

# FAA NW Mountain Region Runway Safety Summit

## Promoting Runway Safety *The Pilot's Perspective*

**First Officer Steve Jangelis**  
**Southern Regional Safety Coordinator**  
**Air Line Pilots Association, International**

**July 23-24, 2008**  
**Seattle, WA**



# Why Do I Volunteer for Safety Work?

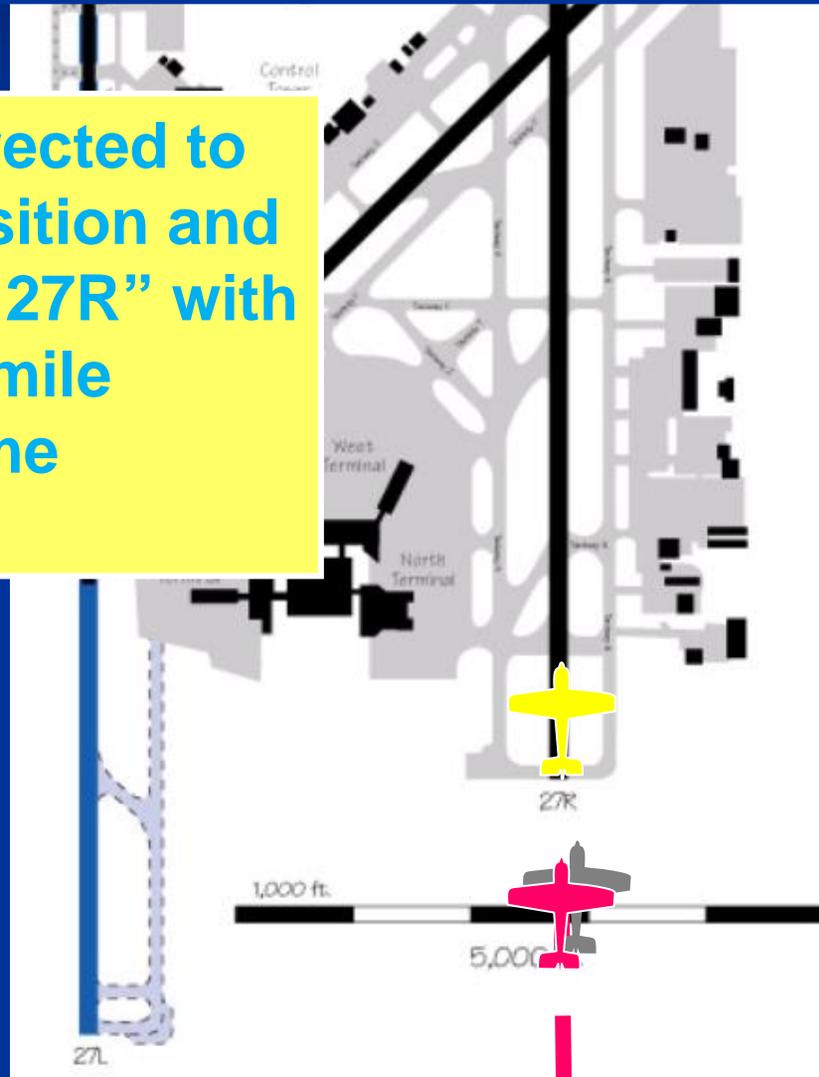
BECAUSE I AM A  
RUNWAY INCURSION  
SURVIVOR.....

# Fort Lauderdale International Airport, March 2001

Night, VFR, Rain Showers, TRW's in vicinity

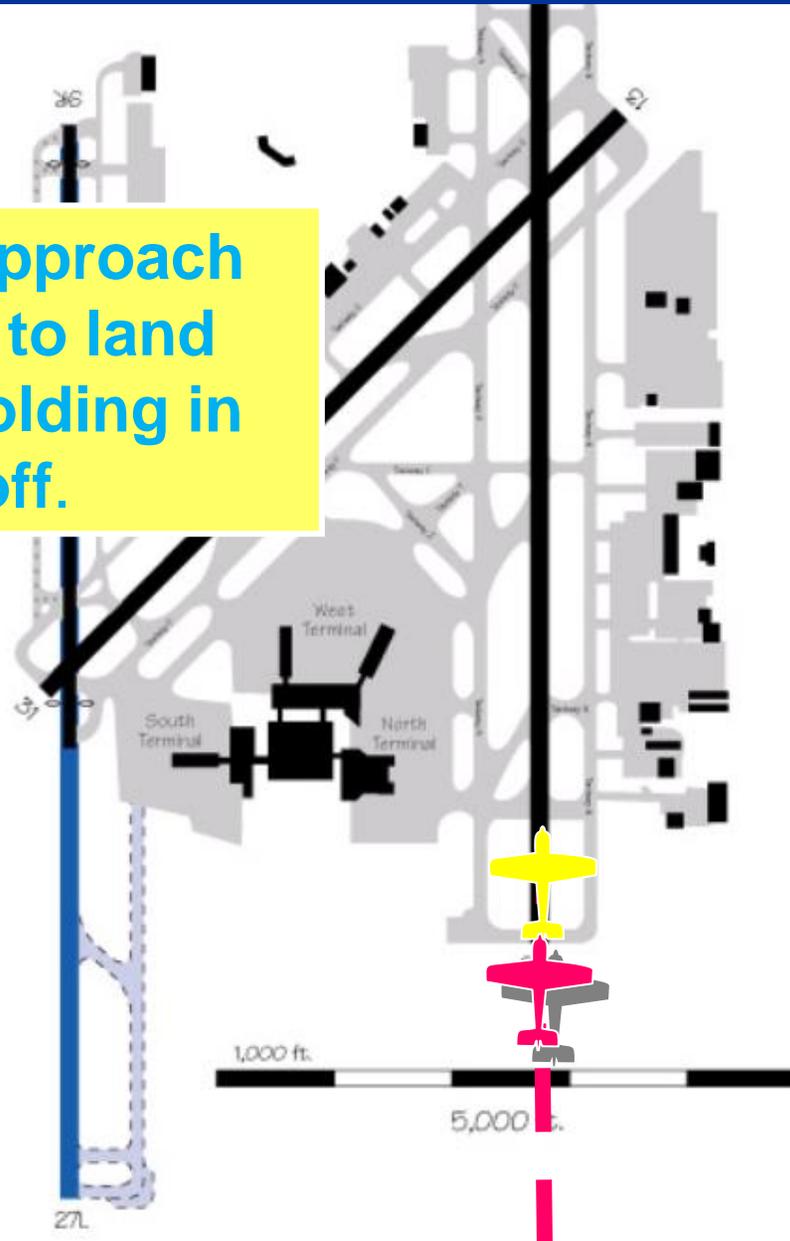
“Close Call” involving a B-737-200 and B-767-400.

1. B-737 was directed to “Taxi into position and hold Runway 27R” with B-767 on a 5 mile approach same runway.

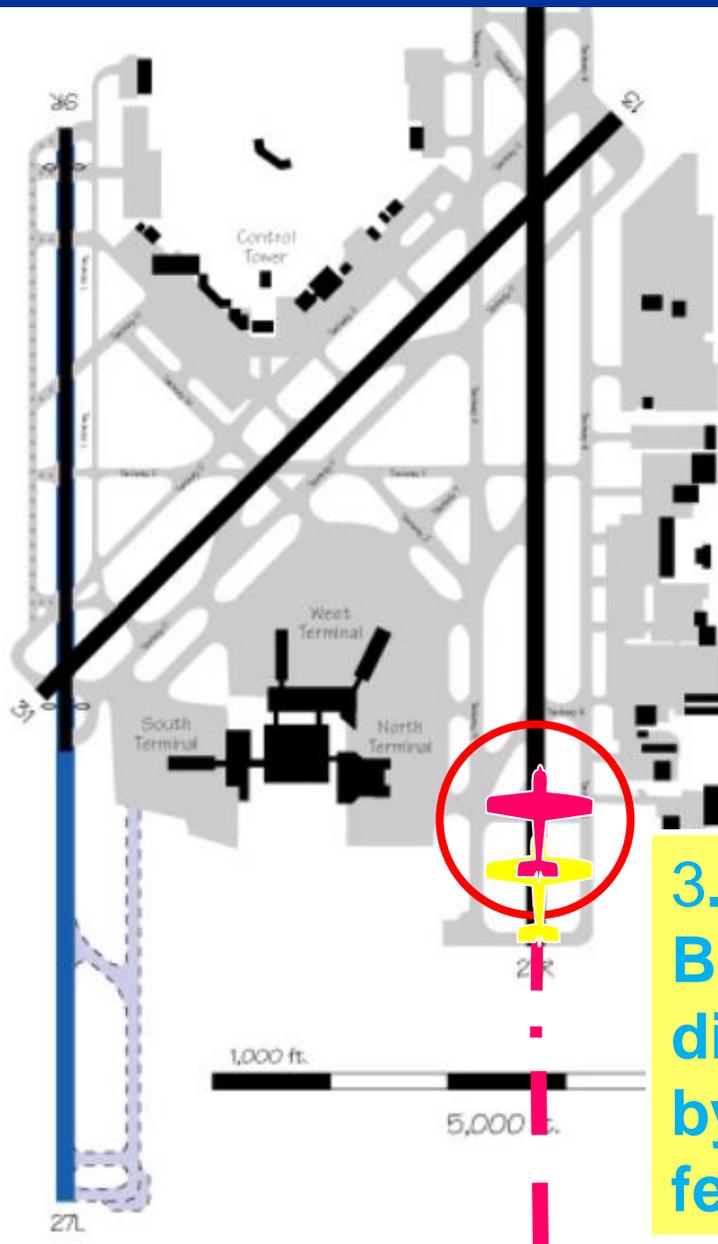


# Fort Lauderdale International Airport, March 2001

2. B767-400 on approach was then cleared to land with B-737 still holding in position for takeoff.



# Fort Lauderdale International Airport, March 2001



3. B-767 overflew B-737 holding in displaced threshold by less than 100 feet.

# Who Is ALPA?

- Represent 55,000 pilots at 40 Airlines in North America
- IFALPA represents over 110,000 pilots at 90 member Associations
- Safety makes up a significant percentage of the operating budget
  - Why? - “Schedule With Safety” has been our motto for 76 years.

