

# What should we teach Native English speakers?

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# Workshop Outline

Introduction

ICAO requirements for Native English Speakers – ICAO 2010

What do they mean in practice?

Teaching those requirements

How should they be taught?

# Introduction

- Who I am

*Linguist and Flight Instructor; research in aviation communication*

- Who you are
- What we want to get out of this workshop

# Introduction: Who I am

## **Pilot**

Glider pilot since 1987 (USA, France, Australia; 800+ hrs)

Power pilot (French PPL; Australian CPL; 1800+ hrs)

Flight Instructor since 2009:      General Aviation in Australia (900+ hrs)  
VFR; single-engine airplane

English Language Proficiency Assessor (CASA, 2018)

# Research Collaboration with Brett Molesworth (UNSW)

- Questionnaire-based surveys of EL2 and NES pilots in Sydney and ACT
- Flight simulator experiments
- Analysis of LiveATC recordings:
  - Sydney Approach/Departure
  - Sydney, Los Angeles, Hong Kong, Tokyo



## Publications

- D. Estival & B. Molesworth (2009) A study of EL2 pilots' radio communication in the General Aviation environment. *Australian Review of Applied Linguistics*. Vol.32, No.3.
- D. Estival & B. Molesworth (2012) Radio Miscommunication: EL2 Pilots in the Australian General Aviation environment. *Linguistics and the Human Sciences*. Vol.5, No.3.
- R. Jang, B. Molesworth, M. Burgess, D. Estival (2014) Improving Communication in General Aviation through the use of Noise Cancelling Headphones. *Safety Science*, 62, pp.499-504.
- B. Molesworth & D. Estival (2015) Miscommunication in general aviation: The influence of external factors on communication errors. *Safety Science*, 73, pp.73–79.
- D. Estival, C. Farris & B. Molesworth (2016) *Aviation English: A lingua franca for pilots and air traffic controllers*. Routledge Research in English for Specific Purposes. Paltridge and Starfield, eds.
- Q. Wu, B. Molesworth, D. Estival (submitted) Investigating miscommunication in commercial aviation between pilots and air traffic controllers.
- D. Estival & B. Molesworth (submitted) Error types in air-ground pilot communication: an experimental study.

# Research results: Pilot studies (2009-2012)

Perception of EL2 pilots as a threat to safety.

Free text answers

First Pilot Study – only 3 responses (out of 36 pilot participants)

- #1 pilots whose first language is not English
- #20 it's very hard when pilot is mumbling/broken English
- #36 Bloody Indians

Second Pilot Study – many answers (83 pilot participants), e.g.:

Very difficult to understand overseas pilots so their position reports approaching & within circuit at busy airports means constant & dangerous guess work.



