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Language Awareness and Intercultural Competence as Human Factors in Pilot-Controller Communication

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Language awareness and intercultural competence as human factors in pilot-controller communication

LHUFT risk – remove before flight ○



1. Introduction



1. Introduction

Ground: echo india, echo tango [delta?] five oh tree, where do you park?

ETD 503: bravo twenty eight, sir

Ground: what taxiway? the letter?

ETD 503: oh negative, sir, we are on two two right holding short of foxtrot

Ground: what taxiway do you enter the ramp?

ETD 503: ok, sir, we just exit the runway and we're holding short of foxtrot on two two right

Ground: you're no listening to what I'm asking you, what taxiway do you enter the ramp?

ETD 503: I'm not on the ramp yet, sir

Ground: what taxiway do you enter the ramp? tell me! what letter?



1. Introduction

Ground: Echo india (.) echo tango [delta] five oh tree where do you park?

ETD 503: Bravo twenty eight **Sir**

Ground: **What taxiway?** The letter?

ETD 503: Oh negative **Sir** we are on two two right holding short of foxtrot

Ground: **What taxiway do you enter the ramp?**

ETD 503: Ok, we just exit the runway and we're holding short of foxtrot on two two right

Ground: You're no listening to what I'm asking you (.) **What taxiway do you enter the ramp?**

ETD 503: I'm not on the ramp yet **Sir**

Ground: **What taxiway do you enter the ramp?** Tell me! What letter?

(liveatc.net, Oct 27, 2006)



1. Introduction



ZRH: Swiss



DFW: American Airlines



LHR:
British Airways



1. Introduction



LAX left to right: British Airways, China Airlines, Emirates,
Air France, Japan Airlines, Lufthansa, Asiana Airlines

(Alan Wilson, CC BY-SA 2.0, via Wikimedia Commons; last accessed May 1, 2018)



1. Introduction: situational awareness → Aviation English



LAX “Wake Turbulence” (© Mike Kelley 2014; circles added)



1. Introduction: accidents/incidents → Aviation English

→ accidents/incidents

- Tenerife (1977) and India (1996) → turning points (Maurino)
- “The results of an ASRS Study (NASA’s Aviation Safety Reporting System) found that about a third of the accidents in air traffic were connected to complications in communication” (Dietrich 2003:6)
- 1971-2002: 26 language-related accidents (Jones 2003: 237-239)
- 1982-1991: “pilot-controller miscommunication contributed to at least 11 per cent of fatal crashes worldwide” (Crystal 2003:110)
- communication as a human factor in accidents/incidents is under-investigated and has most likely contributed to more accidents/incidents than previously thought (Mathews 2018: personal communication)
- → **need for more investigation and improvements** to further **reduce communication-related accidents/incidents** and **increase efficiency** (cf. also *ICAO 2017-2019 Global Aviation Safety Plan*, “human factors” as one of four focus areas)



2. Language awareness



2. Language awareness

- pilots and controllers are encouraged to use standardized phraseology whenever possible
 - “ICAO standardized phraseology shall be used in all situations for which it has been specified. Only when standardized phraseology cannot serve an intended transmission, plain language shall be used.” (ICAO 2016a:5-1)
 - “[...] plain language, which should be **as clear and concise as possible** [...]” (ICAO 2016b:12-1; my emphasis)



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example:

GND: Lufthansa 401 I’m sorry [???] your last question

LH401: Lufthansa 401, we have a little problem and do you have contact with a car nearby the VOR station to look at our airplane

GND: What do you need me to look at?

LH401: Seems we have a refueling panel near the, eh, body, eh, open, maybe it’s closed and the switch, eh so if you could look

(www.liveatc.net, downloaded 2006)



2. Language awareness

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 - ➔ “ICAO standardized phraseology shall be used in all situations for which it has been specified. Only when standardized phraseology cannot serve an intended transmission, plain language shall be used.” (ICAO 2016a:5-1)
 - ➔ “[...] plain language, which should be **as clear and concise as possible** [...]” (ICAO 2016b:12-1; my emphasis)
- ➔ however, plain English is often also used unnecessarily

The Sydney Morning Herald

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Dr Estival said she has heard pilots in Australia saying “cleared for the big smoke” when cleared for takeoff, which was potentially dangerous in a situation where they were communicating with a non-English speaker.

