NTSB National Transportation Safety Board

Federal Most Wanted Transportation Safety Improvements

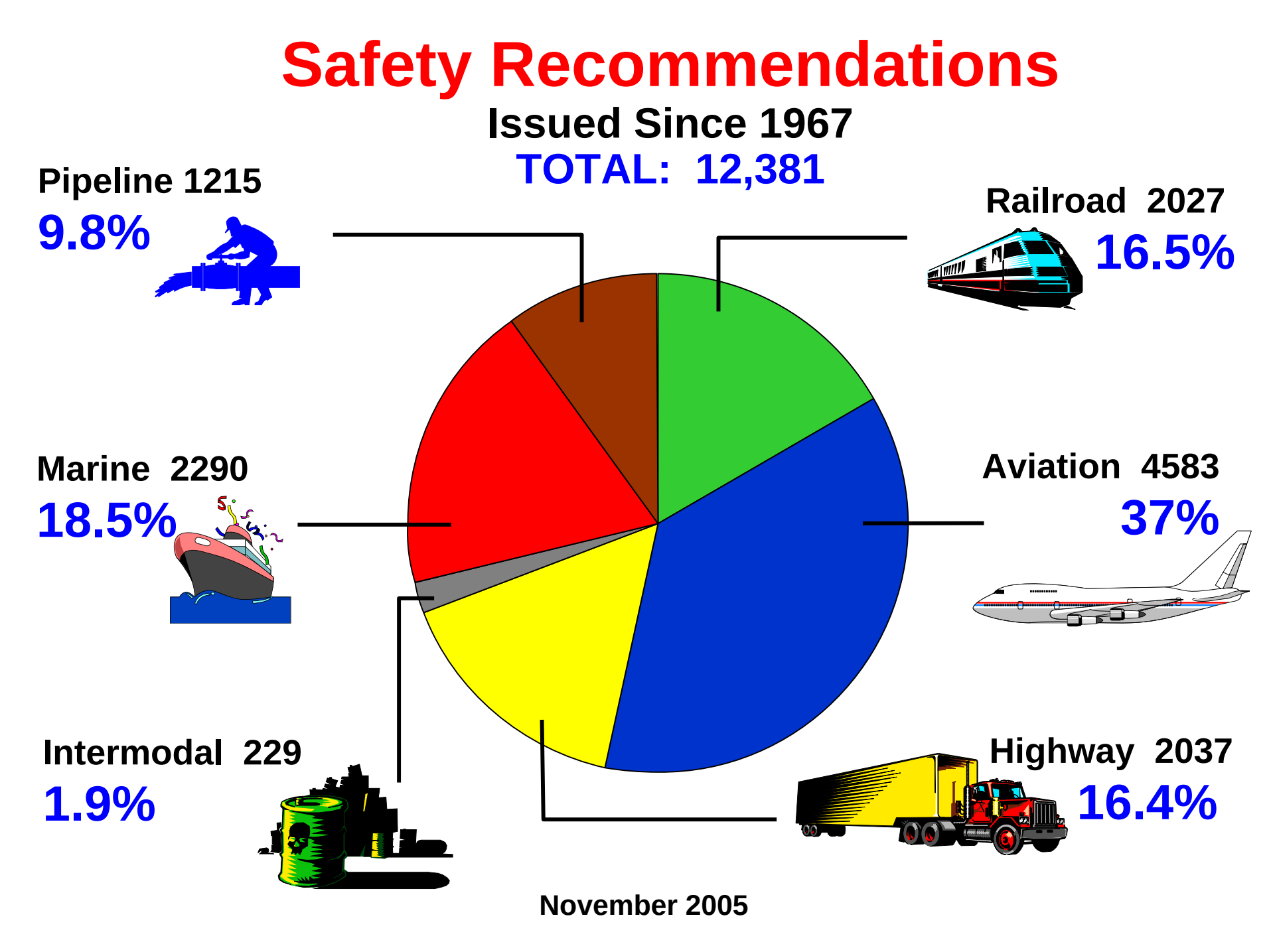
"…a program to increase the public's awareness of, and support for, action to adopt safety steps that can help prevent accidents and save lives."

November 15, 2005

Safety Recommendations

Issued Since 1967

TOTAL: 12,381



November 2005

NTSB MOST WANTED
Transportation Safety Improvements

Acceptance Rates

All Recommendations

82%

Most Wanted List Recommendations

85%

NTSB MOST WANTED
Transportation Safety Improvements

786 Open Recommendations

- Aviation: 333
- Highway: 245
- Railroad: 79
- Marine: 79
- Pipeline: 28
- Intermodal: 22

November 2005

NTSB MOST WANTED
Transportation Safety Improvements

Issue areas selected for intensive follow-up and heightened awareness because they:

- Will impact and enhance safety of the nation’s transportation system
- Have a high level of public visibility and interest
- Will benefit from special form of encouragement

NTSB MOST WANTED
Transportation Safety Improvements

56 Safety Recommendations on Most Wanted List

Federal Issues 47

DOT Secretary	1	PHMSA	2
FAA	21	FRA	1
FMCSA	9	USCG	9
NHTSA	4		

State Issues 9

November 2005

NTSB MOST WANTED
Transportation Safety Improvements

Office of Safety Recommendations & Communications

Recommendation Specialists

Mike Brown - Marine/Pipeline

Jeff Marcus - Aviation

Julie Perrot - Highway

Pat Sullivan - Railroad

Staff Support

Barbara Grider

Nathaniel Hoyt

Jim Rosenberg

Darrin Broadwater

Alan Pollock

Pat Cariseo

Action / Timeliness Criteria

Red: Unacceptable response

Yellow: Acceptable response – progressing slowly

Green: Acceptable response – progressing in a timely manner

NTSB MOST WANTED
Transportation Safety Improvements

Aviation	Stop Runway Incursions/Ground Collisions of Aircraft Reduce Dangers to Aircraft Flying in Icing Conditions Eliminate Flammable Fuel/Air Vapors in Fuel Tanks on Transport Category Aircraft Improve Audio and Data Recorders/Require Video Recorders Require Restraint Systems for Children Under Age 2
Highway	Improve the Safety of Motor Carrier Operations Prevent Medically-Unqualified Drivers from Operating Commercial Vehicles Enhance Protection for Bus Passengers
Intermodal	Update Hours-of-Service Regulations in Aviation, Marine and Pipeline Industries
Marine	Improve Drug and Alcohol Testing of Crews After Accidents
Rail	Implement Positive Train Control Improve Survivability of Recorders

NTSB National Transportation Safety Board

Federal Most Wanted Transportation Safety Improvements

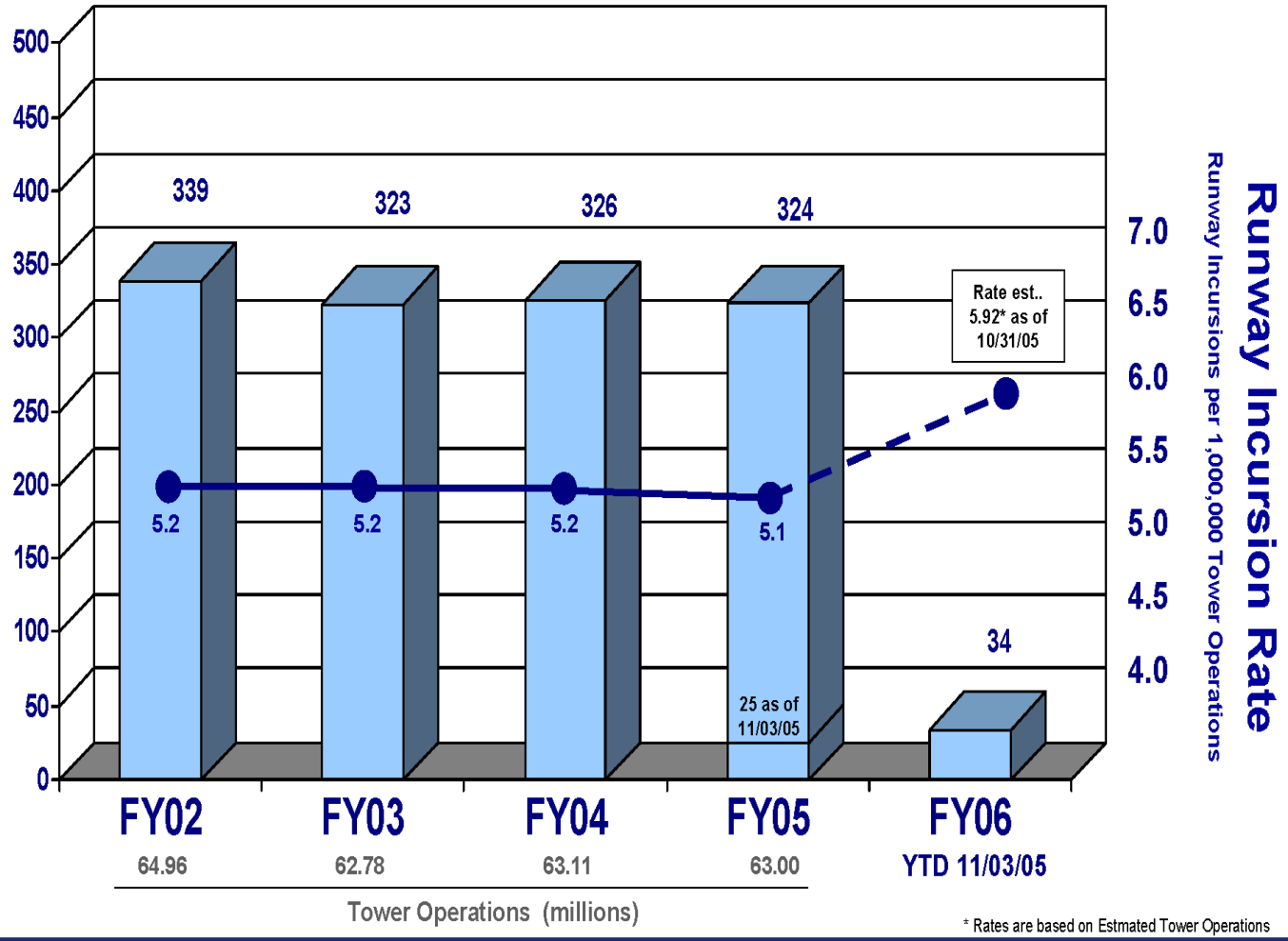
Stop Runway Incursions and Ground Collisions of Aircraft

Safety Improvements Wanted

- Develop ground movement safety systems that will provide direct warning to flight crews in the cockpit **A-00-66**