# **ALPA Safety Committee Project Overview**

**178 Funded Projects Across 13  
Technical Groups**

**Plus**

**9 Accident Investigations**

*Our Roadmap*

# ALPA Safety Committee Priorities





**Looking for Ways to Better  
Manage Risks Before They  
Become Accidents**

# SMS-SAFETY MANAGEMENT SYSTEM

## ICAO Defined Essential Pillars of SMS:

- Safety Policy- All Stakeholders must define their policies and goals.
- Safety Risk Management- Detecting Risk.
- Safety Assurance- Continuous monitoring in changing environment.
- Safety Promotion- Encouraging a sound safety culture.

# ASAP/ FOQA

- AVIATION SAFETY ACTION PROGRAM
- FLIGHT OPERATIONAL QUALITY ASSURANCE

ALPA FULLY SUPPORTS AND ENDORSES IF TRUE USABLE DATA CAN BE EXTRACTED WITHOUT FEAR OF UNECESSARY PUNISHMENT OR RELEASE OF PERSONAL DATA.

# 30 years ago...



- **The potential severity of runway incursions was fully realized**
  
- **We also faced great risk of:**
  - **CFIT accidents**
  - **Windshear accidents**
  - **Mid-air collisions**

# Threat: Controlled Flight Into Terrain

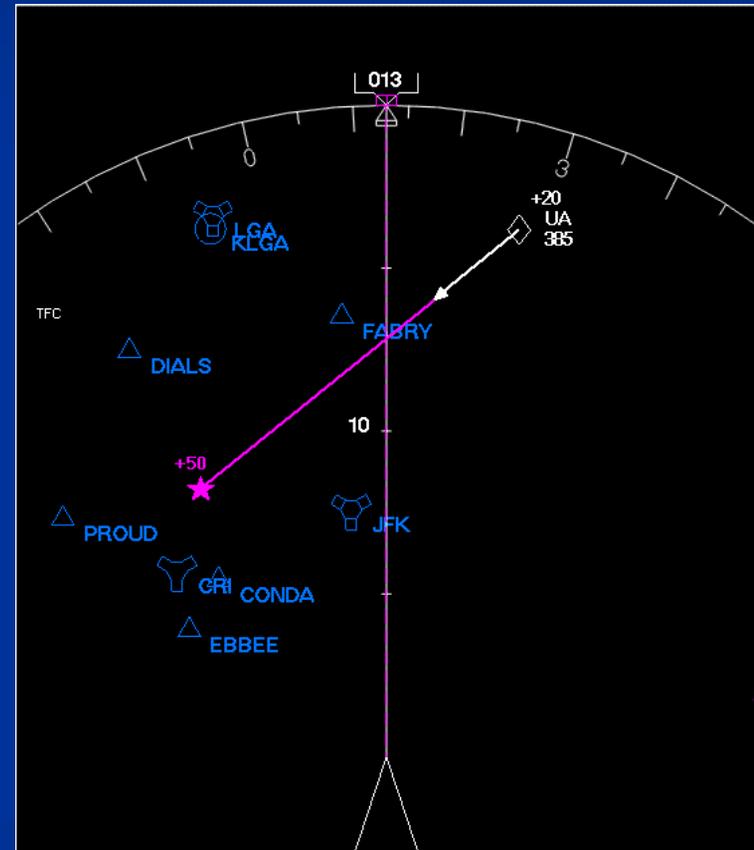


# Threat: Low Level Windshear



*LLWAS-RS Anemometer/Pole*

# Threat: Mid Air Collision



# Evaluating the Risk of Runway Incursions

Severity \ Likelihood		Higher →			
		← Lower			
↑ More Less ↓	More	Green	Yellow	Red	Red
	Less	Green	Green	Yellow	Red
		Green	Green	Yellow	Yellow
		Green	Green	Green	Yellow

Acceptable with Mitigation

Acceptable

Unacceptable

# Runway Incursion Likelihood

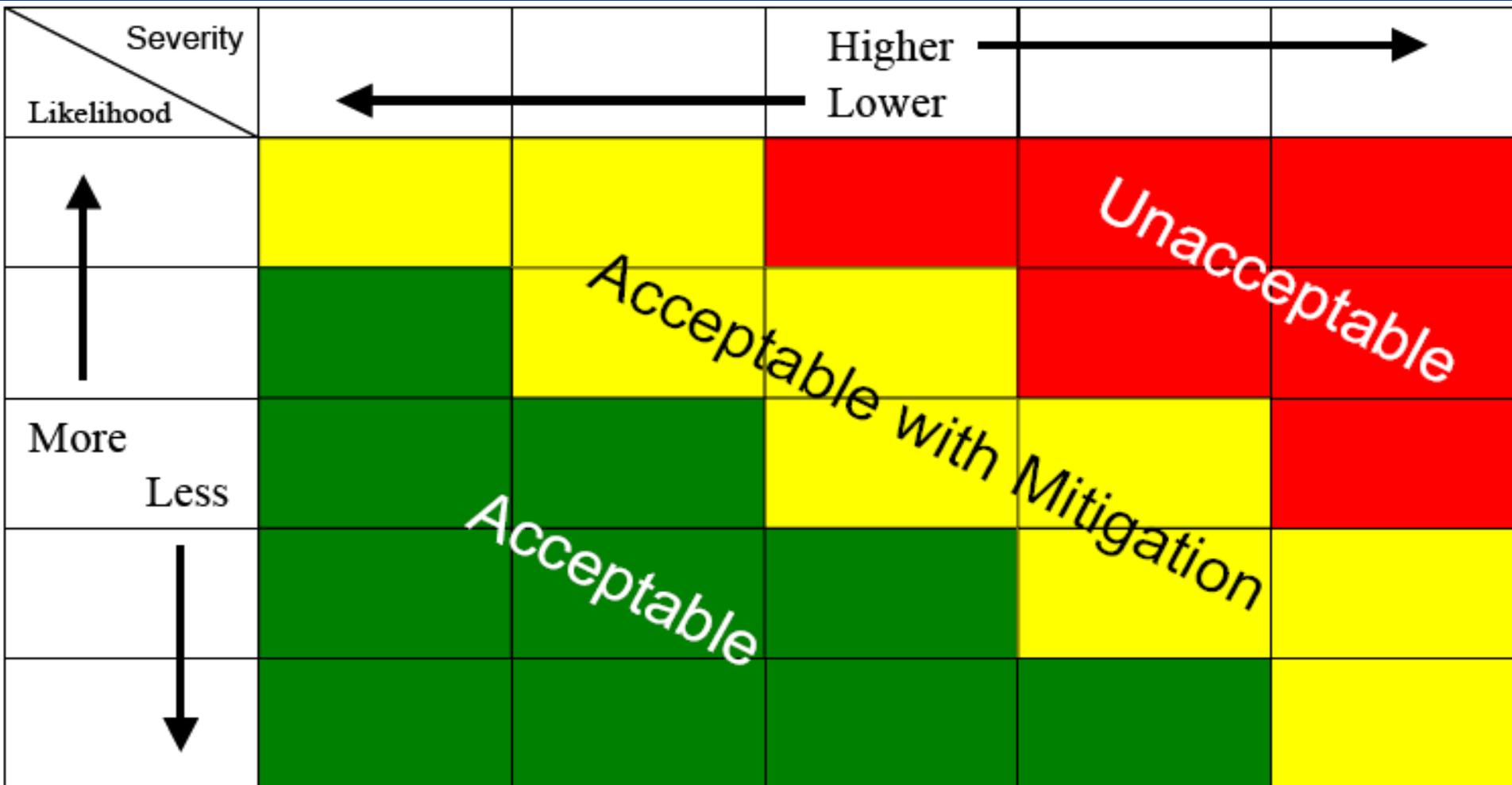


# Runway Incursion Severity



Runway Incursion, B737 & Metro III Collision at LAX  
February 1, 1991

# Conclusion: Runway Incursion Risk is Unacceptable



**RUNWAY INCURSIONS DO NOT DISCRIMINATE –**

**They can happen at any airport at any time to anybody!**



# Runway Incursion Mitigations

- We cannot change the potential severity of an incursion
- We can reduce the likelihood of an incursion through layers of mitigations
- CAST recommendations made in 2002 to reduce frequency of incursions
- **Most have not yet been implemented**

