDURES STANDARDS WAIVER

FLIGHT STANDARDS USE ONLY
CONTROL NO:

1. Flight Procedure Identification:
Chicago, IL, Chicago Midway, ILS Z RWY 31C (special)

2. Waiver Required and Applicable Standard:
To specify landing minimums 3000 RVR visibility, lower than prescribed by FAAO 8260.3B paragraph 251 b(1); paragraphs 344, 350 and appendix 5 paragraph 9.

3. Reason for Waiver *(Justification for nonstandard treatment)*:
There are numerous 34:1 penetrations that require the visibility to be 3/4 mile (RVR 4000). Waiver permits lower than standard landing minimums based on additional aircraft equipment and additional pilot training/proficiency. Results in fewer flight diversions or cancellations due to inclement weather.

4. Equivalent Level of Safety Provided:
1. The approach is limited to use by flight crews that have received specialized training on the use of Heads-up Guidance (HGS) systems, autoflight or autocoupler systems. The aircraft used will have HGS and/or autocoupler system suitable for use on this approach procedure. Specific flight crew training and aircraft equipage operational requirements are documented on the accompanying 8260-10, as provided by Flight Standards and attached to the procedure. The following note is required on the approach procedure chart: "Special Aircrew and Aircraft Authorization Required."

2. Transition to visual acquisition of the runway is supplemented and assured by a requirement for lighting aids and RVR to be operating during use of the approach procedure. The following note is required on the approach procedure chart: "Lead-in Lights (LDIN), Runway End Identifier Lights (REIL), Visual Approach Slope Indicator (VASI), High Intensity Runway Lights (HIRL) and Runway Visual Range (RVR) for runway 31C must be operating."

5. How Relocation or Additional Facilities Will Affect Waiver Requirement:
Relocation of existing facilities, or the installation of an approved approach light system is not feasible due to the urban infrastructure surrounding the airport.

6. Coordination With User Organizations *(Specify)*:
AVN 130
AVN 140
AVN 160
AVN 101

7. SUBMITTED BY

DATE:	Office Identification:	Title:	Signature:
02/26/2004	AVN 100	Manager	[redacted] Chas. Fredric Anderson

FAA FORM 8260 - 1 / July 2003 (computer generated)

US Department of Transportation
Federal Aviation Administration

FLIGHT PROCEDURES STANDARDS WAIVER

FLIGHT STANDARDS USE ONLY
CONTROL NO:

1. Flight Procedure Identification:
Chicago, IL, Chicago Midway, ILS Z RWY 31C (special)

2. Waiver Required and Applicable Standard:
To specify landing minimums 204 HAT, lower than prescribed by FAAO 8260.3B volume 3 paragraphs 3.4.3, 3.5.3.

3. Reason for Waiver *(Justification for nonstandard treatment)*:
Due to final approach "W" and "X" surface penetrations the minimum HAT should be 250 feet. This waiver permits lower than standard landing minimums based on additional aircraft equipment and additional pilot training/proficiency. Results in fewer flight diversions or cancellations due to inclement weather.

4. Equivalent Level of Safety Provided:
1. The approach procedure is limited to use by flight crews that have received specialized training on the use of Heads-up Guidance (HGS) systems, autoflight or autocoupler systems. The aircraft used will have HGS and/or autocoupler system suitable for use on this procedure. Specific flight crew training and aircraft equipage opeartional requirements are documented on the accompanying 8260-10, as provided by Flight Standards and attached to the procedure. The following note is required on the approach procedure chart: "Special Aircrew and Aircraft Authorization Required."

2. Transition to visual acquisition of the runway is supplemented and assured by a requirement for lighting aids and RVR to be operating during use of the approach procedure. The following note is required on the approach procedure chart: "Lead-in Lights (LDIN), Runway End Identifier Lights (REIL), Visual Approach Slope Indicator (VASI), High Intensity Runway Lights (HIRL) and Runway Visual Range (RVR) for runway 31C must be operating."

