Aviation Investigation Final Report

Location:	Peoria, Illinois	**Incident Number:**	OPS09IA001
Date & Time:	September 22, 2008, 17:50 Local	**Registration:**	
Aircraft:		**Aircraft Damage:**	None
Defining Event:	Near midair/TCAS alert/loss of separation	**Injuries:**	N/A
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Analysis

On Monday, September 22, 2008 at 1750 central daylight time, Skywest (SKW) flight 5961, a Canadair Regional Jet (CRJ-200), and American Eagle (EGF) flight 4075, an Embraer ERJ-145 (E145) were cleared to land simultaneously on intersecting runways at the Greater Peoria Regional Airport (PIA) in Peoria, Illinois. The air traffic control tower operator that cleared the two aircraft to land was a position certified developmental controller working local control (LC). EGF4075, number 1 in the landing sequence, on a visual approach to runway 22, rejected the landing clearance stating he was too high and requested a 360 degree turn on final. The LC disapproved the request due to aircraft that were following and directed EGF4075 to enter a right downwind for runway 13. At 1747:45, LC cleared SKW5961, on a visual approach, to land on runway 22 when the flight was four miles from the landing threshold. At 1748:09, LC cleared EGF4075 to land on runway 13 and advised that a regional jet was on a three mile final for runway 22.

At 1749:45, SKW5961 was on landing rollout and LC asked if they could hold short of runway 13. The crew advised they could. The LC directed SKW5961 to hold short of runway 13 for landing traffic. SKW5961 did not acknowledge the hold short instructions. Five seconds later SKW5961 transmitted "Well almost, uh, but uh, we're here what do you want us to do". The LC directed SKW5961 to hold short of runway 13, because of landing traffic. SKW 5961 responded; "We're kind of technically on the runway [runway 22] but there's plenty of room for a small plane". SKW5961 had stopped short of runway 22 on runway 13 just past old land and hold short (LAHSO) markings on runway 13.

The pilot of SKW5961 assumed the LASHO markings on runway 13 was the hold short point for the intersection of runways 13 and 22. LAHSO is an acronym for "Land and Hold Short Operation." These operations include landing and holding short of an intersecting runway, a taxiway, a predetermined point, or an approach/departure flightpath. A LAHSO hold short point

is a point on the runway beyond which a landing aircraft with a LAHSO clearance is not authorized to proceed. This point may be located prior to an intersecting runway, taxiway, predetermined point, or approach/departure flight path. The LAHSO markings on runway 13 are 235 feet from the edge of runway 22. PIA is not a LASHO airport even though LASHO markings are maintained by the airport authority. The PIA air traffic manager, at PIA for approximately one year, was not ware of when PIA ceased LAHSO operations. According to the PIA ATCT Order 7110.1B, Peoria Air Traffic Control (ATC) Facility Standard Operating Procedures (SOP), reference to LAHSO were removed in November 2001.

After SKW5961 reported they were technically on runway 22, the LC directed the pilot to hold his position. At 1750:42 LC instructed EGF4075 to exit runway 13 at taxiway M, 1900 feet from the intersection of runway 13 and runway 22, followed shortly thereafter with instructions to SKW5961 to turn right onto runway 31 and turn right onto taxiway M.

The LC, stated that he believed that SKW5961 would exit runway 22 at taxiway E and that EGF4075 would fly a longer downwind leg of the traffic pattern. This belief resulted in the LC clearing EGF4075 to land on runway 13 prior to having assured separation between aircraft landing on intersecting runways. When the LC realized that separation would be close, he observed SKW5961 stopped on runway 22 short of runway 13 and believed separation was assured. When SKW5961 advised they were technically on runway 13, the LC considered it safer to allow EGF4075 to land rather direct a go around considering the critical phase of flight EGF4075 was in at the time. The controller-in-charge (CIC) was working combined positions that included ground control, flight data, and clearance delivery and stated that he did not perceive a situation developing that would have resulted in a loss of separation.

