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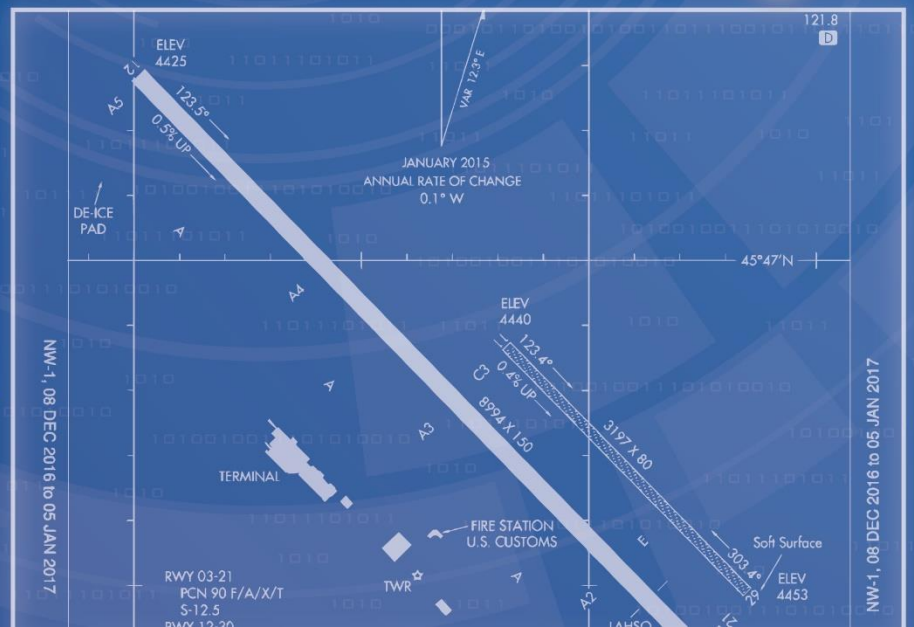
Hot Spot Standardization

Aeronautical Charting Meeting

October 28, 2020



Federal Aviation Administration

Runway Safety Group

Overview

- Background
- Definition of Hot Spots
- Wrong Surface Statistics
- Working Group Members
- Purpose of Standardization
- Standardized Shapes
- Sample Airport Diagrams
- First Airports for Update
- Outreach and Education

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Background

- Runway Safety Hot Spots first appeared in commercially prepared airport diagrams/charts.
- One of the earliest published hot spots appeared in Jeppesen to alert pilots of a misalignment risk for departing Runway 7L at McCarren International Airport (LAS)
- Initially, hot spots were circles, ovals, and polygon designed to capture the area of confusion. At times they encompassed more than one intersection that contributed to surface events.

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Background

- Due to the absence of standards, multiple different shapes were being added to the airport diagrams creating confusion.
- AJV Charting Office developed and proposed a standardized symbology to the already existing hot spots.
- A working group was created to ensure collaboration/agreement among all stakeholders.

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Hot Spot Definition

Hot Spot Definition

As shown in the:

- Chart Supplement
- Terminal Procedures Publication

458 AIRPORT DIAGRAMS

HOT SPOTS

An "Airport surface hot spot" is a location on an aerodrome movement area with a history or potential risk of collision or runway incursion, and where heightened attention by pilots/drivers is necessary.

A "hot spot" is a runway safety related problem area on an airport that presents increased risk during surface operations. Typically it is a complex or confusing taxiway/taxiway or taxiway/runway intersection. The area of increased risk has either a history of or potential for runway incursions or surface incidents, due to a variety of causes, such as but not limited to: airport layout, traffic flow, airport marking, signage and lighting, situational awareness, and training. Hot spots are depicted on airport diagrams as open circles or polygons designated as "HS 1", "HS 2", etc. and tabulated in the list below with a brief description of each hot spot. Hot spots will remain charted on airport diagrams until such time the increased risk has been reduced or eliminated.

Hot Spots address:

- Data-driven Runway Safety-related events
- Airport layout
- Traffic flow
- Signage, Markings and Lighting
- Situational Awareness

Provide benefit by:

- Depicting high risk areas
- Heightened awareness
- Increase situational awareness
- Identify mitigation needs through charting