5. How Relocation or Additional Facilities Will Affect Waiver Requirement:
Relocation of existing facilities, or the installation of an approved approach light system is not feasible due to the urban infrastructure surrounding the airport.

6. Coordination With User Organizations *(Specify)*:
AVN 130
AVN 140
AVN 160
AVN 101

7. SUBMITTED BY

DATE:	Office Identification:	Title:	Signature:
02/24/2004	AVN 100	Manager	[redacted] Chas. Fredric Anderson

FAA FORM 8260 - 1 / July 2003 (computer generated)

US Department of Transportation
Federal Aviation Administration

FLIGHT PROCEDURES STANDARDS WAIVER

FLIGHT STANDARDS USE ONLY
CONTROL NO:

1. Flight Procedure Identification:
Chicago, IL, Chicago Midway, ILS Z RWY 31C (special)

2. Waiver Required and Applicable Standard:
To specify landing minimums 204 HAT, lower than prescribed by FAAO 8260.3B volume 3 paragraphs 3.9.1 (b) and (c).

3. Reason for Waiver *(Justification for nonstandard treatment)*:
Due to missed approach section 1b and 1c penetrations the minimum HAT should be 250 feet. This waiver permits lower than standard landing minimums based on additional aircraft equipment and additional pilot training/proficiency. Results in fewer flight diversions or cancellations due to inclement weather.

4. Equivalent Level of Safety Provided:
1. The approach procedure is limited to use by flight crews that have received specialized training on the use of Heads-up Guidance (HGS) systems, autoflight or autocoupler systems. The aircraft used will have HGS and/or autocoupler system suitable for use on this procedure. Specific flight crew training and aircraft equipage opeartional requirements are documented on the accompanying 8260-10, as provided by Flight Standards and attached to the procedure. The following note is required on the approach procedure chart: "Special Aircrew and Aircraft Authorization Required."

2. Transition to visual acquisition of the runway is supplemented and assured by a requirement for lighting aids and RVR to be operating during use of the approach procedure. The following note is required on the approach procedure chart: "Lead-in Lights (LDIN), Runway End Identifier Lights (REIL), Visual Approach Slope Indicator (VASI), High Intensity Runway Lights (HIRL) and Runway Visual Range (RVR) for runway 31C must be operating."

5. How Relocation or Additional Facilities Will Affect Waiver Requirement:
Relocation of existing facilities, or the installation of an approved approach light system is not feasible due to the urban infrastructure surrounding the airport.

6. Coordination With User Organizations *(Specify)*:
AVN 130 DPS
AVN 140
AVN 160
AVN 101

7. SUBMITTED BY

DATE:	Office Identification:	Title:	Signature
02/24/2004	AVN 100	Manager	[redacted] Chas. Fredric Anderson

FAA FORM 8260 - 1 / July 2003 (computer generated)

US Department of Transportation
Federal Aviation Administration

FLIGHT PROCEDURES STANDARDS WAIVER

DATE: 12/20/2002

1. Flight Procedure Identification: /
Chicago, IL, Chicago Midway, ILS Z Rwy 31C (Special)

2. Waiver Required and Applicable Standard: /
To allow rounding down on minimum altitude used in the missed approach instructions climbing to Peotone (EON) VORTAC, 100ft lower than prescribed in 8260.3B Paragraph 276 (d) and AFS-420 letter on Minimum Segment Altitudes and Required Obstacle Clearance (ROC) DTD 12/07/01.

3. Reason for Waiver *(Justification for nonstandard treatment)*:
Permits special procedure to mirror currently published public procedure that was developed IAW 8260.3B Chapter 9. 951 ft of ROC provided.