# Highly Effective Mitigations:

- Aircraft Moving Map
- Add traffic to display
- Runway occupancy advisories
- Graphical/text of taxi and clearance limits
- ASDE-X



*All great “high tech” solutions*

**Don't Judge a Book...**



# ... By It's Cover!



# “Modern” Airliner Flight Deck with Steam Gauges



# Flight Deck of Small General Aviation Aircraft



# ARE PILOTS VICTIMS OF OUR NEWEST FOUND TECHNOLOGIES AND PROCEDURES??

- Schedule
- Cost-Cutting / “Green” Efforts
- RNAV Departures and/or Arrivals
- New Taxiways and Runway Complexes
- Multiple Ground and Tower Frequencies
- FMS/FMC’s

# Boeing 727 Runway Change

2 Pilots, 1 Flight Engineer.

Runway change steps???

3





A/T ARM IAS/MACH NOG VERT SPD ALT  
 11260 063  
 139 092 10000  
 DISENGAGE  
 11690 087  
 VOR/DME

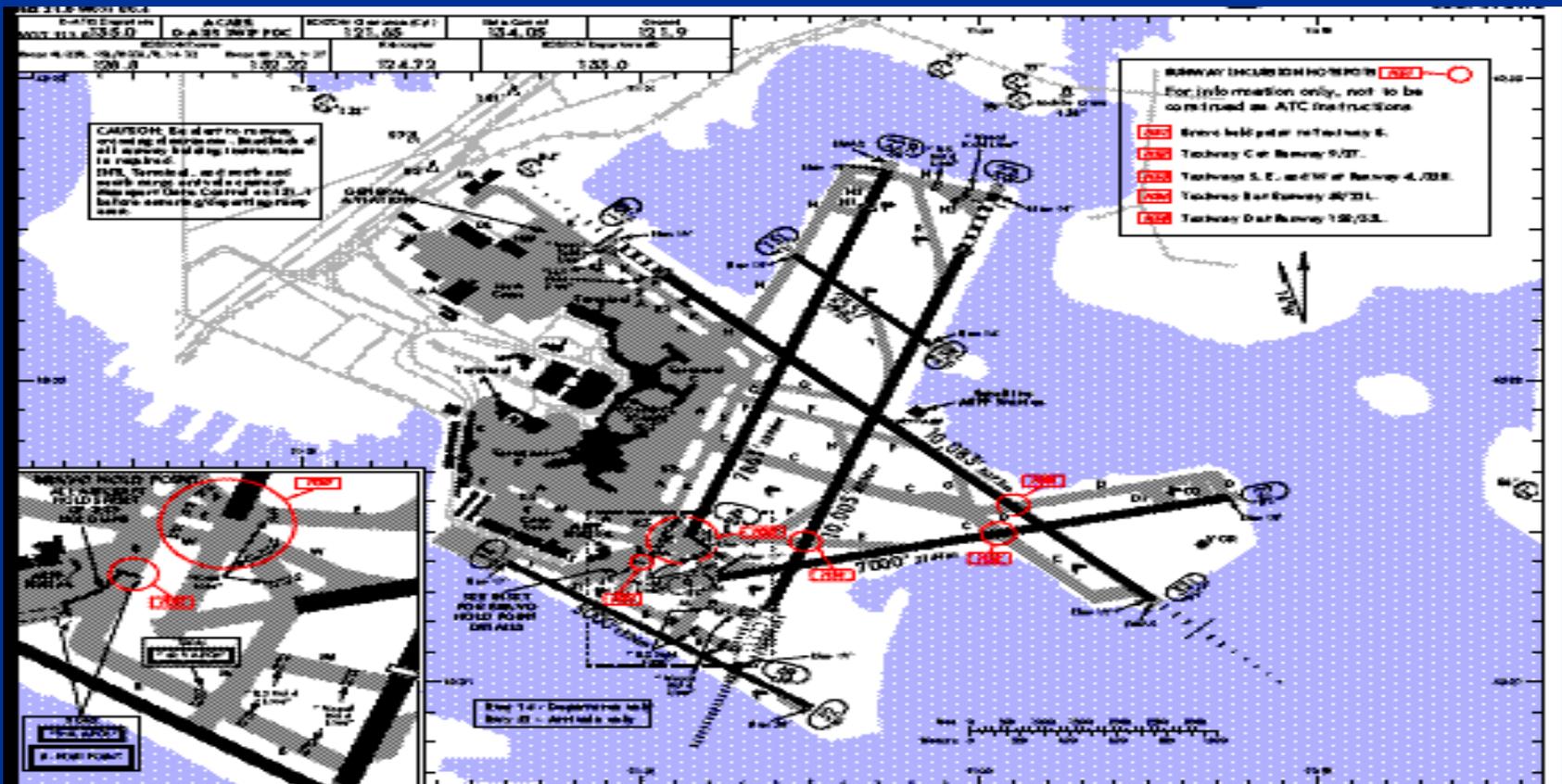
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 AUTOLAND STATUS  
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 HSH HDG REF TRUE  
 TEMP SEL  
 FLAP LIMIT IAS 250K  
 250K 200K 170K  
 ALTN FLAPS 1 5 15 20 25 30  
 UP NORM LE TE  
 RETRACT 270K  
 EXTEND OR EXTENDED 270K-83M  
 LOCK OVRD  
 ALTN GEAR EXTEND 250K-75M  
 OFF ON  
 FLAP OVRD GND PROX GEAR OVRD  
 TERR OVRD  
 TAS 000 SAT -27  
 AUTOLAND STATUS  
 FLT INSTR BUS PWR  
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 2 OIL PRESS 2 CAS MACH GROSS WT TAT +27  
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 00 FAN 00 00 1100 1100  
 00 LPT 00 00 00 00  
 00 H<sub>2</sub> 00 00 00 00  
 00 O<sub>2</sub> 00 00 00 00  
 FAN PH 00 00 00 00  
 LPT PH 00 00 00 00  
 APU EST 6 0  
 RPM 0  
 170K MAX ACT 1100  
 TRA SEL 00  
 EGT 00  
 H<sub>2</sub> FF 00  
 PP 43 0  
 DUCT PR 0  
 BURN PR 1/R 0

POS INIT  
 H23-30-6 H081-2478  
 REF AIRPORT  
 DATE  
 VIS (GPS)  
 GPS POS  
 SET INS POS  
 MENU  
 (RED)

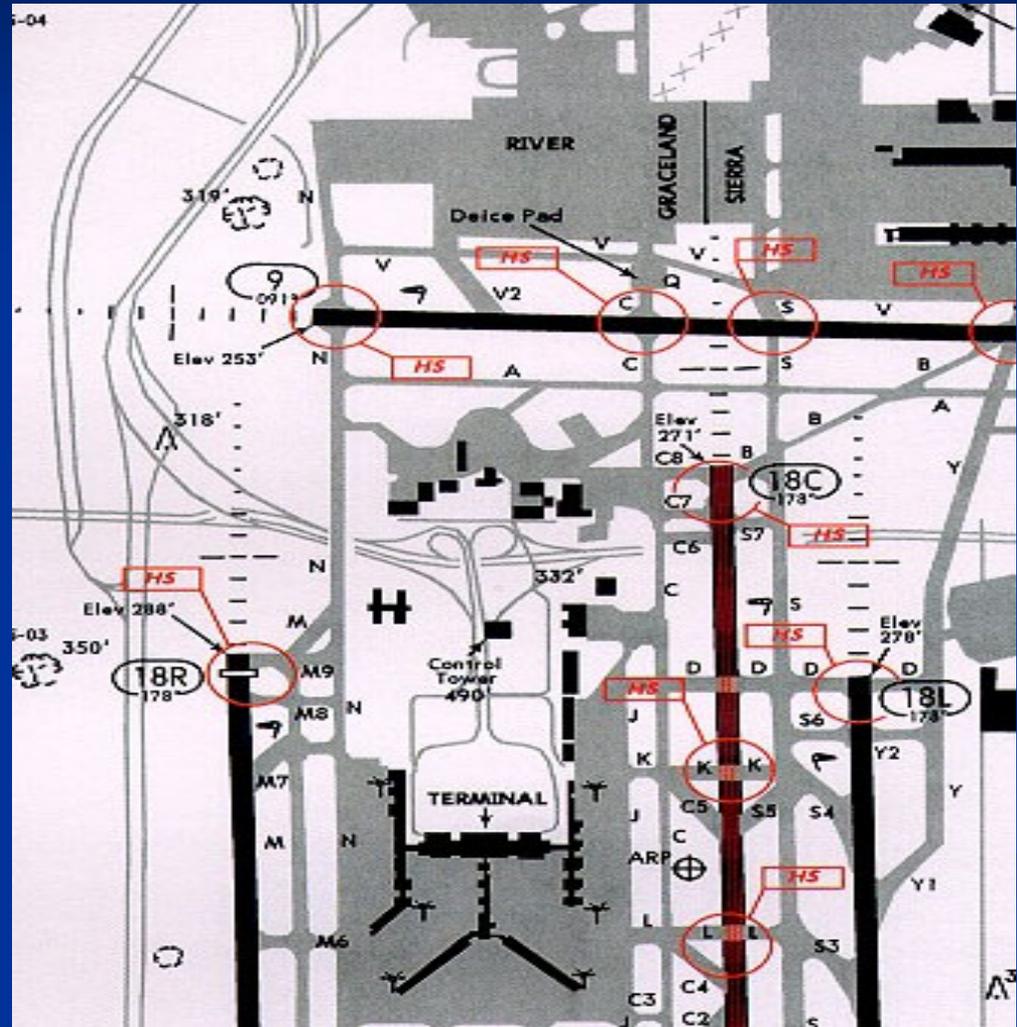
# Intelligent Design

Many airports have exceeded their design capacity and were engineered for a different generation of aircraft.



