Chicago Approach Briefing

“East Flow” Runway 10R/28L Utilization

Presented to: ORD Industry Representatives

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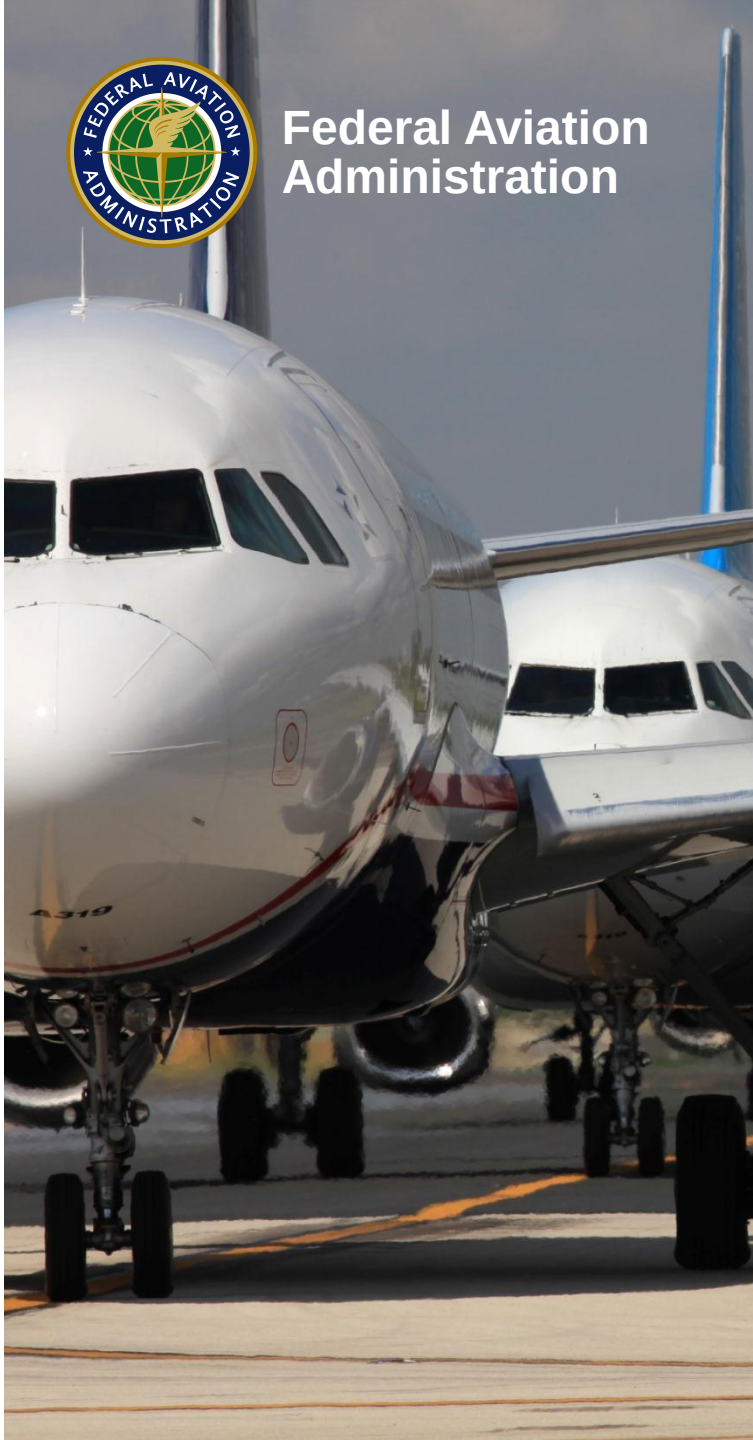
Date: January 14, 2015



Agenda

- Purpose
- Orientation
- East Flow background
- Upcoming Changes
- Procedures
- Stakeholder PRM Participation
- Input
- Questions & Answers

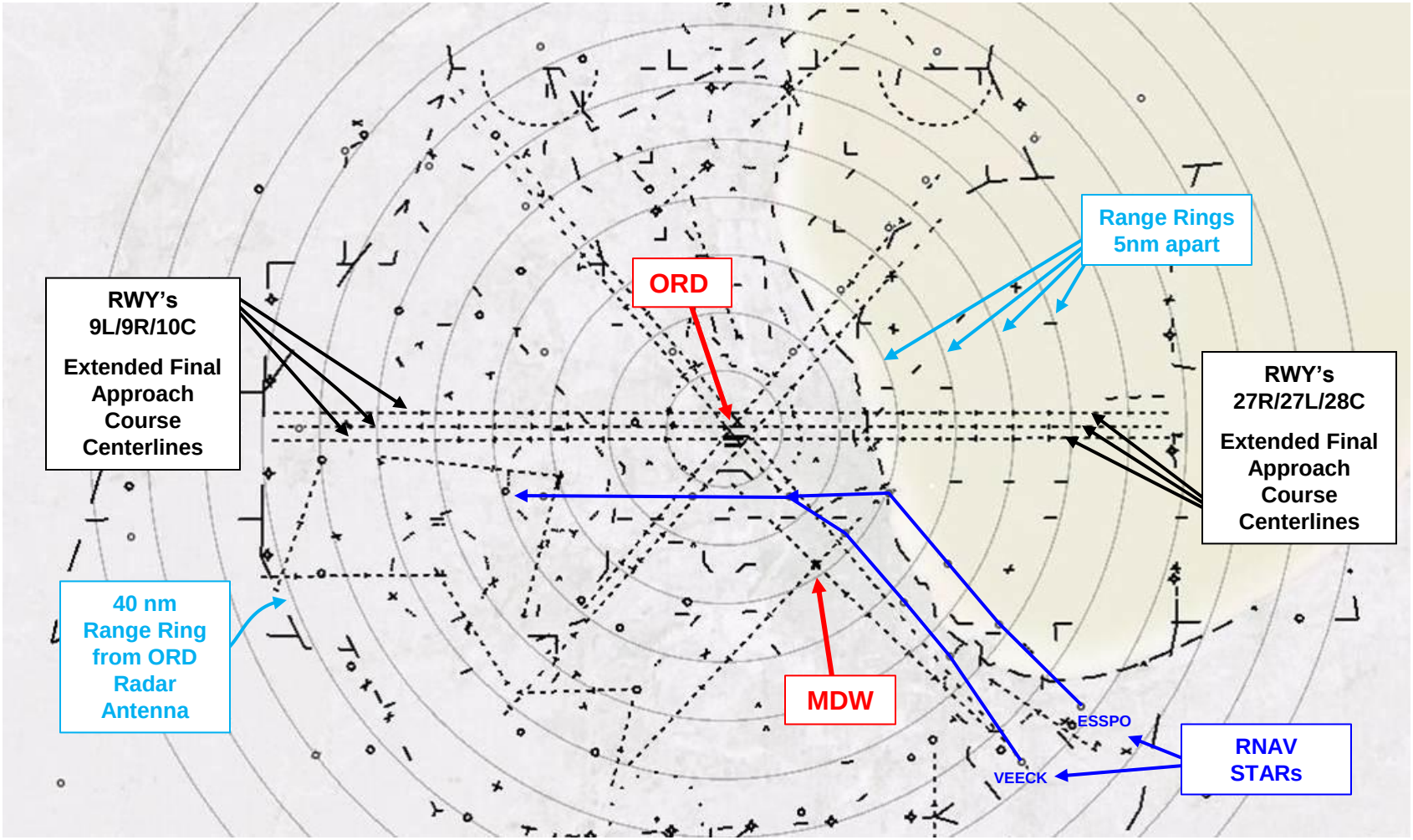
Purpose

To brief ORD Industry representatives on Operational Concepts utilizing Runway 10R/28L in an “East Flow” configuration.

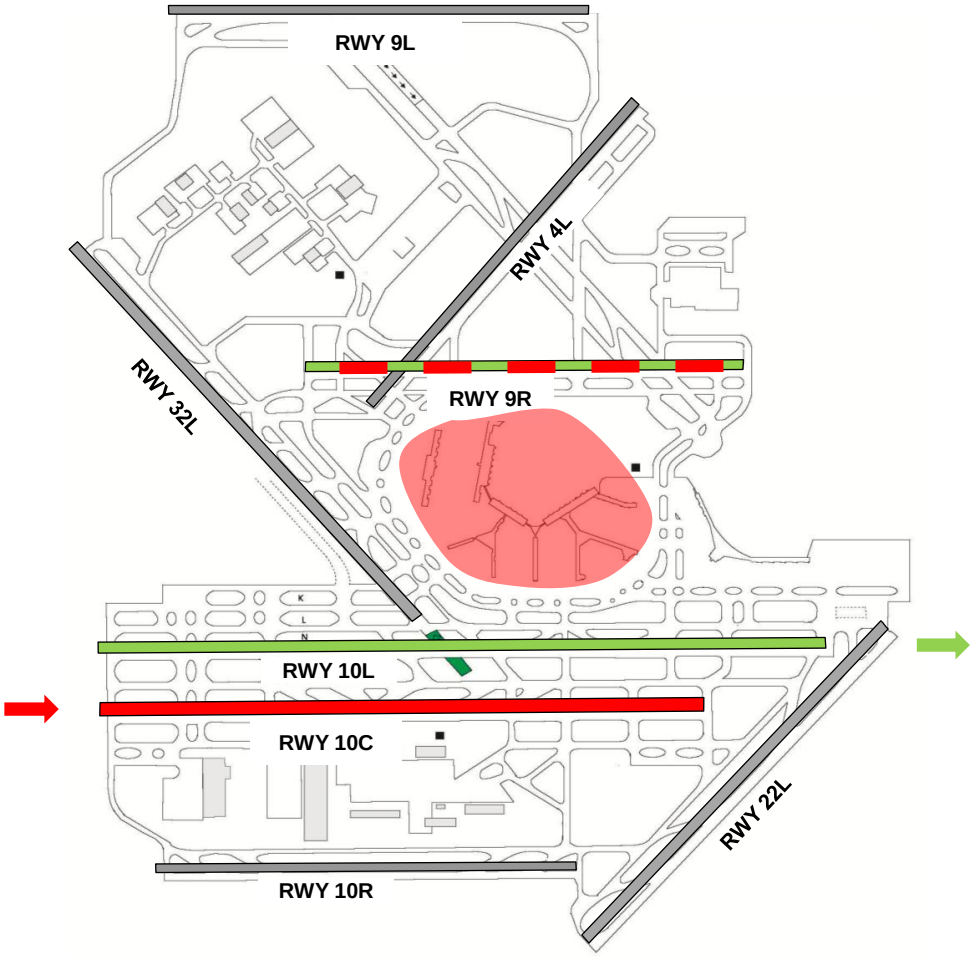
Exchange of information regarding these Operational Concepts, PRM procedures, Closely Spaced Parallel Operations and Offset approaches to Runway 10R.

