

LASER ILLUMINATIONS OF AIRCRAFT - A GROWING THREAT

LASER ILLUMINATION

An Air Crew Perspective



Before we get started...

- ▶ What pilots do behind the closed flight deck door in preparation for landing.



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Arriving at an Airport: Four Phases

- ▶ Arrival
- ▶ Approach
- ▶ Landing
- ▶ Taxi



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Arrival Phase

- ▶ Arrival procedures are constructed to funnel arriving aircraft onto an approach to the airport
- ▶ Uses radio or GPS navigation
- ▶ Imagine a large city with multiple freeways leading into the city
- ▶ Busy time for pilots:
 - Meeting altitude and speed restrictions
 - Preparing for approach phase



Approach Phase

- ▶ Like a funnel to a runway
- ▶ Uses radio or GPS navigation
- ▶ Very busy time for pilots:
 - Flying the airplane
 - Monitoring instruments, making corrections
 - Communicating with Air Traffic Control
 - Preparing for landing phase



Landing Phase

- ▶ Extremely busy time for pilots:
 - Making the transition from flying on instruments to flying visually
 - Preparing for touch down
 - Making the transition from flying to taxiing



Taxi Phase

- ▶ Arguably the busiest time for pilots
 - Taxiing on airport surface can be one of the most challenging aspects of flying
 - Some airports are more complex than others making taxiing even more challenging
 - Communicating with Air Traffic Control
 - Aircraft configuration changes following landing



First Officer Drew Wilkens



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Flight Details

- ▶ ExpressJet Airlines Flight 3104
(Continental Express Flight 3104)
 - Aircraft: Embraer 145 Regional Jet
 - ▶ Departure Airport
 - Charleston, WV (CRW)
 - ▶ Arrival Airport
 - Houston, TX - Intercontinental (IAH)





Embraer 145 Regional Jet



Flight Details

- ▶ Pilot Flying: First Officer Drew Wilkens
- ▶ Pilot Monitoring: Captain Henry Cisneros



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Arrival to Houston Intercontinental

- ▶ Time of arrival 2005 Local (8:05 PM)
- ▶ Weather:
 - Overcast skies
 - Light rain
 - Winds: Easterly at 10-15 MPH



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The Lasing Incident

- ▶ On approach to 8L at Houston (IAH)
 - Typical approach - nothing out of the ordinary
 - Crew focusing on the instruments of the aircraft and monitoring the autopilot



The Lasing Incident

- ▶ Bright green flash on the right side of the aircraft
- ▶ I was *startled* - as it was unexpected
- ▶ It was very distracting



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The Lasing Incident

- ▶ Spotted laser beam moving around in the air trying to hit us again
- ▶ Emanating from a well-lit parking lot
- ▶ Appeared to be an “L” shaped shopping center near the Interstate