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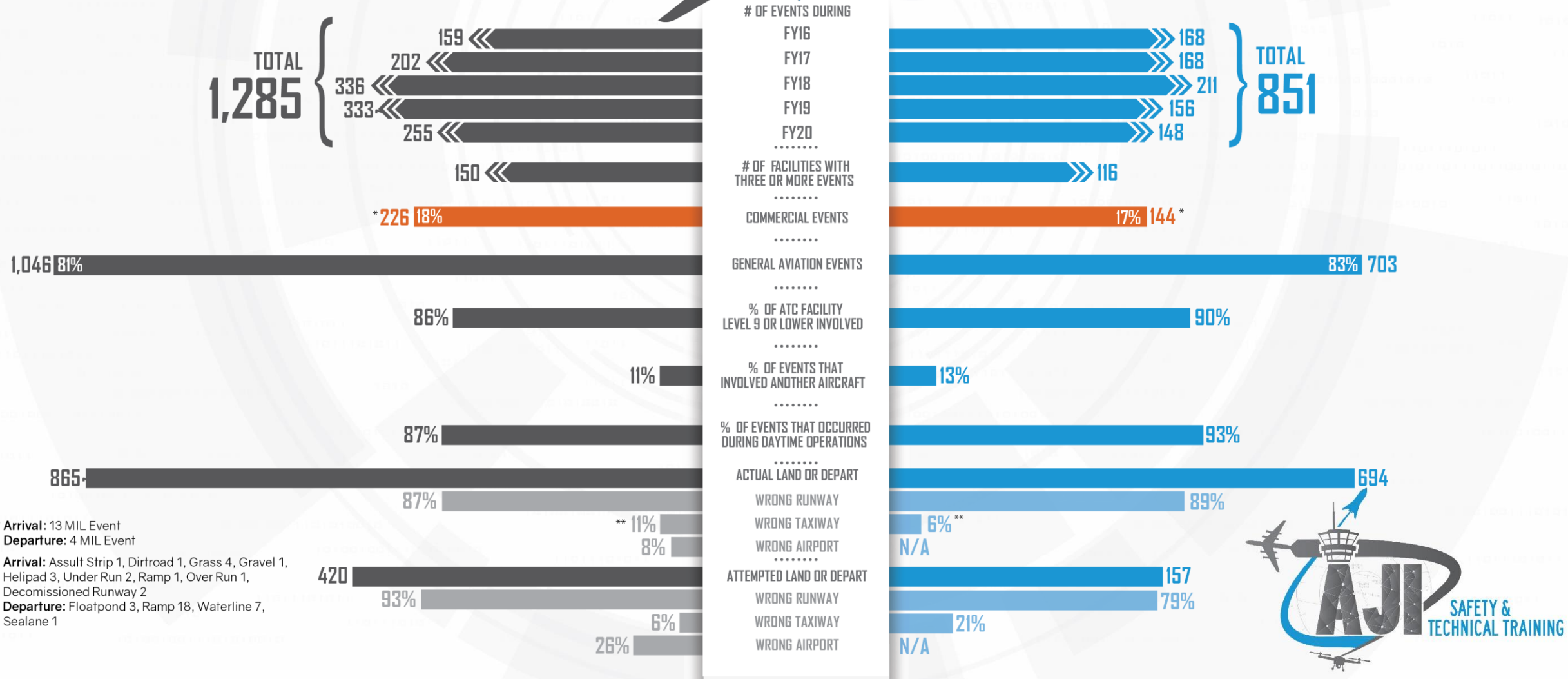
Wrong Surface Statistics

ARRIVALS & DEPARTURES



* **Arrival:** 13 MIL Event
Departure: 4 MIL Event

** **Arrival:** Assult Strip 1, Dirtroad 1, Grass 4, Gravel 1, Helipad 3, Under Run 2, Ramp 1, Over Run 1, Decomissioned Runway 2
Departure: Floatpond 3, Ramp 18, Waterline 7, Sealane 1

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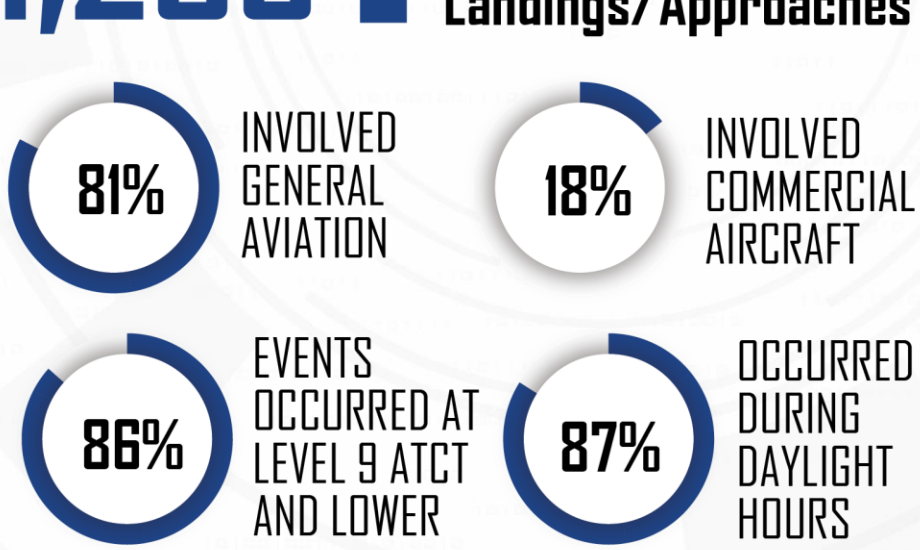
Wrong Surface Landings and Approaches

10,000+
Wrong Surface Landing/Approach Reviewed Reports

1,285 Total Wrong Surface Landings/Approaches



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Wrong Surface Departures

7,500+
Wrong Surface Departure Events

851
Total Wrong Surface Departures

INVOLVED GENERAL AVIATION

INVOLVED COMMERCIAL AIRCRAFT

ATC ERROR BASED ON THOSE EVENTS TAGGED AS OI IN RUNWAY SAFETY (746 OF 800 IN RST)