Scope: East Flow operations with the addition of Runway 10R/28L until the next significant Airport change.

Chicago Approach Orientation

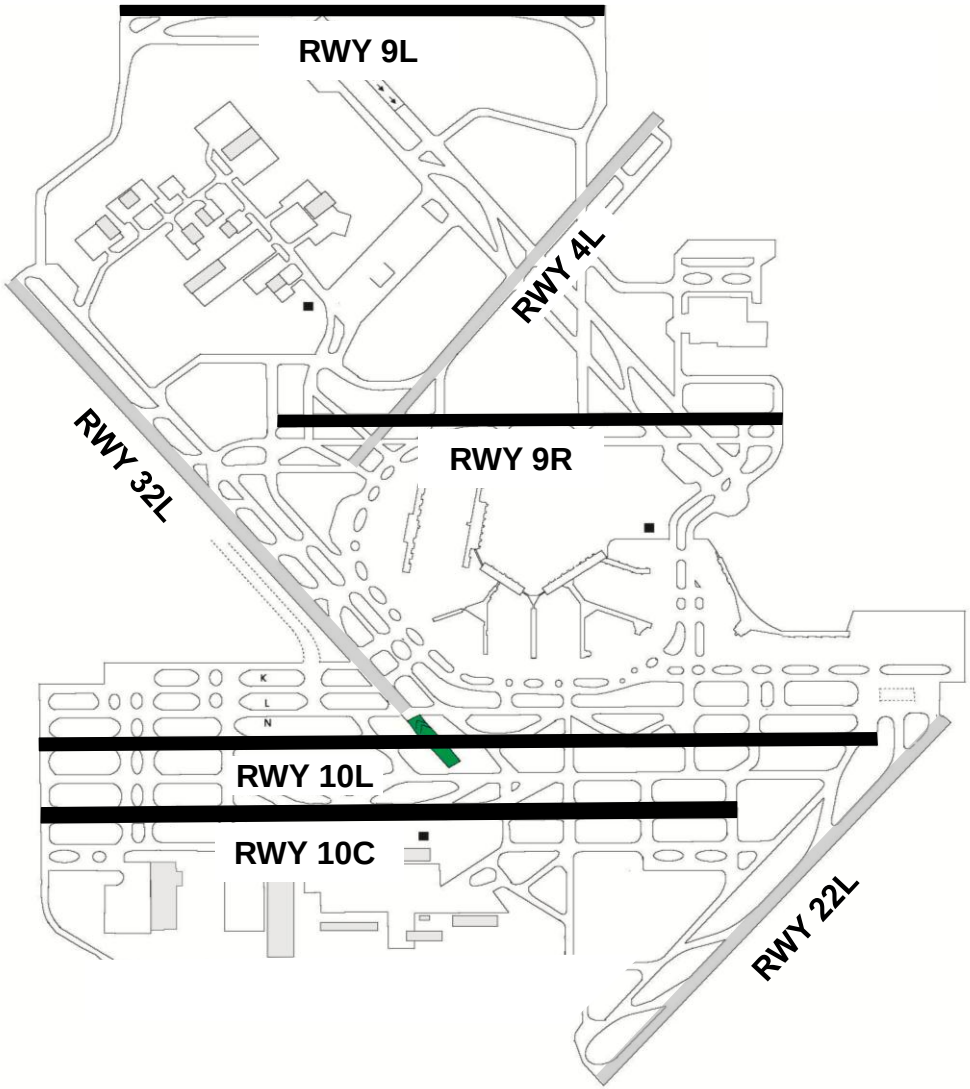


ORD Runway Orientation



- Arrival Runway
- Departure Runway
- Arrival & Departure Runway
- Inactive Runway
- On Center Approach Path
- Offset Approach Path
- Departure Path
- Terminals

Background: East flow “Today”



Land: 9L/9R/10C

Depart: 9R/10L

FAA JO 7110.65 Para 5-9-7

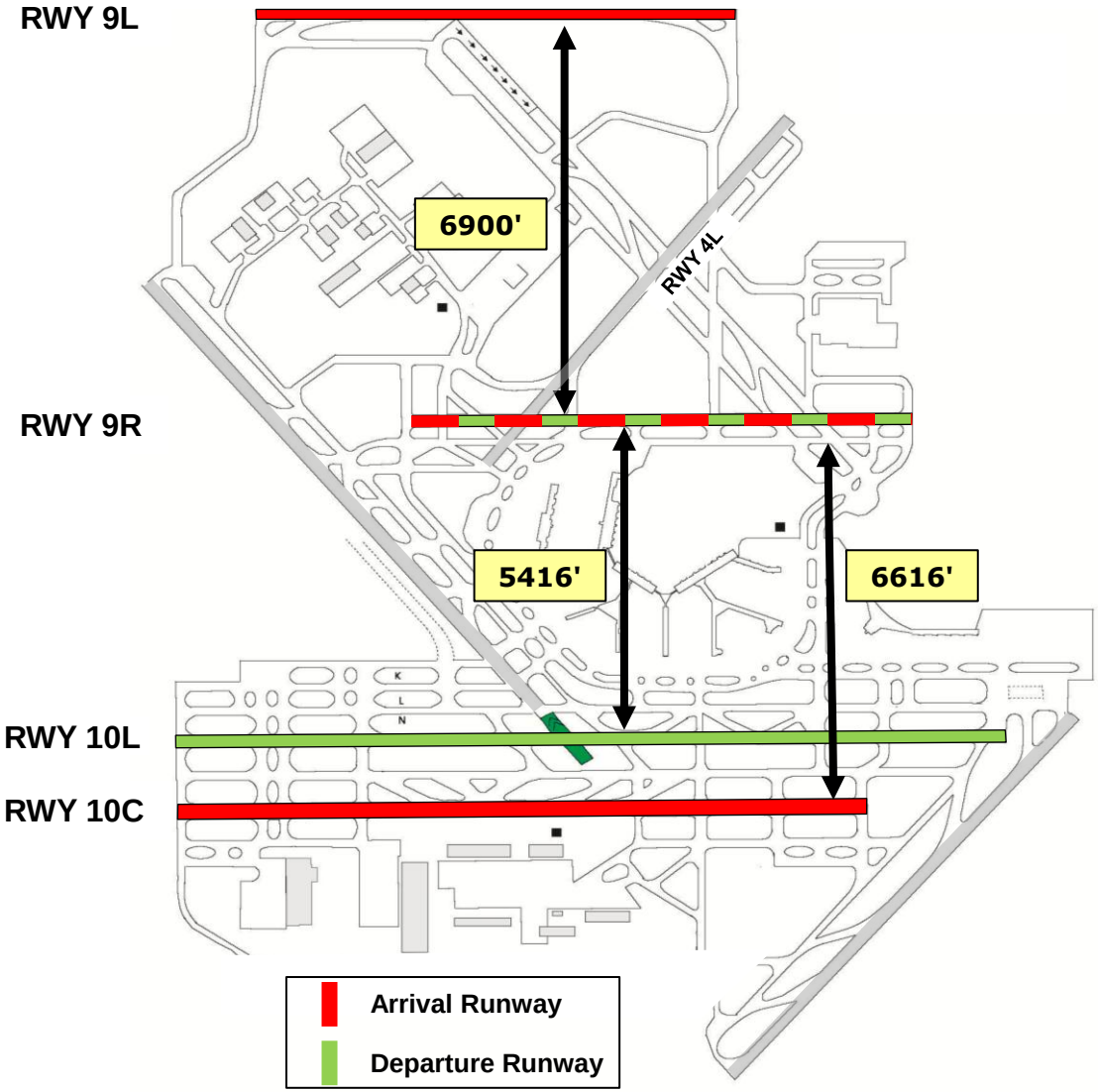
Triple parallel runway centerlines at least 5.000 feet apart, **or**

Triple parallel runway centerlines at least 4.300 feet but less than 5,000 feet apart when ATC uses specialized equipment.