NTSB MOST WANTED
Transportation Safety Improvements

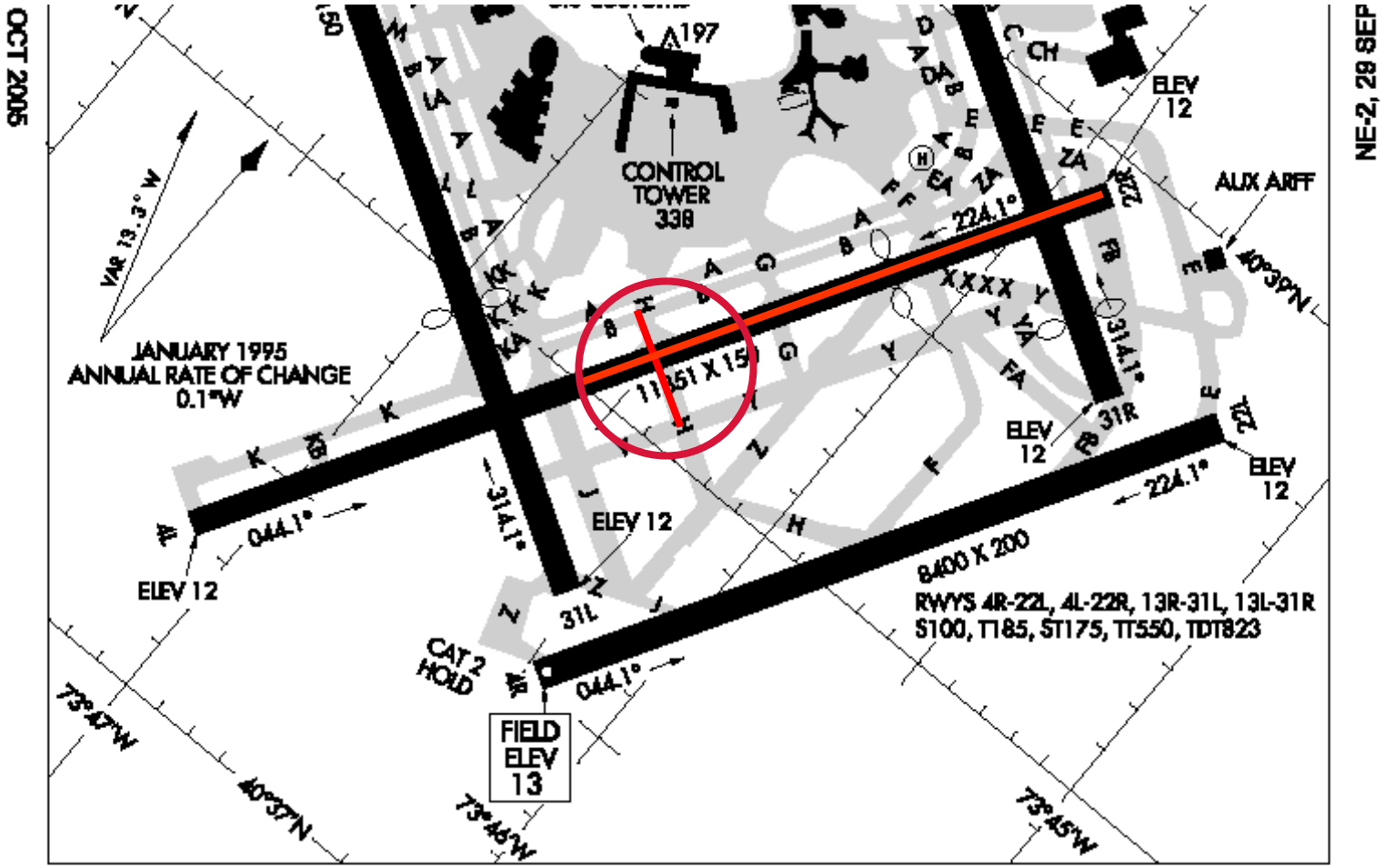
Runway Incursions 2002-2006



* Rates are based on Estmated Tower Operations

NTSB MOST WANTED

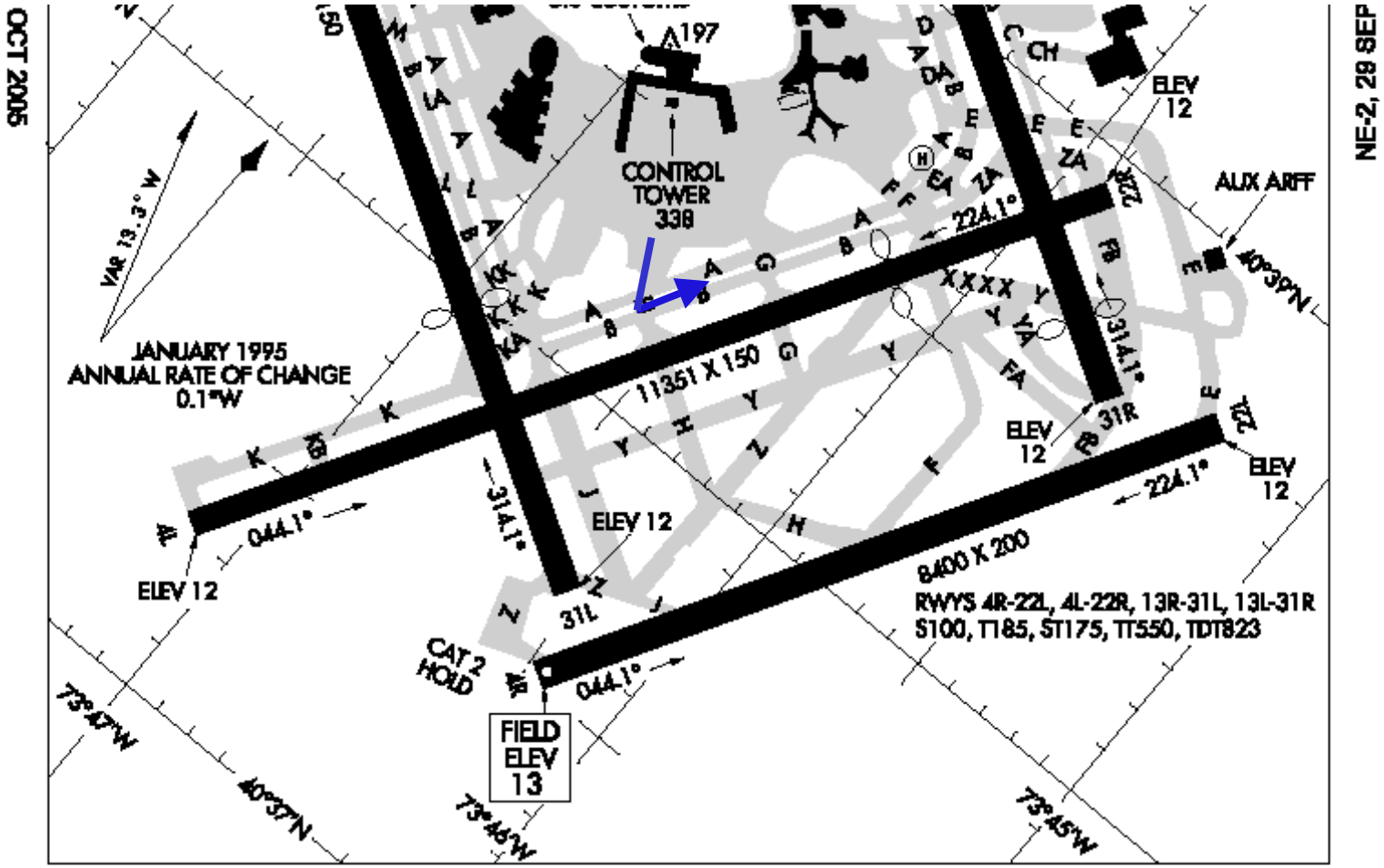
Transportation Safety Improvements



AIRPORT DIAGRAM

03247

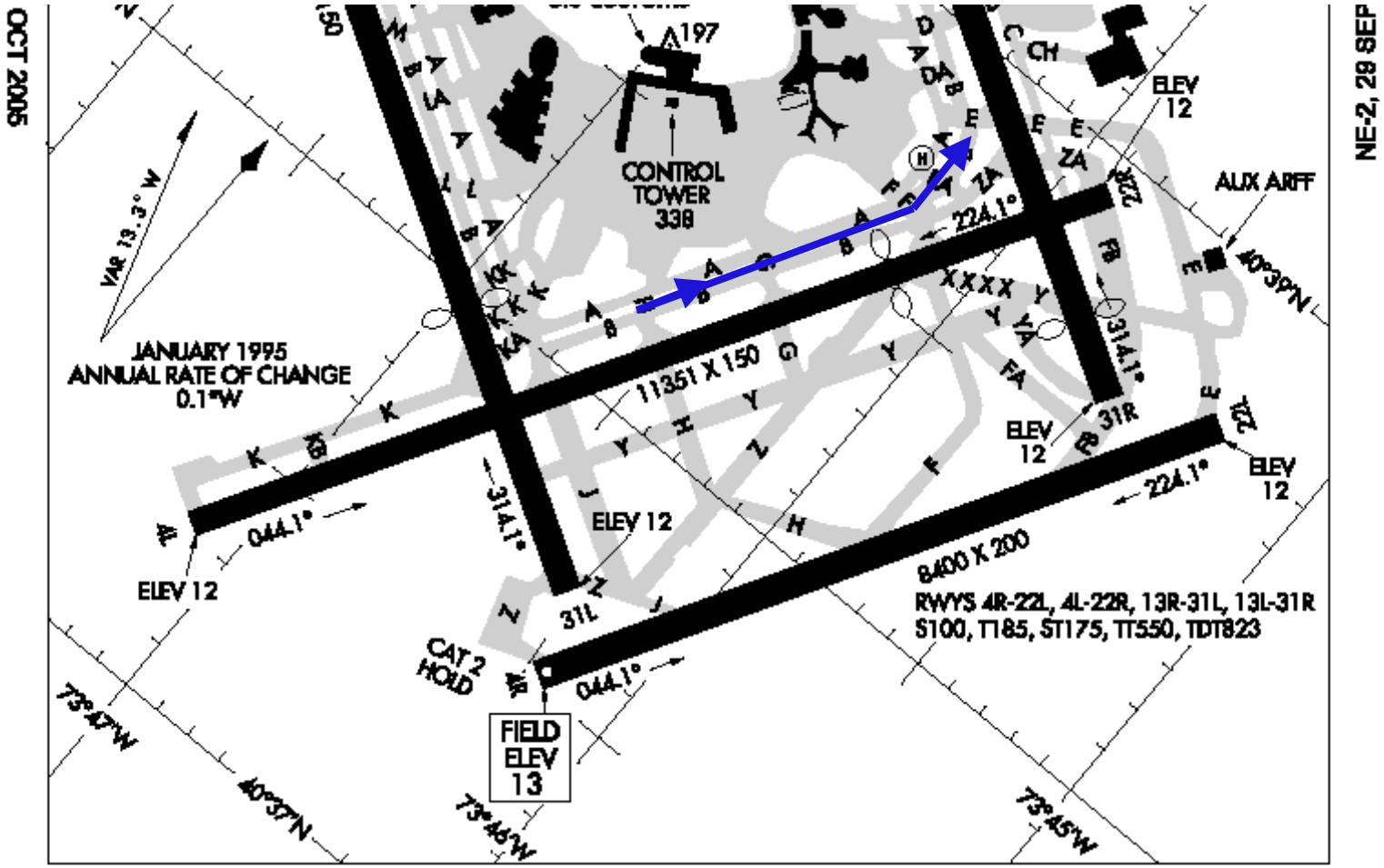
NEW YORK, NEW YORK
NEW YORK /JOHN F. KENNEDY INTL (JFK)



AIRPORT DIAGRAM

03247

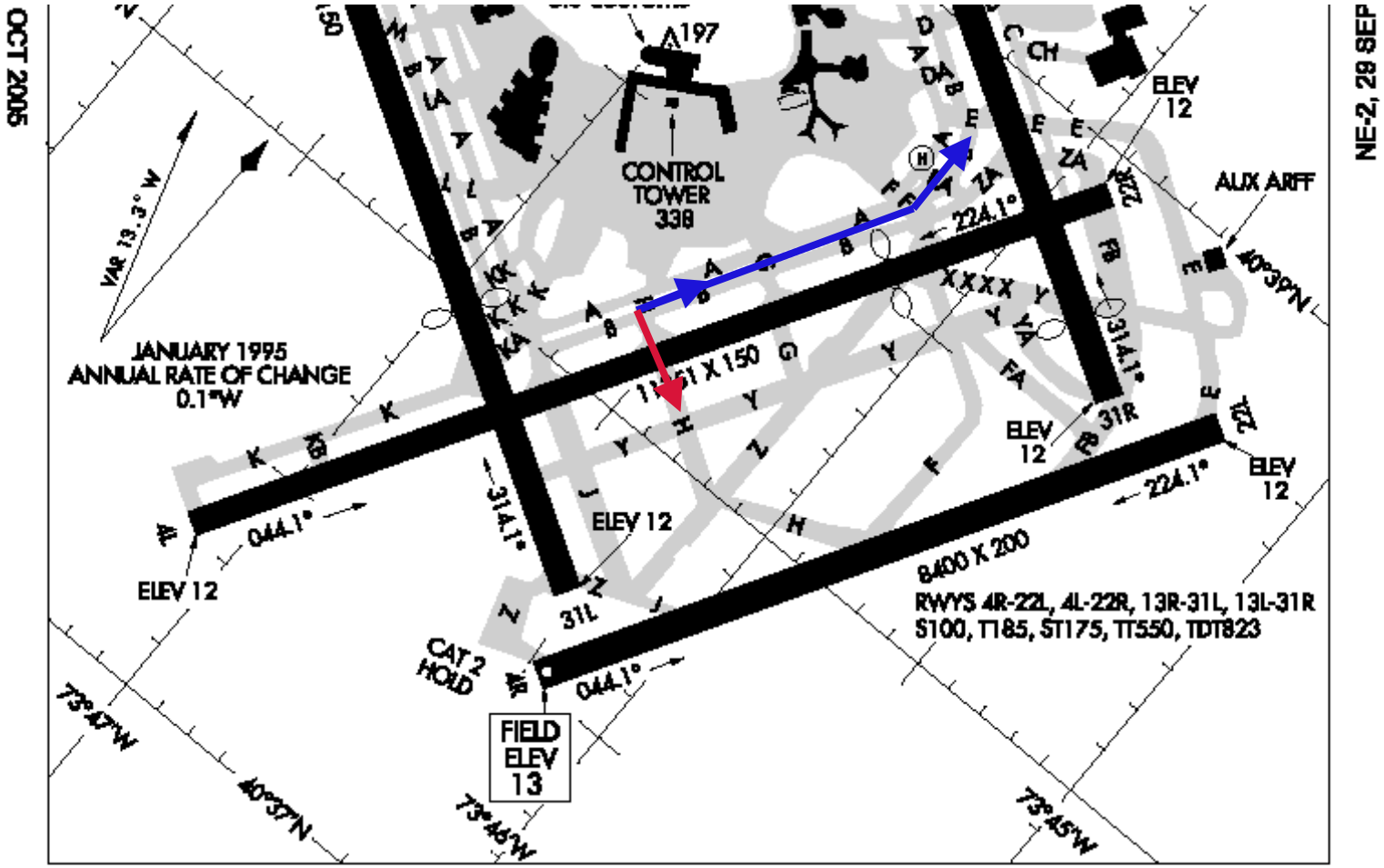
NEW YORK, NEW YORK
NEW YORK /JOHN F. KENNEDY INTL (JFK)



AIRPORT DIAGRAM

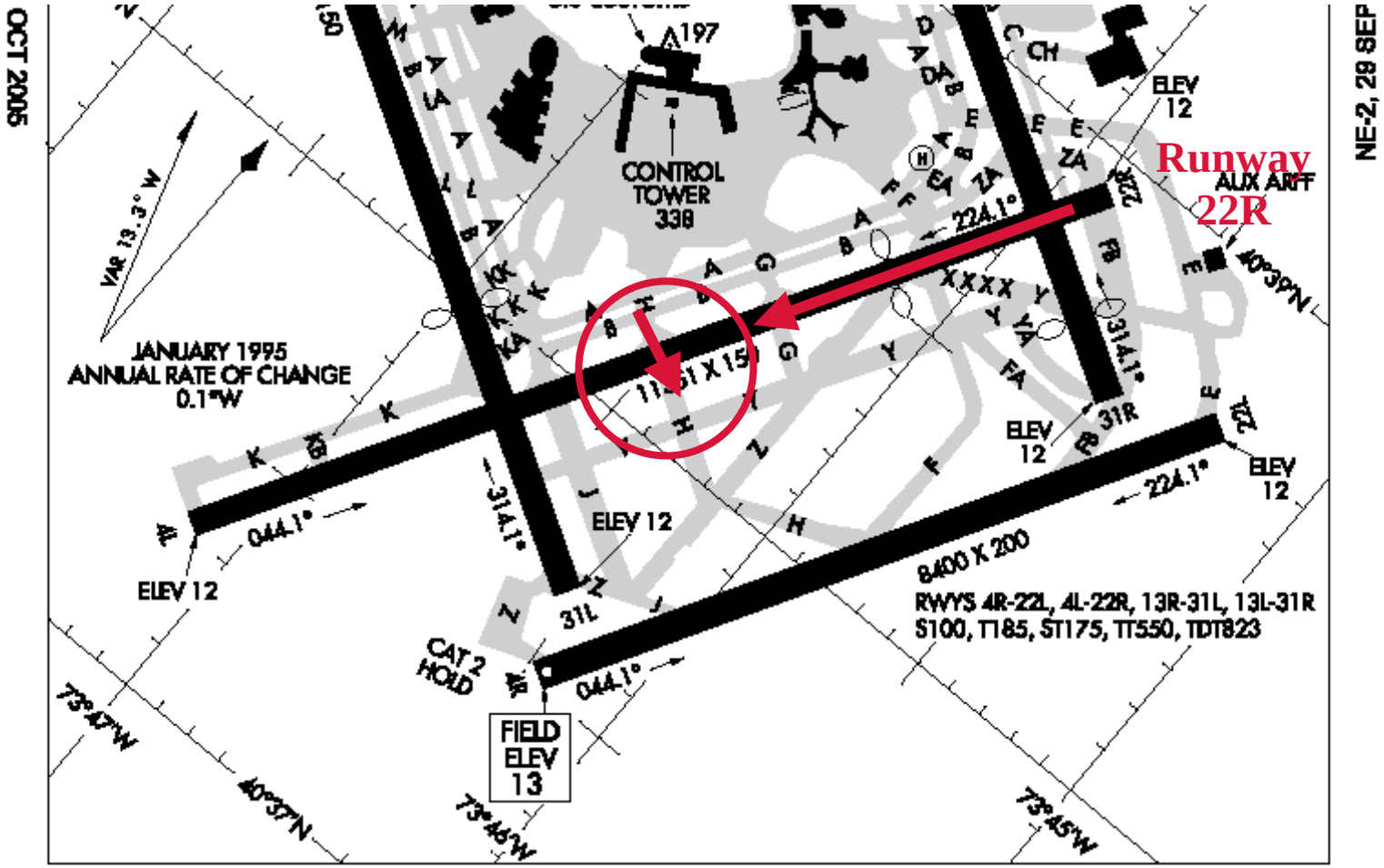
03247

NEW YORK, NEW YORK
NEW YORK /JOHN F. KENNEDY INTL (JFK)



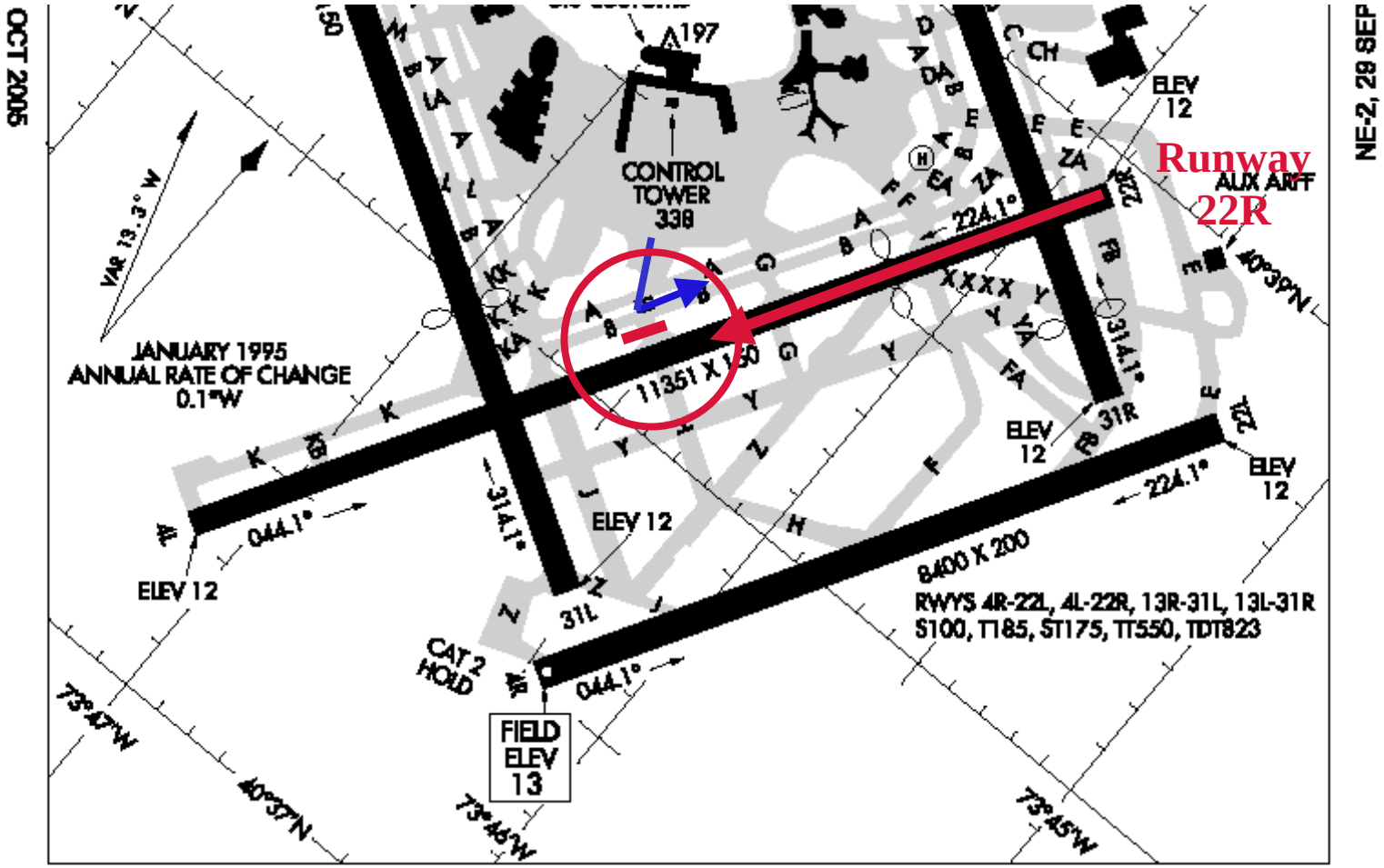
AIRPORT DIAGRAM
03247

NEW YORK, NEW YORK
NEW YORK /JOHN F. KENNEDY INTL (JFK)



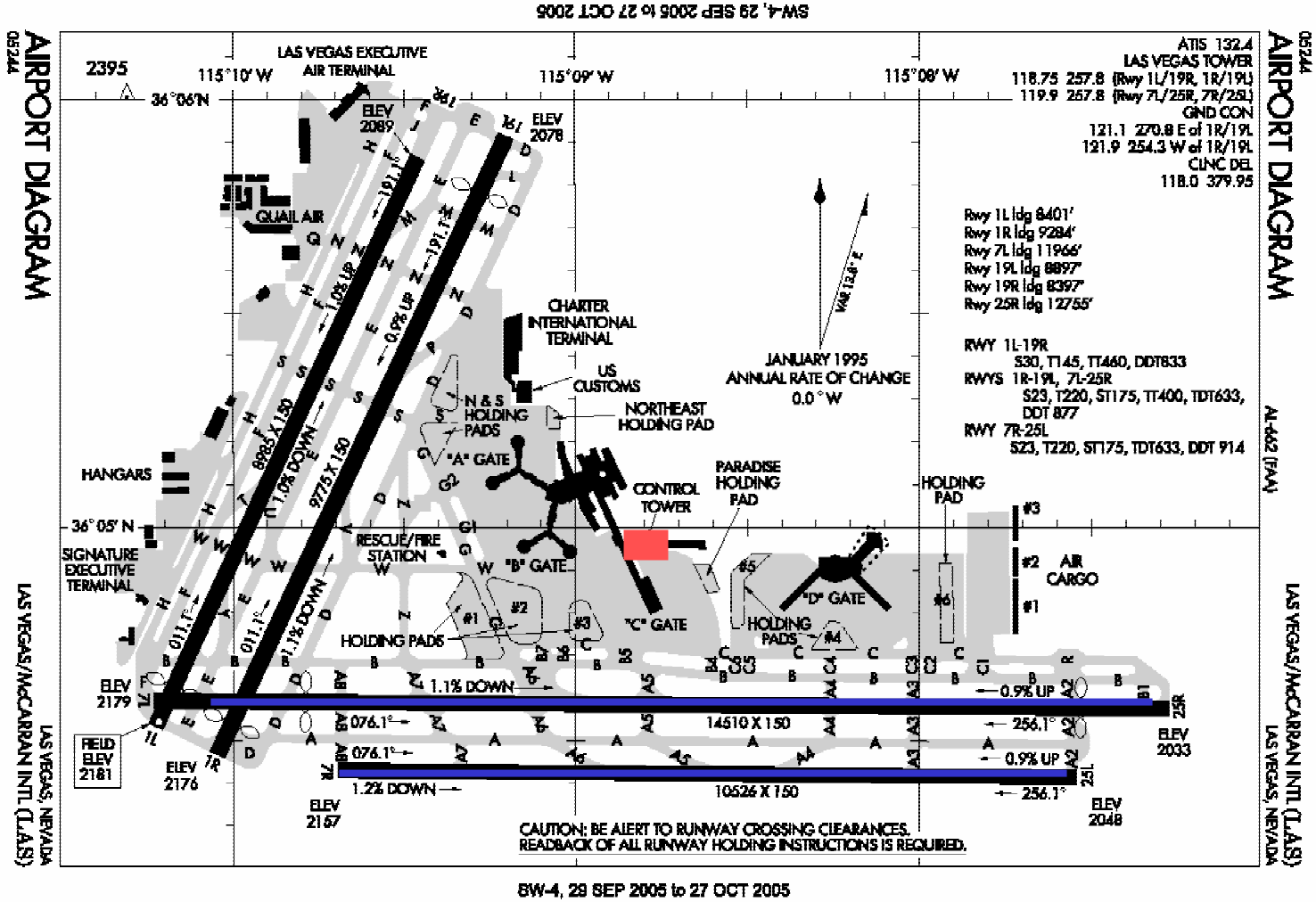
AIRPORT DIAGRAM
03247

NEW YORK, NEW YORK
NEW YORK /JOHN F. KENNEDY INTL (JFK)