EVENTS OCCURRED AT LEVEL 9 ATCT AND LOWER

OCCURRED DURING DAYLIGHT HOURS

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Runway Safety Group

Agency and Industry Working Group Members

Giovanni Dipierro, AJI, Runway Safety Group Manager

Raymond German, AJI, Runway Safety

Christine Madden, AJI, Runway Safety

Maria DeRosa, AJI, Runway Safety

Tom Frakes, AJI, Runway Safety

Chris Diggons, AJI, Runway Safety

Bridget Singratanakul, NATCA Runway Safety Rep

Brent Walker, AJV, Aeronautical Information Services

Jeff Lamphier, AJV, Aeronautical Information Services

Nicholas DeLotell, AFS, Flight Standards

Joseph Foresto, AFS, Flight Standards

Steven Debban, ARP, Office of Airports HQ

Lisa Caldwell, AJT, Air Traffic Terminal

Alex Gertsen, NBAA

Jeffrey Sedin, ALPA

Bill Whyte, RAA

Andrew Sousa, ALPA

Adam Willliams, AOPA

Robert Meder, NAFI

Karen Kalishek, NAFI

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Purpose of Standardizing Hot Spots

Provide consistent symbology and verbiage for existing Hot Spots used for navigating the airport environment

Hot Spots offer a visual aid in reducing risk and providing mitigation for confusing areas on the airport surface:

- Surface-Based Hot Spots
- Misalignment Risk Hot Spots

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Standard Hot Spot Shapes

Ground movement Hot Spots

Circle and an Ellipse

Misalignment Risk Hot Spots

Cylinder

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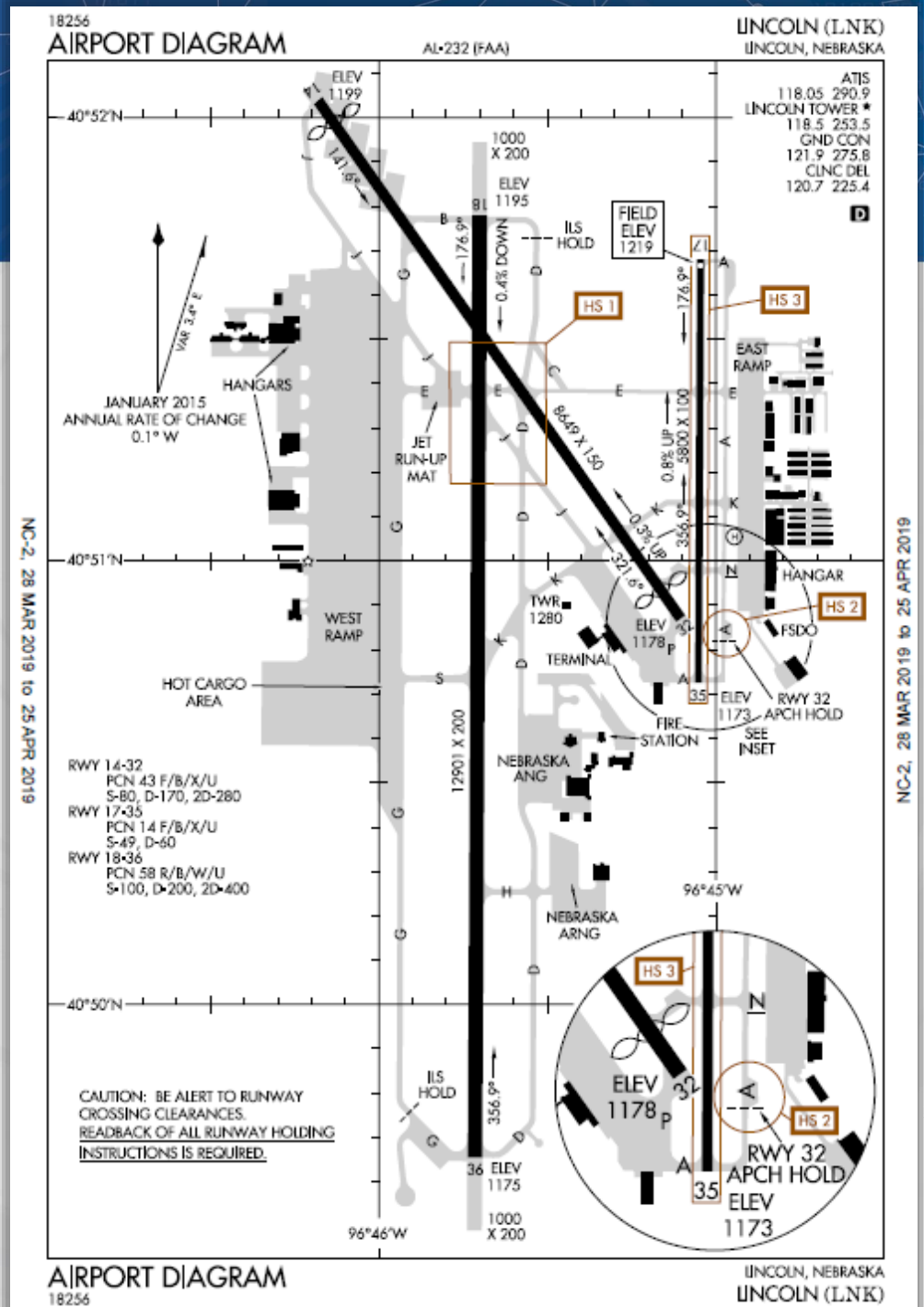
Airport Diagram
Current Version

Linear shapes everywhere…

- Runways
- Taxiways
- Movement areas
- Building outlines
- Projection lines
- Leader lines from text
- Lines under text