Per FAA Order 7110.65, Air Traffic Control, Paragraph 3-10-4, Intersecting Runway Separation: "Issue traffic information to each aircraft operating on intersecting runways. a. Separate an arriving aircraft using one runway from another aircraft using an intersecting runway or a nonintersecting runway when the flight paths intersect by ensuring that the arriving aircraft does not cross the landing threshold or flight path of the other aircraft until one of the following conditions exists:

1. The preceding aircraft has departed and passed the intersection/flight path or is airborne and turning to avert any conflict.

2. A preceding arriving aircraft is clear of the landing runway, completed landing roll and will hold short of the intersection/flight path, or has passed the intersection/flight path."

Tower staffing included four controllers: LC, and another controller working ground control, flight data, clearance delivery, and controller-in-charge (CIC) positions combined. Two controllers were on break.

The weather at PIA at 1754 was wind 130 at 04 knots, visibility 10 statute miles, few clouds at 6500 feet, broken clouds at 10,000 feet, temperature 27 degrees Celsius, dew point 16 degrees Celsius, altimeter 30.26 inches of mercury. Sunset occurred at 1807. The runways were dry.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be: The tower local controller's failure to provide adequate separation between EGF4075 and SKW5961 that landed on intersecting runways.

Findings

Personnel issues	Knowledge of procedures - Pilot
Personnel issues	Knowledge of procedures - ATC personnel
Personnel issues	Decision making/judgment - ATC personnel
Personnel issues	Incorrect action sequence - ATC personnel
Personnel issues	Incorrect action selection - ATC personnel

Factual Information

History of Flight

Landing	Near midair/TCAS alert/loss of separation (Defining event)
Landing	Runway incursion veh/AC/person

On Monday, September 22, 2008 at 1750 central daylight time, a runway incursion at the Greater Peoria Regional Airport (PIA) in Peoria, Illinois involving Skywest (SKW) flight 5961, a Canadair Regional Jet (CRJ-200), and American Eagle Flight (EGF) 4075, an Embraer ERJ-145 (E145). Both aircraft had been cleared to land simultaneously on intersecting runways without assured required separation. The tower local controller, a position certified developmental controller, had been on position for 22 minutes working 3 aircraft with no previous operational errors or operational deviations. SKW5961 landed on runway 22 and while on landing roll, the local controller instructed the pilot to hold short of intersecting runway 13 for landing traffic. The pilot did not read back the instruction. The local controller thought SKW5961 stopped short of runway 13 and cleared EGF4075 to land on runway 13. As EGF4075 was touching down on runway 13, SKW5961 advised that "we may be technically on the runway." There are old land and hold short (LAHSO) markings on runway 22 that the SKW pilot may have been referring to; however, there were no hold short markings for the intersecting runway. Closest proximity between the two aircraft was 1900 feet. The FAA assigned a runway incursion severity index value of "C" to this incident. Runway incursion severity index values are assigned an A, B, C, or D with "A" being the most severe and "D" being the least severe. A category "C" indicates that required separation decreased but there is ample time and distance to avoid a potential collision. Air traffic control staffing included 4 air traffic control specialists (ATCS) with two on position and two on break. Of the two ATCS on position, one controller was working local control (LC) and one controller was working ground control (GC) combined with the controller-in-charge (CIC) position.