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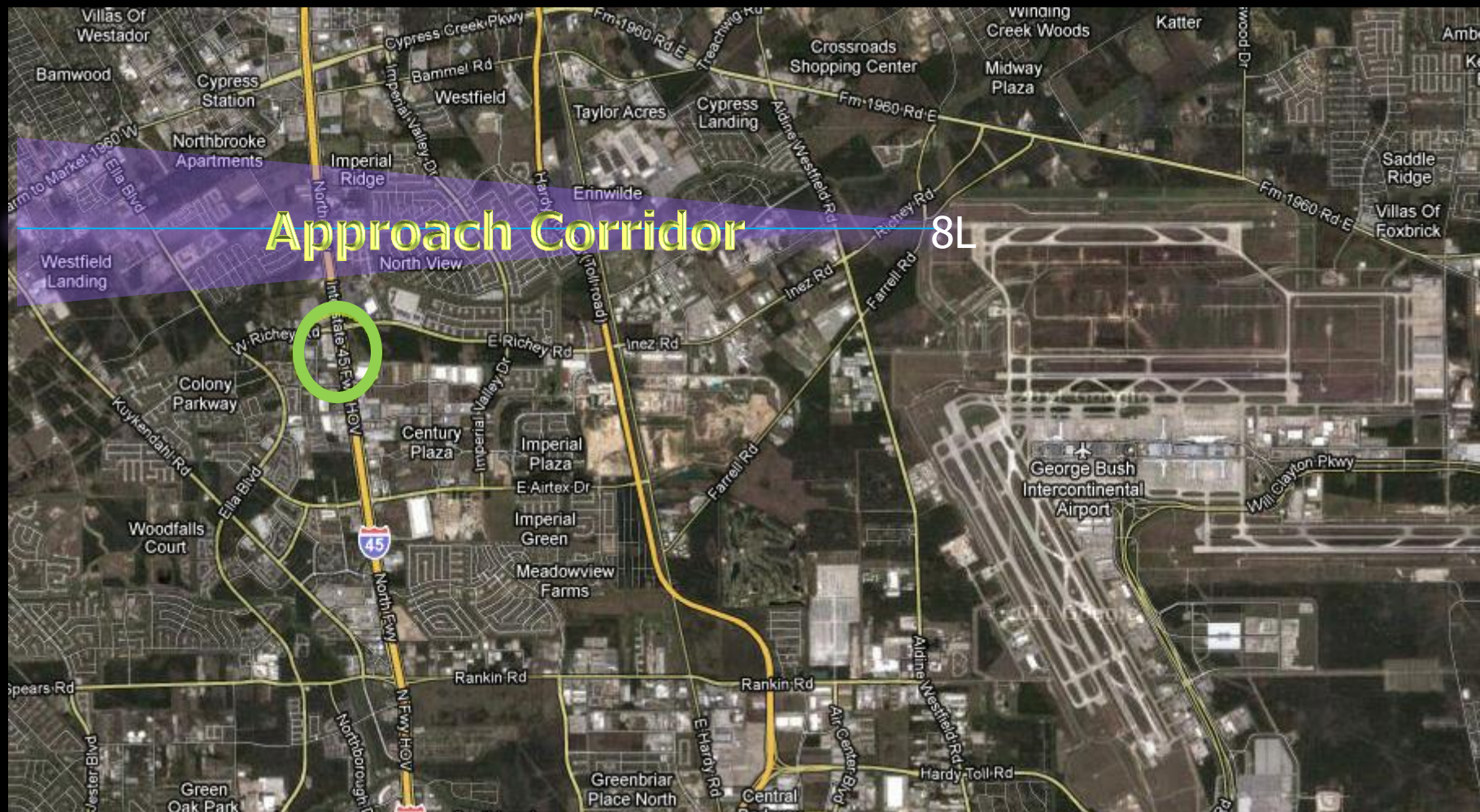
The Lasing Incident

- ▶ We were illuminated again
- ▶ Laser beam caught my right eye
- ▶ Using Google Maps, best guess of where the laser came from:

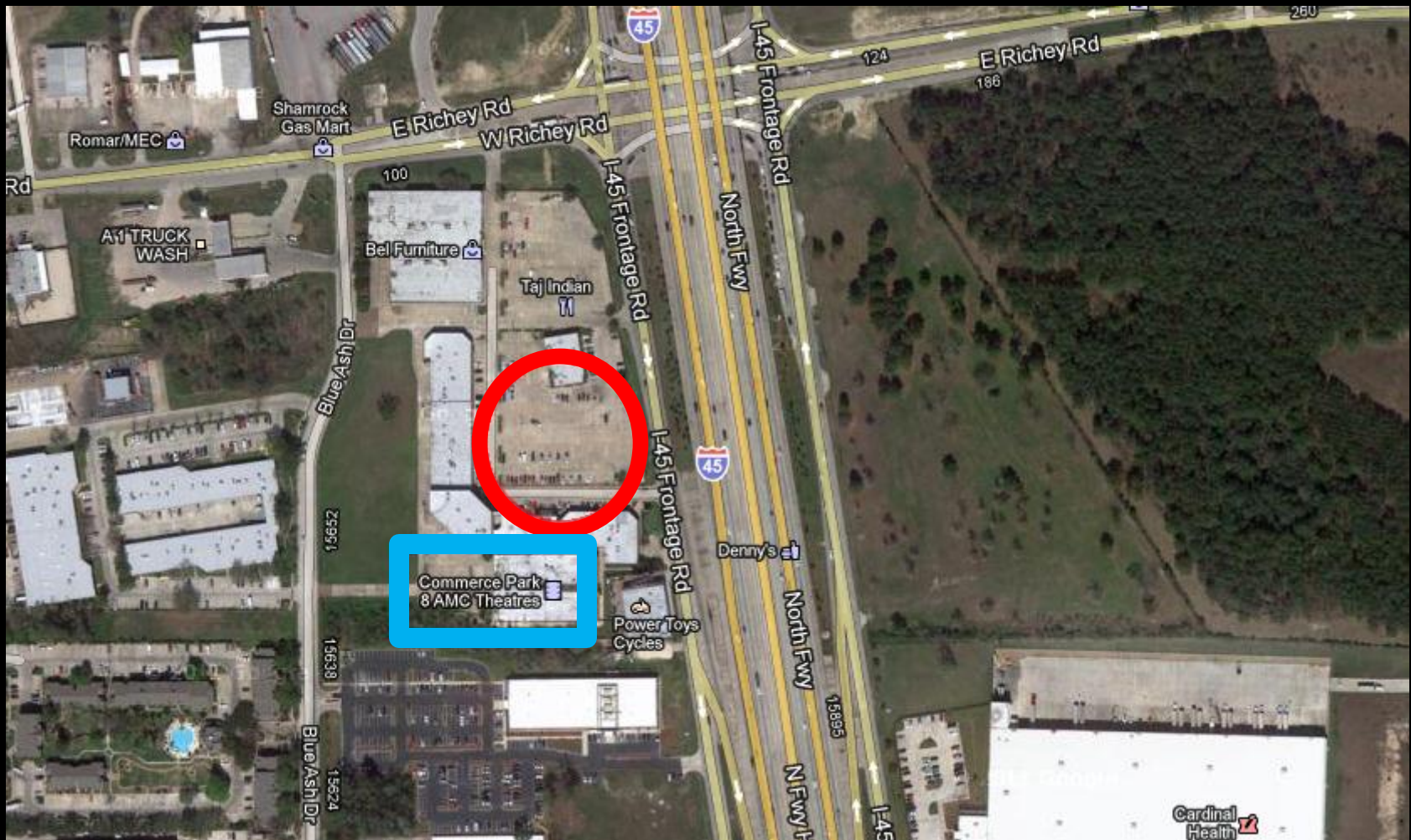


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The Lasing Incident

What could we see when hit with the laser??



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The Lasing Incident

- ▶ I couldn't see anything but **GREEN**
- ▶ The laser lit up the whole flight deck
- ▶ Our ability to see well at night was
GONE!



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The Lasing Incident

- ▶ What did we do?
 - Immediately and almost naturally:
 - ▶ Closed eyes
 - ▶ Looked away
 - Informed Air Traffic Control
 - Relayed approximate location of where we thought the laser was coming from



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The Lasing Incident

► Welfare analysis

- Were we ok?
- Were we able to continue the approach?



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The Lasing Incident

- ▶ Effects of being hit with a laser
 - Not just a bright light
 - ▶ Physical Effects
 - Burning/warm feeling in right eye
 - ▶ Emotional effects
 - Fear
 - Anger



Landing and Taxi

- ▶ Able to land the aircraft without further incident
- ▶ Taxiing to terminal, my eye began to feel warm; it almost had a burning sensation
- ▶ CA Cisneros contacted company operations for paramedics to meet the aircraft



Landing and Taxi

- ▶ Warm/burning sensation may have been caused by the fact that I was rubbing my eye
- ▶ Paramedics found no inflammation or redness of my eyes and suggested I go to an ophthalmologist for a thorough exam



Was I Fit to Continue to Fly?

- ▶ My vision seemed normal
- ▶ Only concern was the warm/burning sensation on the exterior of my eye
 - Assumed it was caused by rubbing it
- ▶ I felt that I was fit to fly
- ▶ Did not go to an ophthalmologist and was able to continue with the rest of the trip



Laser Illuminations - A **REAL** Threat!

Captain Henry Cisneros



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Laser Illuminations - A **REAL** Threat!

- ▶ Have been illuminated by a laser twice
- ▶ It can happen anytime and anywhere

CMU KIAH DEP ATIS 3/5
HAZD WX INFO FOR IAH
AREA AVBL FM FLT WATCH
OR FSS. BIRD ACTIVITY
VICINITY ARPT.
UNAUTHORIZED LASER
ILLUMINATION EVENT FOUR
<RETURN

CMU KIAH DEP ATIS 3/4
CONTROL IN EFFECT. BIRD
ACTIVITY VICINITY ARPT.
VUH OTS. UNAUTHORIZED
LASAR ILLUMINATION EVENT
AT 0014Z, 12 MILE FINAL
RUNWAY 8 RIGHT AT 3000
<RETURN



LASER ILLUMINATIONS OF AIRCRAFT - A GROWING THREAT

- ▶ It causes unnecessary distractions
- ▶ It's a real and growing problem
- ▶ With possibly deadly consequences
- ▶ And it needs to stop ... **NOW!**



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