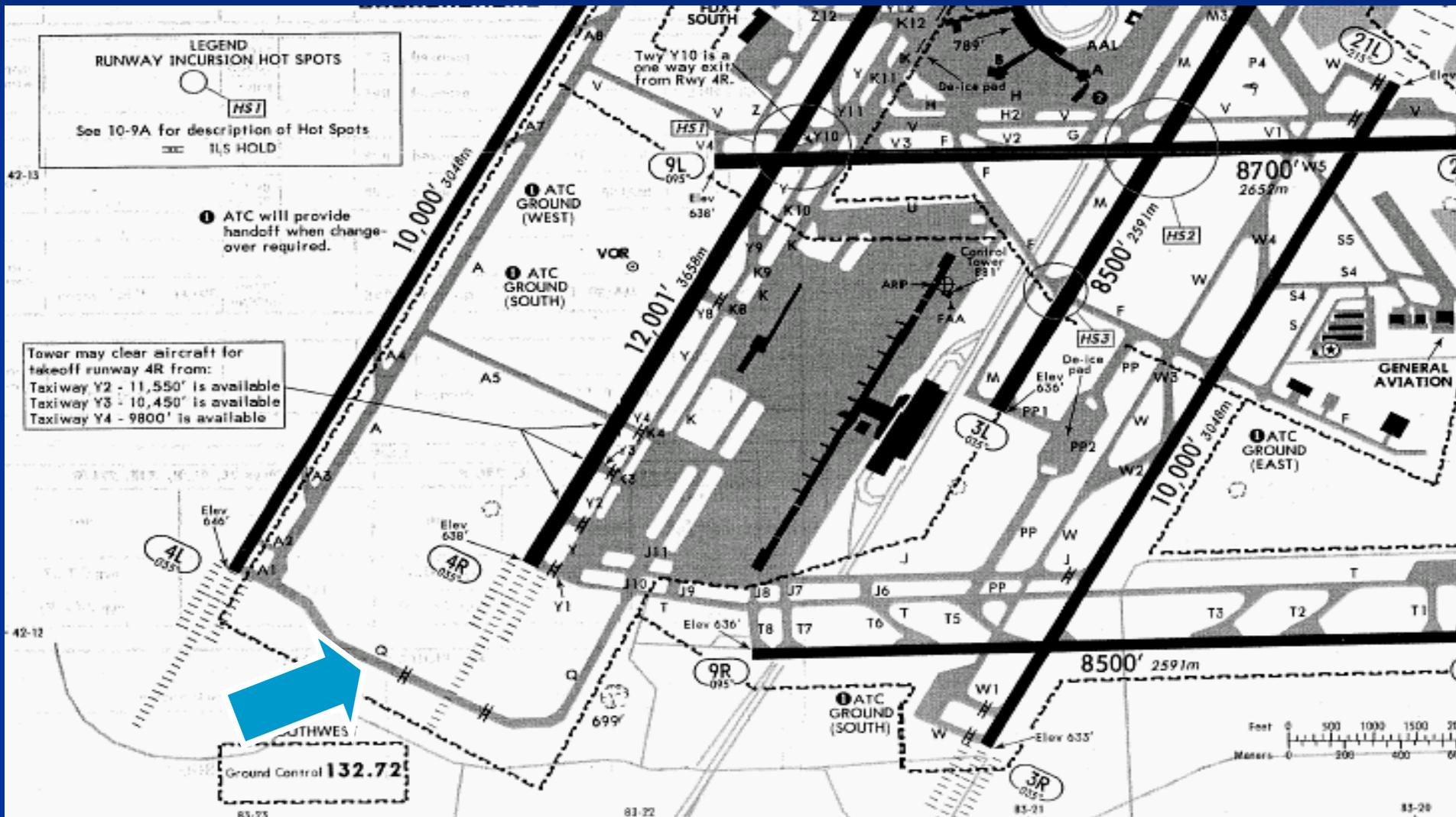
# Hotspots

The challenge is to design Airports that **Do Not** require a need to highlight the Hotspots!