# Research results

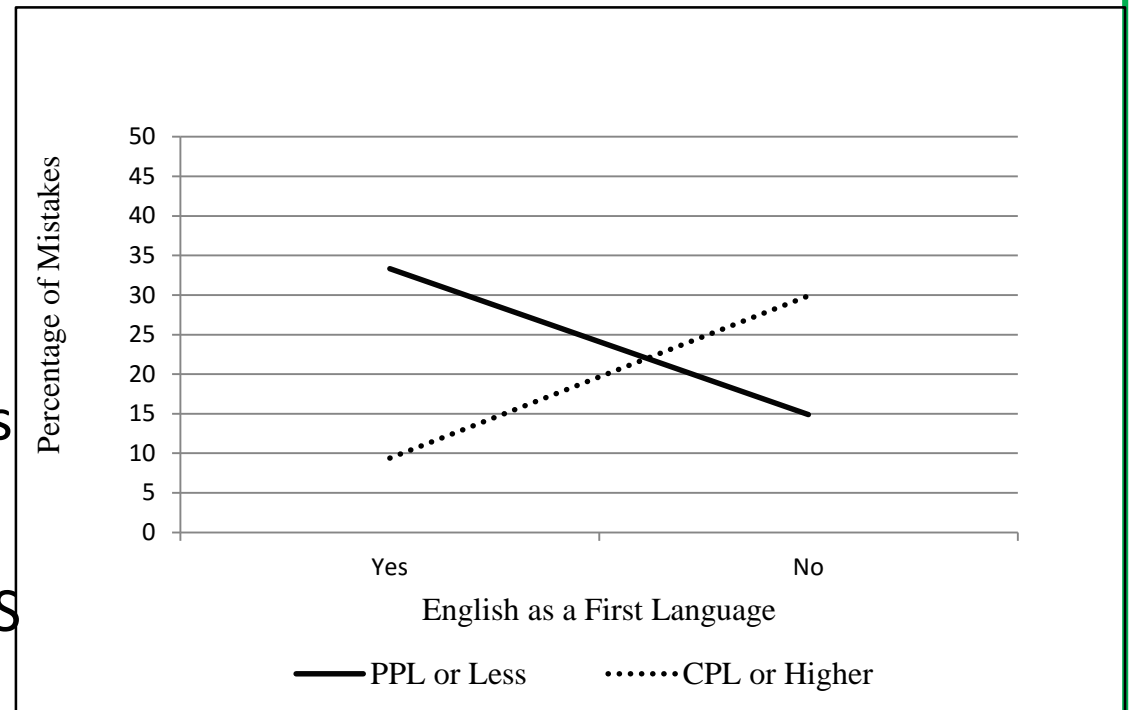
- **Questionnaire-based surveys of EL2 and NES pilots in Sydney and ACT:**
  - 1) Understanding other pilots is the most difficult of communication tasks
  - 2) Perception of EL2 pilots as a threat to safety
- **Flight simulator experiments**
  - 1) Overall NES pilots made fewer communication errors than EL2 pilots **BUT**
  - 2) The EL2/NES distinction was confounded by other factors:
    - *higher information density and greater pilot workload*  
offset any native language advantage (i.e. no difference between EL2 and NES),
    - *ATC speech rate* had a significant impact only on **low qualified EL2 pilots** (PPL or less).

# Research results

- **Type of error: omissions and mistakes**

With high ATC speech rate:

- Significant difference between EL2 and NES:
  - More **mistakes** for low qualified NES pilots
  - More **omissions** for low qualified EL2 pilots
- With higher qualification (CPL or higher), no significant difference between EL2 and NES



Percentage of mistakes out of errors with high ATC speech rate

- **Category of error: words and numerals**

- 1) More mistakes for numerals than for words
- 2) More omissions for words than for numerals





# Research results

- **Analysis of LiveATC recordings (Sydney Approach/Departure)**

- 1) Number of errors:

*higher information density* had a significant impact only for accented pilots

- 2) Type of errors:

*omissions* in readbacks for both native English sounding and accented pilots,  
but *mistakes* in readbacks only for accented pilots.

# Introduction

- Who I am

*Linguist and Flight Instructor; research in aviation communication*

- Who you are

*Pilots? Flight instructors? Aviation English teachers?*

- What we want to get out of this workshop

*Tips for better teaching AE and for better flight instructing  
Suggestions to ICAO?*

Worksheets:

email to [d.estival@westernsydney.edu.au](mailto:d.estival@westernsydney.edu.au)

or: [googledoc](#)

# ICAO Guideline for Native English Speakers – ICAO 2010 (Doc 9835)

What are they?

# ICAO Guidelines for Native English Speakers – ICAO 2010 (Doc 9835)

3.3.3 [...] users with high proficiency must *accommodate their use of language* so as to remain intelligible and *supportive to less proficient* users.

4.5.3 [...] e) Proficient speakers shall use a dialect or accent which is *intelligible to the aeronautical community*.

**➔ Production must be intelligible**

# ICAO Guidelienes for Native English Speakers – ICAO 2010 (Doc 9835)

4.5.10 [...] native speech should not be privileged in a global context.

5.3.2.1 [...] the burden for improved communications should not be seen as falling solely on non-native speakers.

5.3.1.3 [...] Native speakers of English, in particular, have an **ethical obligation** to *increase their linguistic awareness* and to take special care in the delivery of messages.

➔ **Awareness of potential difficulties for EL2**

# ICAO requirements for Native English Speakers – ICAO 2010 (Doc 9835)

## 5.3.1.4 [...]

- b) native and other expert users of English can acquire *strategies to improve cross-cultural communications*;
- c) native and other expert users of English can *refrain from the use of idioms, colloquialisms and other jargon* in radiotelephony communications and *can modulate their rate of delivery*; and
- d) native speakers are under the same obligation as non-native speakers to ensure that their variety of English is comprehensible to the international aviation community.