4. Equivalent Level of Safety Provided:
Procedure requires special aircraft and aircrew certification.

5. How Relocation or Additional Facilities Will Affect Waiver Requirement:
N/A

6. Coordination With User Organizations *(Specify)*:
AVN 130 DC
AVN 160 AD

7. SUBMITTED BY

Office Identification:	Title:	Signature:
AVN 100	Manager	[redacted] /s/ Russell D. Jones

FAA FORM 8260 - 1 / February 1995 (computer generated)

8. REGIONAL ENDORSEMENT		Approval Recommended
		Not Recommended
		Not Required

Comments:

Date:	Routing Symbol:	Signature:

9. AVN ENDORSEMENT		Approval Recommended
		Not Recommended
		Not Required

Comments:

Date:	Routing Symbol:	Signature:

10. AFS ACTION	XX	Approved
		Disapproved
		Not Required

Comments:

Approved based on the equivalent level of safety provided in block 4.

This waiver is cancelled effective concurrent with publication of ILS or LOC/DME RWY 31C, ORIG

[redacted]

for Loren L. Sych, Manager
AVN-140

Date:	Routing Symbol:	Signature:
12/20/02	AFS-400	[redacted] for John W. McGraw, Manager Flight Technologies and Procedures Division

US Department of Transportation
Federal Aviation Administration

FLIGHT PROCEDURES STANDARDS WAIVER

DATE: 12/19/2002

1. Flight Procedure Identification:
Chicago, IL, Chicago Midway, ILS Z Rwy 31C (Special)

2. Waiver Required and Applicable Standard:
To allow second stepdown fix in the intermediate segment, one more than prescribed by FAAO 8260.3B Paragraph 288 c (2).

3. Reason for Waiver *(Justification for nonstandard treatment)*:
Permits special procedure to mirror currently published public procedure that was developed IAW 8260.3B Chapter 9. Gleam INT in the intermediate segment is necessary for air traffic separation from Chicago O'Hare traffic.

4. Equivalent Level of Safety Provided:
Procedure requires special aircraft and aircrew certification, pilot in command is Airline Transport Pilot (ATP) rated, using aircraft equipped with advanced navigation systems, Autopilot and/or Heads Up Guidance (HGS)

5. How Relocation or Additional Facilities Will Affect Waiver Requirement:
N/A

6. Coordination With User Organizations *(Specify)*:
AVN 130 DL
AVN 160 MD

7. SUBMITTED BY

Office Identification:	Title:	Signature:
AVN-100	Manager	[redacted] /Russell D. Jones/

FAA FORM 8260 - 1 / February 1995 (computer generated)

8. REGIONAL ENDORSEMENT	Approval Recommended / Not Recommended / Not Required

Comments:

Date:	Routing Symbol:	Signature:

9. AVN ENDORSEMENT	Approval Recommended / Not Recommended / Not Required

Comments:

Date:	Routing Symbol:	Signature:

10. AFS ACTION	XX Approved / Disapproved / Not Required

Comments:

Approved based on the equivalent level of safety provided in block 4.

This waiver is cancelled effective concurrent with publication of ILS or LOC/DME RWY 31C, ORIG

[redacted]

Caren L. Sych, Manager
AVN-140

Date:	Routing Symbol:	Signature:
01/20/02	AFS-400	[redacted] John W. McGraw, Manager Flight Technologies and Procedures Division

US Department of Transportation
Federal Aviation Administration

FLIGHT PROCEDURES STANDARDS WAIVER

DATE: 12/20/2002

1. Flight Procedure Identification:
Chicago, IL, Chicago Midway, ILS Z Rwy 31C (Special)

2. Waiver Required and Applicable Standard:
To specify landing minimums 250 HAT, lower than prescribed by FAAO 8260.36A Paragraph 20 a, 21 c (1)

3. Reason for Waiver *(Justification for nonstandard treatment)*:
Permits special procedure to mirror currently published public procedure that was developed IAW 8260.3B Chapter 9.

4. Equivalent Level of Safety Provided:
Procedure requires special aircraft and aircrew certification. Flight crews required to utilize Autopilot and/or Heads Up Guidance (HGS) during the approach.