Information

Certificate:	**Age:**
Airplane Rating(s):	**Seat Occupied:**
Other Aircraft Rating(s):	**Restraint Used:**
Instrument Rating(s):	**Second Pilot Present:**
Instructor Rating(s):	**Toxicology Performed:**
Medical Certification:	**Last FAA Medical Exam:**
Occupational Pilot:	**Last Flight Review or Equivalent:**
Flight Time:	

Aircraft and Owner/Operator Information

Aircraft Make:		**Registration:**	
Model/Series:		**Aircraft Category:**	
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:		**Serial Number:**	
Landing Gear Type:		**Seats:**	
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	
Airframe Total Time:		**Engine Manufacturer:**	
ELT:		**Engine Model/Series:**	
Registered Owner:	American Airlines	**Rated Power:**	
Operator:	American Airlines	**Operating Certificate(s) Held:**	Commuter air carrier (135)
Operator Does Business As:	American Eagle Flight	**Operator Designator Code:**	EGF

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	
Observation Facility, Elevation:	KPIA	**Distance from Accident Site:**	
Observation Time:	17:54 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Few / 6500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 10000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	130°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.26 inches Hg	**Temperature/Dew Point:**	27°C / 16°C
Precipitation and Obscuration:			
Departure Point:		**Type of Flight Plan Filed:**	
Destination:		**Type of Clearance:**	
Departure Time:		**Type of Airspace:**	

Airport Information

Airport:	Greater Peoria Regional Airpor PIA	**Runway Surface Type:**	
Airport Elevation:	660 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	13	**IFR Approach:**	Visual
Runway Length/Width:	10104 ft / 150 ft	**VFR Approach/Landing:**	

Wreckage and Impact Information

Crew Injuries:	N/A	**Aircraft Damage:**	None
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	N/A	**Latitude, Longitude:**	40.669101,-89.609878(est)

Administrative Information

Investigator In Charge (IIC):	Bartlett, Daniel
Additional Participating Persons:	Nathan Enders; Federal Aviation Administration; Washington, DC
Original Publish Date:	February 19, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=69307

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Findings

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Personnel issues	Incorrect action selection - ATC personnel
Personnel issues	Decision making/judgment - ATC personnel
Personnel issues	Knowledge of procedures - Pilot
Personnel issues	Knowledge of procedures - ATC personnel

Factual Information

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Landing	Near midair/TCAS alert/loss of separation

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Information

Certificate:	**Age:**
Airplane Rating(s):	**Seat Occupied:**
Other Aircraft Rating(s):	**Restraint Used:**
Instrument Rating(s):	**Second Pilot Present:**
Instructor Rating(s):	**Toxicology Performed:**
Medical Certification:	**Last FAA Medical Exam:**
Occupational Pilot:	**Last Flight Review or Equivalent:**
Flight Time:	

Aircraft and Owner/Operator Information

Aircraft Make:		**Registration:**	
Model/Series:		**Aircraft Category:**	
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:		**Serial Number:**	
Landing Gear Type:		**Seats:**	
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	
Airframe Total Time:		**Engine Manufacturer:**	
ELT:		**Engine Model/Series:**	
Registered Owner:	SkyWest Airlines	**Rated Power:**	
Operator:		**Operating Certificate(s) Held:**	Commuter air carrier (135)
Operator Does Business As:	Skywest Airlines	**Operator Designator Code:**	SKW

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	
Observation Facility, Elevation:	KPIA	**Distance from Accident Site:**	
Observation Time:	17:54 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Few / 6500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 10000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	130°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.26 inches Hg	**Temperature/Dew Point:**	27°C / 16°C
Precipitation and Obscuration:			
Departure Point:		**Type of Flight Plan Filed:**	
Destination:		**Type of Clearance:**	
Departure Time:		**Type of Airspace:**	

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Airport Elevation:	660 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	13	**IFR Approach:**	Visual
Runway Length/Width:	10104 ft / 150 ft	**VFR Approach/Landing:**	

Wreckage and Impact Information

Crew Injuries:	N/A	**Aircraft Damage:**	None
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	N/A	**Latitude, Longitude:**	40.669101,-89.609878(est)

Administrative Information

Investigator In Charge (IIC):	Bartlett, Daniel
Additional Participating Persons:	Nathan Enders; Federal Aviation Administration; Washington, DC
Original Publish Date:	February 19, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=69307