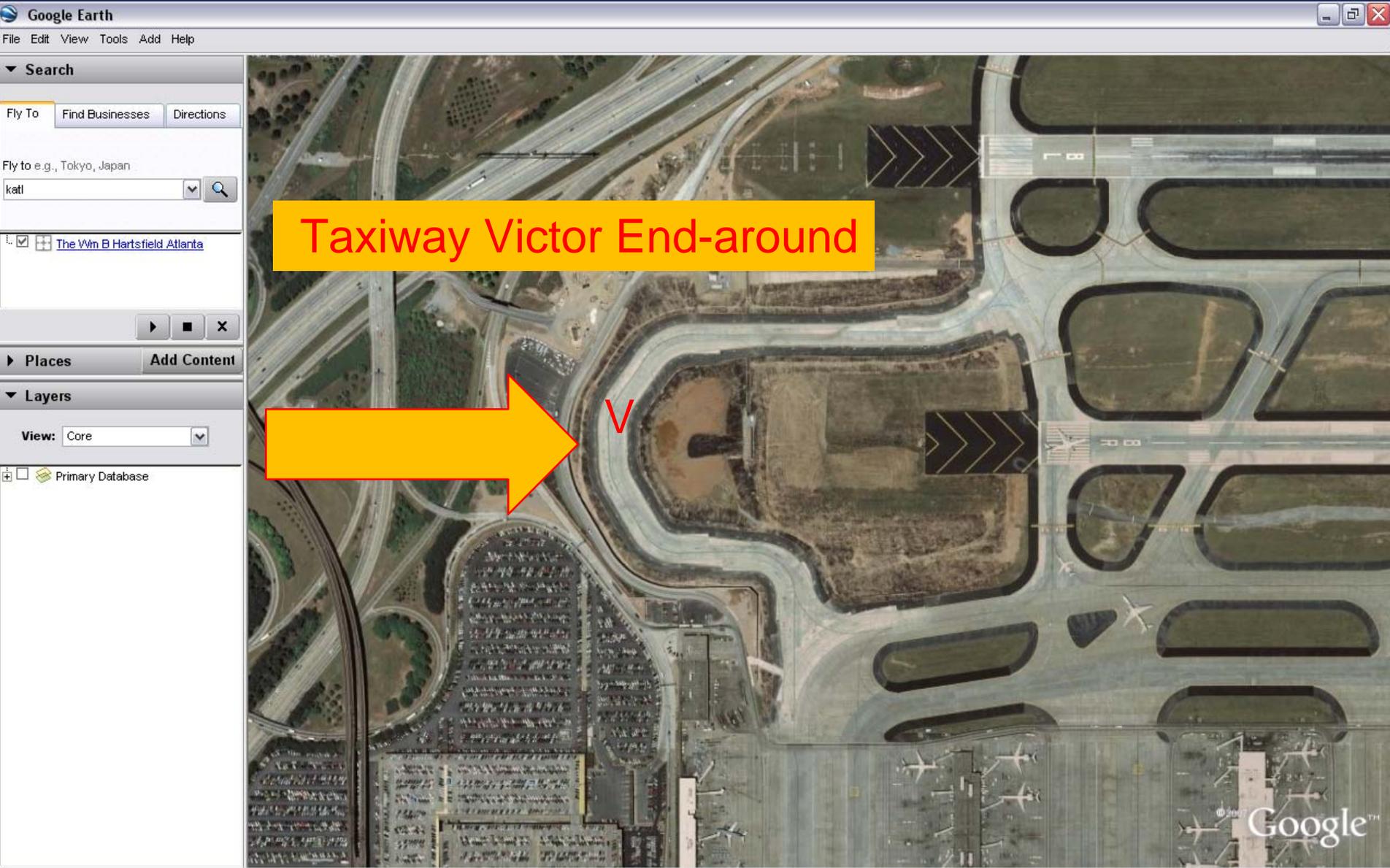


# End-around Taxiway

A better design at DTW



# ATLANTA, GA- KATL



Taxiway Victor End-around



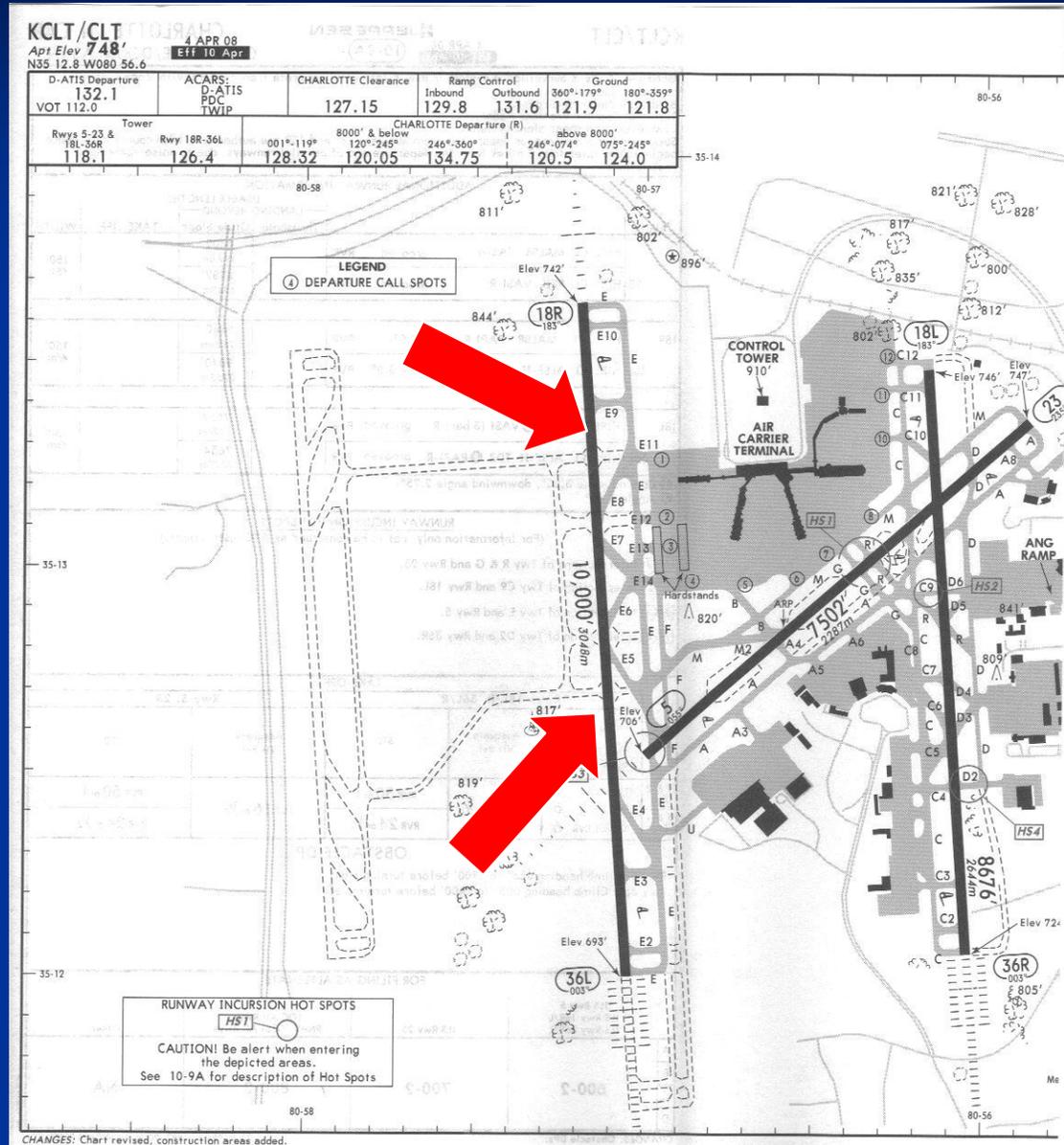
V

# New KCLT Runway?

When considering new construction, we should try to eliminate the hazard of runway crossings.

Or is it OK to just add Hotspots before it even opens?

There is a clean slate, but we can work with what is existing.....

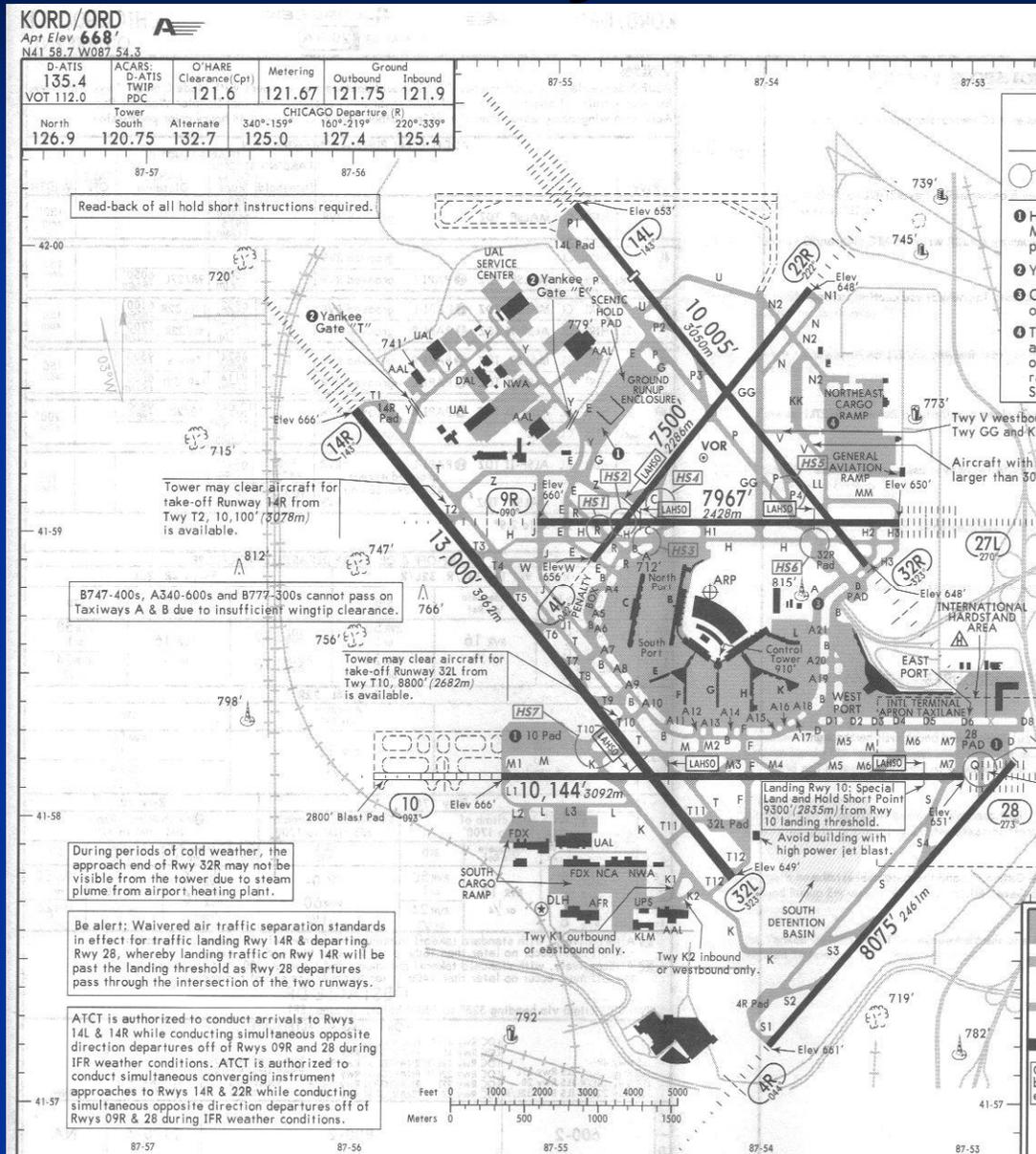


# New KORD Runway?

Same applies here...

Go ahead and add hotspots before it even opens?

There will be a minimum of 2 runway crossings.