Current ORD arrival/departure demand dictates the availability of:

- (3) dedicated arrival runways
- (2) dedicated departure runways.

Current “East Flow” Inefficiencies



<u>Current</u> 5,000 ft runway centerline spacing requires ORD to land:

1. Both North side runways (9L/9R) and
2. One of the South side runways.
3. Utilize one runway as a shared use runway.

RWY 9R is the “shared” use runway.

- Requires expanded spacing to balance arrival/departure throughput.

RWY 10L & 10C become dependent operations in IFR conditions.

- To balance departure/arrival thoughput, arrival spacing suffers.

RWY 4L can’t efficiently be used in conjunction with 9L/9R arrivals.

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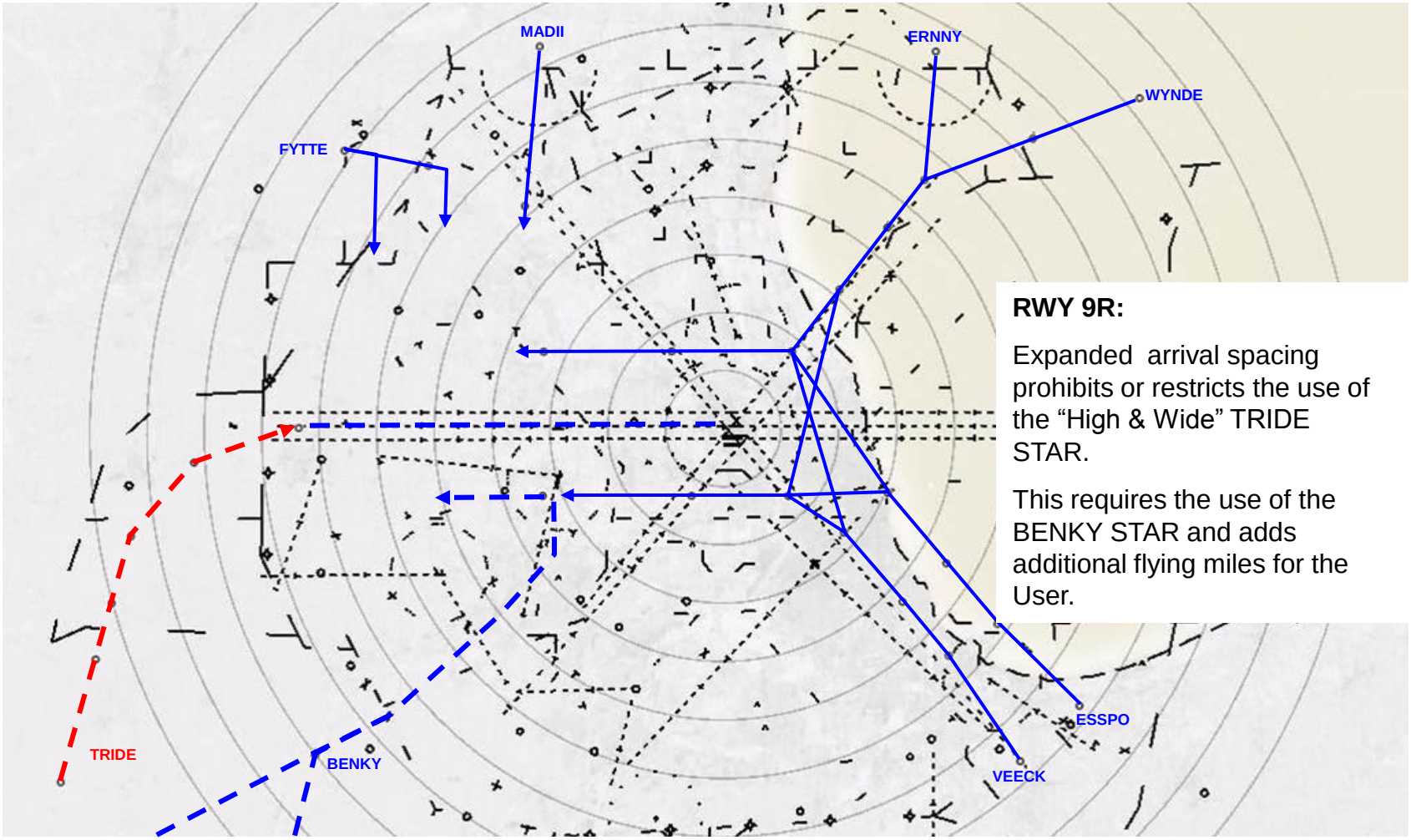
Current “East Flow” Inefficiencies

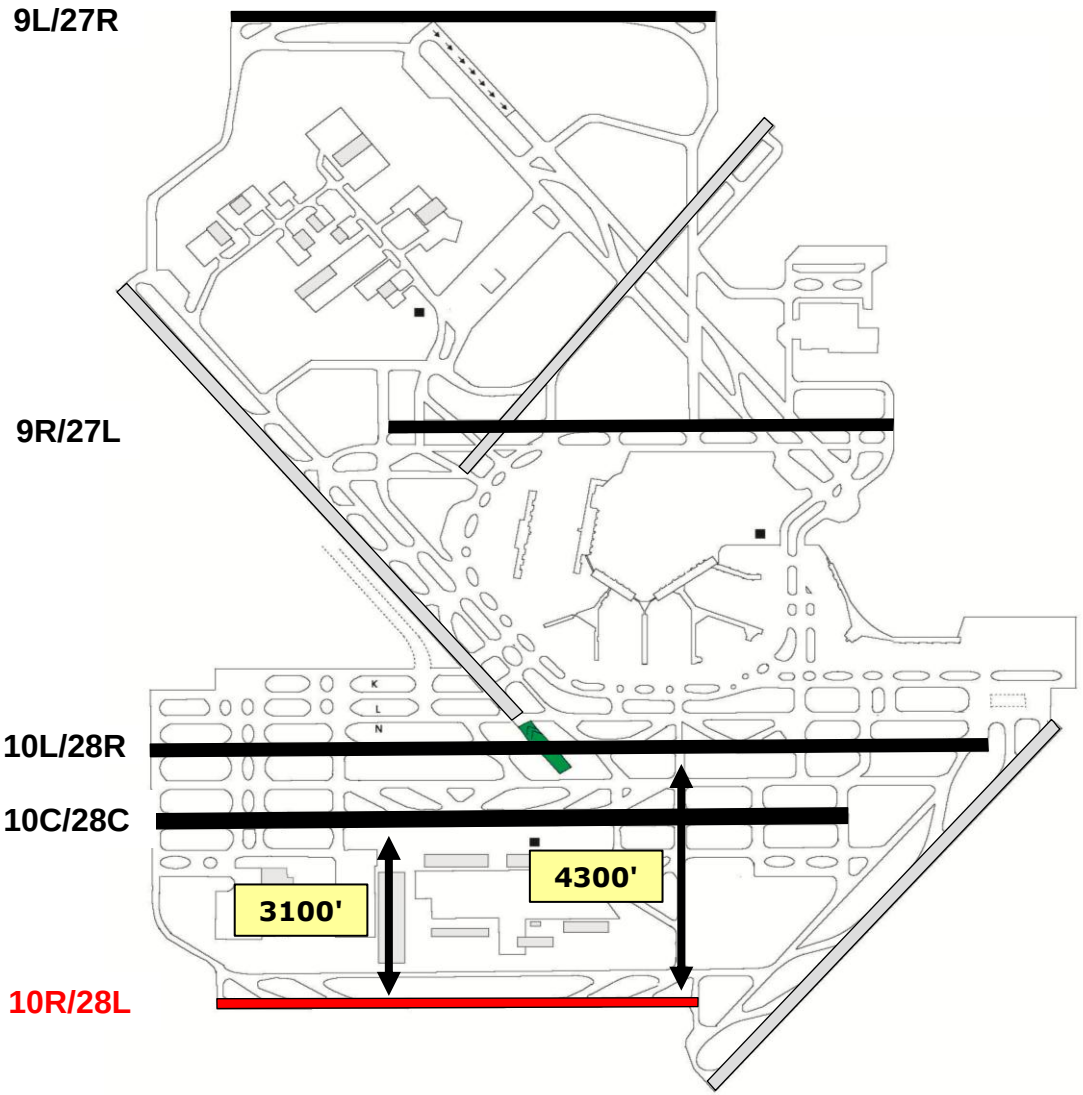


RWY 9R:

Expanded arrival spacing prohibits or restricts the use of the “High & Wide” TRIDE STAR.

This requires the use of the BENKY STAR and adds additional flying miles for the User.

Adding the 5th Parallel Runway



October 15, 2015

New RWY 10R/28L

7,500 X 150

Current challenges Integrating Runway 10R/28L operations.

An IAP under existing rules provides no Triple approach capability (using 10C) due to RCLS.

An IAP in conjunction with RWY 10L requires “High Update Radar “ and creates active arrival runway crossings.

An IAP in conjunction with Runways 9R/9L doesn’t provide long runway capability for arrivals.

Summary: With existing criteria, the current East Flow remains the most efficient configuration, until new options become available.

Upcoming Criteria Changes

Proposed changes to FAA JO 7110.65 Paragraph 5-9-7 a. 3.

CURRENT

3. Triple parallel runway centerlines are at least 5.000 feet apart and the airport field elevation is less than 1,000 feet MSL.