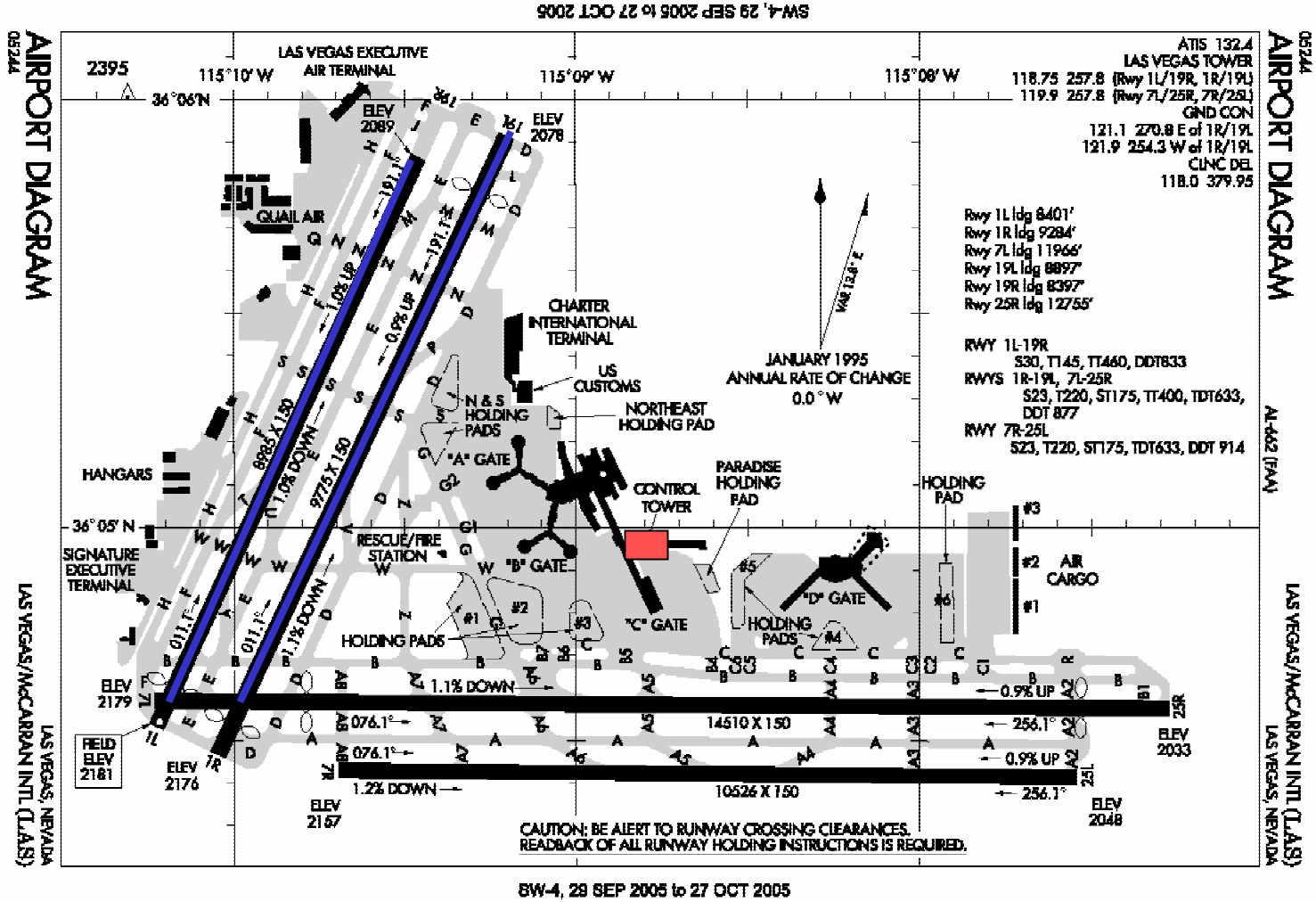


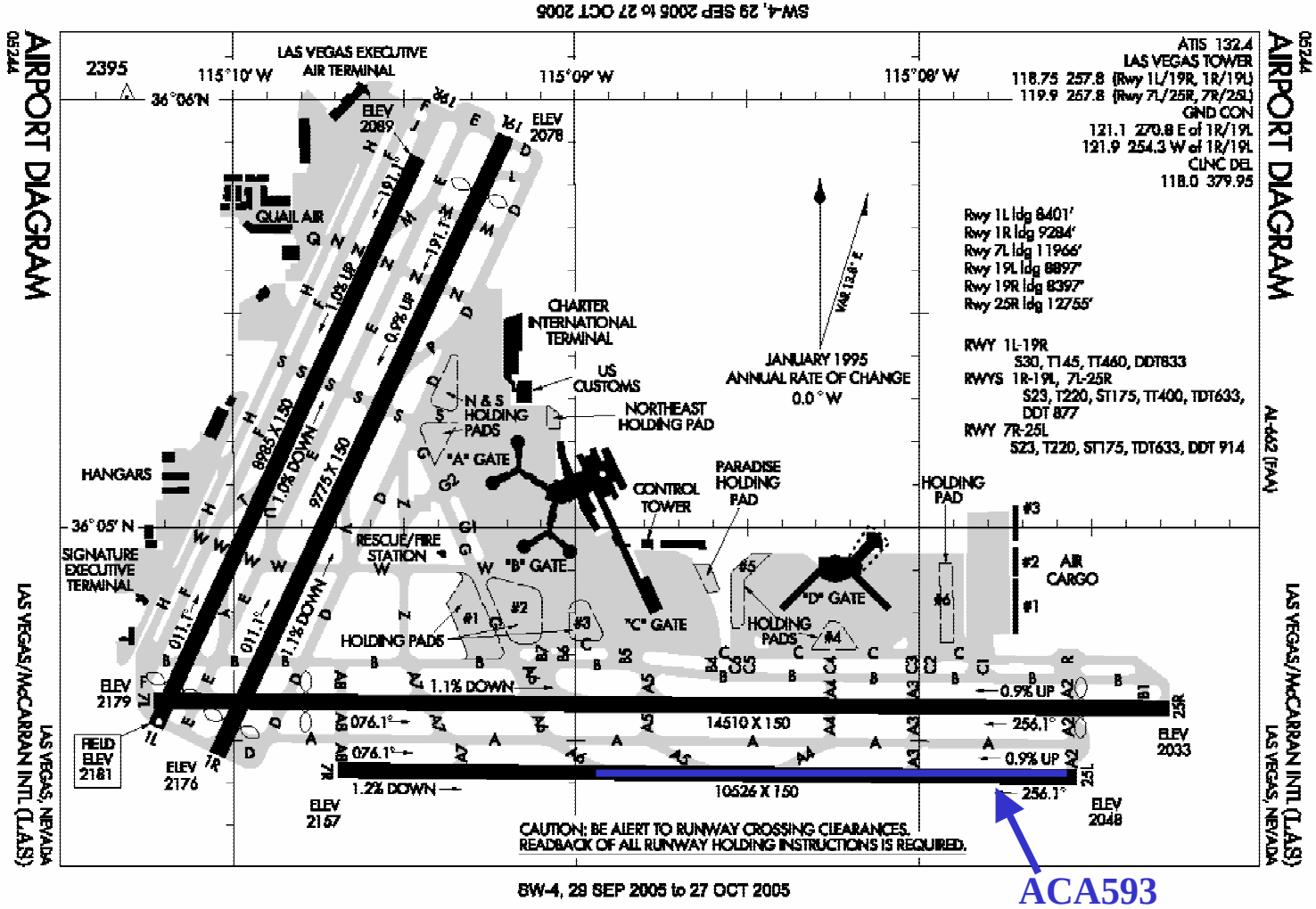
AIRPORT DIAGRAM
03247

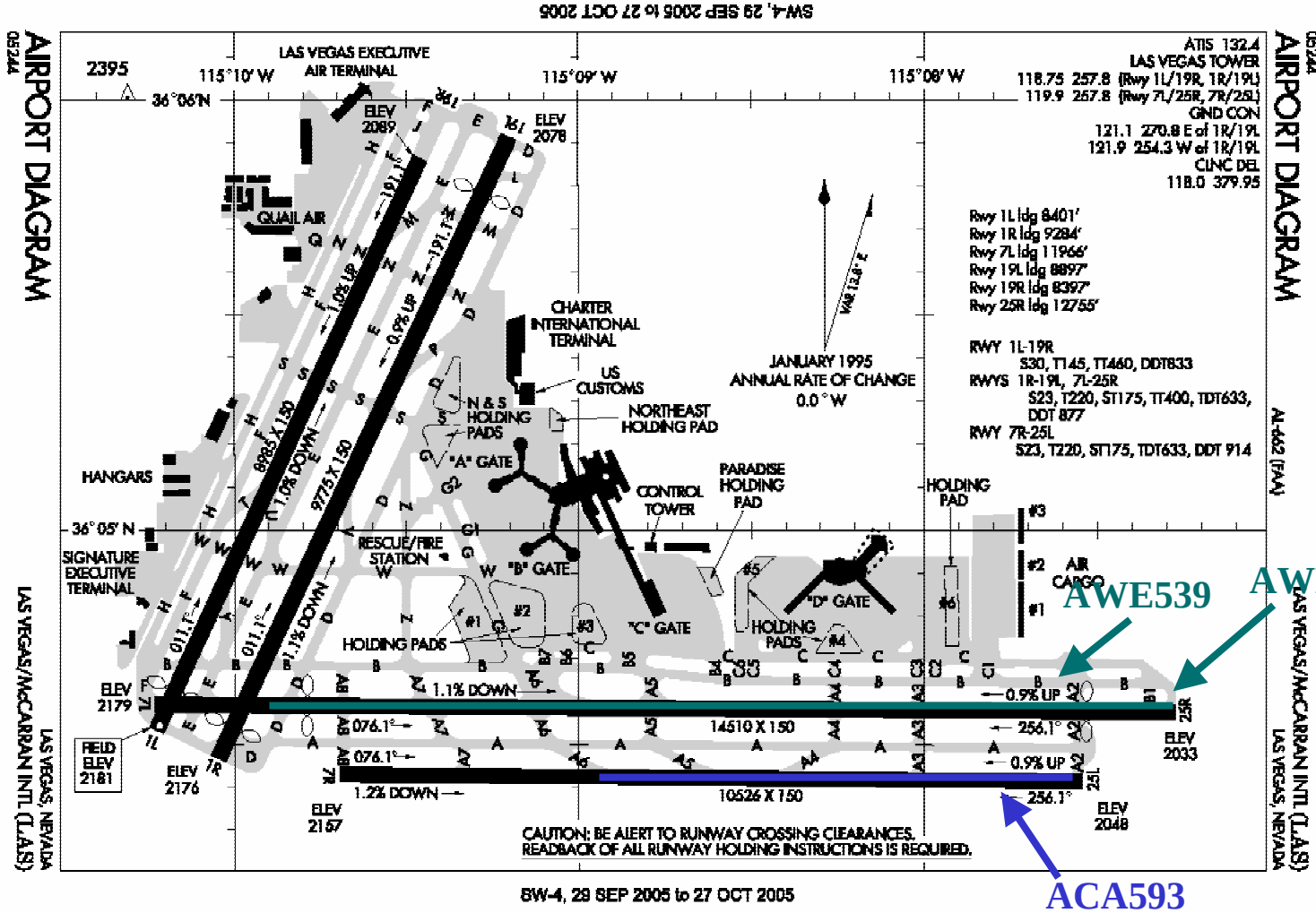
NEW YORK, NEW YORK
NEW YORK /JOHN F. KENNEDY INTL (JFK)

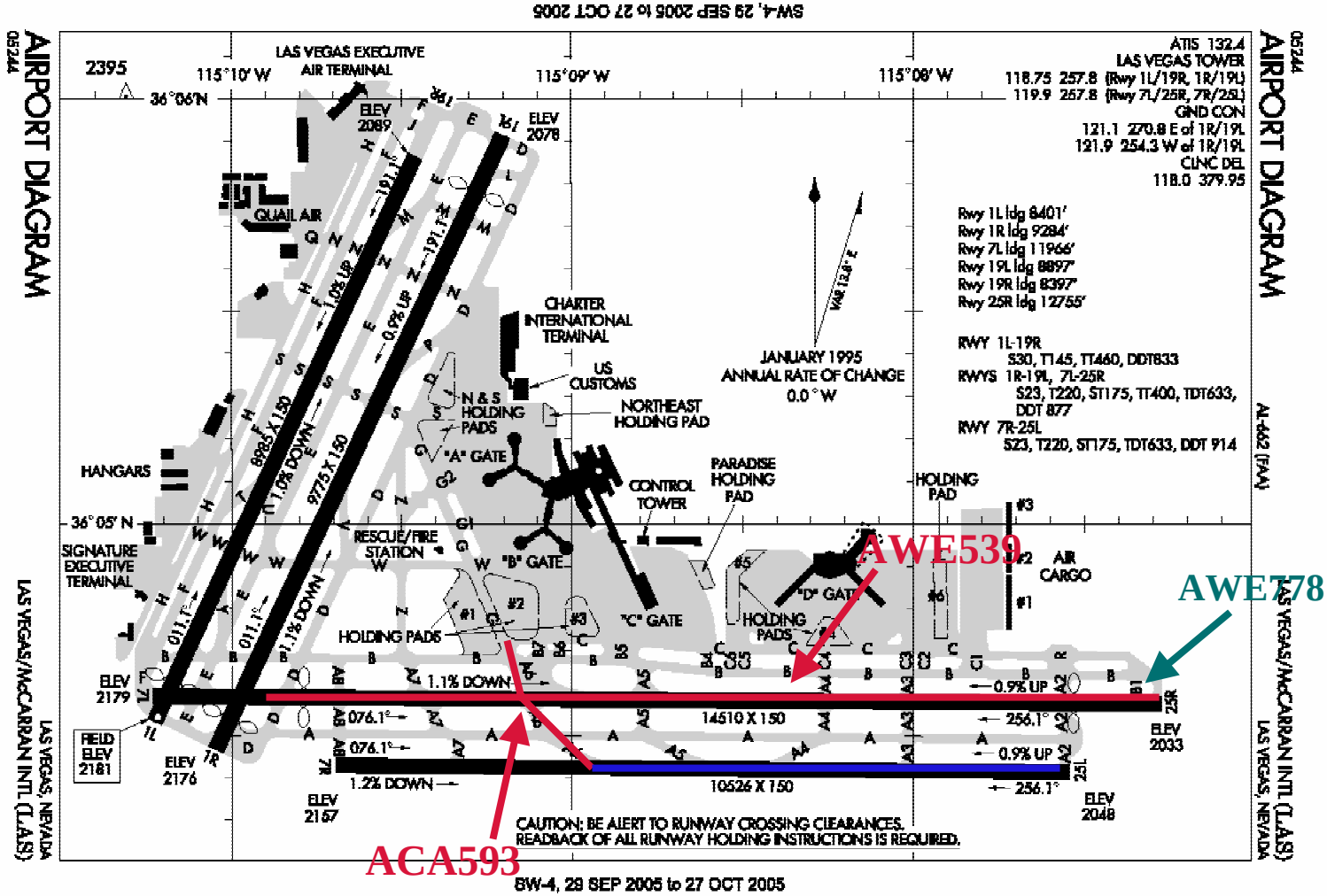


SW-4, 29 SEP 2005 to 27 OCT 2005


SW-4, 29 SEP 2005 to 27 OCT 2005
AIRPORT DIAGRAM
05244
LAS VEGAS EXECUTIVE AIR TERMINAL
2395
115°10' W
115°09' W
115°08' W
36°06'N
36°05' N
ATIS 132.4
LAS VEGAS TOWER
118.75 257.8 (Rwy 1L/19R, 1R/19L)
119.9 257.8 (Rwy 7L/25R, 7R/25L)
GND CON
121.1 270.8 E of 1R/19L
121.9 254.3 W of 1R/19L
CLNC DEL
118.0 379.95
Rwy 1L ldg 8401'
Rwy 1R ldg 9284'
Rwy 7L ldg 11966'
Rwy 19L ldg 8897'
Rwy 19R ldg 8397'
Rwy 25R ldg 12755'
RWY 1L-19R
S30, T145, TT460, DDT833
RWYS 1R-19L, 7L-25R
S23, T220, ST175, TT400, TDT633, DDT 877
RWY 7R-25L
S23, T220, ST175, TDT633, DDT 914
ELEV 2089
ELEV 2078
QUAIL AIR
CHARTER INTERNATIONAL TERMINAL
US CUSTOMS
N & S HOLDING PADS
NORTHEAST HOLDING PAD
"A" GATE
HANGARS
CONTROL TOWER
PARADISE HOLDING PAD
HOLDING PAD
#3
#2
AIR CARGO
#1
SIGNATURE EXECUTIVE TERMINAL
RESCUE/FIRE STATION
"B" GATE
"C" GATE
"D" GATE
#5
#6
#4
HOLDING PADS
HOLDING PADS
ELEV 2179
1.1% DOWN
0.9% UP
14510 X 150
256.1°
076.1°
ELEV 2033
FIELD ELEV 2181
ELEV 2176
0.9% UP
1.2% DOWN
10526 X 150
ELEV 2157
ELEV 2048
CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES.
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED.
JANUARY 1995
ANNUAL RATE OF CHANGE
0.0 ° W
VAR 12.8° E
AL-662 (FAA)
LAS VEGAS/McCARRAN INTL (LAS)
LAS VEGAS, NEVADA
SW-4, 29 SEP 2005 to 27 OCT 2005