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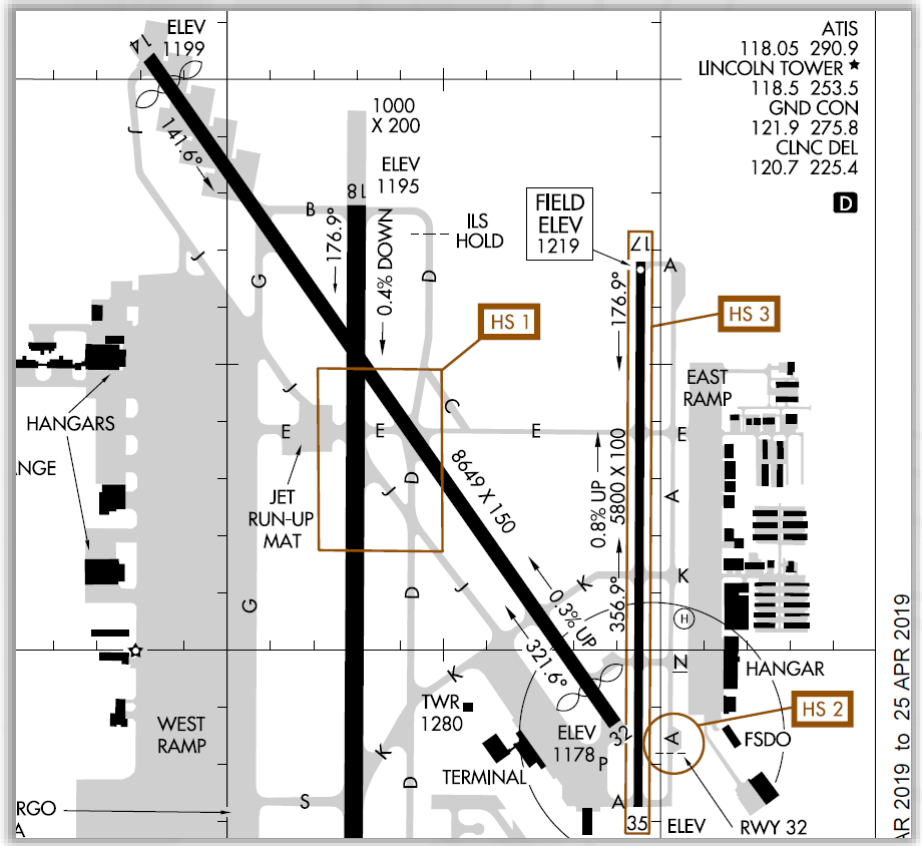
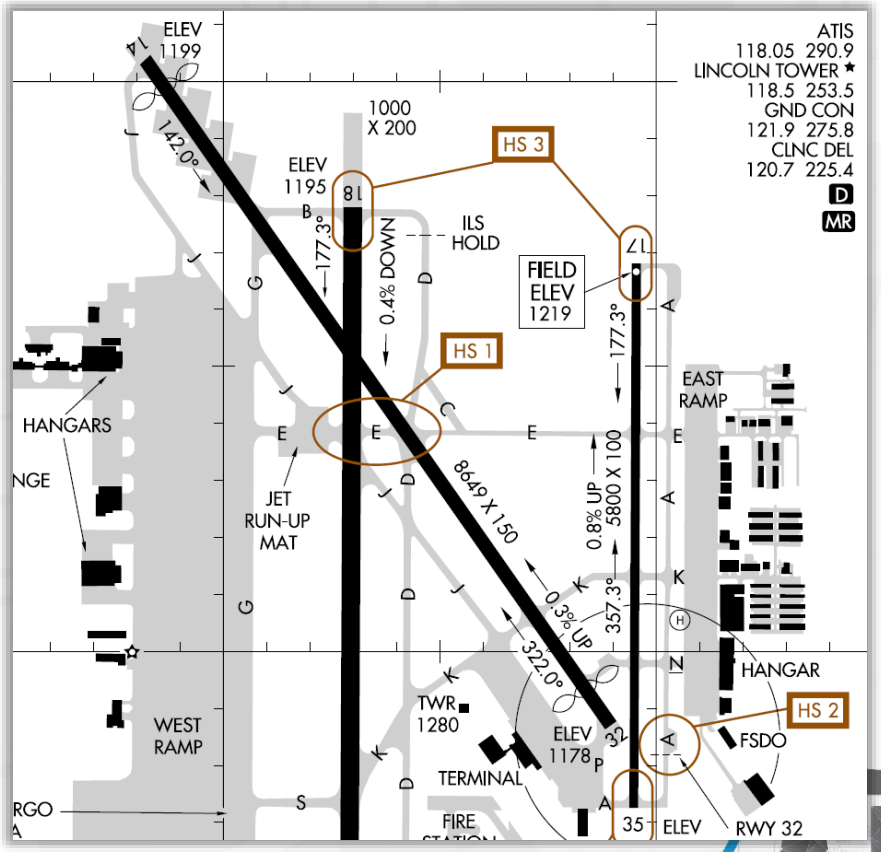
LINCOLN (LNK)
LINCOLN, NEBRASKA

