



# Runway RISKS

Reducing Incursions, Excursions, and Confusion

April 2008

Volume 1  
Issue 4

## Runway Safety Tips from the Line

Following are submissions to the ALPA runway safety website from our members:

- » *I have for many years used my landing/taxi lights for confirmation of standard ATC clearances. For example, when cleared into position and hold, I turn on a landing light. When cleared for takeoff, I turn on the other. When cleared for the approach, I turn on a landing light; when cleared for landing, I turn on the other. Keep in mind, I fly a 747-200 and have lots of lights to play with.*
- » *When operating tired on the backside of the clock, which is usually my case, it helps, and I reference my light switches a lot for confirmation.*
- » *I pay particular attention to the "little guys" when they talk on the radio, and I can ascertain whether they're "on top" of things by the*

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ALPA Air Safety Team  
**800.424.2470**

Visit [www.alpa.org](http://www.alpa.org)

to learn more about runway safety and ALPA initiatives to continuously improve aviation safety.

*ALPA has worked hard and successfully for many years to improve runway design, markings, signage, and the technology that guides us. But nothing can replace the awareness of a pilot in the cockpit.*

*Through our new campaign, "Hold Short for Runway Safety," ALPA will focus its efforts on preventing runway incursions, excursions, and confusion. We will provide you commonsense guidance that will help prevent operational breakdowns. Every pilot knows we have too much to do and not enough time to do it between getting in the cockpit and hitting Vr.*

### Case Study—

## Quincy, Illinois, Municipal Airport, November 1996

**A**lthough not classified by the FAA as a runway incursion at the time because it occurred at an uncontrolled field, the relatively low-energy but fatal collision of two aircraft on the ground at Quincy, Illinois, provides numerous lessons about operations at both controlled and uncontrolled airports. Following is a portion of NTSB report AAR-97/04 concerning this accident.

*On November 19, 1996, at 1701 Central Standard Time, Flight 5925, a Beechcraft 1900C, collided with a Beechcraft King Air A90 at Quincy Municipal Airport. Flight 5925 was completing its landing roll on Runway 13, and the King Air was in its takeoff roll on Runway 04. The collision occurred at the intersection of the two runways. All 10 passengers and two crewmembers aboard Flight 5925 and the two occupants aboard the King Air were killed. Flight 5925 was a scheduled passenger flight operating under Part 135. The King Air was operating under Part 91.*

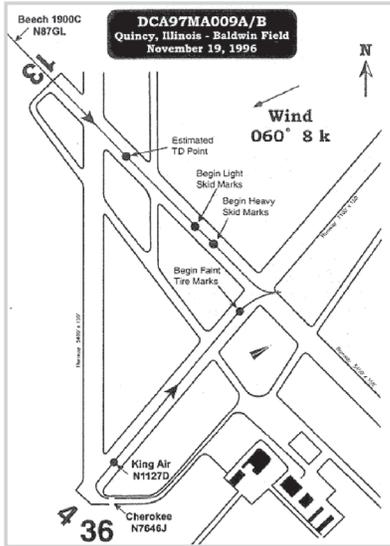
The King Air was holding on Runway 04 as the B-1900 was about to land on Runway 13. The B-1900 crew, who had started their duty day at 0415 and were flying the last of eight

scheduled legs, radioed the King Air crew while on short final approach, asking if they intended to hold until the B-1900 had cleared the intersection. Unfortunately, a low-time general aviation pilot in a Cherokee waiting for takeoff behind the King Air added to the confusion by replying



affirmatively to that radio call. The King Air crew, which was likely engaged in flight instruction, never responded to any of the B-1900 crew's numerous position reports, and they started their takeoff roll apparently without noticing the other aircraft until just before the collision at the intersection of the two runways. All occupants of both aircraft perished in the fire that ensued after the collision.

*continued on page 2*



**Case Study—  
Quincy, Illinois, Municipal Airport**  
*continued from page 1*

## Communications

To the right are key radio transmissions. It should be noted that not all of the radio transmissions were heard by all parties involved. The transcript has been redacted for brevity.

## Factors Contributing to the Accident

The lack of air traffic control greatly contributed to the accident. An air traffic controller following standard procedures would likely have issued a landing clearance to the B-1900, and a hold-for-takeoff clearance to the King Air. In this circumstance, the GA pilot would not have erroneously responded to an inquiry directed at another aircraft. In the event that one or more parties violated their clearance(s), the ATC controller may have had an opportunity to see the potential conflict coming well enough in advance to have given emergency instructions and thereby avoided the collision.