SW-4, 29 SEP 2005 to 27 OCT 2005
AIRPORT DIAGRAM
05244
LAS VEGAS EXECUTIVE AIR TERMINAL
2395
115°10' W
115°09' W
115°08' W
36°06'N
36°05' N
ATIS 132.4
LAS VEGAS TOWER
118.75 257.8 (Rwy 1L/19R, 1R/19L)
119.9 257.8 (Rwy 7L/25R, 7R/25L)
GND CON
121.1 270.8 E of 1R/19L
121.9 254.3 W of 1R/19L
CLNC DEL
118.0 379.95
Rwy 1L ldg 8401'
Rwy 1R ldg 9284'
Rwy 7L ldg 11966'
Rwy 19L ldg 8897'
Rwy 19R ldg 8397'
Rwy 25R ldg 12755'
RWY 1L-19R
S30, T145, TT460, DDT833
RWYS 1R-19L, 7L-25R
S23, T220, ST175, TT400, TDT633, DDT 877
RWY 7R-25L
S23, T220, ST175, TDT633, DDT 914
ELEV 2089
ELEV 2078
QUAIL AIR
CHARTER INTERNATIONAL TERMINAL
US CUSTOMS
N & S HOLDING PADS
NORTHEAST HOLDING PAD
"A" GATE
"B" GATE
"C" GATE
"D" GATE
CONTROL TOWER
PARADISE HOLDING PAD
HOLDING PAD
HOLDING PADS
HANGARS
SIGNATURE EXECUTIVE TERMINAL
RESCUE/FIRE STATION
AIR CARGO
JANUARY 1995
ANNUAL RATE OF CHANGE
0.0 ° W
VAR 12.8° E
8985 X 150
9775 X 150
14510 X 150
10526 X 150
1.05% UP
0.9% DOWN
1.1% DOWN
0.9% UP
1.2% DOWN
011.1°
076.1°
256.1°
ELEV 2179
FIELD ELEV 2181
ELEV 2176
ELEV 2157
ELEV 2033
ELEV 2048
CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES.
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED.
AL-662 (FAA)
LAS VEGAS/McCARRAN INTL (LAS)
LAS VEGAS, NEVADA
SW-4, 29 SEP 2005 to 27 OCT 2005
ACA593

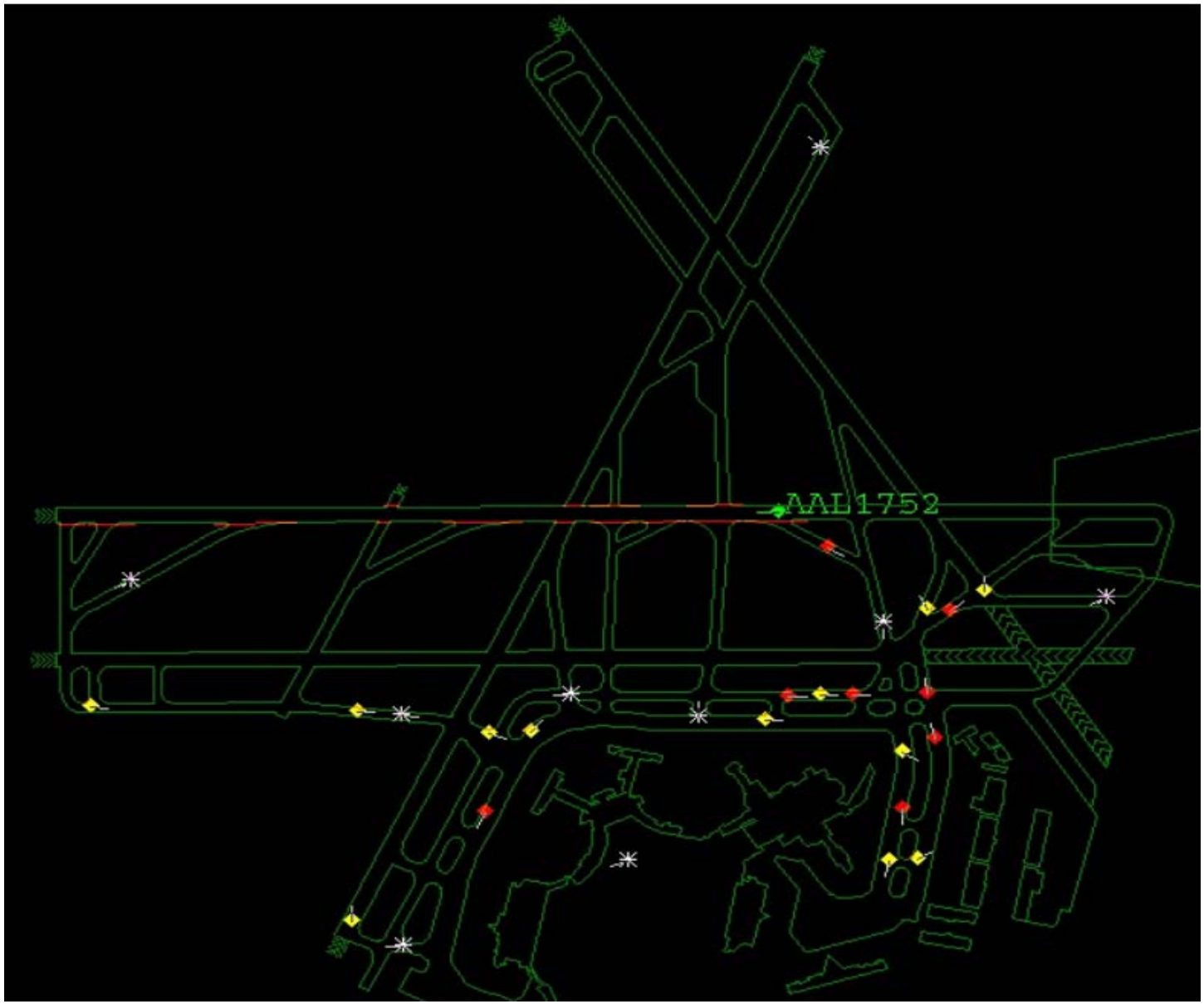

SW-4, 29 SEP 2005 to 27 OCT 2005
AIRPORT DIAGRAM
05244
LAS VEGAS EXECUTIVE AIR TERMINAL
2395
115°10' W
115°09' W
115°08' W
36°06'N
36°05'N
ATIS 132.4
LAS VEGAS TOWER
118.75 257.8 (Rwy 1L/19R, 1R/19L)
119.9 257.8 (Rwy 7L/25R, 7R/25L)
GND CON
121.1 270.8 E of 1R/19L
121.9 254.3 W of 1R/19L
CLNC DEL
118.0 379.95
Rwy 1L ldg 8401'
Rwy 1R ldg 9284'
Rwy 7L ldg 11966'
Rwy 19L ldg 8897'
Rwy 19R ldg 8397'
Rwy 25R ldg 12755'
RWY 1L-19R
S30, T145, TT460, DDT833
RWYS 1R-19L, 7L-25R
S23, T220, ST175, TT400, TDT633, DDT 877
RWY 7R-25L
S23, T220, ST175, TDT633, DDT 914
ELEV 2089
ELEV 2078
QUAIL AIR
CHARTER INTERNATIONAL TERMINAL
US CUSTOMS
N & S HOLDING PADS
NORTHEAST HOLDING PAD
"A" GATE
"B" GATE
"C" GATE
"D" GATE
CONTROL TOWER
PARADISE HOLDING PAD
HOLDING PAD
HOLDING PADS
HANGARS
SIGNATURE EXECUTIVE TERMINAL
RESCUE/FIRE STATION
AIR CARGO
JANUARY 1995
ANNUAL RATE OF CHANGE
0.0° W
VAR 12.8° E
AL-662 (FAA)
LAS VEGAS/McCARRAN INTL (LAS)
LAS VEGAS, NEVADA
1.05% UP
1.05% DOWN
0.9% UP
1.1% DOWN
1.2% DOWN
8985 X 150
9775 X 150
14510 X 150
10526 X 150
011.1°
076.1°
256.1°
ELEV 2179
ELEV 2176
ELEV 2157
ELEV 2033
ELEV 2048
FIELD ELEV 2181
CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES.
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED.
SW-4, 29 SEP 2005 to 27 OCT 2005
AWE539
AWE778
ACA593

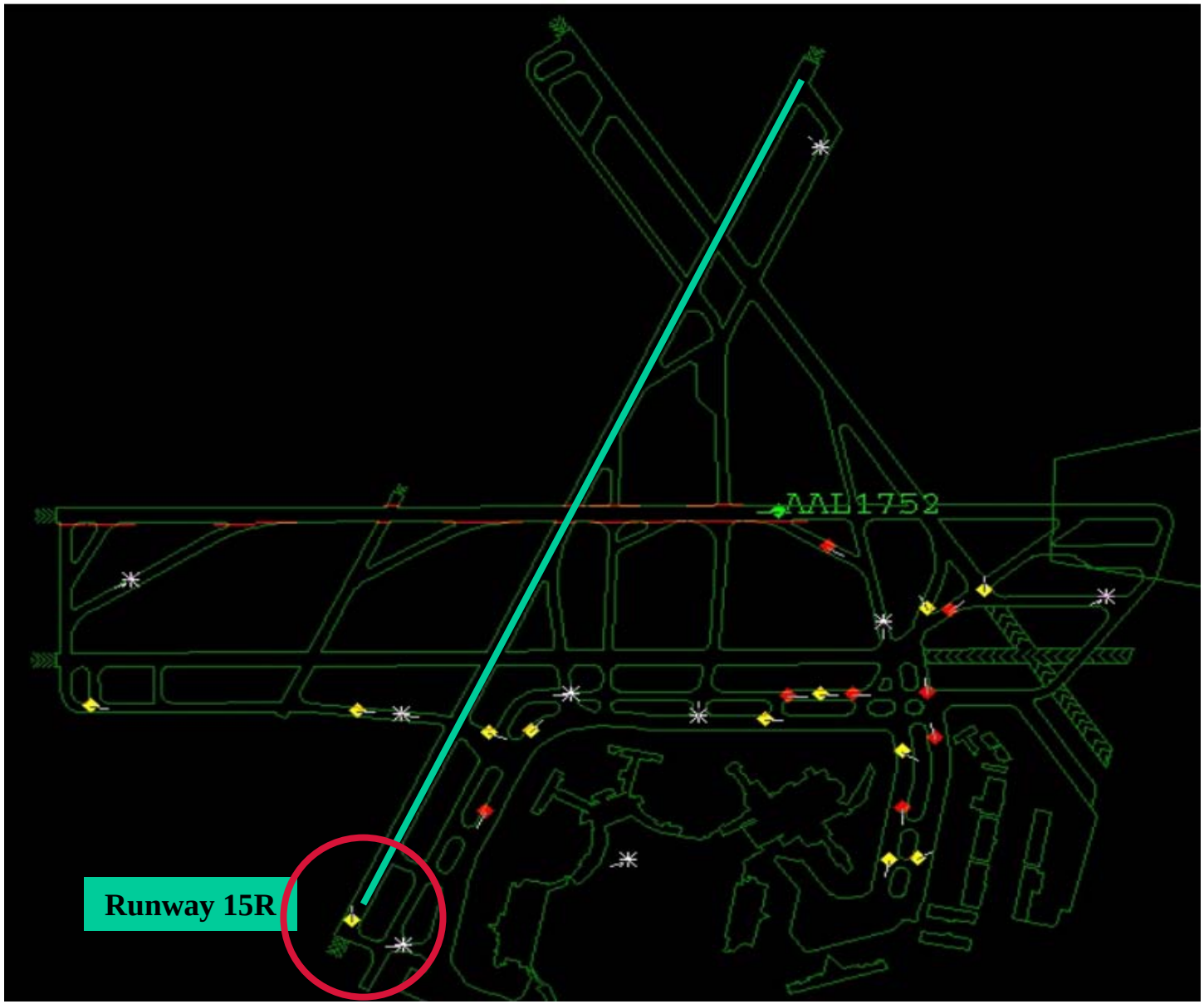

SW-4, 29 SEP 2005 to 27 OCT 2005
AIRPORT DIAGRAM
05244
LAS VEGAS EXECUTIVE AIR TERMINAL
2395
115°10' W
115°09' W
115°08' W
36°06'N
36°05' N
ATIS 132.4
LAS VEGAS TOWER
118.75 257.8 (Rwy 1L/19R, 1R/19L)
119.9 257.8 (Rwy 7L/25R, 7R/25L)
GND CON
121.1 270.8 E of 1R/19L
121.9 254.3 W of 1R/19L
CLNC DEL
118.0 379.95
Rwy 1L ldg 8401'
Rwy 1R ldg 9284'
Rwy 7L ldg 11966'
Rwy 19L ldg 8897'
Rwy 19R ldg 8397'
Rwy 25R ldg 12755'
RWY 1L-19R
S30, T145, TT460, DDT833
RWYS 1R-19L, 7L-25R
S23, T220, ST175, TT400, TDT633, DDT 877
RWY 7R-25L
S23, T220, ST175, TDT633, DDT 914
ELEV 2089
ELEV 2078
QUAIL AIR
CHARTER INTERNATIONAL TERMINAL
US CUSTOMS
N & S HOLDING PADS
NORTHEAST HOLDING PAD
"A" GATE
"B" GATE
"C" GATE
"D" GATE
CONTROL TOWER
PARADISE HOLDING PAD
HOLDING PAD
HOLDING PADS
HANGARS
SIGNATURE EXECUTIVE TERMINAL
RESCUE/FIRE STATION
AIR CARGO
JANUARY 1995
ANNUAL RATE OF CHANGE
0.0° W
VAR 12.8° E
1.05% UP
1.09% DOWN
9775 X 150
8985 X 150
1.1% DOWN
0.9% UP
14510 X 150
10526 X 150
1.2% DOWN
076.1°
256.1°
011.1°
ELEV 2179
FIELD ELEV 2181
ELEV 2176
ELEV 2157
ELEV 2033
ELEV 2048
AWE539
AWE778
ACA593
CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES. READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED.
LAS VEGAS, NEVADA
LAS VEGAS/McCARRAN INTL (LAS)
AL-662 (FAA)
SW-4, 29 SEP 2005 to 27 OCT 2005

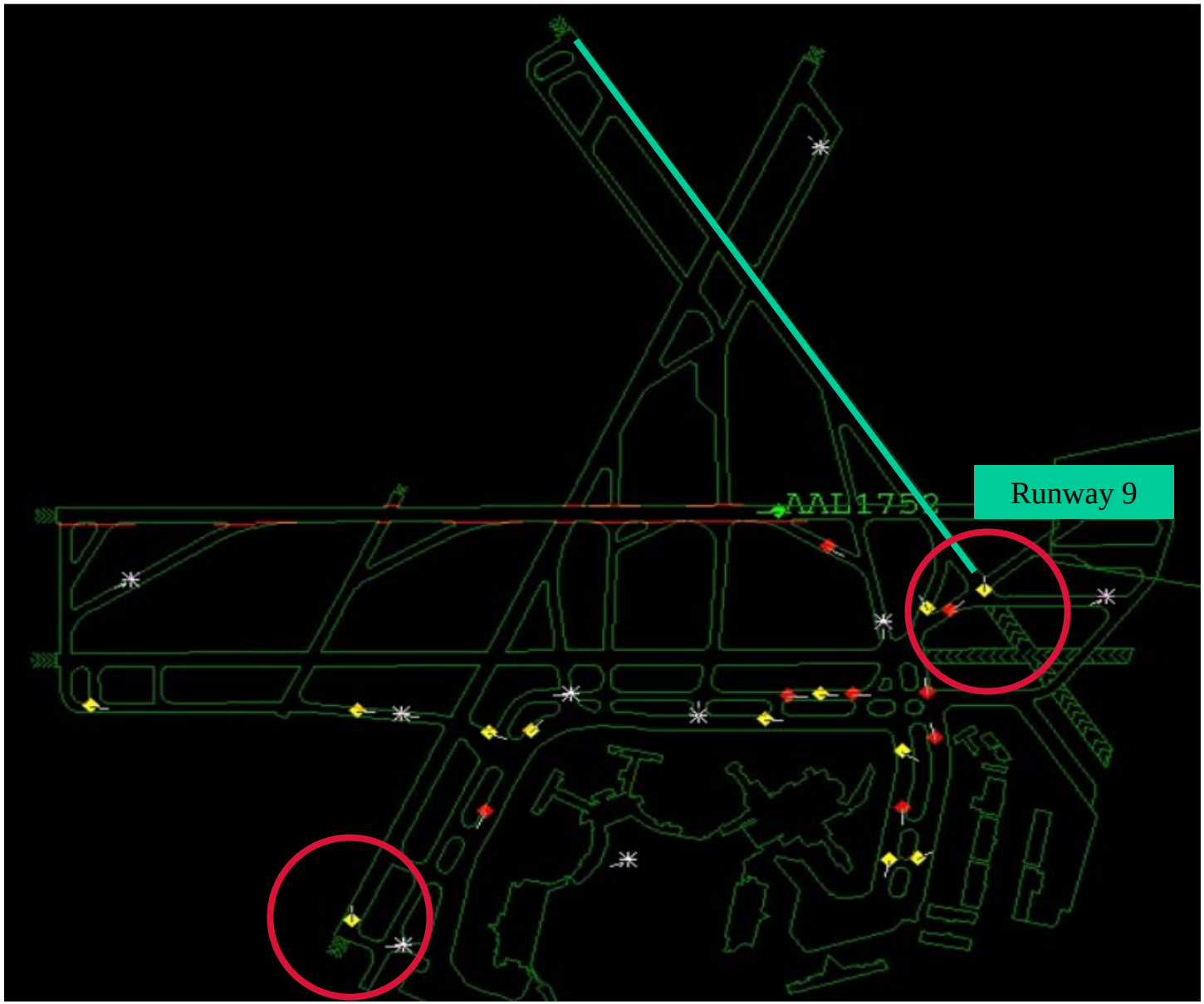
NTSB MOST WANTED
Transportation Safety Improvements