# Low Tech Solutions

Enhanced Holding Position  
Markings



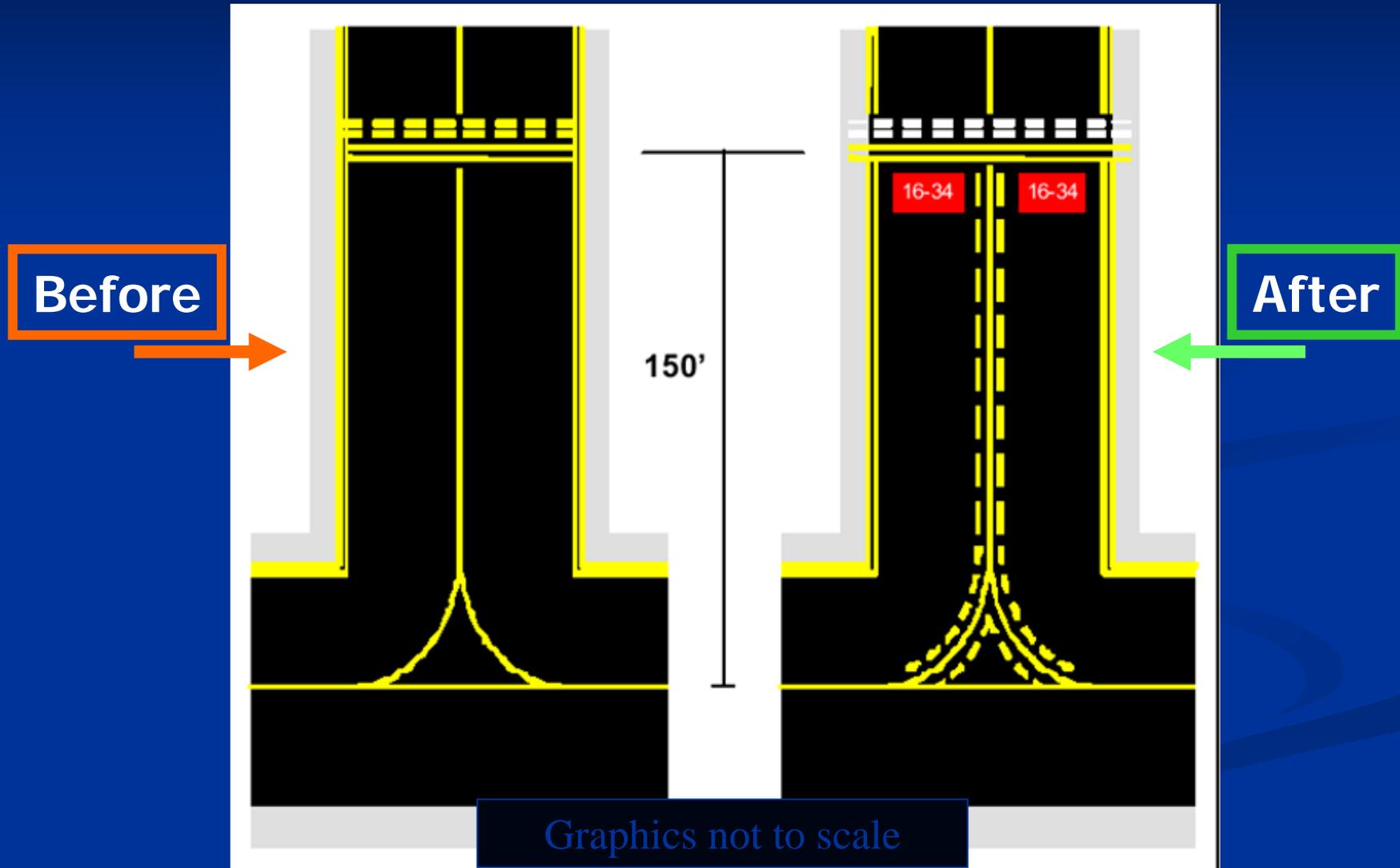
Runway Status Lights



Runway Guard Lights

***PAINT and LIGHTS***

# CAN YOU SEE ME NOW?



# ENHANCED COMPLEX INTERSECTION



# NOTAMS

*Has the time come to start over?*

- **Technology exists to deliver a better product**
- **Are they Intuitive?**
- **Are they as effective at communicating critical information as we would like?**
- **A “real challenge” for future growth**

# Training, SOPs, and Education

- What could ALPA do to educate our membership about Runway Safety??



# Training, SOPs, & Education



**Runway Safety**  
Safe flying starts and ends **alpa** on the ground.

Runway incursions pose a significant but unnecessary risk for pilots and passengers. This course will help you avoid common pitfalls as well as needless accidents and scares.

Enter your email address to begin or resume:

**BEGIN PROGRAM** ➔

Satisfactory completion of this module fulfills the seminar attendance requirement for the RIIEP Program.

Sponsored by the FAA's Office of Runway Safety and Operational Services

Screen Capture from ALPA Web Site [www.alpa.org](http://www.alpa.org)

# ALPA Runway Safety Website

- ALPA Hold Short for Runway Safety



<http://www.alpa.org>  
Safety/Security tab

# Runway Safety and Football?!?!?



# BE LIKE PEYTON Checklist

1. Study Film (Preflight Preparation)
2. Suit up (Airport Diagram Out)
3. Get on your “Game” Face (Sterile Cockpit)
4. Huddle up (Taxi Clearance)
5. Be ready to audible (Runway Change?)
6. Snap the ball (Execute the Clearance)
7. Time Out??? (Questions?? Confused??)
8. Win the Game (Get to the Runway Safely)
9. Prep for next week (Review Arrival Airport)

# SAFETY STARTS AT THE TOP AND THE CULTURE FOLLOWS DOWN TO THE LINE PILOT.....

## Delta Air Lines Awarded National Safety Council's Green Cross Safety Medal

Tuesday May 6, 11:15 am ET

### Delta CEO Richard Anderson Accepts On Behalf of 50,000 Delta Employees

ATLANTA, May 6, 2008 (PRIME NEWSWIRE) -- Delta Air Lines (NYSE:[DAL](#) - [News](#)) is the newest recipient of the prestigious 2008 Green Cross for Safety Medal presented each year by The National Safety Council. The award, presented during a ceremony April 30 at the Georgia Aquarium in Atlanta, recognizes organizations and their leaders for outstanding achievements in safety and health, community service and responsible citizenship. To be considered for the medal, an organization and its leadership must demonstrate a superior record in advancing safety and health practices consistent with the mission of the National Safety Council.

ADVERTISEMENT



### The Next Berkshire Hathaway

In 1957, Bill and Carol Angle invested half their life savings with Warren Buffett. Today, their shares in his company are worth over \$300 million. According to Forbes, another early investor, Malcolm Chace, piled up \$850 million.

You know the Berkshire miracle can't possibly come along more than once in a lifetime. But suppose you could do even half as well?

One stock looks uncannily similar to an early Berkshire Hathaway.

[Click here to get its name in a new free report from The Motley Fool](#)

National Safety Council Chairman of the Board Joseph J. Ucciferro presented the award to Delta CEO Richard Anderson and praised Delta's exemplary commitment to safety that is evident at all levels of its structure. Ucciferro referenced an integration of corporate safety, quality, production and profitability that Anderson has called fundamental to Delta's ability to offer a consistent travel experience and keep customers coming back.

"At Delta, safety is top-of-mind, both on and off the job," said Ucciferro, president and CEO of Philadelphia-based Day & Zimmermann's Commercial and Public Sector. "It's a

way of life that begins at the top and is not assigned to one area or one individual. It is this culture of safety, as exemplified by Delta and our previous Green Cross for Safety recipients that truly contributes to making our world safer."



"This is a great honor for us. Providing a safe, secure operation is Delta's first and most fundamental obligation to our employees and customers. At Delta, safety is embraced as our No. 1 leadership value, and Delta people integrate it into everything we do."

Richard Anderson  
Delta Air Lines CEO



PBS & eCrew  
PBS eCREW

**My Delta Fleet**  
My Delta Fleet is the line pilot's portal for accessing training information, pilot manuals, and news specific to your fleet.

<b>757 and 767</b> -757 Rev Dates -767 Rev Dates	<b>767-400</b> -Rev Dates	<b>777</b> -Rev Dates	<b>MD88/90</b> -Rev Dates
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**DAL Stock Quote**  
DAL 6.06 -0.08  
Provided by Yahoo! Finance

**Ops Notes**  
Mandatory Runway Incursion Training  
Re-issuance of FAA Pilot Certificate for new ICAO standard Memo  
Airway Manual Ship Sets  
Altitude and Speed Constraints Published on RNAV Procedures  
**MORE**

**Delta Weather Links:** [Delta Meteorology](#) | [Domestic Turbulence Chart](#) | [Printable Maps](#)

## Delta 'hitting on all cylinders' Richard says

Richard Anderson told employees during meetings this week that Delta is "hitting on all cylinders" in our operational performance and we've acted "quickly and decisively" to adjust our business plan to counter the effects of rapidly rising fuel costs. In his weekly Right from Richard employee message, Richard said he and Ed Bastian have been meeting with groups of directors and general managers in Atlanta recently to discuss the state of the airline.

"Our on-time [performance] is phenomenal, our completion factor... our quality of service, our baggage, international and our revenue per ASM [available seat mile] and revenue growth," Richard said. "That, coupled with really good cost discipline and a very good fuel hedging position, and we continue to perform well."

Richard stressed that we've overcome some tough challenges during the past three years, but taken necessary and timely actions to manage through them. "While oil and fuel are very serious challenges to the business, we'll certainly get through it," he said. "In the first quarter and the fourth quarter of last year we acted quickly and decisively to adjust our business plan to reduce domestic capacity and continue to increase revenue while very aggressively managing our costs. We were actually way ahead of the industry. A lot of the things you're seeing some carriers do right now we were doing six months ago."