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1649:11	Quincy AWOS	Quincy Muni Baldwin field, two one five zero Zulu, wind zero six zero at eight, visibility one two, ceiling one three thousand broken, two zero thousand overcast, temperature three...
1652:07	B-1900 (CTAF)	The B-1900 Beech airliner, just about 30 miles to the north of the field, will be inbound for landing runway one three at Quincy. Any traffic in the area, please advise.
1653:45	CTAF	<i>Sound similar to someone keying microphone seven times.</i>
1654:46	KC Center (KCC)	B-1900 descend and maintain three thousand, that's pilot discretion.
1654:50	B-1900	B-1900, pilot's discretion down to three thousand.
1655:19	King Air (CTAF)	Quincy traffic, King Air taxiing out uh, takeoff on runway four, Quincy.
1655:40	Cherokee (CTAF)	Quincy traffic, Cherokee back-taxi, uh, taxiing to runway four, Quincy.
1656:21	B-1900 (to KCC)	B-1900, Quincy in sight.
1656:26	KC Center	B-1900 cleared visual approach, Quincy.
1656:29	B-1900 (to KCC)	Cleared for the visual Quincy for B-1900.
1656:56	B-1900 (CTAF)	Quincy area traffic, B-1900 is a Beech airliner currently ten miles to the north of the field. We'll be inbound to enter on a left base for runway one three at Quincy; any other traffic, please advise.
1658:41	KC Center	B-1900, cleared visual approach at Quincy. Report leaving three thousand.
1658:45	B-1900 (to KCC)	B-1900 we're already cleared for the visual at Quincy, um, before you switched and, uh, we're currently out of two thousand three hundred.
1658:54	KC Center	B-1900 roger. Radar service is terminated; change to advisory frequency is approved. Report the cancellation or down time on this frequency.
1659:02	B-1900 (to KCC)	Over to advisory . . .
1659:03	King Air (CTAF)	Quincy traffic, King Air holding short of runway four; be, uh, takin' the runway for departure and heading, uh, southeast, Quincy.
1659:04	B-1900 (to KCC)	. . . We'll, uh, cancel on the ground with you and cleared for the visual for B-1900, good night.
1659:29	B-1900 (CTAF)	Quincy area traffic, B-1900 is a Beech airliner currently, uh, just about to turn, about a six-mile final for runway, uh, one three, more like a five-mile final for runway one three at Quincy.
1700:16	B-1900 (CTAF)	And Quincy traffic B-1900's on short final for runway one three, um, the aircraft gonna hold in position on runway four or you guys gonna take off?
1700:16	GA (CTAF)	GA-call sign, uh, holding, uh, for departure on runway four...
1700:35	GA (CTAF)	. . . (unintelligible) on the, uh, King Air.
1700:37	B-1900 (CTAF)	OK, we'll, we'll get through your intersection in just a second, sir, (unintelligible) we appreciate that.
1700:59	B-1900	Sound of touchdown
1701:08	B-1900	End of recording . . . collision.

**Case Study—**  
**Quincy, Illinois, Municipal Airport**  
*continued from page 2*

## **Other Factors Include:**

Lack of conspicuity of the B-1900 for the King Air crew. Testing by the NTSB after the event demonstrated that because of the relative aircraft positions and the King Air's inherent obstacles to vision, the B-1900 would have only been in the King Air crew's

field of vision for a few seconds, if they were in fact looking for the traffic.

Operating on intersecting runways at an uncontrolled airfield requires significantly greater diligence than was demonstrated by the King Air crew. ✈

## **Lessons Learned**

- » Uncontrolled airports have inherently fewer risk mitigations than do controlled airports. Such fields are often host to flight training and low experience operators who have a greater propensity for making untrapped errors than do professional pilots.
- » Airports with intersecting runway operations have more potential hazards than do those with non-intersecting runways.
- » Pilots should follow standard radio procedures when operating at uncontrolled airports to ensure that other traffic has knowledge of their location and intentions.
- » Good situational awareness demands that pilots monitor other traffic visually and via the radio at all times. Trust, but verify, that potentially conflicting traffic will do what you expect them to do.
- » A good visual scan for traffic means moving one's head around the cockpit enough to get an unobstructed view of other aircraft.

## **Honeywell study shows**

# **70 percent of runway incursion involved crew deviations from SOPs**

*Excerpted from a Flight Safety Foundation Article, dated March 21, 2002*

In 2002, a Honeywell human factors expert, Dr. Ratan Khatwa, made a presentation to the 14th European Aviation Safety Seminar on "An Analysis of Runway Incursion Occurrences Worldwide, 1990–2002." His study found that in many events, more than one contributing factor led to the incursion (see table on page 4).

Dr. Khatwa concluded that in order to reduce runway incursions, it would be

beneficial to develop surface-operations SOPs that include crew coordination, avoidance of distractions, flight planning with appropriate briefings, tactical decision making, progressive taxi instructions, and implementing SOPs in pilot training. He also recommended that readback of clearances should include the call sign and runway designator.