PROPOSED

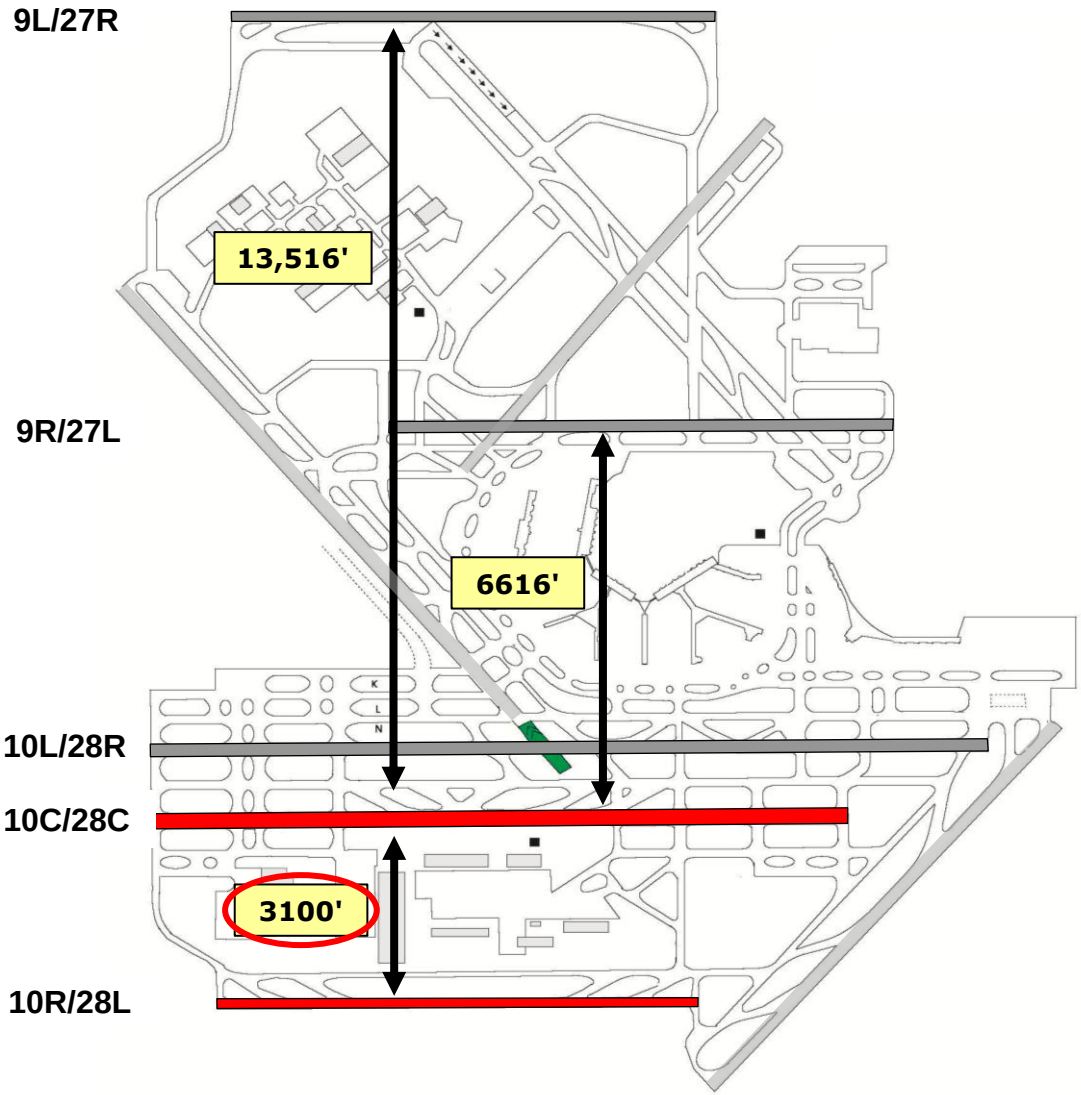
3. ***Triple parallel approaches may be conducted under one of the following conditions:***

(a) Parallel runway centerlines are at least 3,900 feet apart and the airport field elevation is 2,000 feet MSL or less; **or**

(b) Parallel runway centerlines are at least 3,000 feet apart, a 2.5° to 3.0° offset approach to both outside runways, and the airport field elevation is 2,000 feet MSL or less; **or**

(c) *Parallel runway centerlines are at least 3,000 feet apart, a single 2.5° to 3.0° offset approach to either outside runway while parallel approaches to the remaining two runways are separated by at least 3,900 feet,* and the airport field elevation is 2,000 feet MSL or less.

ORD benefits of rule change



Allows ORD to land:

1. RWY (10R /10C) and
2. Any other runway on the North side of Airport (9L or 9R).

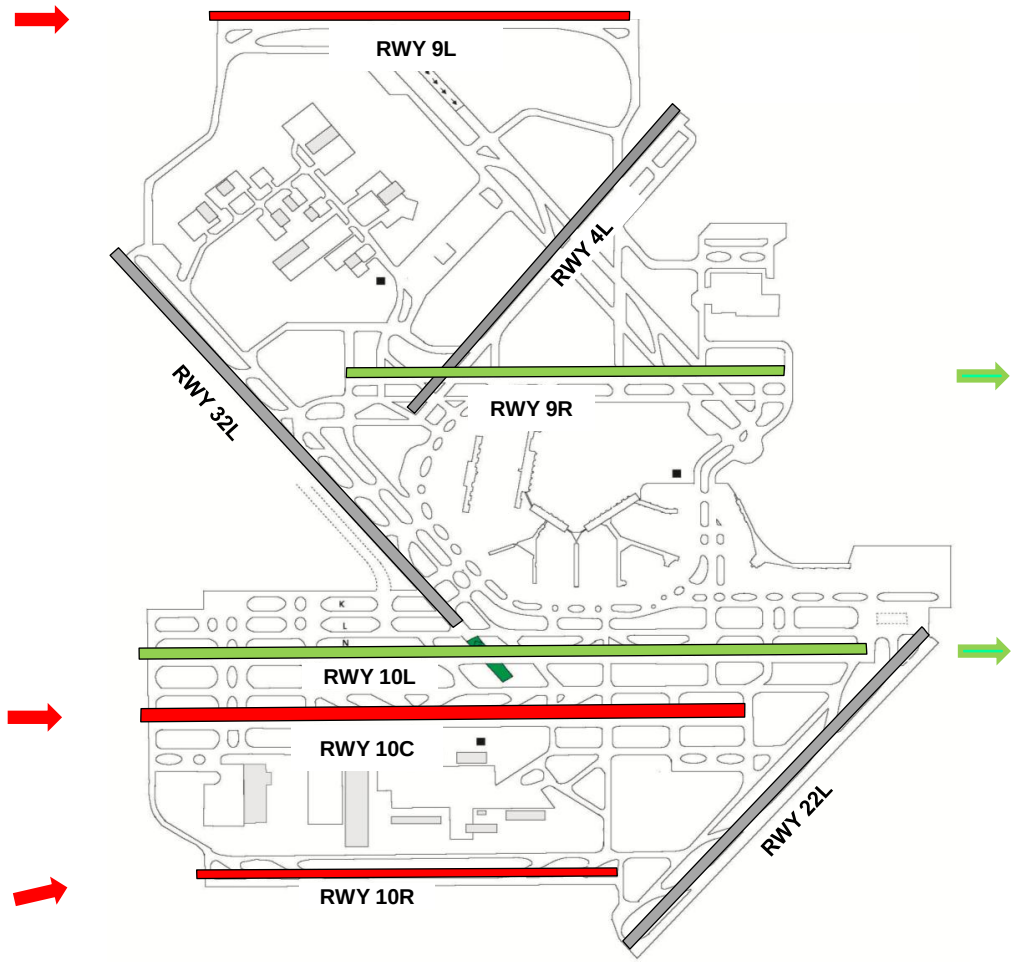
Note: High Update Radar not required.

Changes:

- (2) dedicated departure runways
- (3) dedicated arrival runways
- No active runway crossing
- No shared use runway

This East Flow configuration is capable of an 114 AAR over the current 92 AAR.

East flow



Arrival Runway

Departure Runway

Land: 9L/10C/10R

Depart: 9R/10L

Arrivals:

RWY 10R will utilize a 2.5 degree offset final approach course (including Visual Approaches).

Spacing on all (3) RWY's are unrestricted in VFR conditions.

PRM procedures used on (10R-10C) below 6,500/15 WX.

