

Improving Capacity of Dual and Triple Converging Configurations

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FAA/MOIE

The logo for the MITRE Technology Program, featuring a stylized graphic of stacked blocks in yellow and orange to the left of the text.

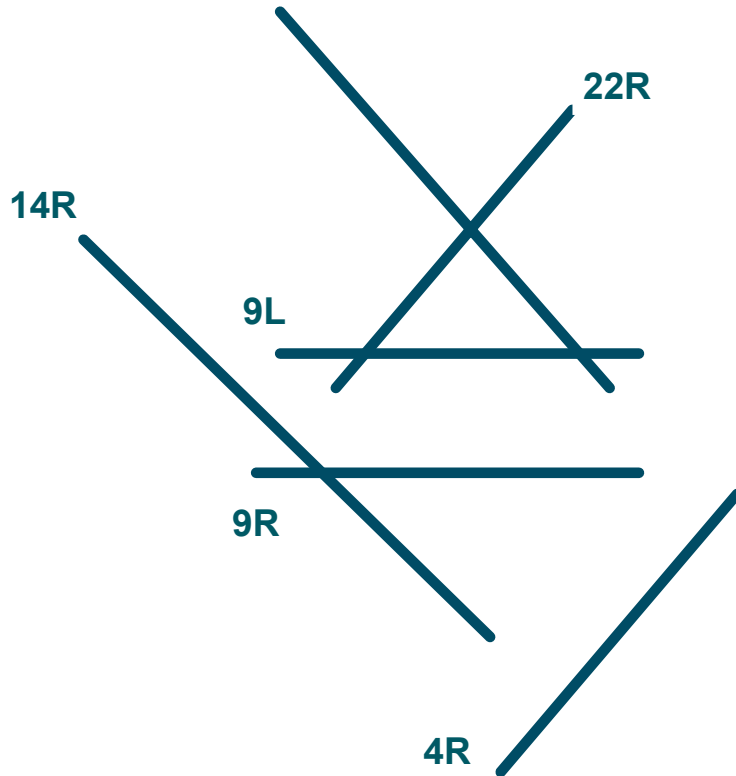
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Problem

- **The capacity of airports with triple runway configurations with a converging runway is reduced significantly in instrument meteorological conditions (IMC).**
- **Current dual converging runway procedures do not offer sufficient margin of benefit for important geometries.**

Background



Capacity of Chicago O'Hare

- **VMC: 90-110**
(depending on the configuration)
- **IMC: 70**

Objective

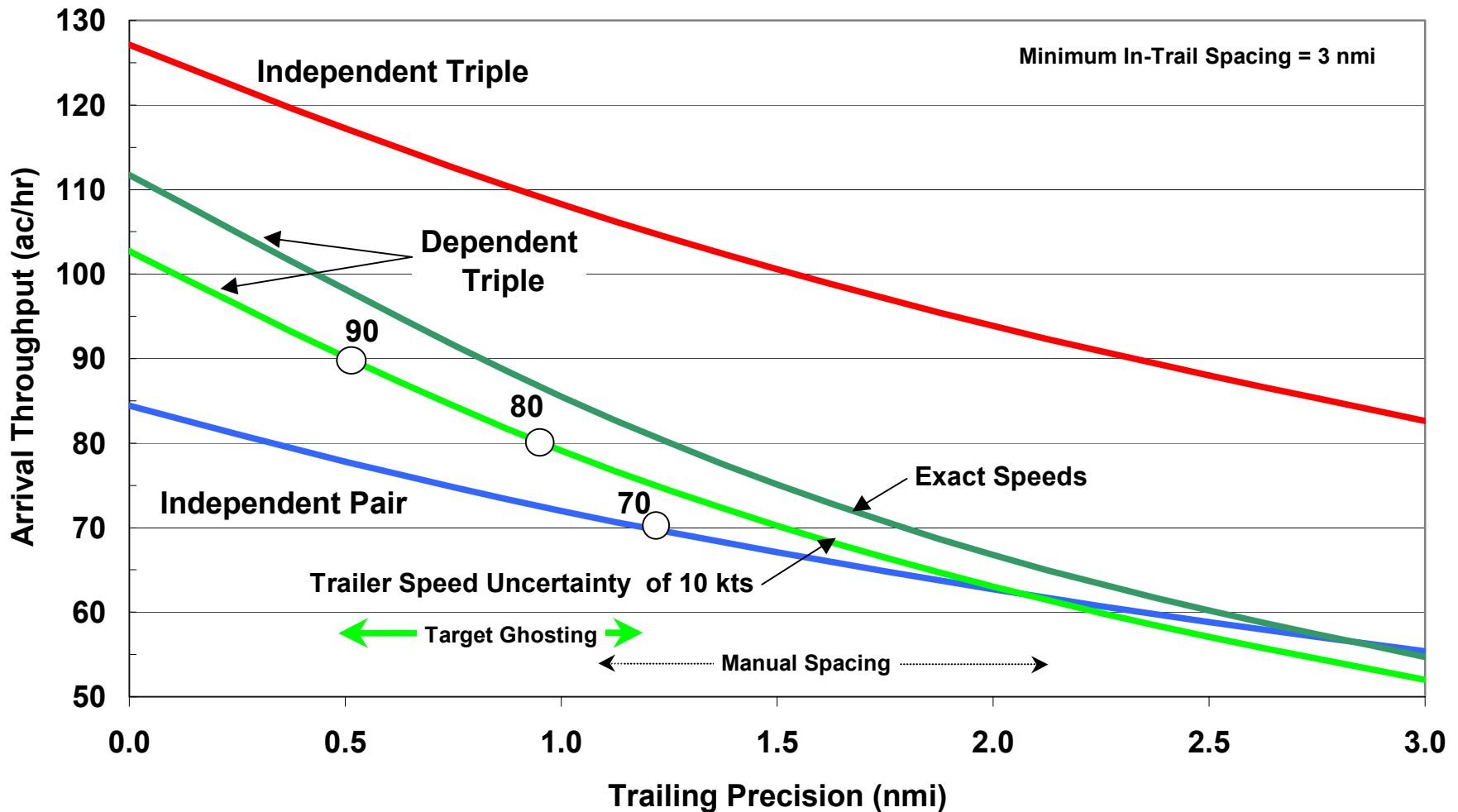
- **Develop procedures and technology concepts for improving capacity in IMC**
- **Use existing procedures as basis and consider simple technology increments**