(Sydney Morning Herald, Oct 16, 2016)



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 - “[...] plain language, which should be **as clear and concise as possible** [...]” (ICAO 2016b:12-1; my emphasis)
- however, plain English is often also used unnecessarily
 - **native speakers must “increase their linguistic awareness and [...] take special care in the delivery of messages”** (ICAO 2010:3-2 [Manual on the Implementation of ICAO Language Proficiency Requirements]; my emphasis)



2. Language awareness: ZRH tower & LOT 411



ATC: LOT four one one, tower, good morning, wind two t(h)ree zero degrees, one t(h)ree knots, runway one four, cleared to land – you may vacate at convenience

LOT: cleared to land, LOT four one one

LOT: tower, LOT four one one, go around due to technical problem

ATC: LOT four one one, that is copied and follow the standard missed approach procedure please

(liveatc.net, March 1, 2017)



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2. Language awareness: JFK tower & GLG 700



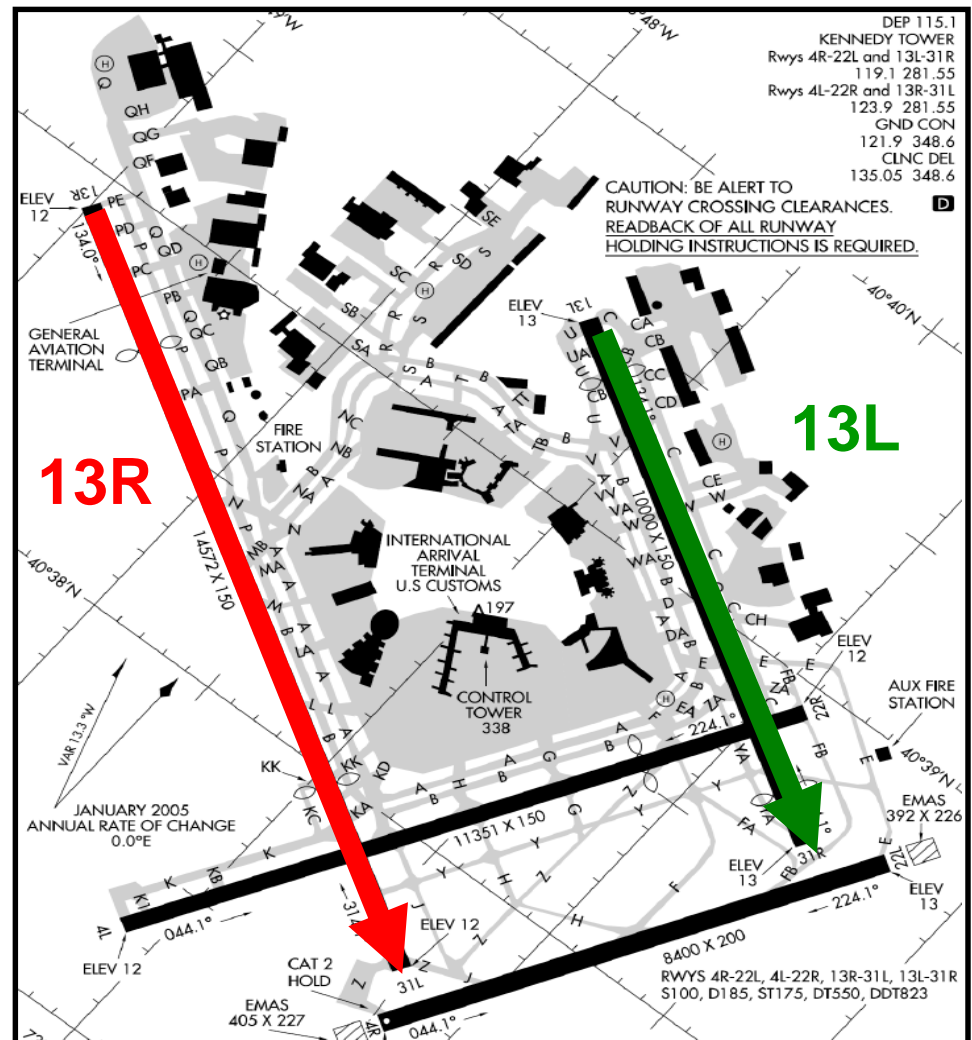
(ABC, Sept 29, 2010)



2. Language awareness: JFK tower & GLG 700



(ABC, Sept 29, 2010)



2. Language awareness: JFK tower & GLG 700



ATC: Aerogal 700 heavy Kennedy Tower winds calm runway
13 Left cleared to land

GLG: Winds calm 13 Left cleared to land Aerogal 700 heavy



2. Language awareness: JFK tower & GLG 700



ATC: Aerogal 700 heavy go around fly runway heading because you are lining up for the wrong runway, you need to start an immediate right turn