CURRENT



PROPOSED



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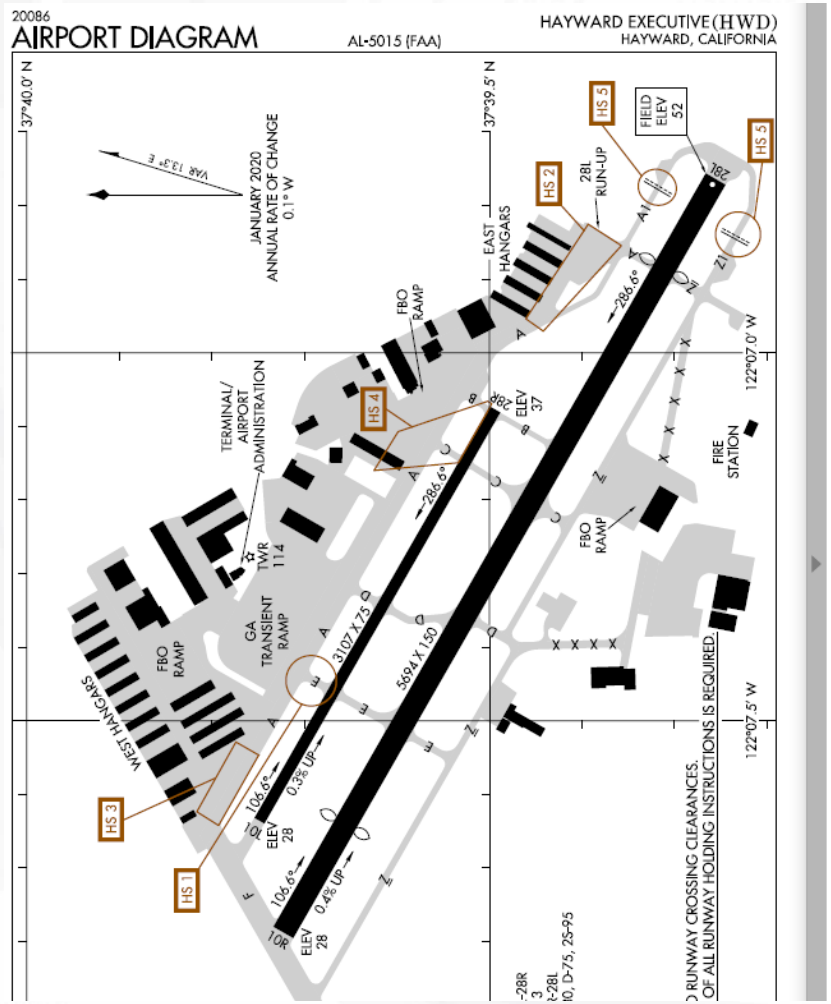
HAYWARD EXECUTIVE (HWD)
HAYWARD, CALIFORNIA

CURRENT



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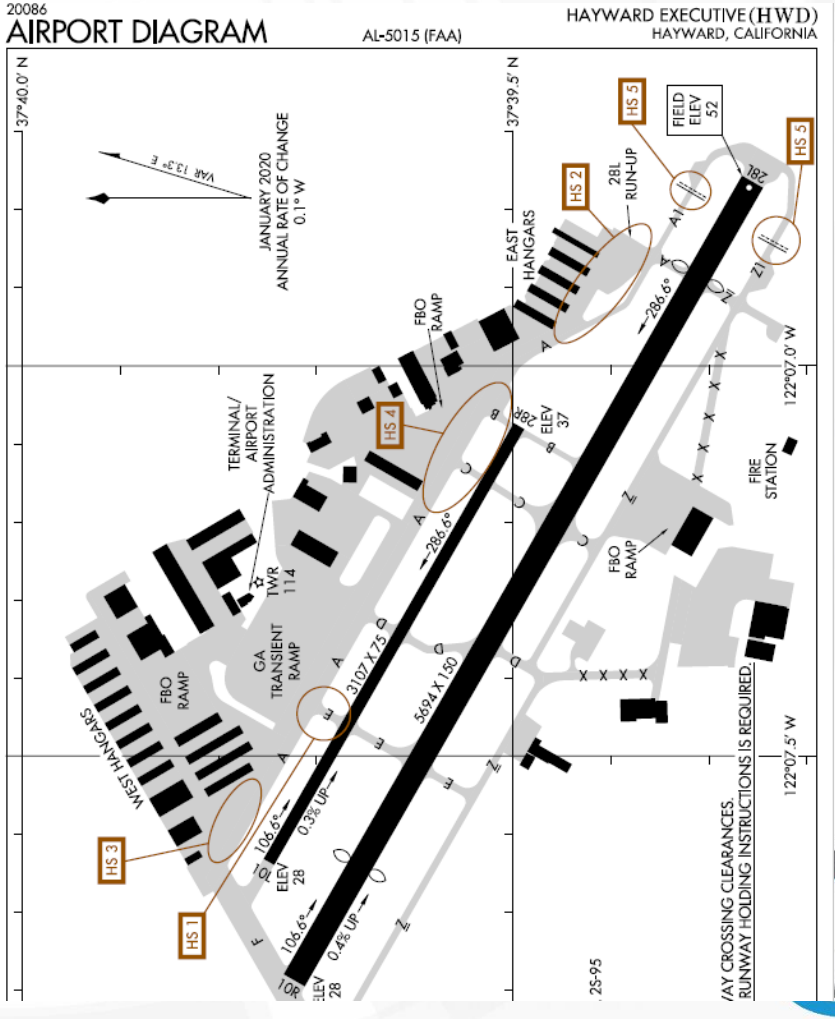