Activities

- **ATC procedures and benefits**
 - enhance dependent converging runway approach procedure by narrowing range of expected aircraft landing speeds
- **Understanding landing speeds**
 - sources and accuracy of prediction
- **Providing information to automation**
 - down-link, cross-link
- **ATC and automation feasibility**

Highlight: Capacity Benefits

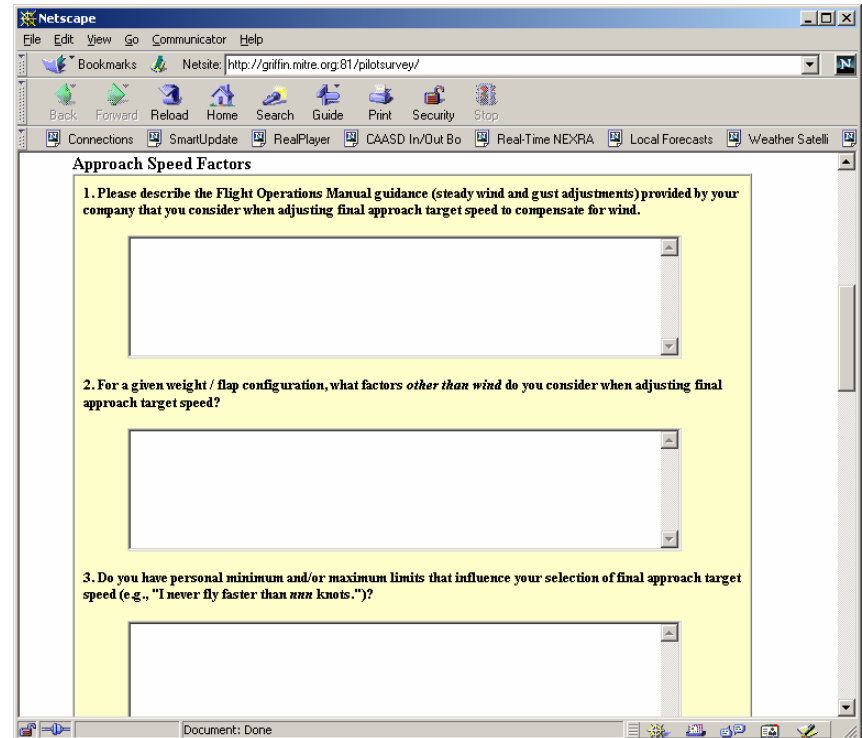
ORD Capacity with Pair Specific Staggers



Highlight: Landing Speeds

Data Collection Objectives:

- Identify the factors affecting approach target speed.
 - Instructor pilot interviews
 - On-line flight crew survey
 - Link from ALPA website
 - Hosted at MITRE
- Define speed prediction algorithm from sources
 - AOC weight/speed data
 - Flight ops policy guidance
- Determine accuracy of planned target speed vs. actual speed flown.
 - Compare predicted speed with ARTS derived speeds or speeds from Flight Operations Quality Assurance Data



Impacts

- **Identification of near-term and mid-term airport capacity enhancement possibilities for airports such as O'Hare in IMC as well as VMC**
- **Concepts for cost effective interim steps for advanced data links (e.g., ADS-B) for passenger carriers**
 - **no CDTI and no transfer of separation responsibility**

Future Plans

- ATC development
- Application to
- Integration with
- Technology
 - CPDLC
 - ADS-B
 - STARS