5. How Relocation or Additional Facilities Will Affect Waiver Requirement:
N/A

6. Coordination With User Organizations *(Specify)*:
AVN 130 DC
AVN 160 MD

7. SUBMITTED BY

Office Identification:	Title:	Signature:
AVN 100	Manager	[redacted] Russell D. Jones

FAA FORM 8260 - 1 / February 1995 (computer generated)

8. REGIONAL ENDORSEMENT		Approval Recommended
		Not Recommended
		Not Required

Comments:

Date:	Routing Symbol:	Signature:

9. AVN ENDORSEMENT		Approval Recommended
		Not Recommended
		Not Required

Comments:

Date:	Routing Symbol:	Signature:

10. AFS ACTION	XX	Approved
		Disapproved
		Not Required

Comments: Approved based on the equivalent level of safety provided in block 4.

This waiver is cancelled effective concurrent with publication of ILS or LOC/DME RWY 31C, ORIG

Caren L. Sych, Manager
AVN-140

Date:	Routing Symbol:	Signature:
12/20/02	AFS-400	for John W. McGraw, Manager Flight Technologies and Procedures Division

US Department of Transportation Federal Aviation Administration	**FLIGHT PROCEDURES STANDARDS WAIVER**	DATE: 12/19/2002

1. Flight Procedure Identification:
Chicago, IL, Chicago Midway, ILS Z Rwy 31C (Special)

2. Waiver Required and Applicable Standard:
To allow second stepdown fix in the intermediate segment, one more than prescribed by FAAO 8260.3B Paragraph 288 c (2).

3. Reason for Waiver *(Justification for nonstandard treatment)*:
Permits special procedure to mirror currently published public procedure that was developed IAW 8260.3B Chapter 9. Gleam INT in the intermediate segment is necessary for air traffic separation from Chicago O'Hare traffic.

4. Equivalent Level of Safety Provided:
Procedure requires special aircraft and aircrew certification, pilot in command is Airline Transport Pilot (ATP) rated, using aircraft equipped with advanced navigation systems, Autopilot and/or Heads Up Guidance (HGS)

5. How Relocation or Additional Facilities Will Affect Waiver Requirement:
N/A

6. Coordination With User Organizations *(Specify)*:
AVN 130 DL
AVN 160 MD

7. SUBMITTED BY

Office Identification:	Title:	Signature:
AVN-100	Manager	[redacted] Russell D. Jones

FAA FORM 8260 - 1 / February 1995 (computer generated)

8. REGIONAL ENDORSEMENT		Approval Recommended
		Not Recommended
		Not Required

Comments:

Date:	Routing Symbol:	Signature:

9. AVN ENDORSEMENT		Approval Recommended
		Not Recommended
		Not Required

Comments:

Date:	Routing Symbol:	Signature:

10. AFS ACTION		XX Approved
		Disapproved
		Not Required

Comments:

Approved based on the equivalent level of safety provided in block 4.

This waiver is cancelled effective
concurrent with publication of ILS
or LOC/DME RWY 31C, ORIG

Caren L. Sych, Manager
AVN-140

Date:	Routing Symbol:	Signature:
8/20/02	AFS-400	[redacted] John W. McGraw, Manager Flight Technologies and Procedures Division

US Department of Transportation
Federal Aviation Administration

FLIGHT PROCEDURES STANDARDS WAIVER

DATE: 12/20/2002

1. Flight Procedure Identification: /
Chicago, IL, Chicago Midway, ILS Z Rwy 31C (Special)

2. Waiver Required and Applicable Standard: /
To allow rounding down on minimum altitude used in the missed approach instructions climbing to Peotone (EON) VORTAC, 100ft lower than prescribed in 8260.3B Paragraph 276 (d) and AFS-420 letter on Minimum Segment Altitudes and Required Obstacle Clearance (ROC) DTD 12/07/01.

3. Reason for Waiver *(Justification for nonstandard treatment)*:
Permits special procedure to mirror currently published public procedure that was developed IAW 8260.3B Chapter 9. 951 ft of ROC provided.