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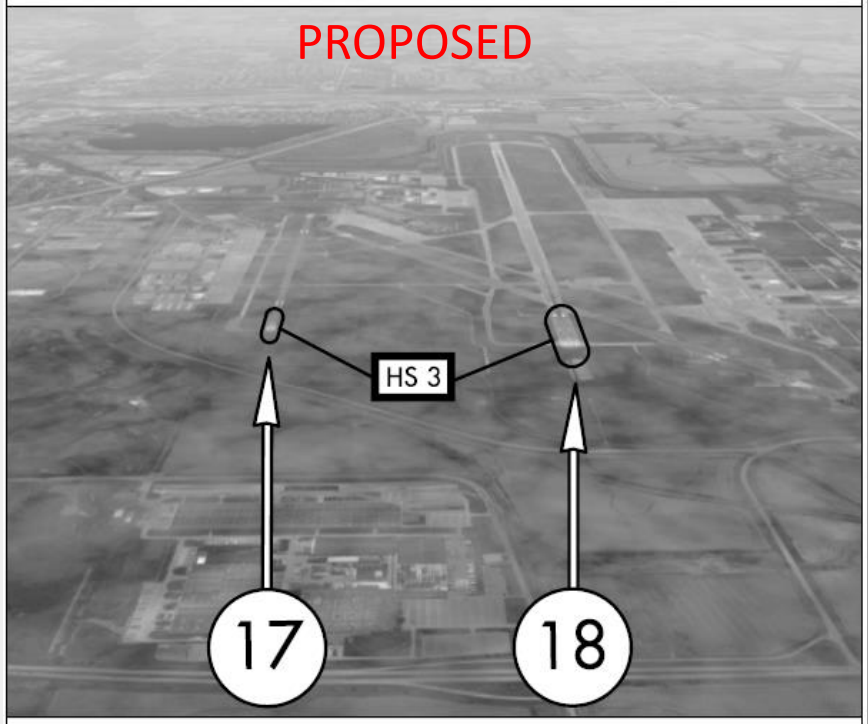
LINCOLN (LNK) ARRIVAL ALERT

Landing South Misalignment Risk
Rwy 17 and Rwy 18

PROPOSED

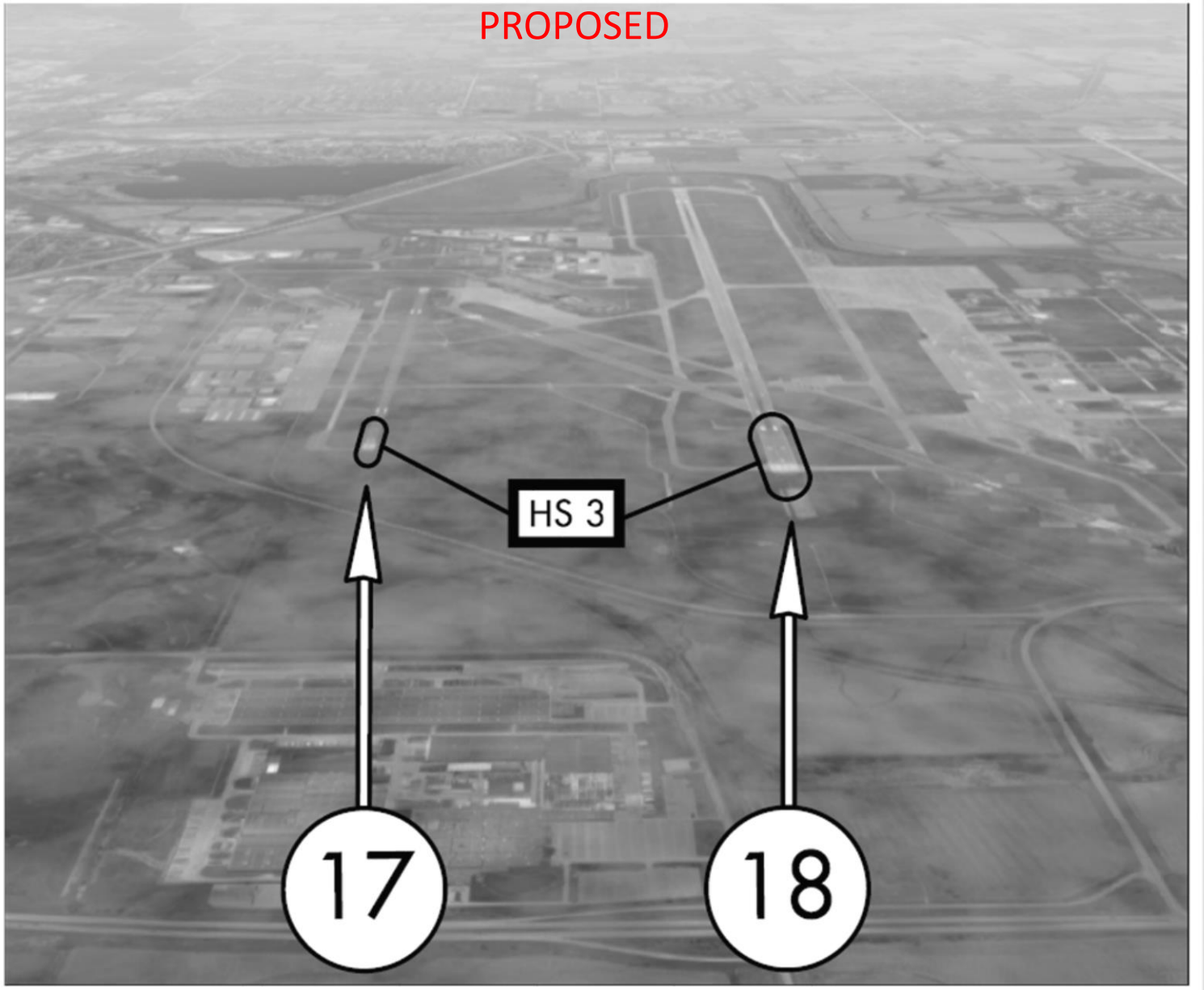


Pilots arriving on Rwy 17 need to be aware that Rwy 17 is 550 feet farther down the approach than Rwy 18.