2. Language awareness: JFK tower & GLG 700



ATC: But you need to start an immediate right turn. You need to turn right there is somebody rolling underneath you

CGC: Roger [ahm] heading



2. Language awareness: JFK tower & GLG 700



- **content**
(heading)
- plain English

ATC: Aerogal 700 heavy go around **fly runway heading** because you are lining up for the wrong runway. You need to start an **immediate right turn** [over 250 words/min]



2. Language awareness: JFK tower & GLG 700



ATC: But you need to start an **immediate** right turn. You need to **turn right**, there is somebody rolling underneath you
[over 220 words/min]

CGC: Roger [ehm] heading



2. Language awareness: JFK tower & GLG 700

• **DiamondFlyer**  From United States of America, joined Oct 2008, 623 posts, RR: 1
Reply 13, posted Fri Oct 1 2010 18:57:41 your local time (2 weeks 4 days 21 hours 51 minutes ago) and read 6652 times:

Quoting netjetsintl (Reply 10):

English is not your native language, things in aviation happen very, very quick

Which is why there needs to be more emphasis on actually understanding the English language than on just being able to speak it. You could probably teach a monkey how to speak English, but he wouldn't understand it. These people need to understand English, so that situations like this don't get worse than it was.

-DiamondFlyer

(www.airliners.net, retrieved Nov 1, 2010)

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TC
Newbie
Office
Posts: 38

Re: 267 almost lands on wrong runway at JFK Sunday
9/19
Reply #28 on: September 30, 2010, 07:12:13 PM

Quote from: Headup90 on September 28, 2010, 02:07:50 PM
How is it possible that ATC did not detect that Aerial ended up on the real for the wrong runway?
Somebody cleared him for approach and, I would hope, made sure that he was heading for the correct runway. Shouldn't the tower controller be first to detect the error (radar screen, visual observation)?
Before we send Aerial crew for more training we may want to look on the ATC role in this incident.

How is (it) possible? How? Because we are responsible for many things in a tower cab that you don't hear on the radio. Coordinations, handling strip movement, tower teamwork, etc. We SEPARATE the planes, we don't babysit them. The a/c was cleared for the approach to and cleared to land on a specific runway. We don't have the luxury of having all the other planes stop in midair or on the ground while we stare at this 1 guy to make sure he doesn't mess up. There are other planes on the surface moving around in close proximity to active runways, even crossing them at times. We watch them, too. We have to watch everyone. And we have aids, but in this instance the ground radar WASN'T WORKING. Thank the agency for that. God bless the pilot who 1st said something. God bless the controller who took quick action and averted a disaster that the pilot nearly caused by
antic instructions to turn he remained cool under pressure and REVENTED a collision!! And you question his actions??? You want to "look at" HIS role?? His role is simple. It's spelled H-E-R-O. Your remarks and insinuation leave me stunned.

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ATC: **Aerogal 700 heavy go around** fly runway heading because you are lining up for the wrong runway. You need to start [an] **immediate right turn** [over 250 words/min]

ATC: But you need to start an **immediate** right turn. You need to **turn right**, there is somebody rolling underneath you [over 220 words/min]

cf. above: native speakers must “increase their linguistic awareness and [...] take special care in the delivery of messages” (ICAO 2010:3-2) → adequately trained?

- **conflicting information**
- **too much plain (colloquial) English**
- **and much too fast**



2. Language awareness: more proficiency as panacea?

- **Would more proficiency alone solve all problems?**
 - proficiency in (plain) English is very important (unusual situations etc.)
 - **but:** even native(-like) proficiency is not always enough



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example:

the complaint of a British Airways pilot who cannot understand the American controller

BA pilot: I'm sorry, I'm very new and you say it **so quickly** and in such a **strange accent**, I just don't understand

(liveatc.net, Dec 11, 2003; KJFK)



2. Language awareness: more proficiency as panacea?

→ Would more proficiency alone solve all problems?