4. Equivalent Level of Safety Provided:
Procedure requires special aircraft and aircrew certification.

5. How Relocation or Additional Facilities Will Affect Waiver Requirement:
N/A

6. Coordination With User Organizations *(Specify)*:
AVN 130 DC
AVN 160 MD

7. SUBMITTED BY

Office Identification:	Title:	Signature:
AVN 100	Manager	[redacted] /s/ Russell D. Jones

FAA FORM 8260 - 1 / February 1995 (computer generated)

8. REGIONAL ENDORSEMENT		Approval Recommended
		Not Recommended
		Not Required

Comments:

Date:	Routing Symbol:	Signature:

9. AVN ENDORSEMENT		Approval Recommended
		Not Recommended
		Not Required

Comments:

Date:	Routing Symbol:	Signature:

10. AFS ACTION	XX	Approved
		Disapproved
		Not Required

Comments:

Approved based on the equivalent level of safety provided in block 4.

This waiver is cancelled effective concurrent with publication of ILS or LOC/DME RWY 31C, ORIG

Caren L. Sych, Manager
AVN-140

Date:	Routing Symbol:	Signature:
12/20/02	AFS-400	[redacted] for John W. McGraw, Manager Flight Technologies and Procedures Division

13. C90 Traffic Management Unit Log Summary for December 8, 2005

NTSB REQUEST # 06-013 - FROM: C90

LOG SUMMARY FOR 12 08 2005

TIME	FAC/POS	ENTRY	OI
1131	C90/TMU	James Stephenson (AW) On duty position TMU	
1143	C90/TMU	ORD B Trip 14R 22R 22L, DEP:9L 14L 22L 27L AAR: 96 ADR: 96	AW
1143	C90/TMU	MDW 4R 4R, DEP:4L 4R 13C 31C AAR: 32 ADR: 32	AW
1144	C90/TMU	shift forecast vmc early snow before noon s/se wind	AW
1336	C90/TMU	zau east ord 2x7 mdw 1x10	AW
1634	C90/TMU	ORD D/D+15/1624 OTHER:WEST VOL	AW
1649	C90/TMU	zau west ord 2x7 pll aoa240 10 mdw 1x15	AW
1706	C90/TMU	ORD OUT OF DELAYS	AW
1800	C90/TMU	Julie Mirfield (JJ) On duty position TMU	
1950	C90/TMU	ORD D/D+15/1936 VOL:ARPT EAST	JJ
1952	C90/TMU	ORD Dept via ELX AOB FL310, DEPTS LANDING IN ZBW 1915-2000, VOL:ENRT SCTR, ZOB:ZAU, RSTN:	JJ
2010	C90/TMU	ORD 14's 14L 14R, DEP:4L 4R AAR: 80 ADR: 80	JJ
2016	C90/TMU	MDW 4R 4R, DEP:4L 4R 13C 31C AAR: 24 ADR: 24	JJ