Departures:

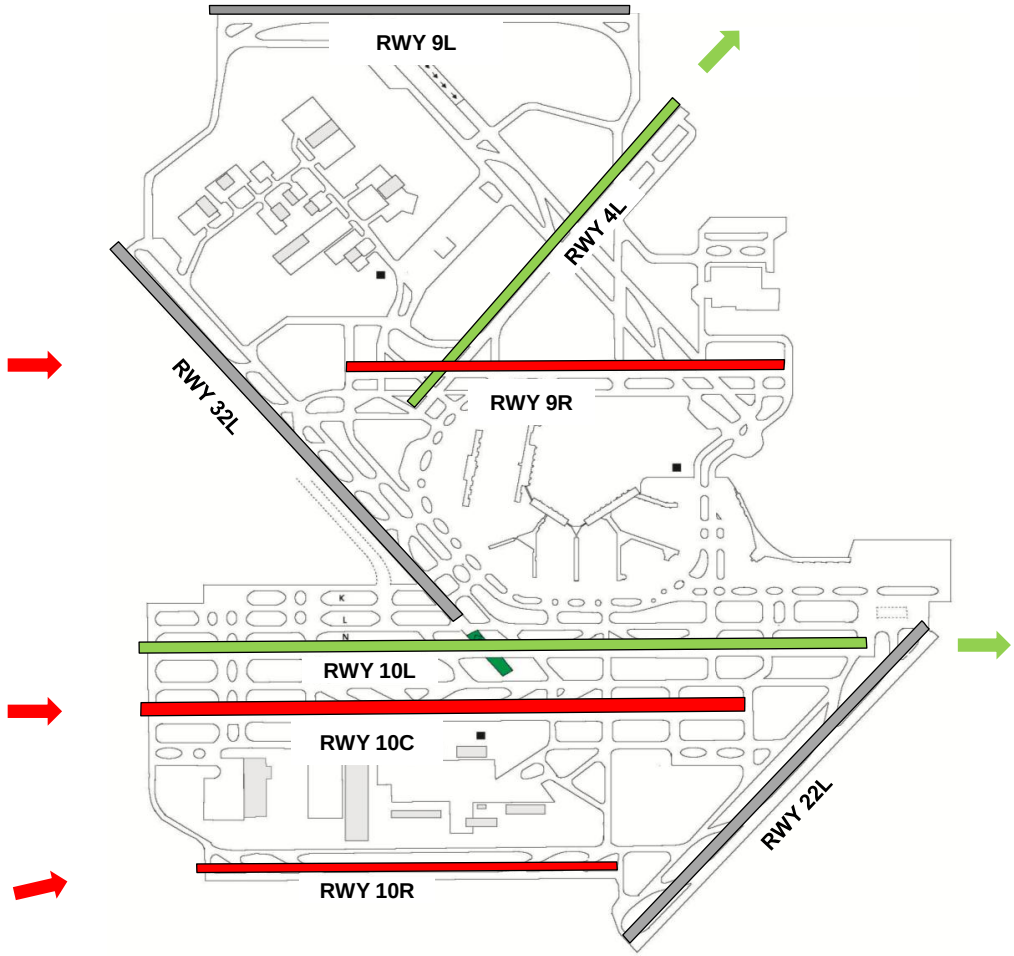
All Westbounds will depart around the North side of Airport (OLINN & PEKUE fixes included).

Configuration AAR:
VFR - 114
IFR – 106
CAT II-III N/A.

East flow using RWY 9R

Arrival Runway

Departure Runway



Land: 9R-10C-10R

Depart: 4L-10L

Arrivals:

RWY 10R will utilize a 2.5 degree offset final approach course (including Visual Approaches).

Spacing on all (3) RWY's are unrestricted in VFR conditions.

PRM procedures used on (10R-10C) below 6,500/15 WX.

Departures:

All Westbounds will depart around the North side of Airport (OLINN & PEKUE fixes included).

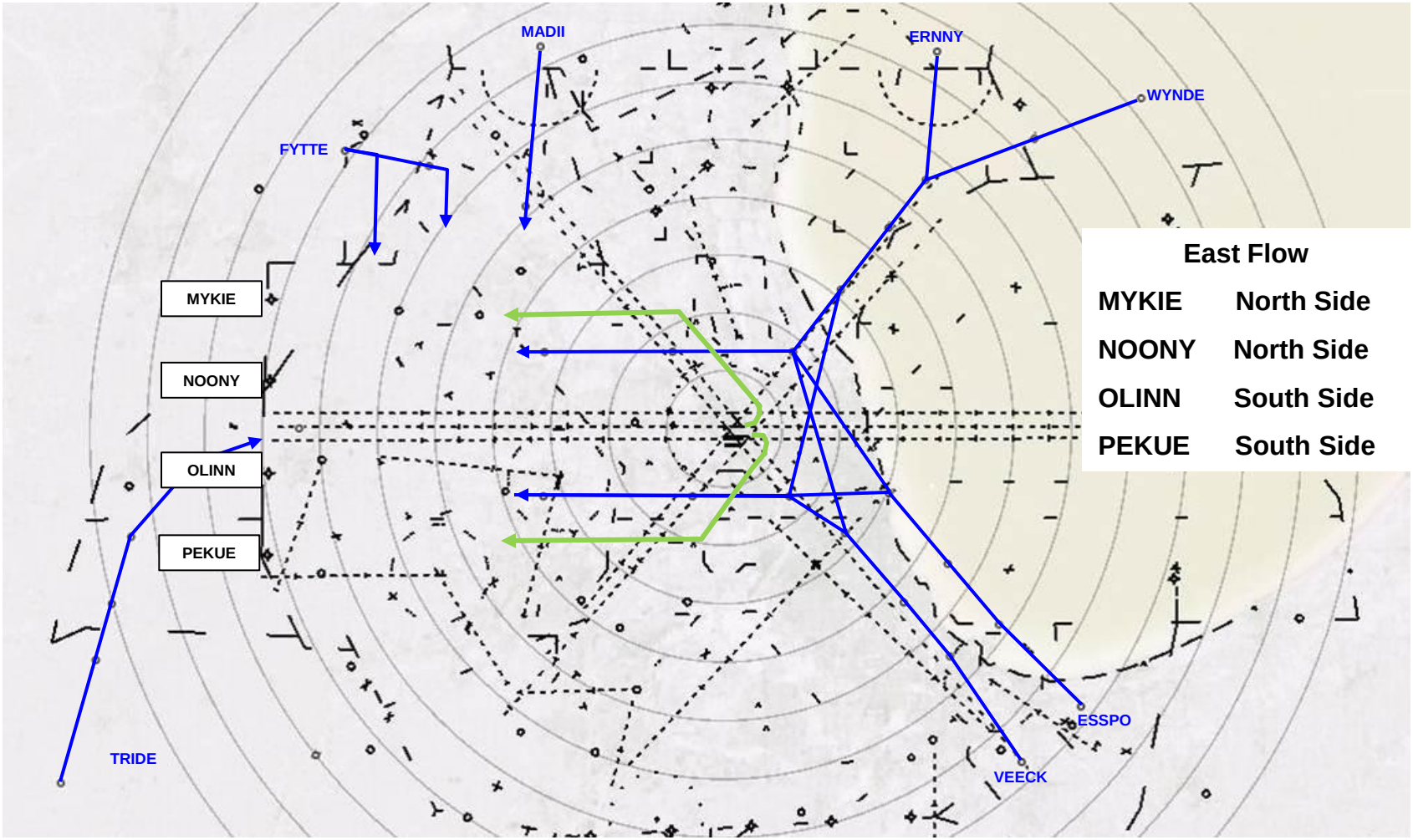
Configuration AAR:

VFR - 114

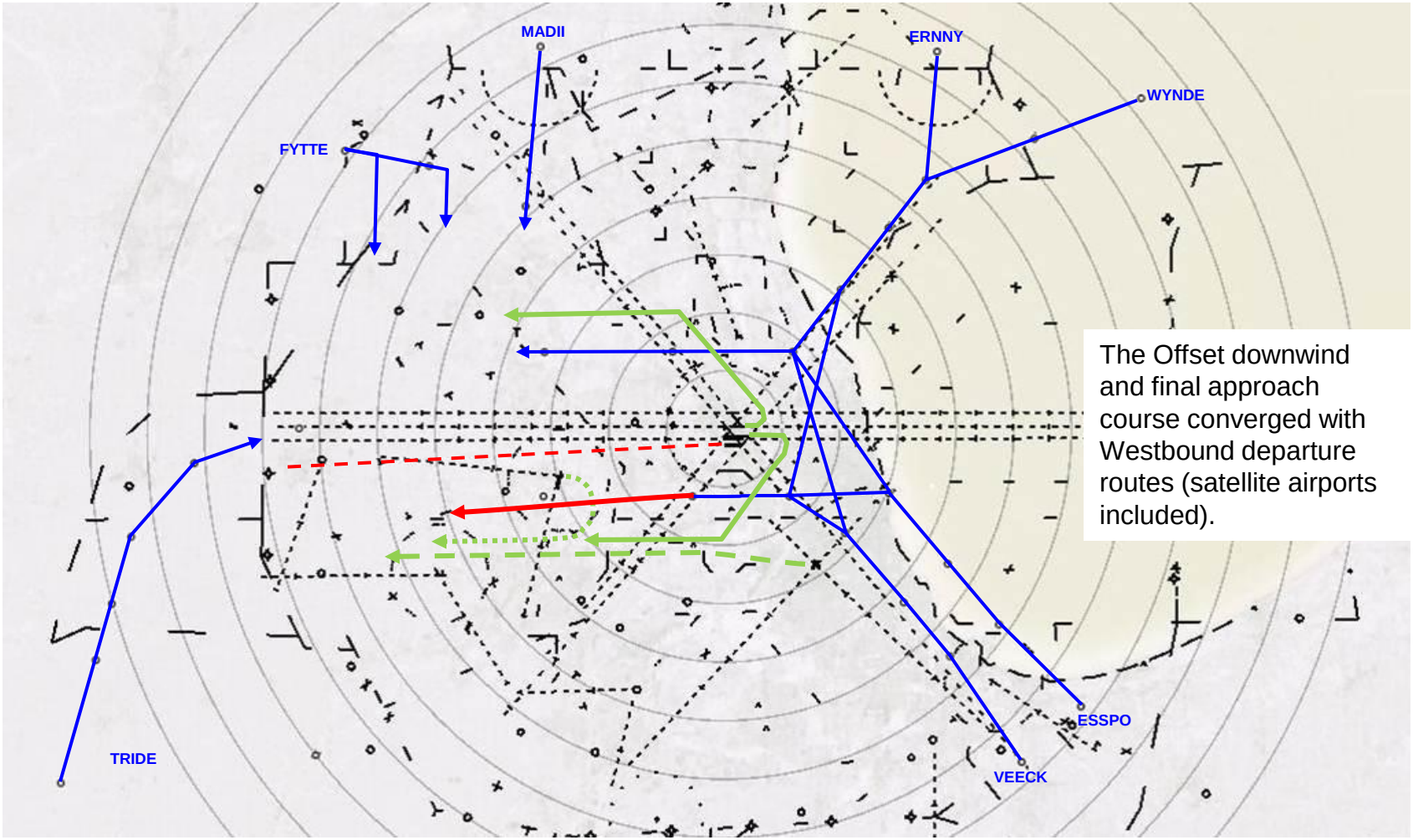
IFR – 106

CAT II-III N/A

Westbound Departures “Today”