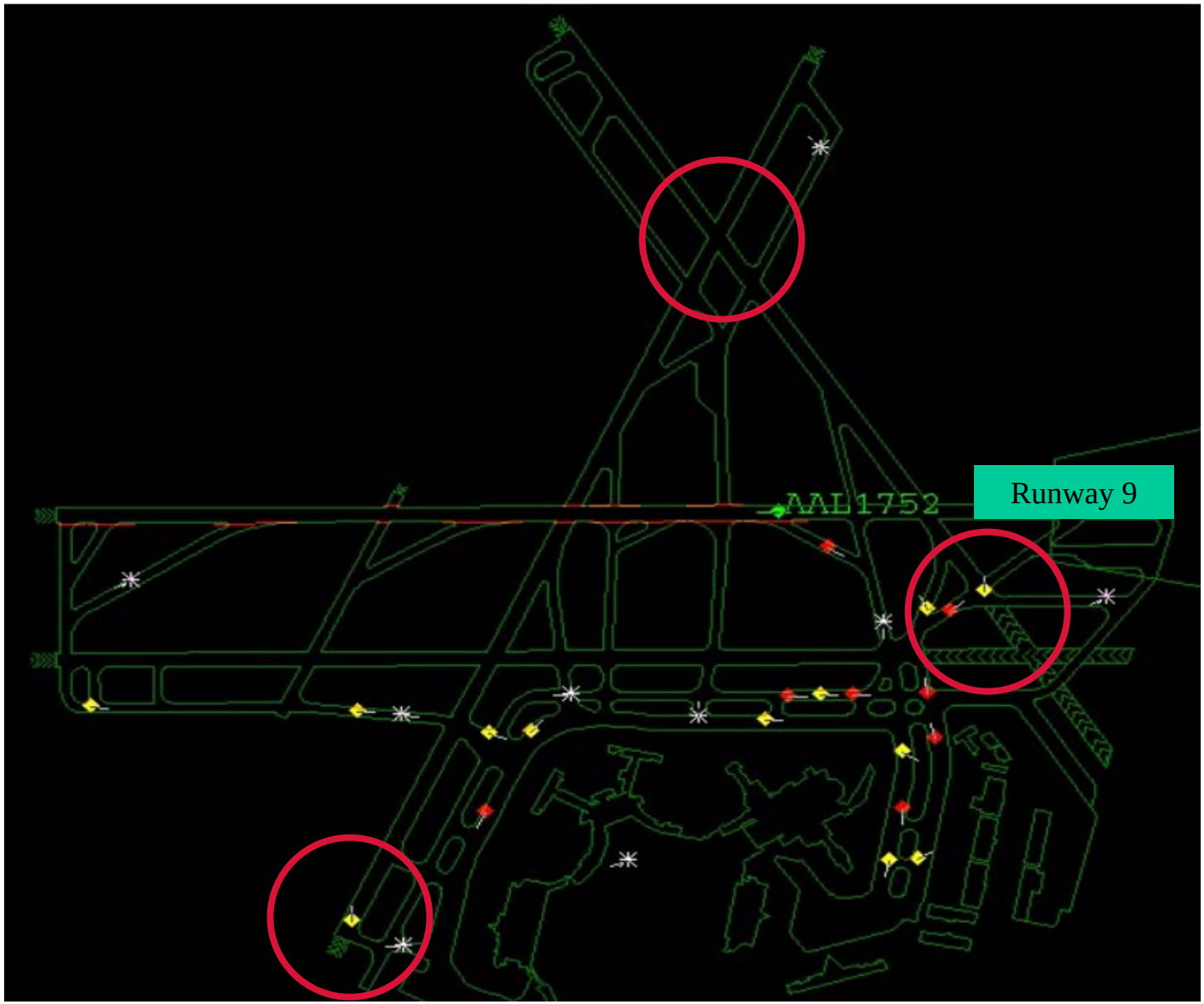
Animation (AVI, 169KB)

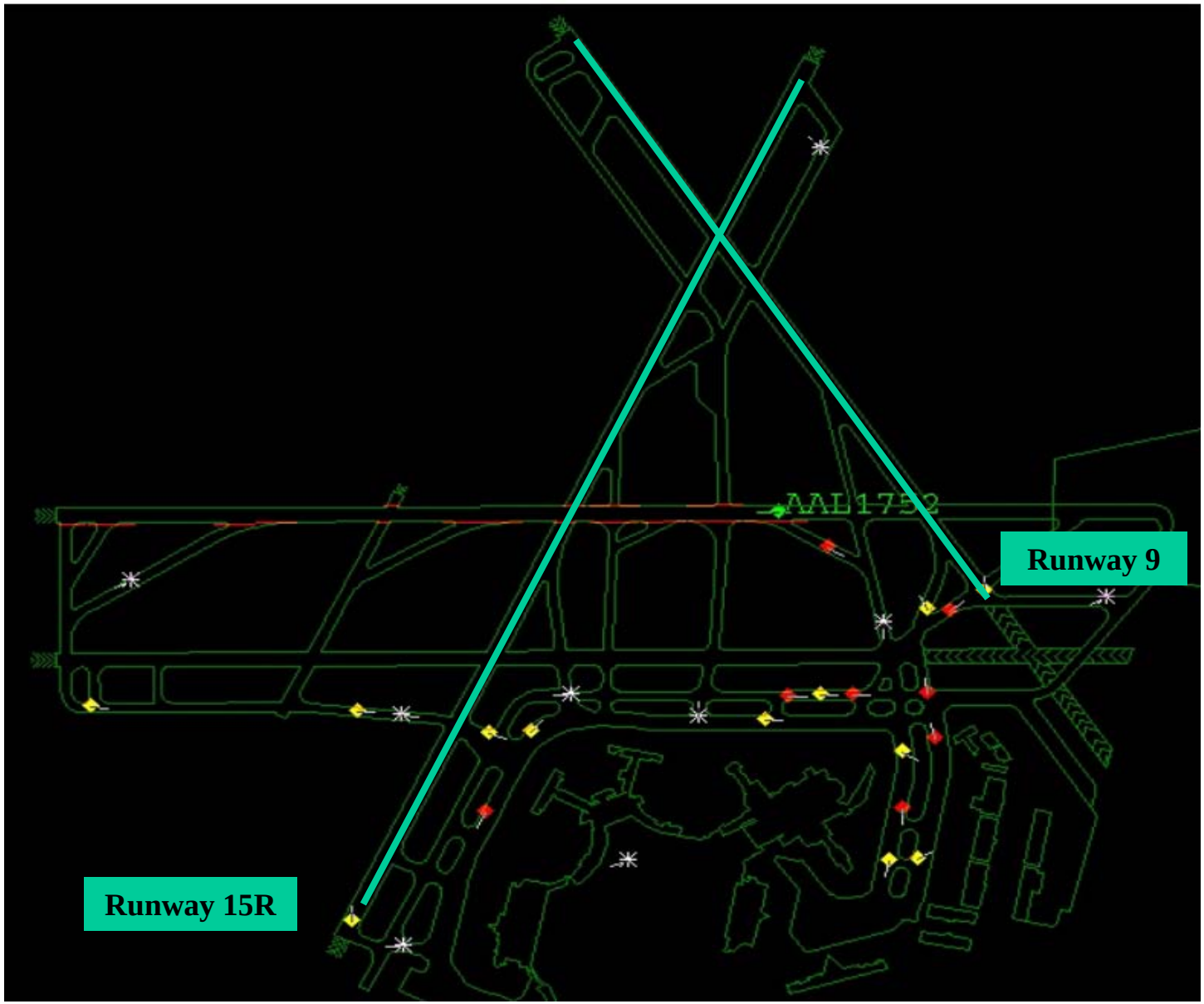
NTSB MOST WANTED
Transportation Safety Improvements

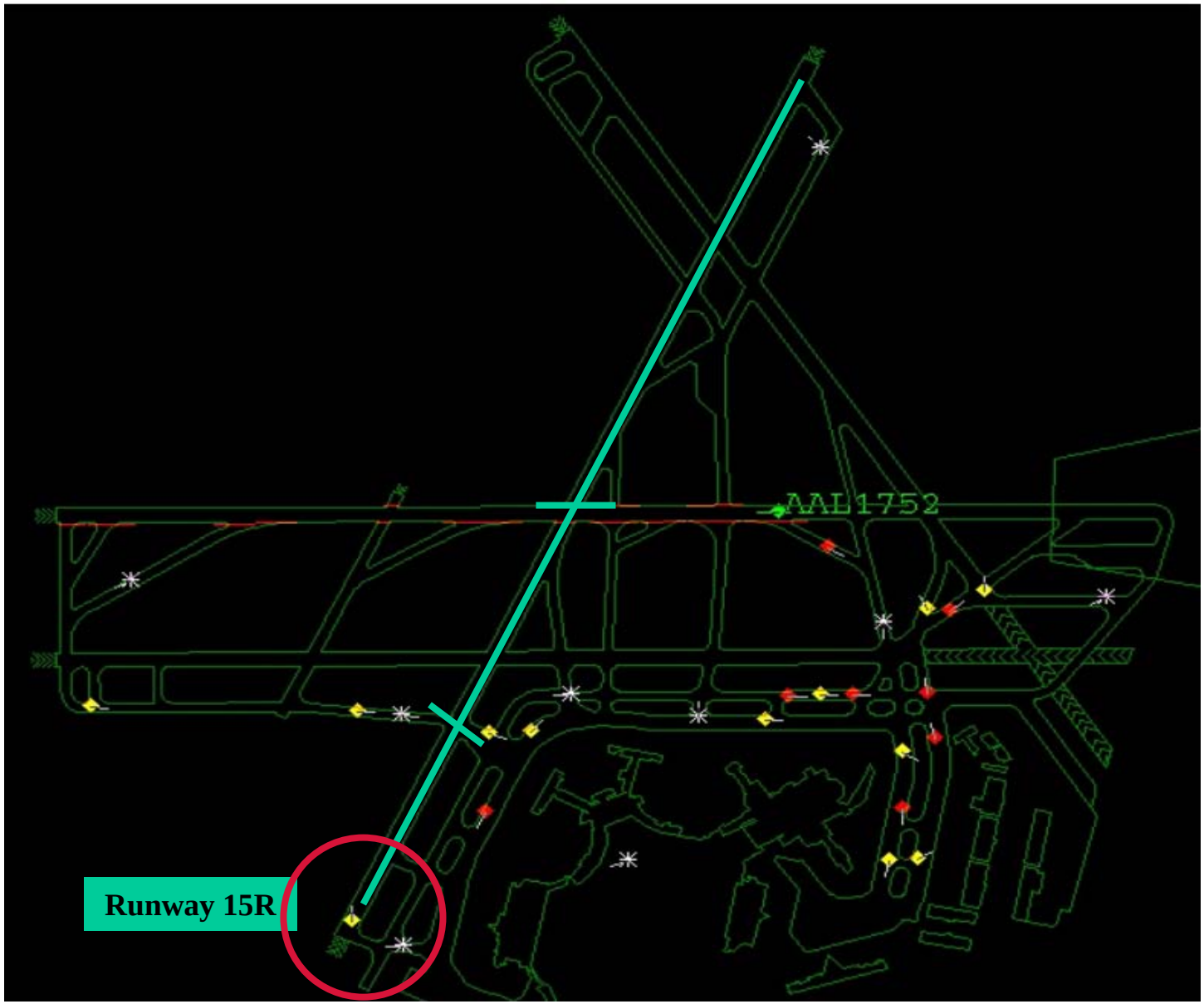


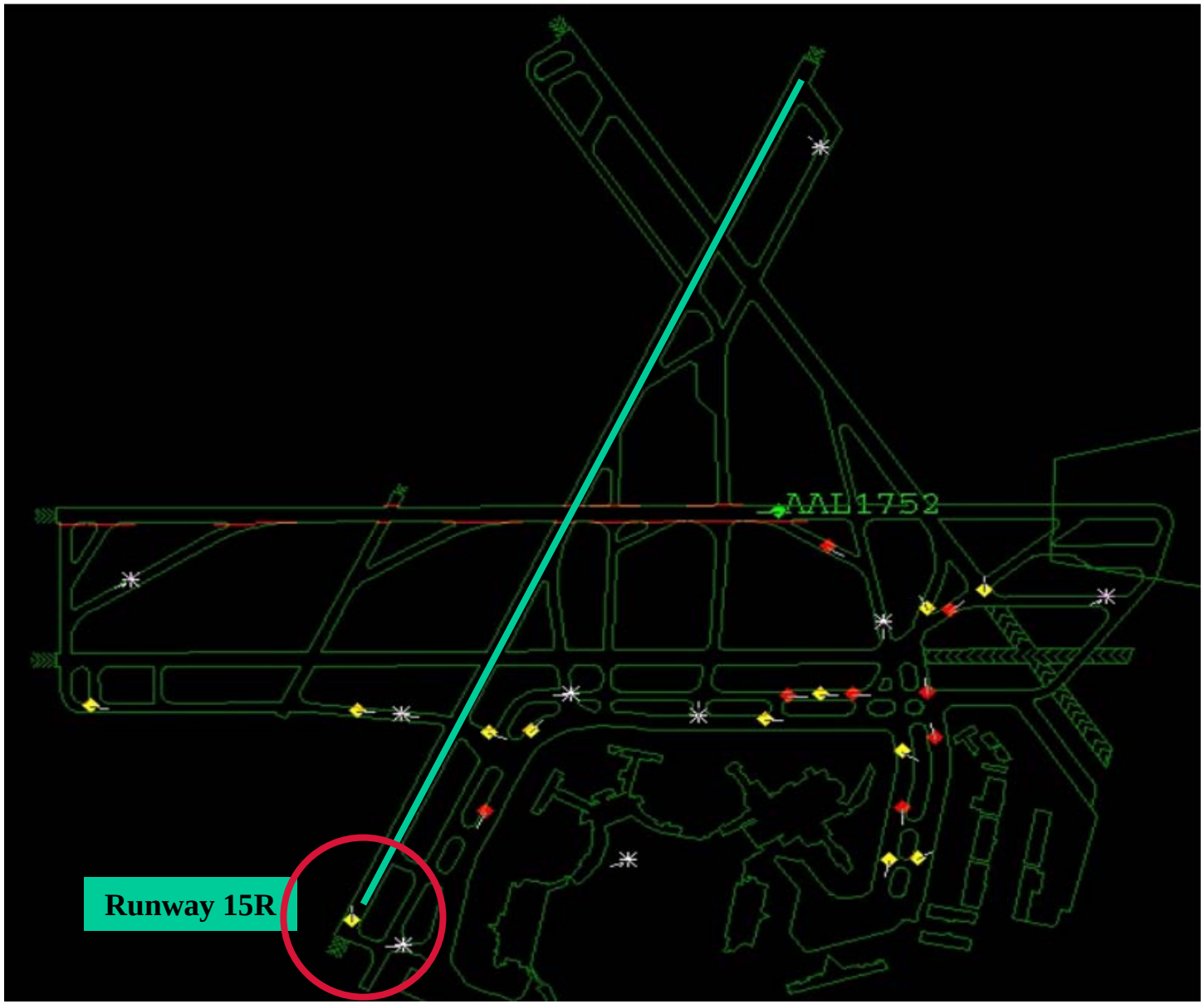

AAL1752
Runway 15R

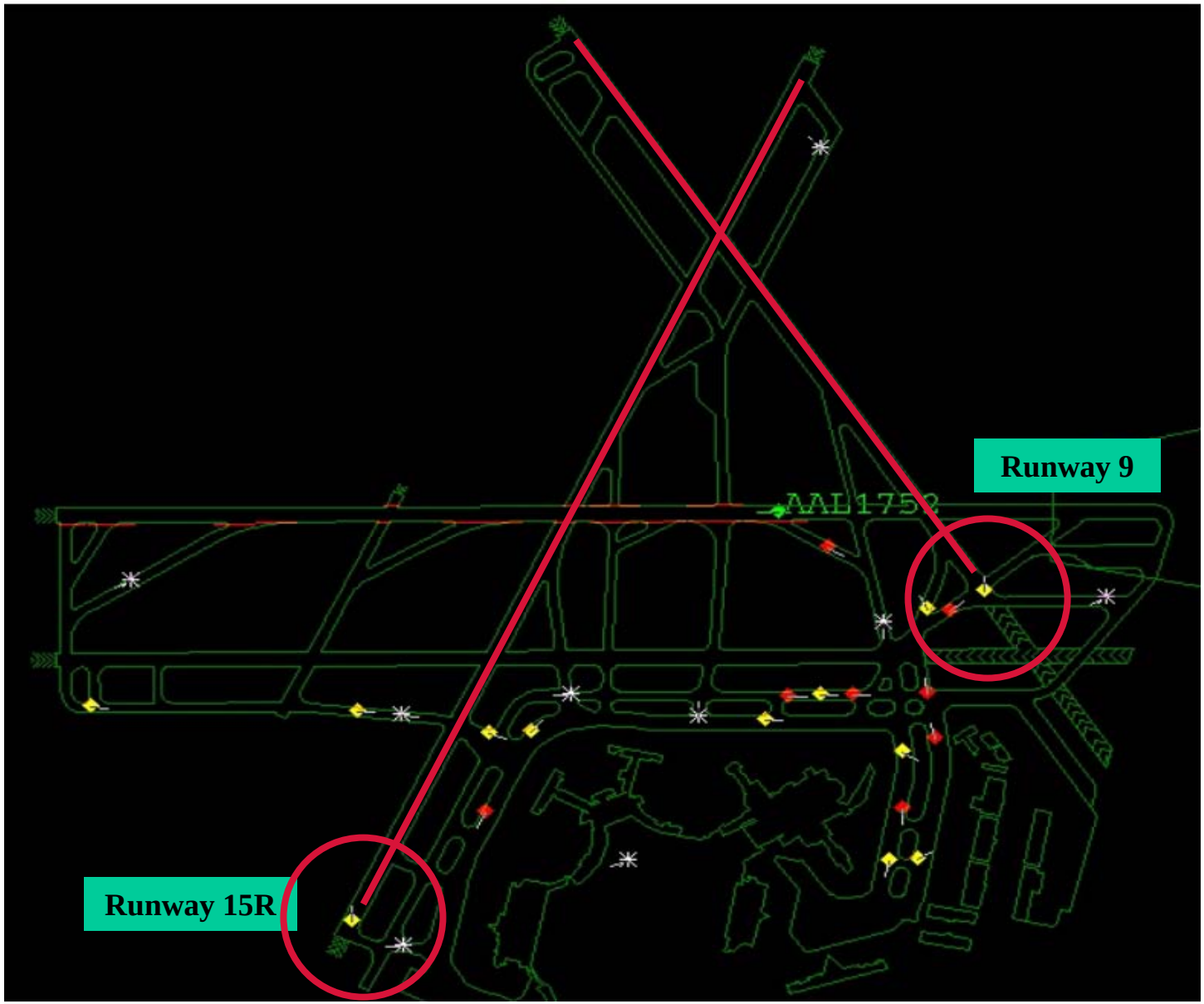

AAL1752
Runway 9


AAL1752
Runway 9


AAL1752
Runway 9
Runway 15R


AAL1752
Runway 15R


AAL1752
Runway 15R


Runway 9
AAL1752
Runway 15R

NTSB MOST WANTED
Transportation Safety Improvements

Animation (WMV, 600KB)