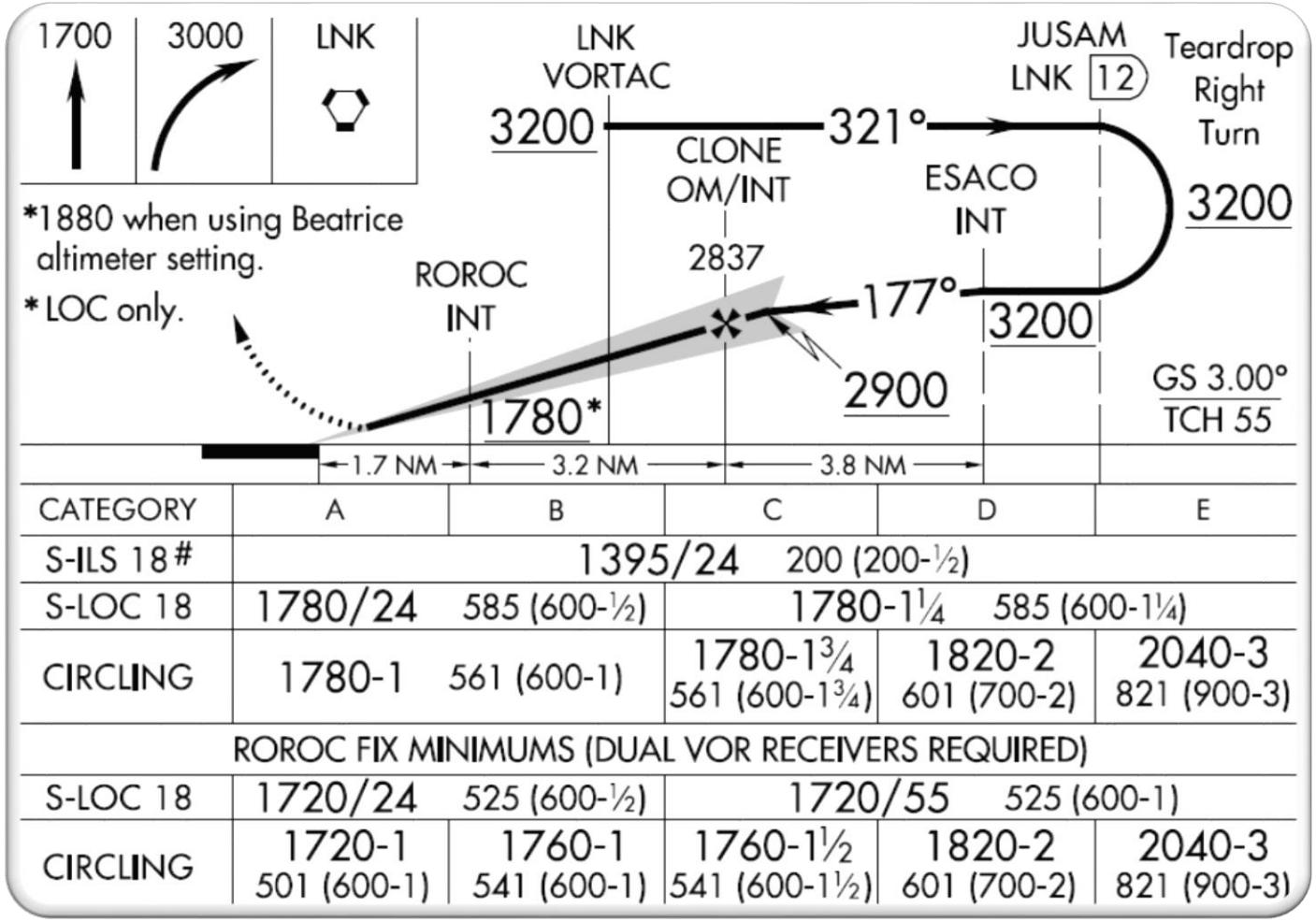
Not for Navigation

LNK Airport manager, (555) 555-5555 Effective 10 SEP 2020 to 8 SEP 2022

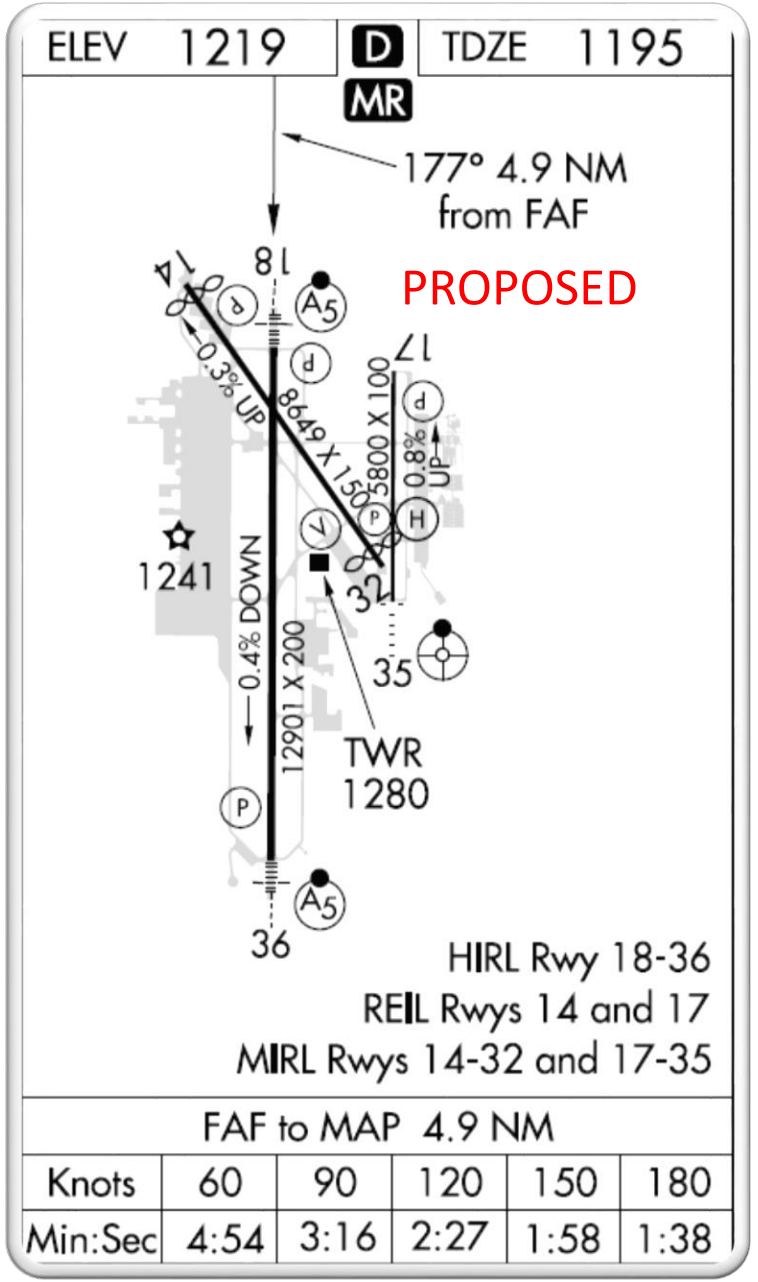
PROPOSED



LINCOLN (LNK)
LINCOLN, NEBRASKA



CATEGORY	A	B	C	D	E
S-ILS 18#	1395/24 200 (200-½)				
S-LOC 18	1780/24 585 (600-½)		1780-1¼ 585 (600-1¼)		
CIRCLING	1780-1 561 (600-1)		1780-1¾ 561 (600-1¾)	1820-2 601 (700-2)	2040-3 821 (900-3)
ROROC FIX MINIMUMS (DUAL VOR RECEIVERS REQUIRED)					
S-LOC 18	1720/24 525 (600-½)		1720/55 525 (600-1)		
CIRCLING	1720-1 501 (600-1)	1760-1 541 (600-1)	1760-1½ 541 (600-1½)	1820-2 601 (700-2)	2040-3 821 (900-3)



FAF to MAP 4.9 NM					
Knots	60	90	120	150	180
Min:Sec	4:54	3:16	2:27	1:58	1:38

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First Airports to be Updated With Standard Symbology

Airports with Existing Arrival Misalignment Risk Hot Spots

Tucson, AZ (TUS)
Reno, NV (RTS)
Phoenix, AZ (PHX)
Palm Springs, CA (PSP)
Reid-Hillview, San Jose, CA (RHV)
Rochester, NY (ROC)
Honolulu, HI (HNL)
Idaho Falls, ID (IDA)
Peach Tree DeKalb, GA (PDK)
Dallas McKinney National, TX (TKI)
Flying Cloud, MN (FCM)
Lincoln, NE (LNK)
Kansas City, MO (MCI)

Airports with ground movement Hot Spots only

Grand Junction Regional, CO (GJT)
Santa Rosa, CA (STS)
Victorville, CA (VCV)
Colorado Springs, CO (COS)
Las Vegas, NV (LAS)
Seattle Boeing Field, WA (BFI)
Groton, CT (GON)
Richmond, VA (RIC)