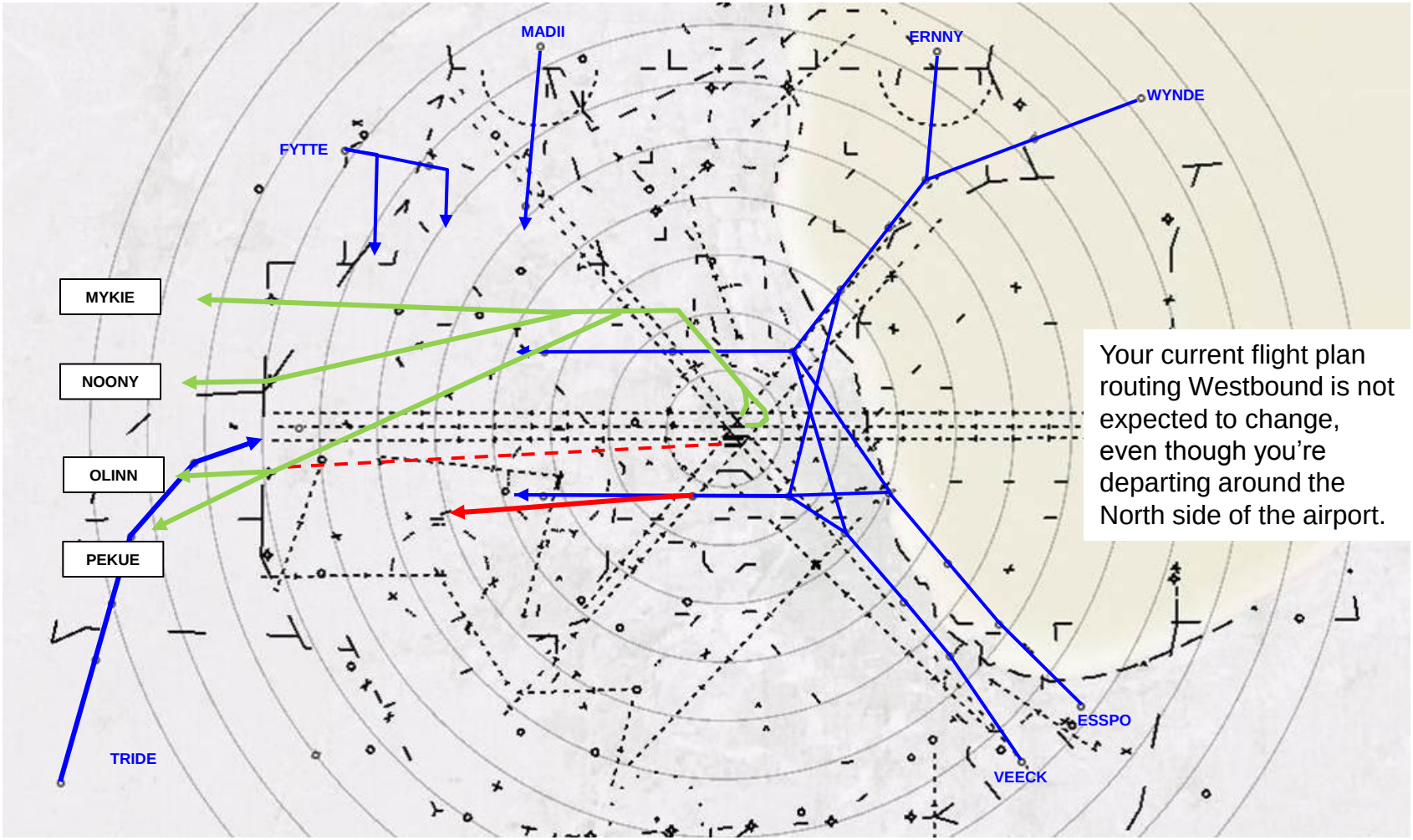


Westbound Departures “East Flow”



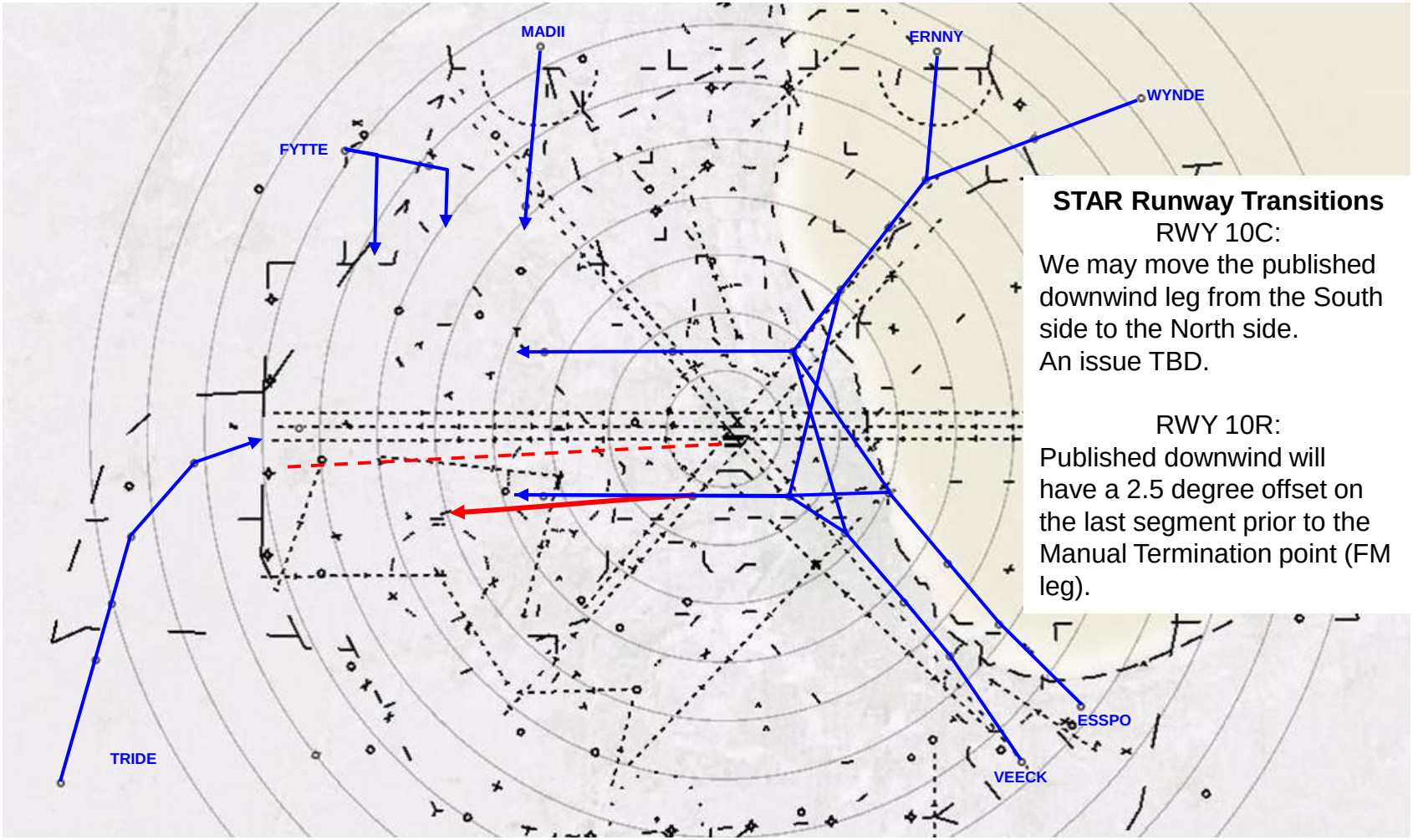
The Offset downwind and final approach course converged with Westbound departure routes (satellite airports included).

Westbound Departures “East Flow”



Your current flight plan routing Westbound is not expected to change, even though you’re departing around the North side of the airport.

RWY 10R “Offset” with STAR changes



STAR Runway Transitions

RWY 10C:

We may move the published downwind leg from the South side to the North side.
An issue TBD.

RWY 10R:

Published downwind will have a 2.5 degree offset on the last segment prior to the Manual Termination point (FM leg).