NTSB MOST WANTED
Transportation Safety Improvements

Animation (WMV, 5.3MB)

NTSB MOST WANTED

Transportation Safety Improvements

FAA Actions

- Final Approach Runway Occupancy Signal
- Critical Area Management System
- Runway Status Lights

Animation (AVI, 2.9MB)

NTSB MOST WANTED
Transportation Safety Improvements

Stop Runway Incursions and Ground Collisions of Aircraft

Proposed Safety Board Action

- Keep issue area on Most Wanted List
- Retain red classification: Unacceptable response

Timeliness Classification	RED

NTSB MOST WANTED
Transportation Safety Improvements

Reduce Dangers to Aircraft Flying in Icing Conditions

NTSB MOST WANTED
Transportation Safety Improvements

Safety Improvements Wanted

- Research into effects of in-flight icing, including freezing rain and critical ice shapes **A-98-92**
- Upgrade aircraft certification standards and operational procedures **A-96-54, A-96-56, A-98-100**

NTSB MOST WANTED
Transportation Safety Improvements

Cessna 208B Caravan

- Single-engine turboprop airplane
- Several icing-related fatal accidents in last 5 years
- Subject of current special assessment by staff
- Recommendations issued in December, 2004

NTSB MOST WANTED
Transportation Safety Improvements

Under Investigation: Bombardier Challenger CL-600

Montrose, CO – November 29, 2004

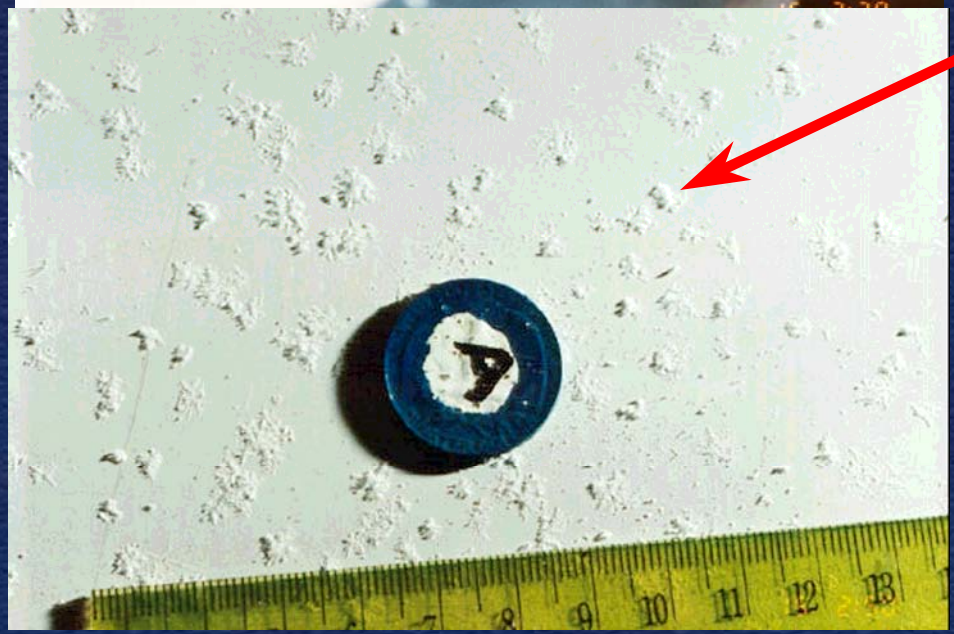
- 3 fatalities, 3 seriously injured
- Crashed During Takeoff
- Atmospheric conditions conducive to upper wing surface ice accumulation
- Upper wing ice contamination is being investigated

"…a pilot, and president of a worldwide charter aircraft referral service, said the Challenger's engines were powerful enough to take off even with icy wings.

"The extra weight of ice and snow shouldn't have made a difference; it should have been able to bully its way through…"

Colorado news report

NTSB MOST WANTED
Transportation Safety Improvements



Small, almost imperceptible accumulations

Photos from Chaput, M., Hanna M., Ruggi E. and Mayhew, J. *Aircraft Full-Scale Test Program for the 1998/99 Winter*, APS Aviation Inc. Montreal, October 1999, Transportation Development Centre TP 13485E

NTSB MOST WANTED
Transportation Safety Improvements

Alert to Pilots: Upper Wing Surface Ice Accumulation

- **Issued December 29, 2004**
- Reiterated many findings from past research and ground-icing investigations
- Research results have shown that fine particles of frost or ice, the size of a grain of table salt and distributed as sparsely as one per square centimeter over an airplane wing's upper surface can destroy enough lift to prevent that airplane from taking off

NTSB MOST WANTED
Transportation Safety Improvements

Under Investigation: Cessna 560

Pueblo, CO – February 16, 2005

- 8 fatalities
- Crashed on approach
- Atmospheric conditions conducive to icing
- Ice accretion was discussed on CVR

FAA - ARAC Actions for A-96-54

- **1996 – 2002**

  FAA tasks Aviation Regulatory Advisory Committee (ARAC) working group to develop certification criteria and gathered required data

- **2002**

  ARAC accepted concept developed by Ice Protection Group for regulatory requirements in ‘supercooled large droplets’

FAA - ARAC Actions for A-96-54

- **2005**

  ARAC is continuing to develop a revision to 14 CFR part 25 to include requirements for SLD conditions

FAA - Recent Actions

- On November 4 2005, FAA issued NPRM for new standards to evaluate performance and handling qualities in icing conditions
- Also issued a proposed Advisory Circular (AC) to provide methods to meet requirements of NPRM
- Included in proposed AC are descriptions of ice shapes to be used in evaluations of handling qualities
- **Staff is evaluating this NPRM**

NTSB MOST WANTED
Transportation Safety Improvements

Reduce Dangers to Aircraft Flying in Icing Conditions

Proposed Safety Board Action

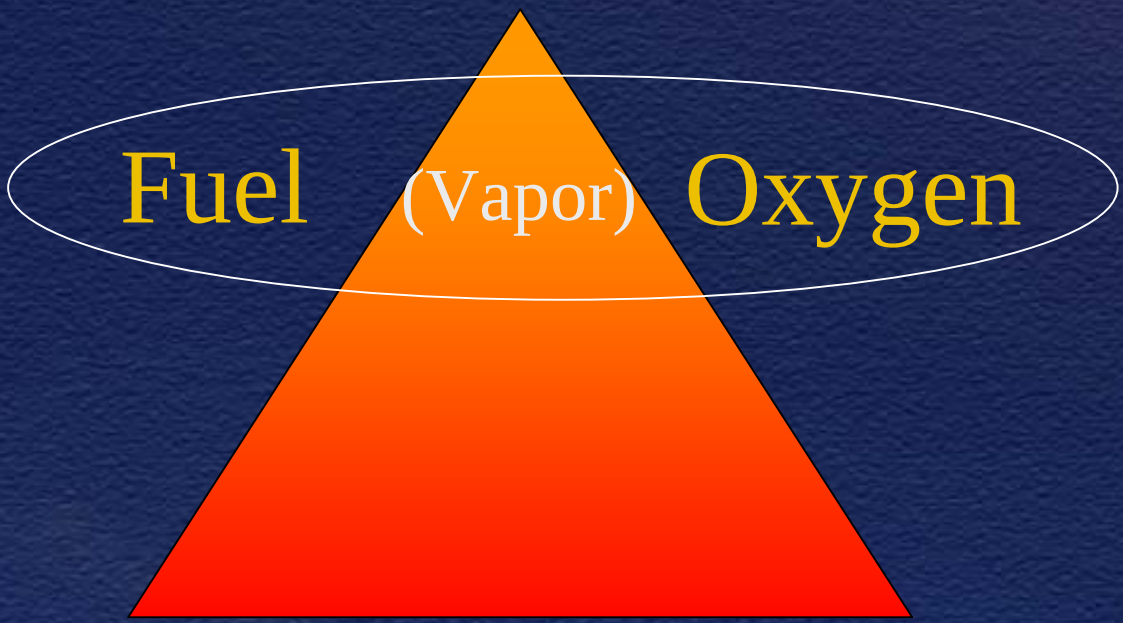
- Keep issue area on Most Wanted List
- Retain red designation: Unacceptable response

Timeliness Classification	RED

NTSB MOST WANTED
Transportation Safety Improvements

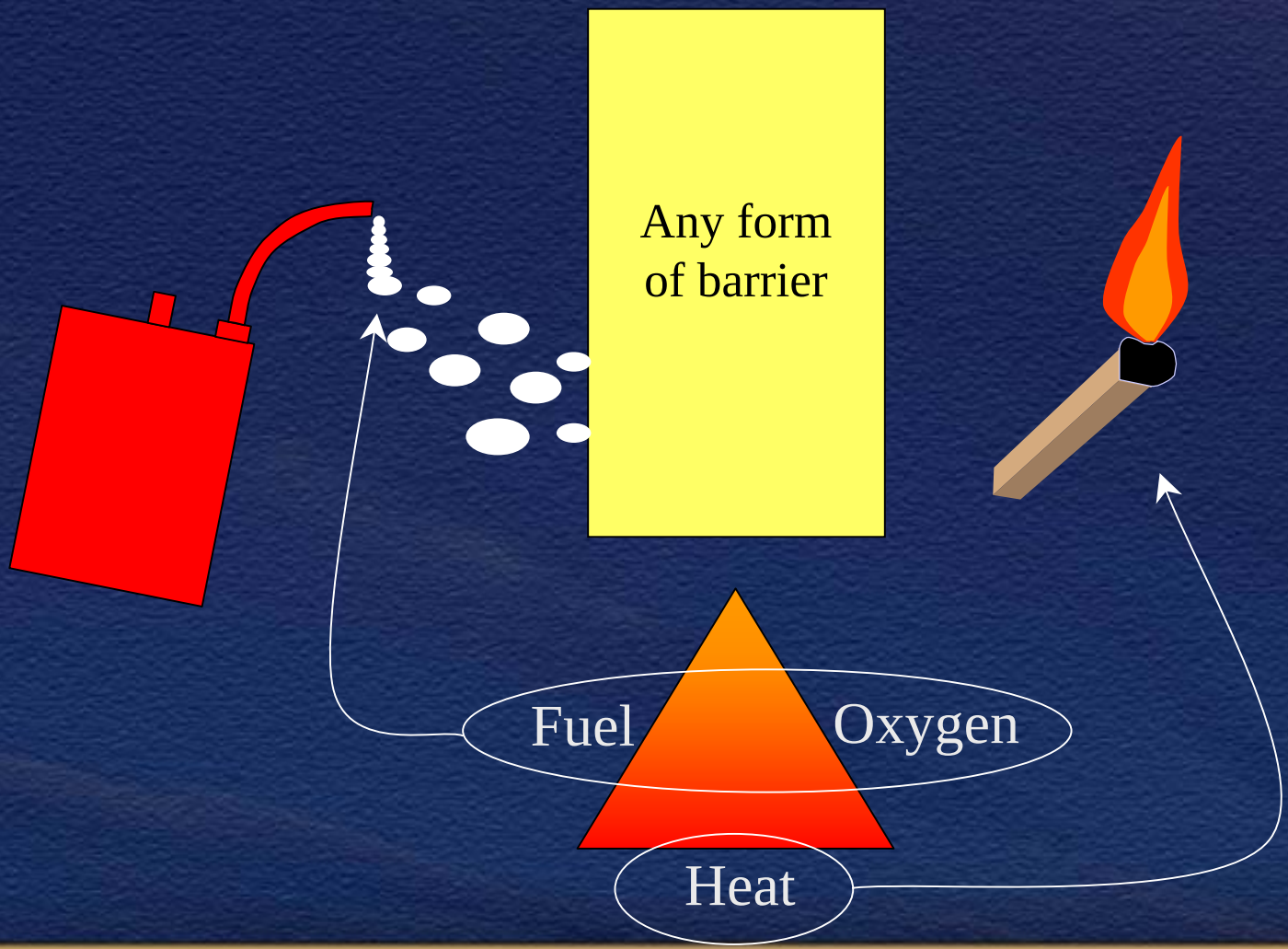
Eliminate Flammable Fuel / Air Vapors in Fuel Tanks on Transport Category Aircraft

Fire Triangle



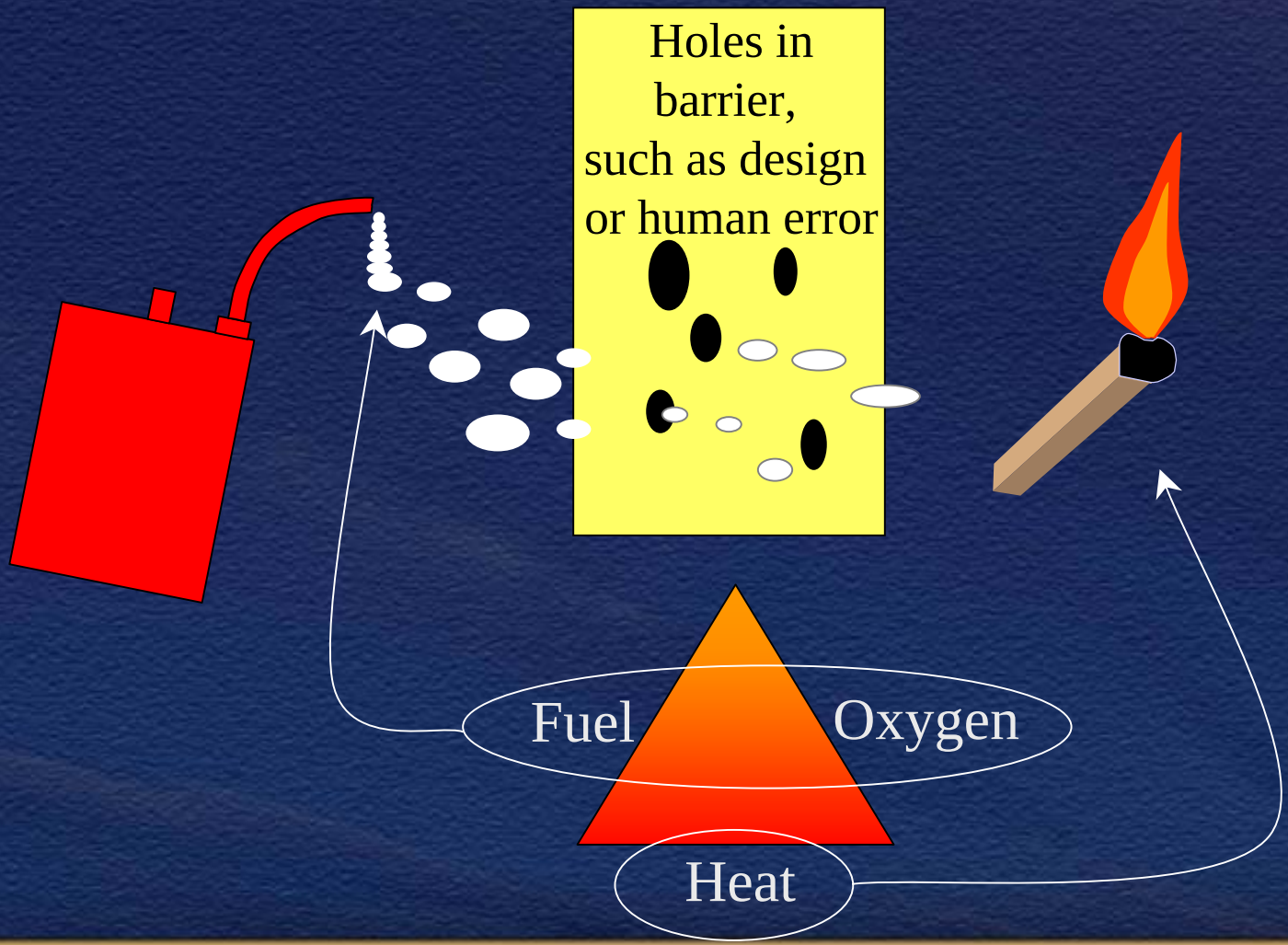
NTSB MOST WANTED
Transportation Safety Improvements

Previous Philosophy: Isolate vapors from potential ignition sources



NTSB MOST WANTED
Transportation Safety Improvements

Safety Board found that a single barrier did not work



Major Passenger Airline Center Wing Tank Explosions

Avianca 727 November 1989

PAL 737 May 1990

TWA 747 July 1996

Thai Airways March 2001

NTSB MOST WANTED
Transportation Safety Improvements

Safety Improvements Wanted

…preclude the operation of transport-category airplanes with explosive fuel/air mixtures in the fuel tanks:

- Develop airplane design modifications such as nitrogen-inerting and insulation between heat-generating equipment and fuel tanks **A-96-174**
- Modify operations to reduce the potential for fuel-air mixtures in the fuel tanks of transport category aircraft to be flammable **A-96-175**

Industry Input:

- **1998 ARAC** found:
  - a difference between rates of explosions in heated versus unheated fuel tanks.
  - no cost effective solutions,
  - recommended further investigation of flammability reduction methods.