- proficiency in (plain) English is very important (unusual situations etc.)
- **but:** even native(-like) proficiency is not always enough
- **proficiency and language awareness are necessary**

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3. Intercultural competence



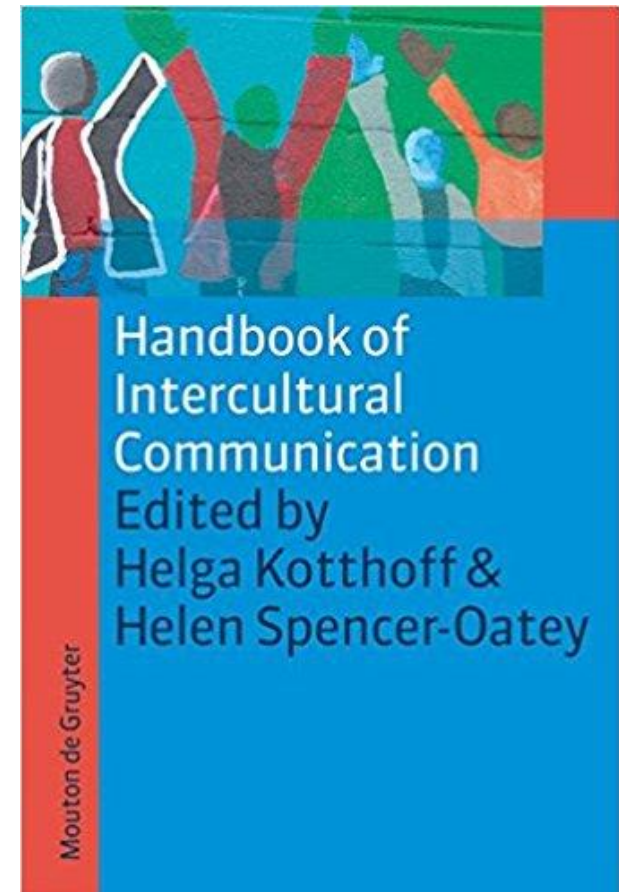
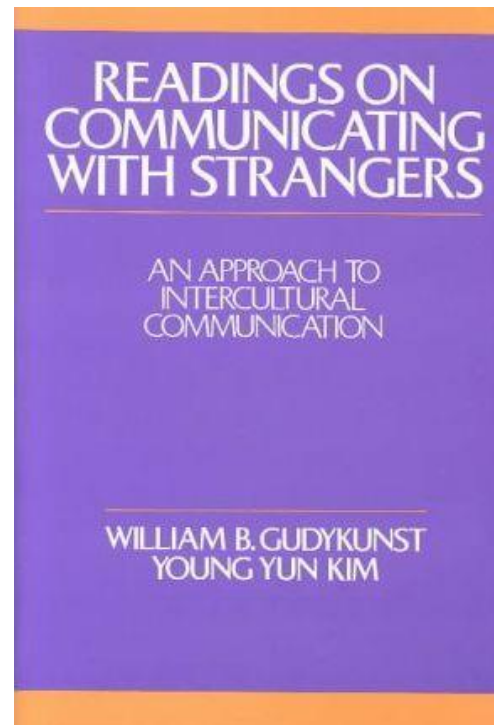
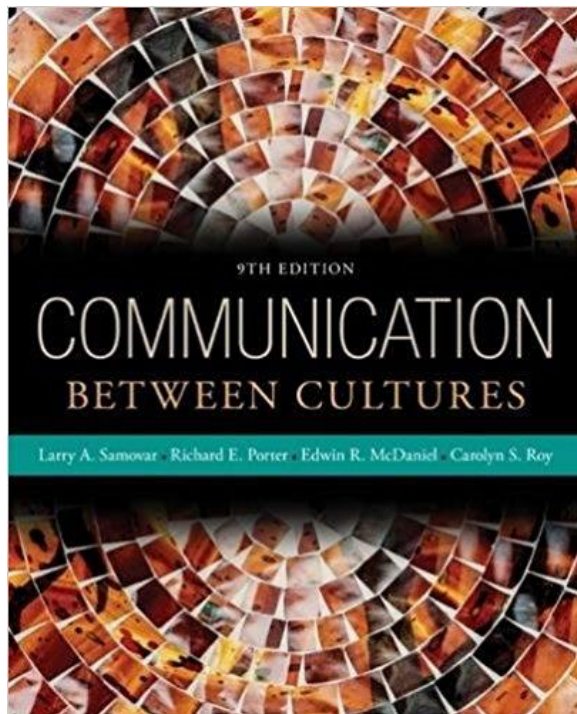
3. Intercultural competence

- ➔ growing international air travel inevitably leads to **more intercultural encounters** in pilot-controller communication



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- ➔ problems are **well-documented**



3. Intercultural competence

- growing international air travel inevitably leads to **more intercultural encounters** in pilot-controller communication
- problems are **well-documented**
- culture can be (roughly) defined as “our theory of the ‘game being played’ in our society” (Gudykunst/Kim 2002: 17)
 - we are usually “**not highly aware** of the rules of the game being played” (Gudykunst/Kim 2002: 17; my emphasis)
 - these “rules” shape our **expectations**



3. Intercultural competence

Ground: Echo india (.) echo tango [delta] five oh tree where do you park?