Visual Approach Procedures

Visual Approaches (FAA JO7110.65 7-4-4)

What's used today

Parallel runways separated by 4,300 feet or more.

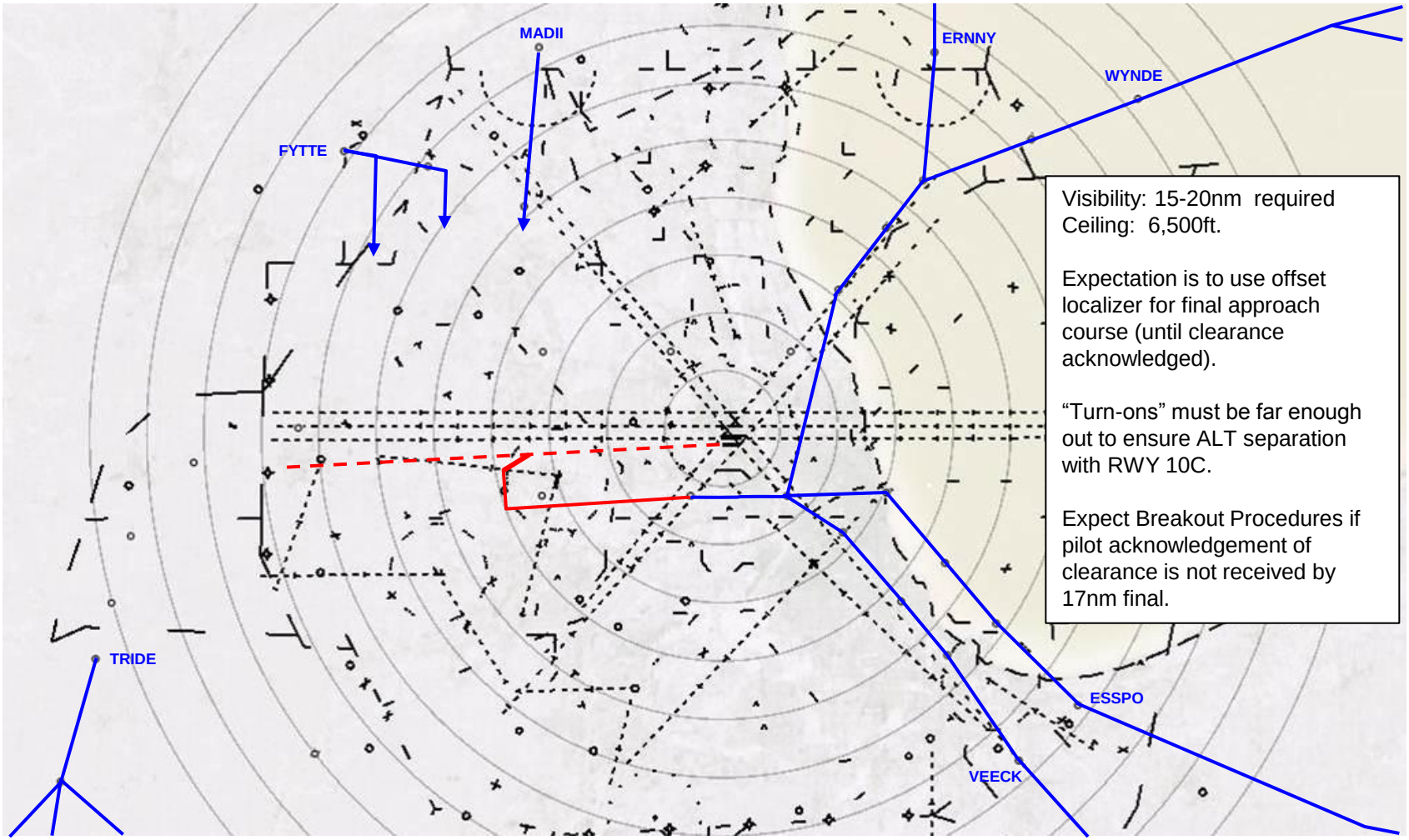
Standard separation is maintained until one of the aircraft has been issued and the pilot has acknowledged receipt of the visual approach clearance. Each **aircraft must be assigned headings** which will allow the aircraft to intercept the extended centerline of the runway at an angle not greater than 30 degrees.

RWY 10R Only

Parallel runways separated by at least 2,500 feet, but less than 4,300 feet.

Standard separation is provided **until the aircraft are established on a heading** which will intercept the extended centerline of the runway at an angle not greater than 30 degrees, **and each aircraft has been issued and one pilot has acknowledged receipt of the visual approach clearance**, and the other pilot has acknowledge receipt of the visual or instrument approach clearance.

RWY 10R Visual Approach



East Flow
When PRM Approaches are in use.

Ceiling < 6,500 feet **or**
Visibility < 15-20

RWY (9R or 9L): "On-center"
Simultaneous Independent ILS Approach using a Standard ILS or RNAV instrument Approach.

RWY 10C: "On-center"
Simultaneous Closely Spaced Parallel Approach using ILS PRM, RNAV PRM On-center approach.

RWY 10R: "Offset 2.5 degrees"
Simultaneous Closely Spaced Parallel Approaches using ILS PRM, RNAV PRM with 2.5 degree offset final approach course.

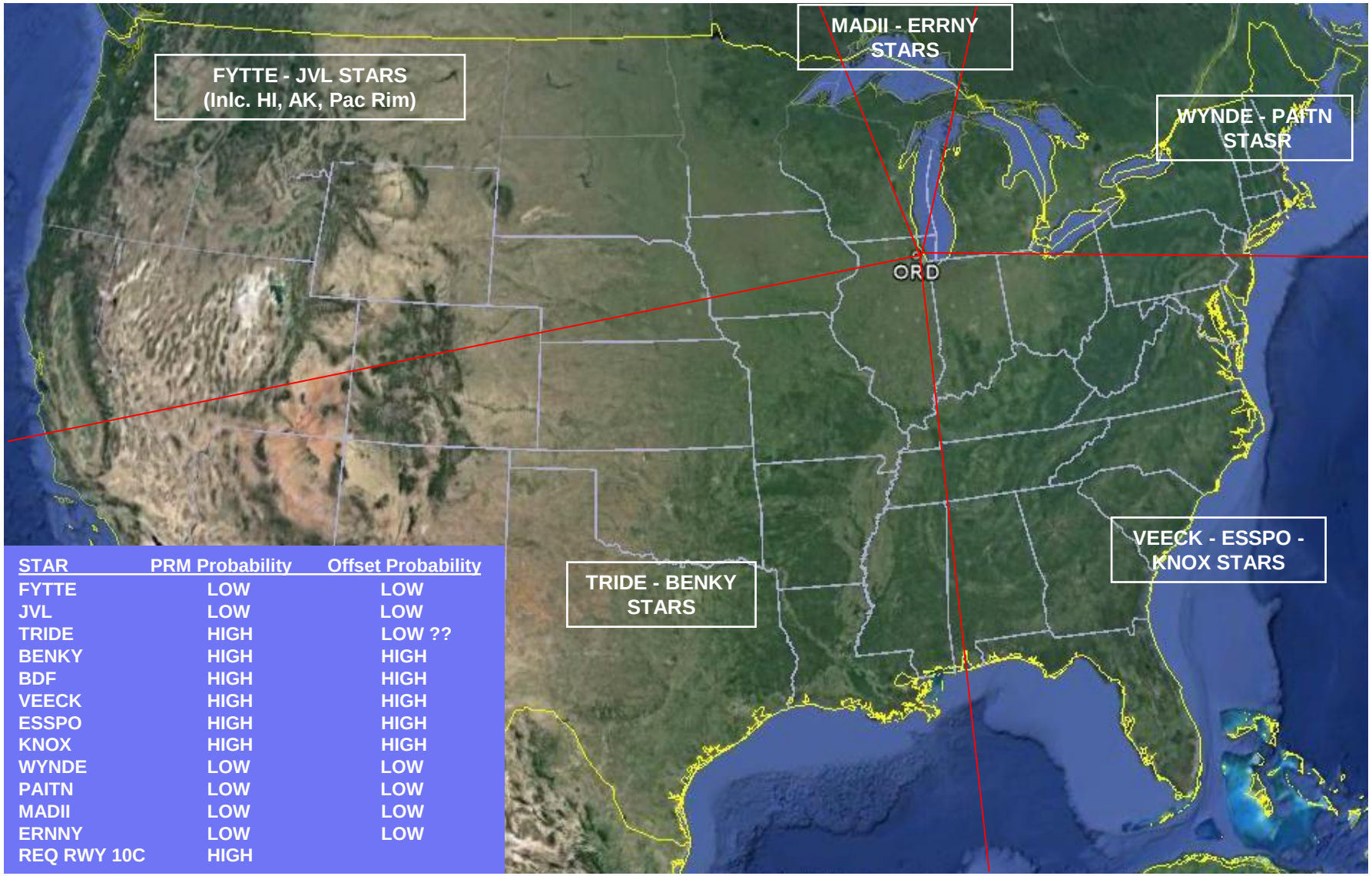
CLOSELY SPACED PARALLEL APPROACHES: PRM Instrument Approach Procedures will be conducted on RWYs 10C/10R when WX is below 6,500 ft. or 15nm.