- **2001 ARAC** found no inerting system produced benefits that were reasonably balanced by cost.

Industry remains focused on trying to eliminate potential ignition sources.

NTSB MOST WANTED
Transportation Safety Improvements

FAA Developed Inerting System

- Based on mature surface-based technology
- Low cost, light weight, uses existing bleed air sources, no moving parts to maintain

Inerting System Now Mature

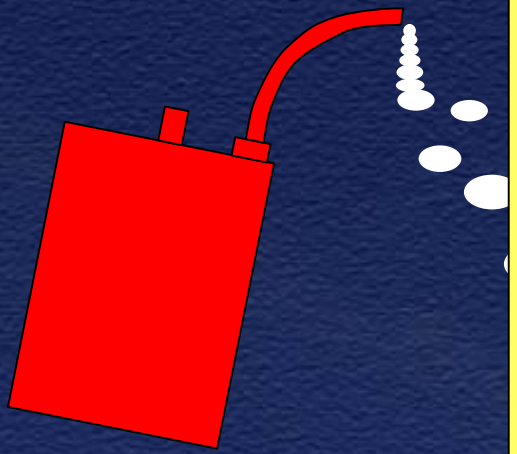
- Flight tested since May 2002 by:

AIRBUS BOEING FEDERAL AVIATION ADMINISTRATION NASA U.S. AIR FORCE

- Now certified and in commercial use
- Low cost, light weight, uses existing bleed air sources, no moving parts to maintain

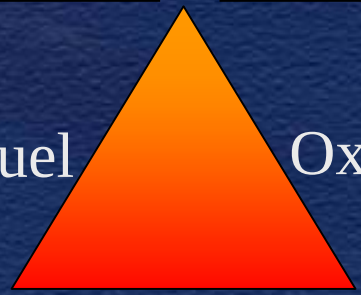
NTSB MOST WANTED
Transportation Safety Improvements

Why continue to address potential ignition sources?



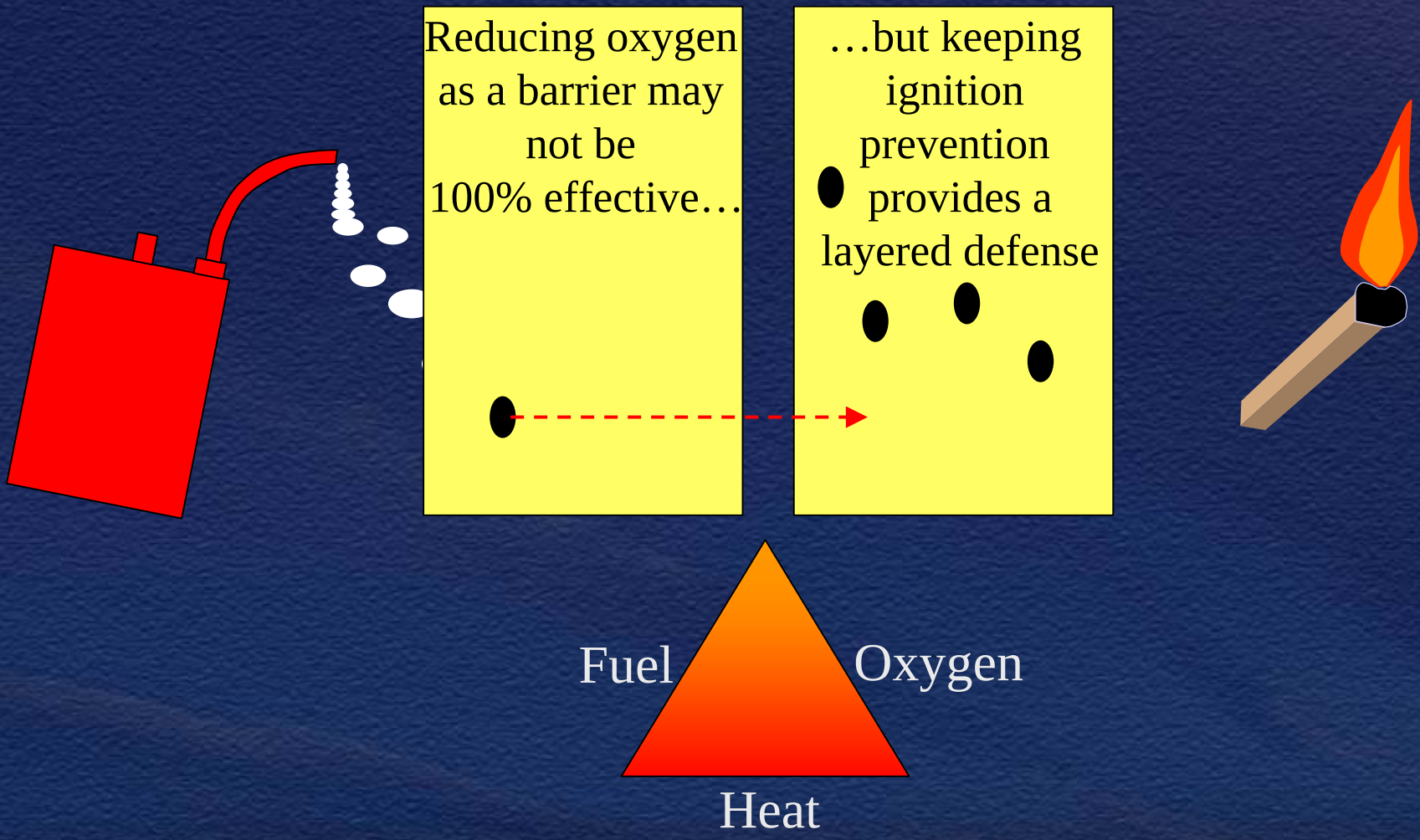
Reduced oxygen is a protective barrier

Ignition prevention is a protective barrier



NTSB MOST WANTED
Transportation Safety Improvements

No single barrier is 100% effective, but vulnerabilities seldom align.



Rulemaking

FAA developed a Notice of Proposed Rulemaking

- Released yesterday
- Proposed inerting of heated fuel tanks
- Addresses current fleet and new designs
- Addressing potential ignition sources for unheated tanks

EASA RIA recommends production cut-in in 2008

No retrofit planning cited in RIA

Resistance

- Industry-led ARACs were not supportive
- Airline resistance seen in comments and in published EASA meeting minutes
- Manufacturer estimates of cost vary by up to factors of 4
- End of comment period slipped from March 2005 to January 2006

Short-Term Recommendation

Modify operations to reduce the potential for fuel-air mixtures in the fuel tanks of transport category aircraft to be flammable A-96-175

The FAA has not adopted interim operational change.

Proposed Safety Board Action:

- Reclassify A-96-175 as ‘Closed – Unacceptable’

NTSB MOST WANTED
Transportation Safety Improvements

Eliminate Flammable Fuel/Air Vapors in Fuel Tanks

Proposed Safety Board Actions

- Keep the issue area on Most Wanted List
- Retain yellow designation:

  Acceptable response – progressing slowly

Timeliness Classification	YELLOW

NTSB MOST WANTED
Transportation Safety Improvements

Eliminate Flammable Fuel/Air Vapors in Fuel Tanks

Proposed Safety Board Actions

- Reclassify A-96-175 as ‘Closed – Unacceptable’
- Keep the issue area on Most Wanted List
- Retain yellow designation:

  Acceptable response – progressing slowly

Timeliness Classification	YELLOW

NTSB MOST WANTED
Transportation Safety Improvements

Improve Aviation Audio and Data Recorders and Require Cockpit Video Recorders

NTSB MOST WANTED
Transportation Safety Improvements

- Retrofit 30 minutes to 2-hour CVRs
- 10-minute backup power
- Dual redundant CVR/FDR
- 737 additional parameters
- Cockpit image recorders

NTSB MOST WANTED
Transportation Safety Improvements

Safety Improvements Wanted

Accident Recorder Improvements

- 2-hour cockpit voice recorder with battery back-up power **A-99-16**
- Dual combination recorders **A-99-17**
- Reliable aircraft electrical power **A-99-18**

FAA Activity

- **FDR Enhancement NPRM**
  - Retrofit 2-Hour CVR
  - Partial recorder independent power supply
  - No mandatory dual redundant CVR/FDR requirement

FAA reviewing comments

Final rule 2006

NTSB MOST WANTED
Transportation Safety Improvements

Safety Improvements Wanted

Additional Boeing 737 Flight Data Recorder Parameters

- Upgrades for 737 series aircraft

A-99-28 and 29

NTSB MOST WANTED
Transportation Safety Improvements

Safety Improvements Wanted

Cockpit Image Recorders

- Adopt technical standard for image recorder **A-99-59**
- Require image recorder in all Part 121/135 turbine aircraft not previously equipped with recorders **A-03-64**
- 2-hour cockpit image recorder in larger transport category aircraft **A-00-30 and 31**

NTSB MOST WANTED
Transportation Safety Improvements

Video Recorder Update

- FAA did not address image recorder in NPRM
- FAA-NTSB-Industry Flight test
- TSO January 2006

NTSB MOST WANTED
Transportation Safety Improvements

Improve Audio and Data Recorders Require Cockpit Image Recorders

Proposed Safety Board Action

- Keep issue area on Most Wanted List
- Retain red designation: Unacceptable response

Timeliness Classification	RED

NTSB MOST WANTED
Transportation Safety Improvements

Require Restraint Systems for Children Under Age 2

Safety Improvements Wanted

- Require all occupants be restrained during takeoff, landing and turbulence, and require infants and small children be restrained appropriately for their size. **A-95-51**

NTSB Board Meeting August 2004

- Child restraint issue discussed in depth
- Board voted to keep issue on Most Wanted List
- Classified recommendation as ‘unacceptable response’

FAA Response

- FAA withdrew rulemaking on child restraints, August 2005
- FAA told NTSB that they will *not* require use of child restraints, October 2005

Require Restraint Systems for Children Under Age 2

Proposed Safety Board Action

- Reclassify A-95-51: ‘Closed – Unacceptable’
- Remove issue area from Most Wanted List

NTSB MOST WANTED
Transportation Safety Improvements

Implement Positive Train Control Systems

Safety Improvements Wanted

- Facilitate development and implementation of positive train control systems that include collision avoidance, and

- Require implementation of positive train control on main line tracks, giving priority to high-risk corridors where commuter and intercity passenger railroads operate. **R-01-6**

Human Factors Causes

- Fatigue
- Sleep-Apnea
- Medication
- Reduced Visibility
- Distractions

Train Accidents

FRA reported accidents for 2004

- 178 head-on, rear-end, and side collisions
- 160 or 90% attributed to human factor causes

NTSB MOST WANTED
Transportation Safety Improvements

Accidents Under Investigation

- Chicago, IL
- Carrizozo, NM
- Gunter, TX
- Macdona, TX
- Zephyrhills, FL
- Graniteville, SC
- Anding, MS
- Shepherd, TX
- Chicago, IL
- Texarkana, AR

FRA Action

- Final Rule effective June 2005 that establishes standards for the development and use of processor-based signal and train control systems

NTSB MOST WANTED
Transportation Safety Improvements

Positive Train Control Projects

Amtrak

- 430 miles installed on Northeast Corridor
- 45 miles installed on Michigan Line

New Jersey Transit

- 23 miles of 540 miles installed

Alaska Railroad

- 611 miles under development

North American Joint Positive Train Control Project

- 120 miles being installed between Chicago and St. Louis

NTSB MOST WANTED
Transportation Safety Improvements

Positive Train Control Projects

Norfolk Southern Railway

- Charleston - Columbia, SC
  122 miles

BNSF Railway

- Centralia - Beardstown, IL
  135 miles
- Dallas / Fort Worth - Oklahoma City
  167 miles

NTSB MOST WANTED
Transportation Safety Improvements

Implement Positive Train Control Systems

Proposed Safety Board Action

- Keep issue area on Most Wanted List
- Retain yellow designation:

  Acceptable response – progressing slowly

Timeliness Classification	YELLOW

NTSB MOST WANTED
Transportation Safety Improvements

Improve Railroad Recorder Survivability

Safety Improvements Wanted

- Establish crash survivability standards for locomotive event data recorders for new and rebuilt locomotives **R-98-30**

FRA Actions

- FRA issued final rule concerning locomotive crashworthy event recorders on June 30, 2005
- Removed tape-based EDRs from service
- Established recorder survivability specifications

NTSB MOST WANTED
Transportation Safety Improvements

Improve Survivability of Recorders

Proposed Safety Board Action

- Remove issue area from Most Wanted List

NTSB MOST WANTED
Transportation Safety Improvements

Improve Drug and Alcohol Testing of Crews After Accidents

NTSB MOST WANTED
Transportation Safety Improvements

Safety Improvements Wanted

- Clear post-accident collecting and testing procedures, responsibilities and time limits, and abstinence from alcohol
  M-98-71, M-98-73, M-98-76, M-98-77, M-98-79, M-98-81
- Task force to evaluate deficiencies in post- accident testing and implement program based on ‘lessons learned’
  M-98-72
- Breath and urine-testing devices on foreign ships in U.S. waters and U.S. oceangoing ships
  M-98-75

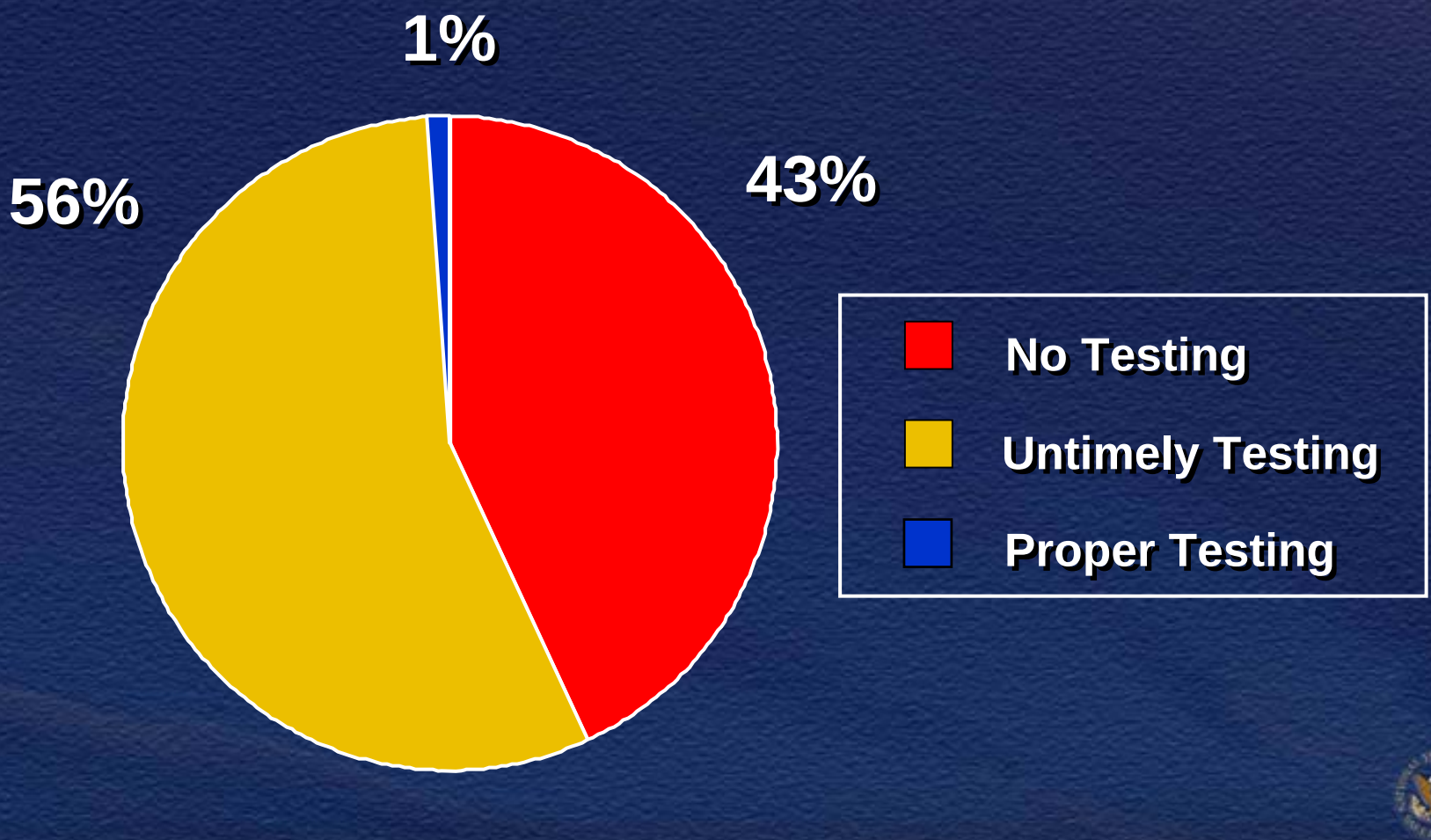
NTSB Special Investigation Report

Alcohol and Drug Testing

- 1998 report cited 28 major marine accidents since *Exxon Valdez*
- Identified shortcomings in post-accident testing process.