2020	C90/TMU	NORMAL WEST	JJ
2021	C90/TMU	GS ALL Acft Arriving MDW Departing ZAB/ZLC/ZFW/ZAU/ZMP/ZDV/ ZKC/ZME/ZID/ZOB/ZBW/ZTL/ZNY/ZDC with ETD's of 2004-2115 Total/Affected Flights 38/27	JJ
2027	C90/TMU	MDW 31C 31C, DEP:4R 22L 31L 31C 31R AAR: 24 ADR: 24	JJ
2028	C90/TMU	MDW 31C 31C, DEP:4R 22L 31L 31C 31R AAR: 18 ADR: 18	JJ
2034	C90/TMU	GS ALL Acft Arriving ORD Departing ZSE/ZAB/ZLC/ZFW/ZLA/ZAU/ ZMP/ZDV/ZKC/ZME/ZID/ZMA/ZHU/ZJX/ZOB/ZBW/ZTL/ZNY/ZDC/ZOA with ETD's of 2030-2130 Total/Affected Flights 101/92	JJ
2054	C90/TMU	ORD D/D-15/2032 VOL:ARPT EAST (E)	JJ
2104	C90/TMU	IMPLEMENTED GDP, DATE: 12/08/2005 AIRPORT/CENTER MDW/ZAU SCDTFILE: 12/08/2005 ADL TIME: 12 08 2005 2059 PRGM TYPE RBSPP (10 min taxi) FOR ETA's: 2100 - 0359 REASON: WEATHER FACILITIES IN PRGM: ZSE/ZAB/ZLC/ZFW/ZLA/ZAU/ZMP/ZDV/ZKC/ZME/ ZID/ZMA/ZHU/ZJX/ZOB/ZBW/ZTL/ZNY/ZDC/ZOA DELAY ASSIGNMENT MODE: FA DELAY LIMIT: 360 ATC DELAY - TOTAL/AFFECTED 181/129 TOTAL: 21336 MAX: 223 AVG: 165 STACK: 49 STACK_AAR: 18 GA FACTOR: 0 DELAY CEILING (MIN): 999	JJ
2113	C90/TMU	GS: traffic arriving ORD from 2030-2130, WX:SNOW/ICE entered by ZSE	JJ
2114	C90/TMU	ORD 14's 14L 14R, DEP:4L 4R AAR: 60 ADR: 60	JJ
2127	C90/TMU	GS MODIFIED: GS: ALL Acft Arriving ORD Departing ZSE/ZAB/ZLC /ZFW/ZLA/ZAU/ZMP/ZDV/ZKC/ZME/ZID/ZMA/ZHU/ZJX/ZOB/ZBW/ZTL/ZNY /ZDC/ZOA with ETD's of 2109-2229 Total/Affected Flights 190/ 181	JJ
2127	C90/TMU	ORD 14's 14L 14R, DEP:4L 4R AAR: 50 ADR: 50	JJ
2150	C90/TMU	ORD REQUIRES 15-MIN GAP ON 14L FOR SNOW REMOVAL	JJ
2202	C90/TMU	IMPLEMENTED GDP, DATE: 12/08/2005 AIRPORT/CENTER ORD/ZAU SCDTFILE: 12/08/2005 ADL TIME: 12 08 2005 2154 PRGM TYPE RBSPP (10 min taxi) FOR ETA's: 2139 - 0559 REASON: WEATHER FACILITIES IN PRGM: ZSE/ZAB/ZLC/ZFW/ZLA/ZAU/ZMP/ZDV/ZKC/ZME/ ZID/ZMA/ZHU/ZJX/ZOB/ZBW/ZTL/ZNY/ZDC/ZOA DELAY ASSIGNMENT MODE: FA DELAY LIMIT: 360 ATC DELAY - TOTAL/AFFECTED 594/397 TOTAL: 95982 MAX: 338 AVG: 242 STACK: 176 STACK_AAR: 96 GA FACTOR: 0 DELAY CEILING	JJ