# ICAO Guidelines for Native English Speakers

## – ICAO 2010 (Doc 9835)

5.3.3.2 In this context, native speakers aware of the challenges faced by speakers of English as a foreign language (EFL) can take greater care in their speech. Native and highly proficient speakers can, for example, focus on *keeping their intonation neutral and calm*, admittedly difficult at busy control areas, but a good strategy to calm the language anxiety of an EFL speaker. They can take particular care to be explicit, rather than indirect, in their communications and train themselves away from the use of jargon, slang and idiomatic expressions. They can ask for readbacks and confirmation that their messages have been understood. They can also attend more carefully to readbacks in cross-cultural communication situations, *taking greater care to avoid the pitfalls of expectancy*, where a pilot or controller expecting a given result unconsciously affects the outcome. Additionally, a slower rate of delivery seems to make speech more comprehensible; therefore, taking care to *moderate speech rate* is a common-sense approach to improving communications.

# ICAO Guidelines for Native English Speakers

## – ICAO 2010 (Doc 9835)

5.3.3.7 While accent can sometimes be difficult to control, speakers can control intelligibility by *moderating the rate of speech, limiting the number of pieces of information per utterance, and providing clear breaks between words and phrases.*

5.3.5.2 [...] While communication errors will probably never completely go away, disciplined use of ICAO standardized phraseology, compliance with the ICAO language proficiency requirements, alert awareness of the potential pitfalls of language, and an **understanding of the difficulties faced by non-native English speakers** will enable pilots and controllers to more readily recognize communication errors and work around such errors.



# CAP 1375 (Barbara Clark, 2017)

## Identified issues with NES:

- Deviation from standard phraseology
- Not adhering to ICAO number pronunciation

## Recommendations (p.32):

- Native English speakers should think of English in the flight deck or over the radio as not English as they know it, but instead as a different 'language'.
- On-going language awareness training should be implemented.
- Language awareness training should emphasise the elimination of local slang and non-standard phraseology.
- Language awareness training should incorporate awareness of non-native English listeners in training.

# What do the guidelines mean in practice?

Examples of NES interacting with EL2: failures and successes

# Teaching NES to those guidelines

Are they taught?

Which ones?

Where, and by whom?

How are they taught?

# How should they be taught?

GA NES student (almost PPL by then) on a nav flight to Canberra last January

YSCB: MHF, squawk xxxx. remain outside controlled airspace. Maintain 5000.

MHF: Squawk xxxx. Maintain 5000. MHF.

YSCB: MHF. Identified. Direct to the field. Maintain 5500. Do you have information C? QNH xxxx  
[was not maintaining assigned altitude].

Student to instructor: “What was that?”

Instructor to student: “Tell her we do have the QNH. You need to maintain 5500”

MHF: Yes, we have the QNH.

YSCB: Say again, MHF.

Instructor to student: “AFFIRM, you should say ‘Affirm’.”

MHF: Affirmative.

YSCB: (Pause) MHF, say again. I didn’t quite get that last transmission?

MHF(I): Affirm, QNH xxx. MHF.

➔ Refresher on the ground about phraseology (Yes/No – Affirm/Negative)...

UNSW student (airline pilot) on IFR flight from Gold Coast to Sydney.  
Understood “Best rate to 80” as “Best rate 280”.

Pilot: XYZ. Passing 1500. Climbing 6000.

BN Approach: XYZ. Identified. Cancel speed. Best rate to 80.

Pilot: (Pause) Flight level 280. Cancel speed. XYZ.

[...] later, changed frequencies, now on BN Centre

Pilot: XYZ. Climbing Flight level 280.

BN Centre: XYZ. Confirm level.

Pilot: 280.

ATC: Climb amended 180.

➔ Phone call from Airservices on the ground...

# Should there be requirements for NES in addition to the guidelines in Doc 9835?

- Which ones?
- How should they be taught?

# Outcomes of the workshop

- Discussion
- Collate suggestions
- Collect worksheets  
or email to [d.estival@westernsydney.edu.au](mailto:d.estival@westernsydney.edu.au).  
or: [googledoc](#)