**TopNews**  
Deadline Saturday to submit forms for voluntary program enrollment  
05/29/2008 04:01 PM  
PPT payouts hit checks Friday  
05/29/2008 02:58 PM  
Want to save money on gas? Consider a carpool, mass transit  
05/28/2008 03:27 PM  
We've signed on with PayPal for easier online sales  
05/27/2008 02:07 PM  
Our pink plane featured at popular D.C. air show  
05/23/2008 02:41 PM  
DOT gives final OK to SkyTeam ATI  
05/23/2008 02:36 PM  
**MORE**

**News2Know**  
Anchorage's 'queen bee' celebrates 40 years of service  
05/29/2008 07:16 PM

# RUNWAY SAFETY CALL TO ACTION

 DELTA

Version 1.0

Self-certify per instructions  
no later than April 25, 2008

Proprietary & Confidential

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## CQ07

Fleet Common Continuing Qualification  
WorldWide Operations Continuing Qualification

July 2007 — June 2008

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FCQ007v1.5

Instructions:  
Insert CD-ROM in drive.  
Courseware should launch  
automatically.

If CD does not auto-run:  
Select Run in the Start menu.  
Browse to the CD drive  
Double-click D:\fcq007.exe.  
Follow instructions in courseware.

Minimum Requirements:  
Windows™ 98 or newer  
1GHz processor  
1024×768 monitor

 Delta

# Now for the Investigation...

- Beyond 1 Probable Cause... "Probability" of Cause, maybe?
- FAA certifies all airmen as "expert" operators based on stringent training and qualification requirements.
- We know who did what. Why did the system not support expert operators?
- System must be resilient to random errors made by expert, yet human, operators.

# Safety Improvements Wanted

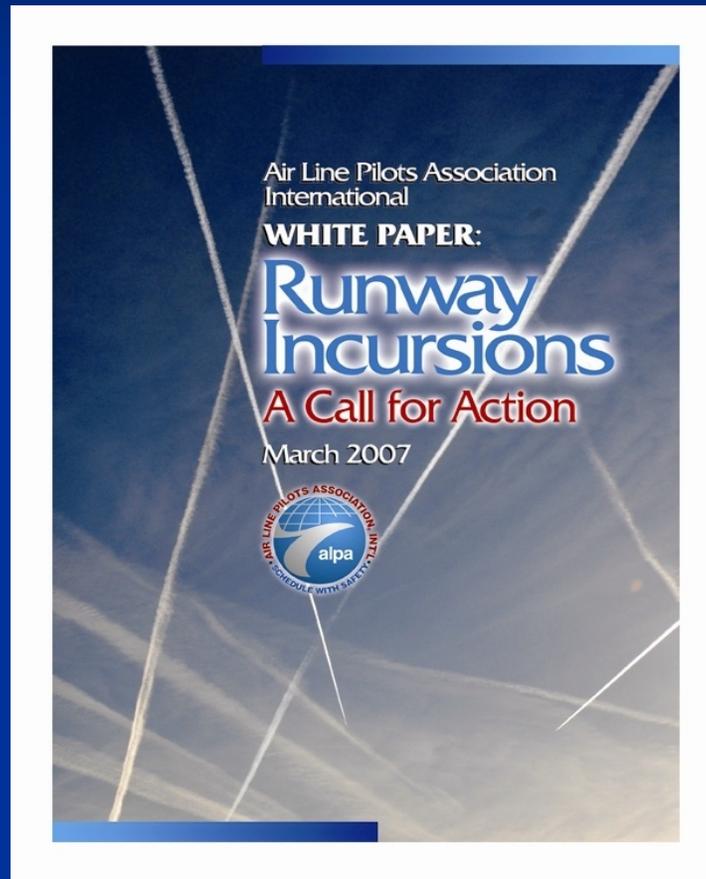
## Runway Incursions

Require all runways crossings be authorized only by a specific clearance. **A-00-67**

Require runway crossing clearances be issued only after the previous runway has been crossed. **A-00-68**



# ALPA White Paper on Runway Incursions



[WWW.ALPA.ORG](http://WWW.ALPA.ORG)

# *Another Runway Safety Issue*

# **RUNWAY EXCURSIONS**



**Air France, August 2005**  
**Toronto Runway 24L**

# RUNWAY EXCURSIONS

- Southwest Airlines
- Chicago-Midway 31C
- December 8, 2005
- 1 Ground Fatality.



# RUNWAY EXCURSIONS

## STILL OCCURRING

- Kalitta Air aborted T.O.
- Brussels, Belgium
- May 25, 2008
- 4 slight injuries to Flight Crew





RIGHT SNORRE - VAP

AIRLINERS.N

THIS COULD HAVE BEEN MUCH WORSE....

# RUNWAY EXCURSIONS

Still occurring....

5 days later

- Taca Airlines  
overrun
- Tegucigalpa,  
Honduras
- May 30, 2008
- 5 Fatalities  
(2 on Ground)



LET'S SEE A TEGUCIGALPA  
APPROACH TO THE SAME  
RUNWAY .....

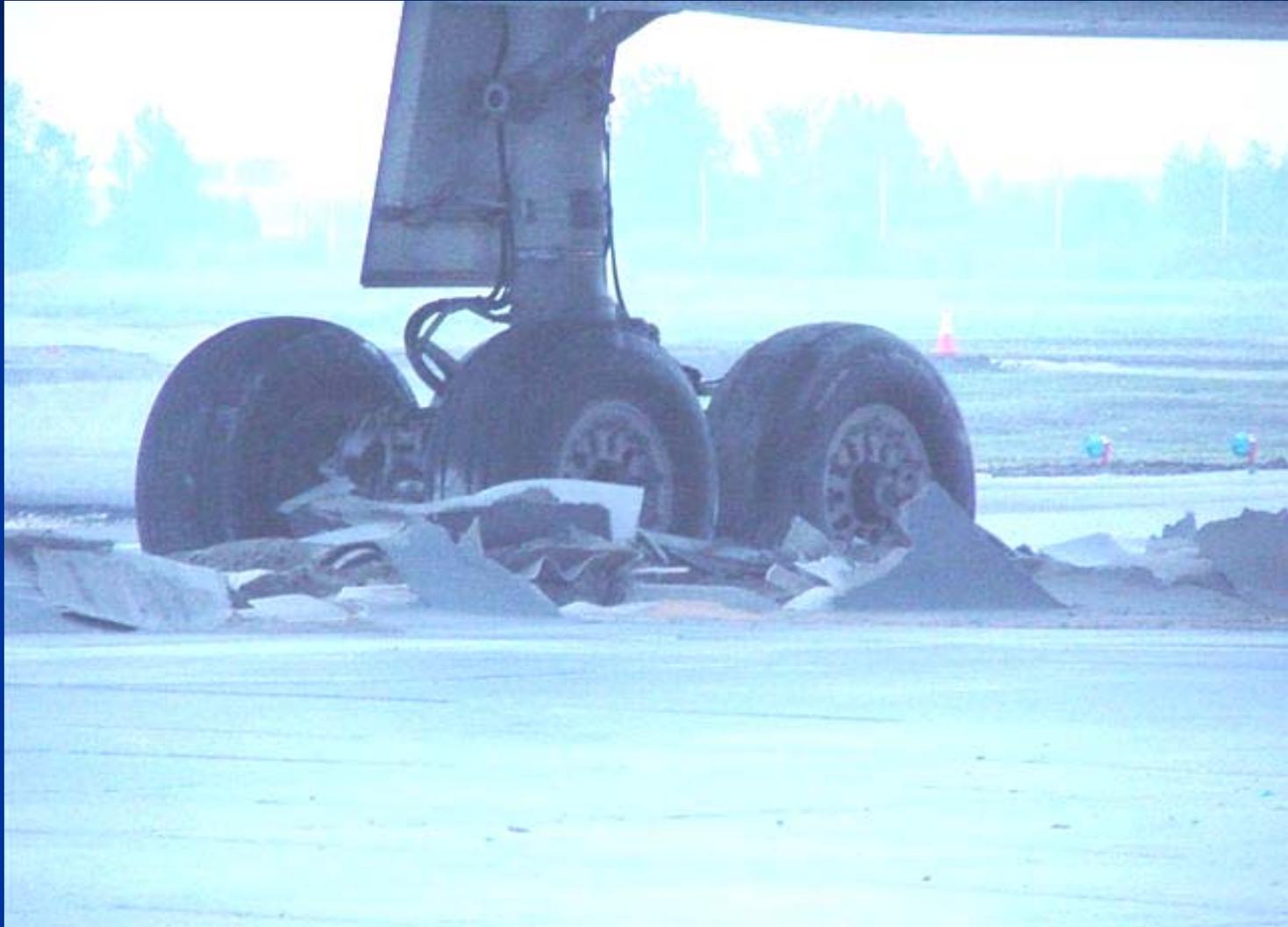
WITH **GOOD** WEATHER...