SIMULTANEOUS INDEPENDENT ILS APPROACHES: Standard Instrument Approach Procedures (Non-PRM) will be conducted on RWYs 9L or 9R when PRM procedures are in use on (10C/10R).

Non-participating PRM aircraft on (10C/10R):

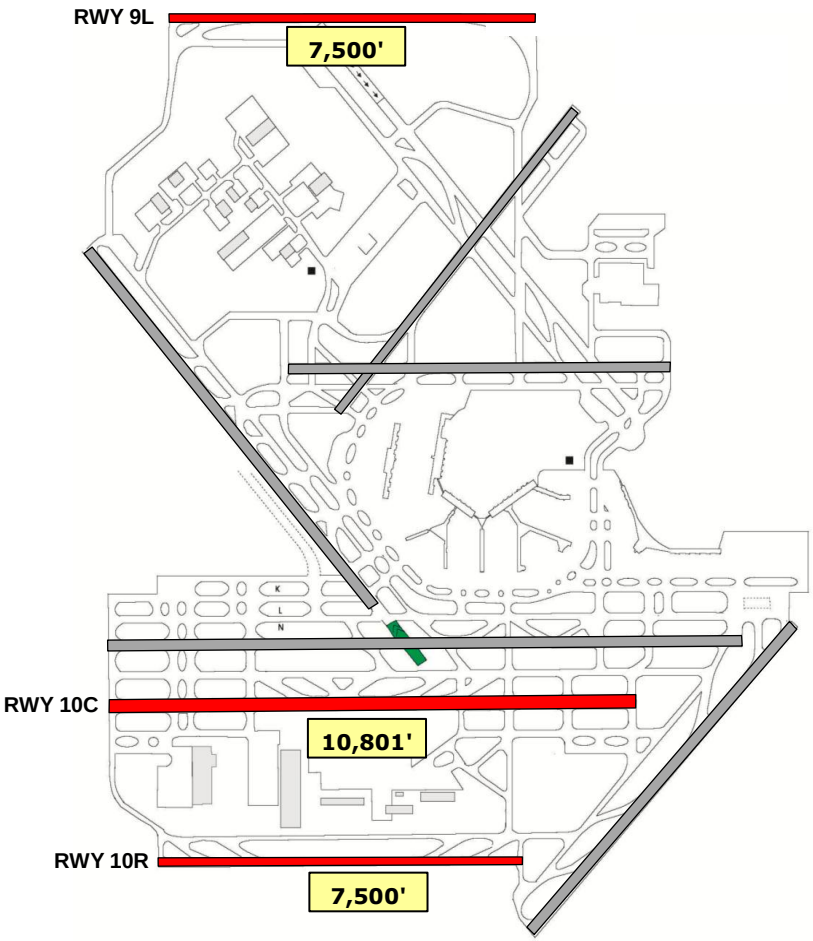
- Standard Instrument Approach Procedures will be used, and an arrival gap will be created on the closely spaced parallel runway **OR**
- You might be rerouted to the North runway, **OR**
- You might hold until an opportunity exists.

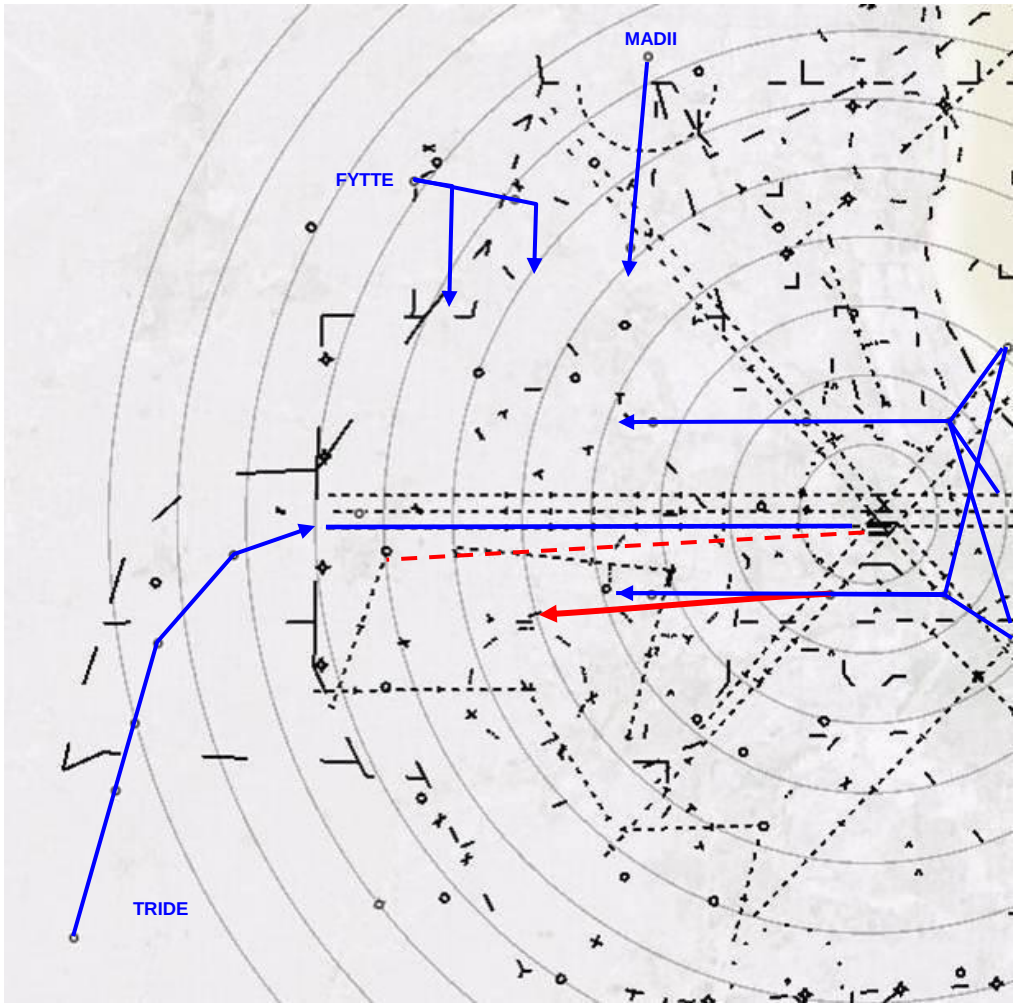
NOTE: Non-participating PRM aircraft will have an impact on the operation .



STAR	PRM Probability	Offset Probability
FYTTE	LOW	LOW
JVL	LOW	LOW
TRIDE	HIGH	LOW ??
BENKY	HIGH	HIGH
BDF	HIGH	HIGH
VEECK	HIGH	HIGH
ESSPO	HIGH	HIGH
KNOX	HIGH	HIGH
WYNDE	LOW	LOW
PAITN	LOW	LOW
MADII	LOW	LOW
ERNNY	LOW	LOW
REQ RWY 10C	HIGH	

RWY 10C requests vs. requirements





Stakeholder Participation

Non-Participation of PRM procedures (International & Domestic) will impact the operation. Impact to the operation will vary depending on many factors:

- Arrival route: From which direction you're arriving from.
- Timing: Arrival demand at the time.
- Traffic: Arrival bank fleet mix and direction of flight.
- Level of PRM participation (both "on-center" and "offset" procedures).
- Number of Flights requiring RWY 10C due to landing weight or equipment.
- Flights not advising ATC facility in a timely manner of non-participation.
  - AAUP will require ATC notification at least 100 nm out from Airport.
- Flights refusing shorter Runways (9L or 10R) for shorter taxi times.

Input

1. Concerns over Closely Spaced Parallel PRM Approaches:
    a. Expected level of PRM participation?
    b. User Concerns: “on-center” or “offset” PRM procedure?
    c. Who (if any) can conduct an “on-center” but not an “offset” PRM procedure?
    d. Concerns over RWY 10R PRM refusals when ORD is IFR or during snow events?
    e. Are there any briefing points Users would like to see included on the AAUP?
2. Discuss the various forms of non-participation that can impact the operation.
3. What type of Instrument Flight Procedure (beyond the ILS) gives ATC the highest utility in the event of a Glide Slope outage (GPS, RNP or GLS)?
4. Minimizing Pilot/Controller confusion by the exchanging of operational expectations.
5. Proper STAR and IFP design to meet both ATC and Industry requirements.
6. Industry; Contact your “Principal Operations Inspector” (POI) for training requirements on Closely Spaced Parallel Operations utilizing PRM Instrument Approach Procedures.

Input

7. When would Flight Crews recognize and advise ATC of their inability to participate in PRM Approaches. Could it happen within Terminal airspace?
8. Visual Approaches to Runway 10R; C90 ATC expects to utilize the (offset) localizer whenever conducting approaches to RWY 10R. ATC will instruct Crews to intercept the localizer, report the airport in sight. ATC cannot issue an Approach clearance until aircraft is “established” on the intercept heading (outside a 17nm final).
    a. How does ATC explain these expectations to Flight Crews; via the ATIS, during initial approach assignment, any other options?
    b. What type of approach to assign when expecting to intercept a localizer but cleared for a Visual?
    c. What requirements (if any) do users have for backup navigational guidance?
    d. What final approach course will crew intercept, “on-center” or “offset”?
    e. Would Flight Crews prefer or expect something different?
    f. What to advertise on ATIS?
9. If assigned a Visual Approach and the weather subsequently changes for the worse, how long does it take to brief and accept a PRM Approach?

Questions?