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(liveatc.net, Oct 27, 2006)



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3. Intercultural competence

perceived impoliteness:

Ground: [...]

ETD503: [...] next time I would like you to be polite with me [...]

GND: [...] you don't understand what I'm saying

ETD503: [...] polite with me, alright!?



3. Intercultural competence

cultural differences:

‘Twenty-five years ago, we were a step below astronauts,’ says one veteran pilot. ‘Now we’re a step above bus drivers. And the bus drivers have a better pension.’ [...] ‘Pilots are being treated as a commodity,’ says Gary Hummel, training committee chairman for the U.S. Airline Pilots Association. (Kolker 2009)

Ansehen einzelner Berufsgruppen – Forsa- Umfragen 2007, 2015, 2016

Es haben ein (sehr) hohes Ansehen *)	2007	2015	2016
in Prozent			
Feuerwehrlenten	90	95	93
Ärzten	86	90	87
Kranken-/Altenpflegern	85	90	87
Erziehern im Kindergarten/Kita***)	k.A.	85	82
Polizisten	78	84	82
Richtern	77	79	75
Piloten	k.A.	73	75
Hochschulprofessoren	k.A.	74	70
Lehrern	63	63	70
Müllabfuhr	63	7	73
Technikern	k.A.	66	63
Dozenten	63	63	63
Soldaten	k.A.	58	61
Unternehmensberatern (ab 2014)	k.A.	57	61
Kanal-/Kläranlagenmitarbeitern (ab 2016)	k.A.	k.A.	57
Briefträgern	52	63	60
Unternehmern	61	58	54
Studienräten	53	53	50
Anwälten	58	57	48
Journalisten	47	47	44
Steuerberatern	47	42	35
EDV-Sachbearbeitern	43	39	34
Beamten	27	37	34
Steuerbeamten	28	34	29
Bankangestellten	38	36	28
Managern	37	29	26
Politikern	20	24	24
Gewerkschaftsfunktionären	23	26	24
Mitarbeitern einer Telefongesellschaft (bis 2011 Telekom)	19	19	18
Mitarbeitern einer Werbeagentur	18	15	13
Versicherungsvertretern	11	12	9

75 percent of the population consider „pilot“ a (very) prestigious occupation

(job prestige in Germany, Forsa 2016)



3. Intercultural competence

perceived impoliteness:

- different concepts of politeness and the status of pilots due to different cultural backgrounds
 - **culture-bound expectations are violated**
- much ATC communication is inter-/transcultural communication



(cf. introduction)



4. Conclusion(s)



4. Conclusion(s)

1) **both language proficiency and language awareness are necessary to facilitate effective and efficient pilot-controller communication**

- phraseology and plain (aviation-related) English are specialized registers of English even native speakers do not acquire “without explicitly studying them” (Biber/Conrad 2009:2), i.e. they are not part of anybody’s native language (cf. Bieswanger 2016 for details)
- i.e. both non-native **and** native speakers of English have to make an effort to improve pilot-controller communication (→ training)



4. Conclusion(s)

- 1) both language proficiency and language awareness are necessary to facilitate effective and efficient pilot-controller communication**
- 2) intercultural competence and cultural awareness are also prerequisites for effective and efficient communication in intercultural settings**
 - cultural awareness is often considered an integral part of language awareness (cf. Edmondson 2009:165) and communicative competence



4. Conclusion(s)

- 1) both language proficiency and language awareness are necessary to facilitate effective and efficient pilot-controller communication**
- 2) intercultural competence and cultural awareness are also prerequisites for effective and efficient communication in intercultural settings**
- 3) research in (applied) linguistics can help to...**
 - identify problem areas and suggest solutions
 - improve the recommendations for air-ground communication
 - develop training material for different groups



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- 1) both language proficiency and language awareness are necessary to facilitate effective and efficient pilot-controller communication**
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- 3) research in (applied) linguistics can help to...**

LHUFT risk – remove before flight ○



Thank you!
Good Day!

LHUFT risk – remove before flight ○