Fort Myers, FL (RSW)
Fort Lauderdale, FL (FLL)
Orlando, FL (ORL)
Veterans Airport, IL (MWA)
Ohio State, OH (OSU)
Central Wisconsin, WI (CWA)
Salt Lake City, UT (SLC)
Mason City, IA (MCW)
Littlerock, AR (LIT)
Valley International, TX (HRL)
Houston Hobby, TX (HOU)
San Marcos Regional, TX (HYI)
Willow Run, MI (YIP)

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Outreach and Education

- Working with the FAA Office of Communications (AOC) on several outreach efforts, as outlined as a result of the SRMP, to be completed prior to publication.
  - One-pager and a presentation to be communicated via:
    - FAA Flight Standards FAAST Blast
    - Agency stakeholders (AJT, ARP, NATCA, PASS, etc.)
    - Industry stakeholders (ALPA, NBAA, RAA, AOPA, NAFI, etc.)
    - Runway Safety website
  - Single-topic video describing the updates via the From the Flight Deck (FTFD) series
    - Update existing affected FTFD videos
- Participating in the National Association of Flight Instructors (NAFI) Mentor LIVE webinar
- Continuing work with Aeronautical Charting (AJV) to ensure Chart Supplements, Approach Plates and Arrival Alert pages are all defined and outlined in those publications
- Collect data and analyze Wrong Surface events at the affected airports

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Questions

Are there any questions?

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