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## **Runway Safety Tips from the Line**

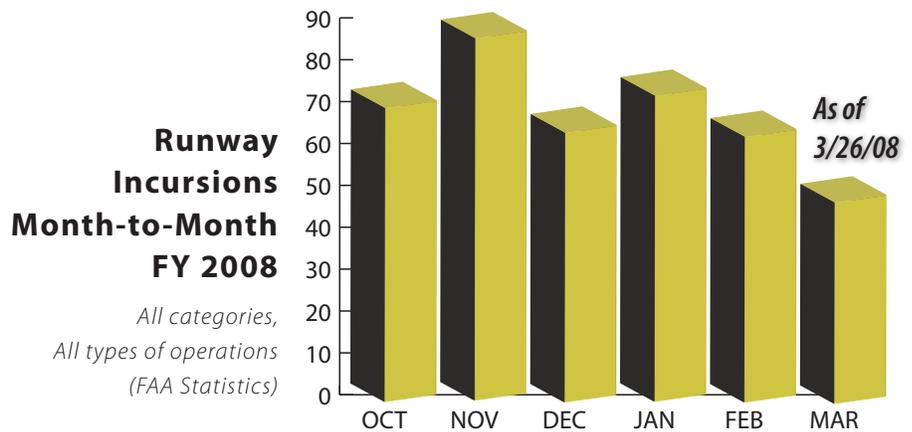
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*professionalism of their voices especially when they read back taxi clearances. I especially listen to readbacks of runway numbers by other flight crews (the little guy) to ascertain who's going where.*

- » *I have tried to develop the habit of restating the clearance to enter a runway, i.e., "cleared to position and hold," "cleared to cross," "cleared for takeoff," as I approach a runway holdline. This gives the F/O or jumpseater a reason to question or confirm that they have heard and understand the same clearance as I have. It's just one more opportunity to stop before entering the runway without clearance.*
- » *Any time I am cleared to cross an active runway I turn on the strobes—day or night. When held in position before takeoff clearance for an extended length of time, I turn on the strobes—day or night. This sometimes irritates pilots of aircraft waiting to take off, and they will voice their displeasure over the radio. I tell them that it's not them sitting on the active runway, and, furthermore, they may choose to look away from the bright lights until I am gone.*
- » *Just a thought . . . as an instructor pilot in T-38s many years ago, we had the honor at Vance AFB of being the third busiest airport in the world by aircraft movement count. We were taught and we passed on to our students that the runway was always to be considered sacred. You used it and got off of it. While using it, it is yours alone! However, someone right behind you may need it more than you, including controllers, so you did not dally on sacred ground. From Cessna 150 drivers to go-fast machines and everything in between . . . sacred ground should be taught, reinforced, and above all else, considered SACRED.*

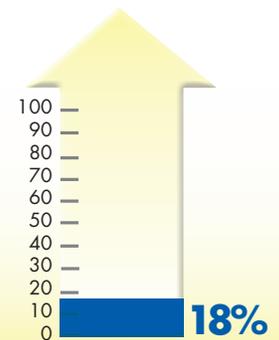
**Honeywell Study**  
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Contributing Factor	Prevalence of Occurrence
Pilot actions were involved.	62%
ATC actions were involved.	35%
Crew failure to maintain adequate lookout was a factor.	41%
Crew loss of position awareness was a factor.	40%
Crew had poor awareness of traffic position.	45%
Crew exercised improper readback, misheard, or used improper phraseology.	31%
Inadequate crew resource management.	31%
Inadequate crew monitoring/challenging.	31%
Tactical decision making.	39%
Crew pressed on despite uncertainty about their position or the clearance.	20%



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## Do you have a best practices recommendation for safe airport operations?

Through personal experience, many pilots have learned or developed their own best practices for safe operations. If you have a suggestion regarding safe operating procedures in the airport environment, please share it with us by clicking on the button below. All suggestions will be reviewed and considered for publication in subsequent newsletters.

**Thank you for your contribution.**

**Thank you** for reading this edition of ALPA's *Runway Safety Newsletter*. Please provide us with your comments on this critical topic and look for future issues for more information regarding runway safety.

ALPA has developed a special website dedicated solely to runway safety. There you will find links to runway safety educational material and video recreations of several high-profile incidents. Material on this website is being added on a regular basis, so stop by for the latest information on runway safety. Previous issues of this newsletter can also be found there. The website address is [holdshort.alpa.org](http://holdshort.alpa.org).

## Our Goals

While our main goal of distributing this newsletter is to increase your education and awareness of runway safety hazards, ALPA is also committed to providing access to educational resources on our website. In addition, we strive to:

1. immediately provide you with awareness tools,
2. conduct this educational campaign to provide information to line pilots,
3. continue the pursuit of long-term system mitigations of runway collision hazard.