NTSB MOST WANTED
Transportation Safety Improvements

Post-Accident Alcohol Testing



NTSB MOST WANTED
Transportation Safety Improvements

Congressional Action

- **1998** Federal law requires the establishment of procedures to ensure post-accident alcohol testing within 2 hours, unless prevented by concerns for safety directly related to accident

Coast Guard Action

- **2003** Notice of proposed rulemaking on chemical testing following serious marine incidents
- **2005** Final rule received by OMB September 30

Improve Drug and Alcohol Testing of Crews After Accidents

Proposed Safety Board Action

- Keep issue area on Most Wanted List
- Change yellow designation to green:

  Acceptable response – progressing in a timely manner

Timeliness Classification	GREEN

NTSB MOST WANTED
Transportation Safety Improvements

Improve the Safety of Motor Carrier Operations

Safety Improvements Wanted

- Change the way safety fitness ratings are determined so adverse vehicle and driver performance alone are sufficient to result in an overall unsatisfactory rating for the carrier **H-99-6**

Truck Fitness Safety Ratings

Safety Fitness Factors

- General
- Drivers
- Operations
- Vehicles
- Hazardous Materials
- Accidents

Truck Fitness Safety Ratings

Accident Factors

- General
- **Drivers**
- Operations
- **Vehicles**
- Hazardous Materials
- Accidents

FMCSA Actions

- Planning to issue NPRM for revised safety rating system
- Continue efforts to develop truck fitness rating standards that appropriately recognize importance of vehicle and driver factors

NTSB MOST WANTED
Transportation Safety Improvements

Improve the Safety of Motor Carrier Operations

Proposed Safety Board Action

- Keep issue area on Most Wanted List
- Retain yellow designation:

  Acceptable response – progressing slowly

Timeliness Classification	YELLOW

NTSB MOST WANTED
Transportation Safety Improvements

Prevent Medically-Unqualified Drivers from Operating Commercial Vehicles

Safety Improvements Wanted

Develop comprehensive medical oversight program that addresses:

- Examiner qualifications
- Adequacy of regulations
- Non-regulatory guidance
- Review process
- Tracking mechanisms
- Enforcement and Reporting

H-01-17 thru H-01-24

FMCSA Actions

- Medical Division
- Establishment of Medical Review Board
- Development of National Registry of Certified Medical Examiners
- Working on NPRM to merge CDL/medical certificates

FMCSA Actions Remaining

- NPRM to merge CDL and medical certificate
- Formal review and tracking
- Reporting of conditions between examinations

NTSB MOST WANTED
Transportation Safety Improvements

Prevent Medically-Unqualified Drivers from Operating Commercial Vehicles

Proposed Safety Board Action

- Keep issue area on Most Wanted List
- Retain yellow designation:

  Acceptable response – progressing slowly

Timeliness Classification	YELLOW

NTSB MOST WANTED
Transportation Safety Improvements

Enhance Protection for Bus Passengers

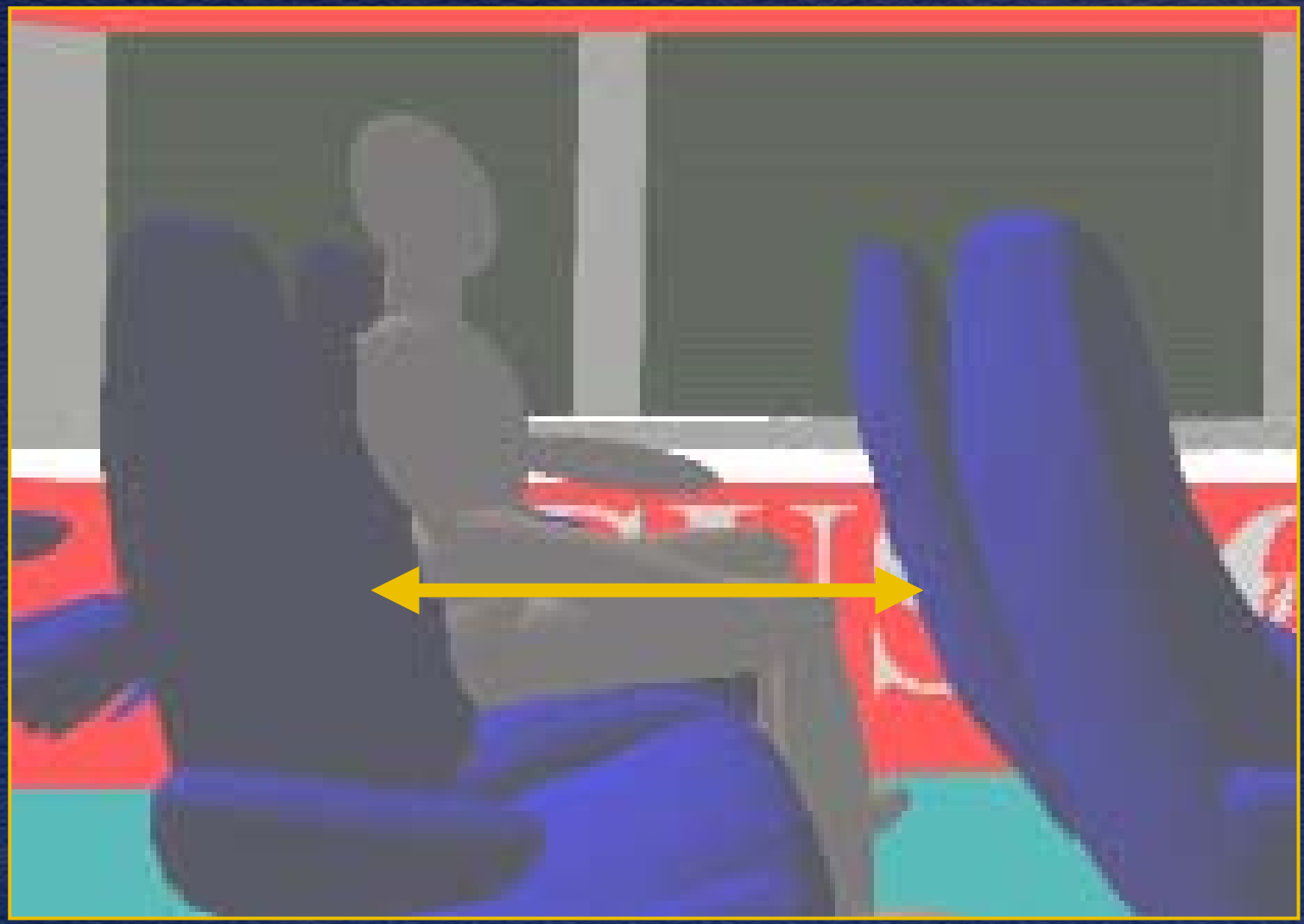
NTSB MOST WANTED
Transportation Safety Improvements

Safety Improvements Wanted

- Roof strength requirements to provide maximum survival space **H-99-50**
- Easy opening window and roof exits that stay open during evacuations **H-99-9**
- Occupant protection systems during impacts and rollovers **H-99-47**
- Standard definitions for bus body types **H-99-43**

NTSB MOST WANTED

Transportation Safety Improvements



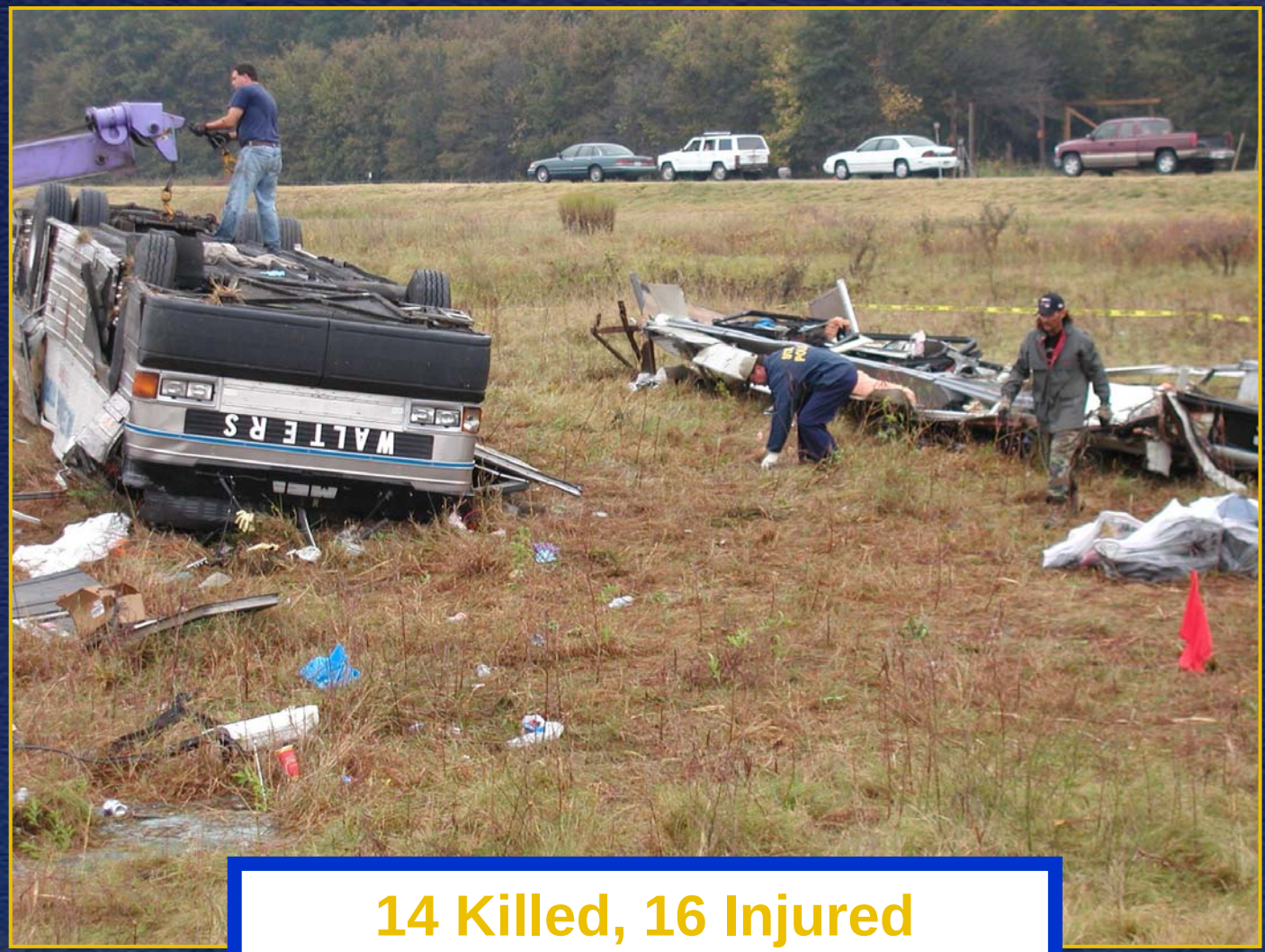
NTSB MOST WANTED
Transportation Safety Improvements

New Orleans
May 1999

NHTSA Actions

- Recommendations issued in 1999
- NHTSA scheduled NPRM for fall of 2004 did not materialize
- No NHTSA - Industry consensus on vehicle safety standards
- NHTSA has begun window related research, completion expected 2006

NTSB MOST WANTED
Transportation Safety Improvements



14 Killed, 16 Injured
October 2004, Turrell, AR

NTSB MOST WANTED
Transportation Safety Improvements

Enhance Protection for Bus Passengers

Proposed Safety Board Action

- Keep issue area on Most Wanted List
- Retain yellow designation:

  Acceptable response – progressing slowly

Timeliness Classification	YELLOW

NTSB MOST WANTED
Transportation Safety Improvements

Update Hours-of-Service Regulations in Aviation, Marine and Pipeline Industries

1989 DOT Fatigue Recommendations

- **I-89-1:** Research – Closed Acceptable
- **I-89-2:** Education – Closed Acceptable
- **I-89-3:** Hours of Service Regulations – Closed Superseded

Safety Improvements Wanted

- Establish scientifically-based hours-of-service rules that set limits on work hours, provide predictable work and rest schedules, and consider circadian rhythms and human sleep and rest requirements. **I-99-1**

- Modal recommendations to, FRA, FMCSA, FAA USCG, and PHMSA

Department of Transportation

- **I-99-1:** Require the modal administrations to establish scientifically-based HOS regulations

- DOT Human Factors Coordinating Committee Operator Fatigue Management (OFM) Program
  - Non-prescriptive approach
  - Currently validating fatigue management tools

Aviation

- **A-94-194, A-95-113, A-99-45, A-97-71**
- Flight and duty time limits set in 1938 and 1958
- FAA issued NPRM in 1995 to update flight/duty time regulations – but no rule issued
- FAA has conducted research on fatigue in maintenance, but no rulemaking proposed

Marine

- **M-99-1**
- Work-hour limitations date to early 1900s
- International Maritime Organization amended regulations in 1995
- Coast Guard and Maritime Transportation Act
  - Crew Endurance Management (CEM) demonstration project

Pipeline

- **P-98-30, P-99-12**
- No Federal hours-of-service regulations exist for controllers of pipeline systems
- PHMSA Advisory Bulletin

NTSB MOST WANTED
Transportation Safety Improvements

Update Hours-of-Service Regulations in Aviation, Marine and Pipeline Industries

Proposed Safety Board Action

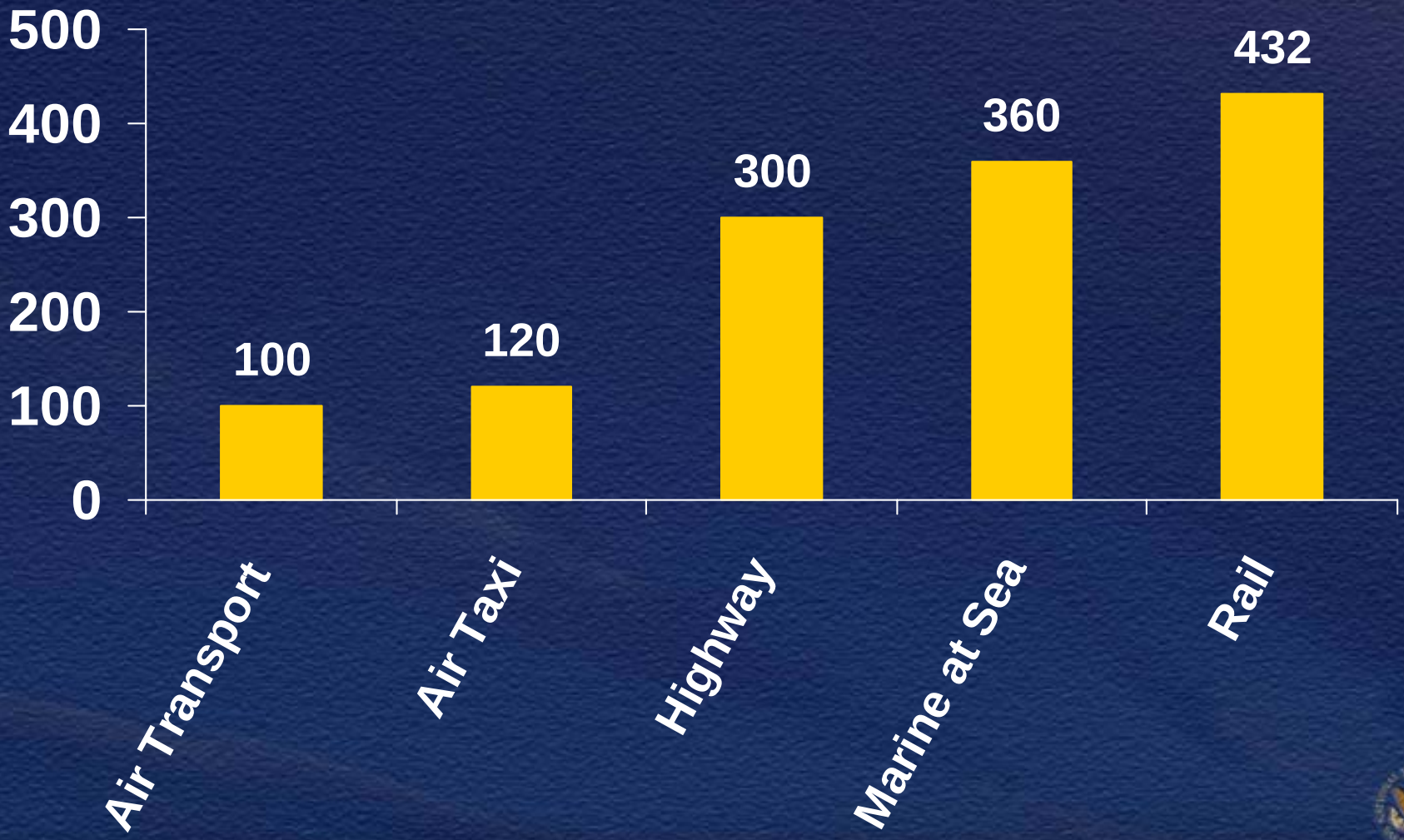
- Reclassify A-97-71: ‘Open – Unacceptable’
- Keep issue area on Most Wanted List
- Retain yellow designation:

  Acceptable response – progressing slowly

Timeliness Classification	YELLOW

NTSB MOST WANTED
Transportation Safety Improvements

Maximum Hours per Month by Mode



NTSB MOST WANTED
Transportation Safety Improvements

Most Wanted List
Federal Issues

Vote to adopt full report

www.ntsb.gov