Book Review: Understanding the Misunderstandings in Pilot-Controller Dialogue

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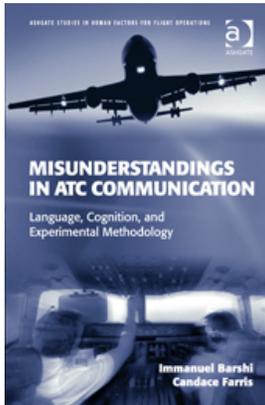
Book: Misunderstandings in ATC [*Air Traffic Control*] Communication
Authors: Immanuel Barshi & Candace Farris
Publisher: Ashgate Publishing Ltd
Year: 2013
Book Price: $98.95
eBook Price: $98.85
Length: 268 pages
Read Time: 8 hours
Read Rating: 5 – Very Easy
Book Rating: 4 – Good

Misunderstandings in any environment can be detrimental, if not counterproductive, to the intentions, expectations, or objective(s) of any communication, but in complex airspace congested by heavy traffic, pilot-controller transmissions, and various meteorological phenomena, they can be catastrophic. Barshi and Farris combine 45 years of aviation experience, 20 years of related research, and advanced education with sound methodology to deliver a well-balanced combination of theoretical and practical work to the fields of aviation, human factors, and psychology. Through *Misunderstandings in ATC Communications*, the authors guide readers through a series of experiments, literature, and transcribed air traffic control recordings to explore how linguistics and cognition impact communication in aviation.

The text is very well written, as should be expected of a book composed of two peer-reviewed capstone projects that were extensively reviewed and edited as a single published work. The publication follows a logical flow as the authors transition from a well-developed Introduction, to Part I, to Part II, and they close with an insightful conclusion section. In addition to providing scholarly, applied research, the authors include various instruments in the appendices that can be used to replicate original research when environmental or operational conditions change.

In Part I, Barshi employed qualitative and quantitative cognitive/psycholinguistic methods to investigate the phenomena of misunderstandings as impacted by controller-to-pilot message composition, pilot memory limitations, and ATC message deliveries. A qualitative review of ATC transcripts revealed interesting results in the form of high pilot-controller instruction read-back errors and the association among the foregoing and speech rate, message length, and complexity. Using the aforementioned categories as independent variables,

Barshi inculcated a series of quantitative experiments to substantiate the qualitative review. The findings of the Part I study support current ATC practices and disprove some assumptions about the relationships between independent variables and misunderstandings.

In Part II, Farris partially replicated and extended Barshi's 1997 seminal work on aviation communications conducted in a second language. The replicated portion of the study explored the earlier noted independent variables of Barshi's work. Farris extended the study by exploring the impacts of concurrent task performance and cognitive workloads. The results of the study contribute significantly to the previously existing body of knowledge.

Although Barshi and Farris generated significant findings for the aviation psychology discipline, the current price of the text is somewhat unattractive for the average buyer, but probably just right as a student text. Make no mistake, *Misunderstandings in ATC Communications* is not for the layman. The above *Read Rating* assumes the reader is, at minimum, a graduate student in a related discipline.

Barshi and Farris couple their graduate research to deliver a scholarly and insightful experience to the human factors, psychology, and aviation communities. I would highly recommend this exceptional book as a graduate course text in the aforementioned disciplines.
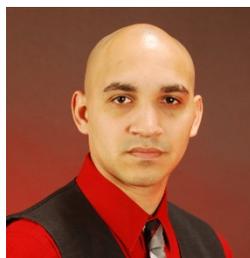
Dr. (Major) Jason Newcomer, U.S. Air Force, is the Chief of Airfield Operations Strategic Planning at the Air Force Flight Standards Agency and an Assistant Professor of Aeronautics at Embry-Riddle Aeronautical University–Worldwide. As a Federal Aviation Administration certified air traffic controller and USAF certified airfield manager, he leads the branch that develops the air traffic control and landing systems Master Plan and annual Modernization Strategic Plan. He holds a Doctorate in Business Administration (DBA) specializing in Leadership (Walden University) and a Master of Aeronautical Science specializing in Space Studies and Aerospace Operations (Embry-Riddle Aeronautical University).