Assessing Communicative Competence in Pilots and Controllers at Risk for Miscommunications

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ABSTRACT

This paper attempts to analyze radiotelephony miscommunications from the standpoint of communication competence in pilots and air traffic controllers. Ineffective communication is frequently at the root of radiotelephony miscommunications. The objective was to describe the characteristics of communication failures between pilots and air traffic controllers and to examine the effects of communication incompetence to these patterns. Databases of communication and language related accidents as well as studies were reviewed and analyzed for patterns of miscommunication caused by insufficient language proficiency. Recurrent error patterns emerging from the analysis included unclear wording, ambiguities, partial or improper readbacks, and the use of mother tongue. The findings were to evoke the public's attention to English language proficiency and to provide practical information to facilitate the implementation of ICAO language proficiency requirements in Taiwan

KEYWORDS: *Pilot-ATC communications; Aircraft accident; Radiotelephony*

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1 Introduction

English is the international language of aviation and has been widely implemented in international flights. This applies to all those employed in aviation sectors who are required to communicate with international passengers and customers, pilots, dispatchers, operations centre technicians and regulatory agencies. To facilitate the interchange of information among them, English has evolved to become the global language for all aviation needs and an essential prerequisite for safety, efficiency and effective communication.

The widespread of the language has pros and cons. On the positive side, it allows air traffic communications to be listened in and monitored by all pilots and air traffic controllers when standardized aviation phraseology is used. Take the 1996 mid-air crash over Zagreb as an example. The controller was speaking in Croatian rather then English to the Yugoslavian plane, which meant that the British Airways Trident crew was deprived of information that might have saved their lives. On the negative side, most pilots and air traffic controllers speak English as a second or foreign language. English does not have the largest number of speakers provided that it has become predominant global language over the past 50 years. The extent of English proficiency varies greatly among crews and air-traffic control personnel, and that there is no guarantee that one's counterpart on the same radio frequency actually speaks and understands English. Evidence of past aviation accidents shows that air traffic communications often deviate from standard phraseology in emergency situations towards a more conversational style [1~4]. What is worse is that speakers tend to revert to their native langue when under stress and communication in a non-native language, a phenomenon known as code switching. It takes a high level of proficiency or strong self-discipline to continue speech in a non-native

language when under stress. The outcome of such “code switching”, which may be difficult to recognize, can be confusion and contradiction. Worse, the statement may make perfect sense to the listener but may not reflect the meaning intended.

In contrast to previous standards where grammatical competence was the priority, communicative competence is made up of four competence areas: linguistic, sociolinguistic, discourse, and strategic.

1.1 Title Level II

- *Linguistic* competence is knowing how to use the grammar, syntax, and vocabulary of a language. Linguistic competence asks: What words do I use? How do I put them into phrases and sentences?

Table 1:Four Aspects to Communicative Competence

Grammatical Competence	words and rules
Sociolinguistic Competence	appropriateness
Discourse Competence	coherence
Strategic Competence	strategies when communication starts to fail

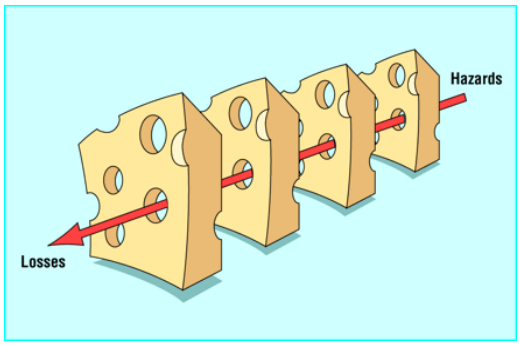

Figure 1：The Swiss Cheese Model Reason [5]

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※ References should be numbered [1],[2] consecutively in the text and listed at the end of the paper.