NTSB REQUEST # 06-013 - FROM: C90

LOG SUMMARY FOR 12 08 2005

		(MIN): 999	
2203	C90/TMU	ORD 14's 14L 14R, DEP:4L 4R AAR: 45 ADR: 45	JJ
2205	C90/TMU	ORD GS EXTENDED to 2200 entered by ZSE	JJ
2210	C90/TMU	ORD D/D+30/2138 WX:SNOW/ICE	JJ
2252	C90/TMU	ORD D/D+45/2204 WX:SNOW/ICE	JJ
2342	C90/TMU	ORD D/D-45/2248 WX:SNOW/ICE	JJ
0059	C90/TMU	CDM WITH ATCSCC, ZAU C90 AND ORD. ORD LANDING ONE RWY ONLY DUE TO CONGESTION AT THE AIRPORT WITH TOO MANY AIRPLANES GOING BEYOND THEIR DEICING TIME. IT WILL CHANGE BACK AND FORTH BETWEEN 14R AND 14L. (E)	JJ
0104	C90/TMU	ORD 14's 14L 14R, DEP:4L 4R AAR: 30 ADR: 30	JJ
0106	C90/TMU	GS: traffic via ORD from 0103-0200, VOL:ARPT entered by ZAU	JJ
0110	C90/TMU	IMPLEMENTED GDP, DATE: 12/09/2005 AIRPORT/CENTER ORD/ZAU SCDTFILE: 12/09/2005 ADL TIME: 12 09 2005 0104 PRGM TYPE RBSPP (10 min taxi) FOR ETA's: 0059 - 0559 REASON: WEATHER FACILITIES IN PRGM: ZSE/ZAB/ZLC/ZFW/ZLA/ZAU/ZMP/ZDV/ZKC/ZME/ZID/ZMA/ZHU/ZJX/ZOB/ZBW/ZTL/ZNY/ZDC/ZOA DELAY ASSIGNMENT MODE: FA DELAY LIMIT: 360 ATC DELAY - TOTAL/AFFECTED 469/162 TOTAL: 38867 MAX: 448 AVG: 240 STACK: 65 STACK_AAR: 96 GA FACTOR: 0 DELAY CEILING (MIN): 999	JJ
0110	C90/TMU	ORD D/D-30/0045 WX:SNOW/ICE	JJ
0116	C90/TMU	MDW CLSD. DISABLED AIRCRAFT	JJ
0133	C90/TMU	GS ALL Acft Arriving MDW Departing ZSE/ZAB/ZLC/ZFW/ZLA/ZAU/ZMP/ZDV/ZKC/ZME/ZID/ZMA/ZHU/ZJX/ZOB/ZBW/ZTL/ZNY/ZDC/ZOA with ETD's of 0104-0229 Total/Affected Flights 48/40	JJ
0134	C90/TMU	Until 0300 12/08 MDW CLSD DUE TO AIRCRAFT INCIDENT Fwd by ZAU/AC/AC	JJ
0150	C90/TMU	GS ALL Acft Arriving ORD Departing ZSE/ZAB/ZLC/ZFW/ZLA/ZAU/ZMP/ZDV/ZKC/ZME/ZID/ZMA/ZHU/ZJX/ZOB/ZBW/ZTL/ZNY/ZDC/ZOA with ETD's of 0124-0229 Total/Affected Flights 30/28	JJ
0224	C90/TMU	IMPLEMENTED GDP, DATE: 12/09/2005 AIRPORT/CENTER ORD/ZAU SCDTFILE: 12/09/2005 ADL TIME: 12 09 2005 0204 PRGM TYPE RBSPP (10 min taxi) FOR ETA's: 0204 - 0559 REASON: WEATHER FACILITIES IN PRGM: ZSE/ZAB/ZLC/ZFW/ZLA/ZAU/ZMP/ZDV/ZKC/ZME/ZID/ZMA/ZHU/ZJX/ZOB/ZBW/ZTL/ZNY/ZDC/ZOA DELAY ASSIGNMENT MODE: FA DELAY LIMIT: 360 ATC DELAY - TOTAL/AFFECTED 437/124 TOTAL: 47689 MAX: 816 AVG: 385 STACK: 105 STACK_AAR: 30 GA FACTOR: 0 DELAY CEILING (MIN): 999	JJ
0224	C90/TMU	GS MODIFIED: GS: ALL Acft Arriving MDW Departing ZSE/ZAB/ZLC/ZFW/ZLA/ZAU/ZMP/ZDV/ZKC/ZME/ZID/ZMA/ZHU/ZJX/ZOB/ZBW/ZTL/ZNY/ZDC/ZOA with ETD's of 0159-0330 Total/Affected Flights 46/46	JJ
0225	C90/TMU	0125 12/08-0300 MDW CLSD DUE TO AIRCRAFT INCIDENT Fwd by ZAU/AC/AC	JJ
0559	C90/TMU	Close of business.	KJ