

# Expertise differences in air traffic control: An eye-tracking study

## Citation for published version (APA):

Van Meeuwen, L., Jarodzka, H., Brand-Gruwel, S., Kirschner, P. A., De Bock, J., & Van Merriënboer, J. (2012). *Expertise differences in air traffic control: An eye-tracking study*. Paper presented at Annual Meeting of the American Education Research Association (AERA) 2012, Vancouver, British Columbia, Canada.

## Document status and date:

Published: 25/09/2012

## Document Version:

Peer reviewed version

## Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

## General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

<https://www.ou.nl/taverne-agreement>

## Take down policy

If you believe that this document breaches copyright please contact us at:

[pure-support@ou.nl](mailto:pure-support@ou.nl)

providing details and we will investigate your claim.

Downloaded from <https://research.ou.nl/> on date: 01 Dec. 2021

Open Universiteit  
[www.ou.nl](http://www.ou.nl)



# Expertise Differences in Air Traffic Control: An Eye-tracking Study

**Abstract.** Air traffic control (ATC) involves dealing with complex visualizations. Making decisions based on those visualizations requires not only conceptual but also perceptual skills, like efficient visual search of critical airplane compositions, their quick and correct interpretations, and the appropriate reactions. This study examined expertise differences in perceiving and interpreting ATC stimuli on a perceptual and performance level. Moreover, the potentially mediating influence of spatial abilities was investigated. Expertise differences were found between experts, intermediates and novices in ATC performance and eye movements. No expertise differences were found in spatial ability.

**Keywords:** expertise; eye tracking; spatial ability; instructional design; air traffic control