# Runway Safety Areas

- Non-compliance
- Schedule
- Declared Distances
  - When is a runway not a runway
  - Need information more accessible to pilots
  - All charts should show useable lengths.
- Runway Safety Areas need to be *at least* 1,000' long!!! No exceptions! Not 200, not 400, not 600! 1000 Feet!!
- EMAS

# EMAS – One option



# ALPA Position on EMAS

***“Air carrier airports should upgrade all runway safety areas. Where upgrades that meet minimum standards of AC 150/5300-13 or ICAO ANNEX 14 Section 3.4 are not feasible, Engineered Materials Arresting Systems (EMAS) should be installed.”***

# Runway Safety – A Puzzling Issue...



# Which Will Be Solved When We Work Together

Moving  
Map  
Display

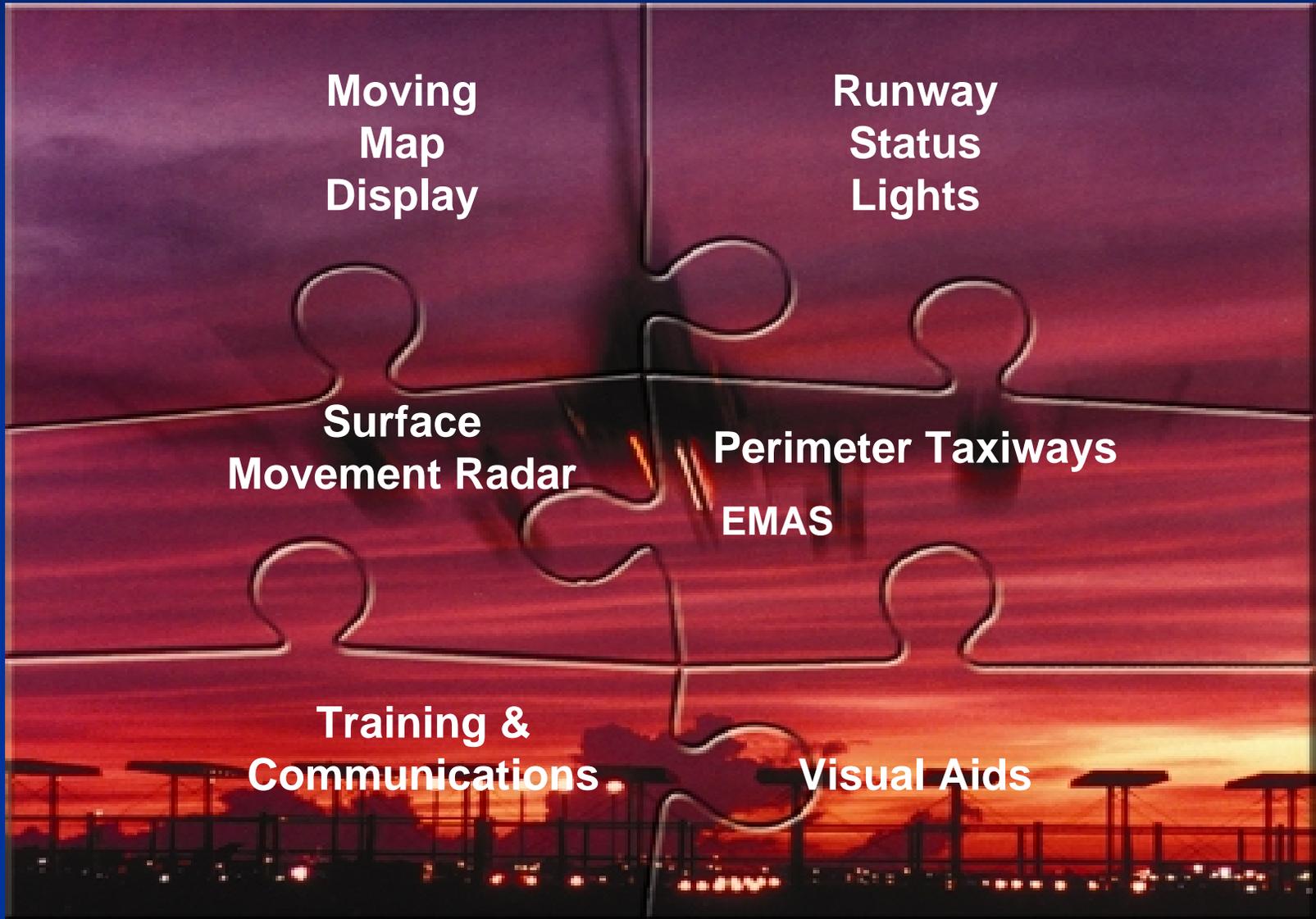
Runway  
Status  
Lights

Surface  
Movement Radar

Perimeter Taxiways  
EMAS

Training &  
Communications

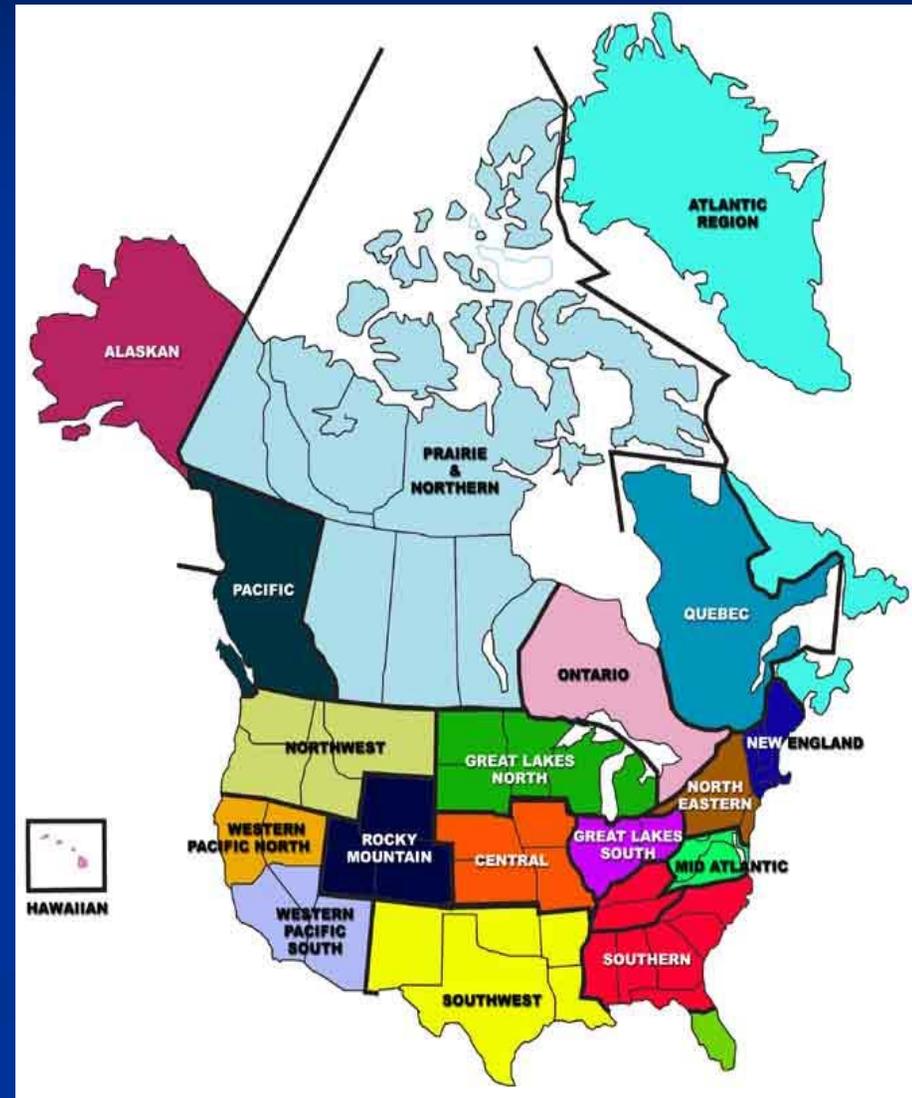
Visual Aids



# You need a Pilot's Perspective at your airport.....

ALPA can help by utilizing our Airport Liaison Representative Program.

- Consists of 170 Safety-trained Pilot Volunteers educated in Airport Operations.
- Can give an unbiased operator opinion on operations or safety issues.
- Has the full support and resources of ALPA Engineering and Administration staff.



# ALPA ALR's Northwest Region

- BOISE, ID
- BILLINGS, MT
- BOZEMAN, MT
- PORTLAND, OR
- PASCO/ TRI-CITIES, WA
- SEATTLE, WA
- SPOKANE, WA

If you don't see your airport represented, I can put you in contact with the proper ALR in other regions....

# A Call For Action

- ➔ We have the knowledge and the means to eradicate the incursion and excursion problem
- ➔ Do we have the political will, and will we expend the necessary resources to do so?





**THANK YOU**  
for your commitment to the  
continuous improvement of aviation  
safety.

**Together we are making a difference**

