

# HUMAN FACTORS NEWS

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## CULTURAL FACTORS



### Welcome

The globalisation of air travel is leading to an increasingly multinational crew. Cultural differences can make a significant difference in the ways a crew will interact and communicate.

Within the boundaries of one's own culture, fellow members and environments are predictable. However, when encountering foreign cultures in aviation the behaviour of fellow crew members in the work environment becomes less predictable and requires more cognitive effort.

The aviation environment is by its very nature cross-cultural. Air crew work in multinational teams, operate in foreign airspace and interact

with passengers and cargo from around the world. Pilots also fly aircraft that have been designed and built in other countries with systems and technical specifications that reflect the cultural norms of that country.

Cultural awareness training should help people recognize the benefits and limitations of their own cultural norms, without them becoming defensive. There should be a shared recognition that differences in the way personnel conduct their work can be influenced by cultural biases and that the areas of difference can have implications for air safety.

### Nationalities of Pilots Middle Eastern Airline 2011

3700+ Pilots : 93 Passports : 128 Nationalities



## Culture in the cockpit

Research has confirmed that national cultural exerts significant influence on cockpit behaviour.

The following three cultural dimensions developed by Geert Hofstede have been found to be directly relevant to the aviation environment:

**1. Power Difference (PD)** is the acceptance by subordinates of unequal power relationships, where juniors should not question the decisions or actions of their superiors.

It is generally found that Anglo-Western pilots, (for example from USA, Australia, New Zealand, Ireland, and United Kingdom) have moderate to low PD scores, meaning that the relationships between the crew is less hierarchical and junior pilots are usually confident to question the decisions of superior ranks. Asian and Latin pilots commonly have higher PD scores, resulting in more hierarchical command styles differentiated by the relative importance allocated to senior ranks.

**2. Individualism/Collectivism** is the difference between individualistic cultures (USA, Australia) where people value independent decision making versus collectivist ones (Latin America, Asia) where the focus is on harmony within one's work or family group.

Drawing on the strengths of both individualistic and collectivist cultures is

useful in the aviation context. Cooperation and team cohesiveness can be good when the nature of the problem is unclear and creative solutions are appropriate. In situations where there is a crisis and immediate action is required, the expertise and authority of the leader is necessary, despite the risk to team harmony.

**3. Uncertainty Avoidance (UA)** Cultures with high UA scores focus on the belief that written procedures are needed for all situations and that an organisation's rules should never be broken. Those with lower UA scores will consider deviating from procedures when they consider it necessary.

A finding from research which examined the response of pilots from an East Asian airline about the prospect of introducing expat western pilots into the company highlighted this point. The pilots from high UA countries, in this instance Korea, Japan and Taiwan said: "Everything will be okay if everyone follows SOPs". The western pilots perceived potential problems because they thought the Asian pilots would be less flexible if the need arose to deviate from SOP's.

These studies reflect broad cultural norms and not the values and behaviours of individuals who do not necessarily conform to their cultural background.



**Royal Brunei Airlines' first all-female flight crew**

## Asiana Flight 214

On 6 July 2013, Asiana Airline Flight 214 crash landed in San Francisco. The aircraft crashed short of the runway, with the landing gear and then the tail striking the seawall that projects into San Francisco Bay as the crew attempted to abort the landing and execute a go-around.

Of the 307 people, aboard, three passengers died and another 187 individuals were injured, 49 of them seriously.

The flight was flown by three experienced captains:

Captain Lee Jung Min was in the right hand seat filling the dual role of a check instructor captain and pilot in command. He had 12,387 hours of flying experience of which 3,220 were in a 777. This was his first flight as an instructor.

Captain Lee Kang Kuk occupied the left seat and was receiving his initial operating experience. This was Kuk's first landing at SFO in this aircraft type, although he had previously landed there in a Boeing 747 and other aircraft.

Captain Bong Dong-won was the relief pilot.

Miscommunication due to the highly authoritarian behaviours in the cockpit was found during the investigation as one of the key

reasons why this flight may have crashed.

Kuk later stated he did not feel confident about the landing but was too embarrassed to share his concerns with his crew members. He stated he had been blinded during the landing by a piercing light coming from outside the aircraft. When asked why he didn't wear sunglasses, he said it would be considered impolite to wear them when flying with an instructor.

Captain Kuk called out the command to abort just 3 seconds before the crash. He stated that there was confusion about who had the authority to stop the landing. Even though he was the pilot flying, he gave authority to abort the landing to the senior instructor pilot.

The relief pilot noticed the quick loss of altitude of the plane. He voiced his concern 4 times but neither the pilot or instructor pilot responded to his concerns.

Though this crew had been undertaking cockpit resource management training which encouraged subordinates to speak out about safety concerns, it didn't have the impact needed for this flight. This crash shows that cultural norms are not easily broken.



## Communicating with Non-Native English Speaking Air Traffic Controllers

A study was commissioned by IATA in 2011 to look at communication problems between pilots and air traffic controllers in international air space.

The study was based on the anonymous questionnaire responses of 2,070 airline pilots and 568 air traffic controllers.

### The Pilots

Pilots reported that ambiguity in general aviation language and the use of slang, improper use of the phonetic alphabet, and the failure to use ICAO's standard terminology when repeating aircraft call signs were leading factors in increasing the likelihood of communication errors.

Also, the use of mixed languages with international crews speaking English with ATC and their country's language among themselves was of concern. Pilots indicated that this resulted in their situational awareness being reduced.

Pilots also reported that speaking too fast was an issue. Some comments included:

"Most controllers in Australia speak too fast and in a slang that is very difficult to understand", and "There is often too much information in a single message."

### Air Traffic Controllers

In responses to the questionnaire, air traffic controllers said that the lack of proper readbacks,

including failure to include an aircraft call sign by pilots, constituted their greatest concern.

The controllers also complained that standard instrument departures and standard terminal arrival route procedures "routinely create issues for controllers."

Forty-six percent of controllers said that they used languages other than English in at least some of their communications with pilots.

A majority of controllers said that at least once a day they encounter situations in which ICAO standard phraseology is not used.

### In what region do you most often experience an event where ICAO standard phraseology is NOT used?

	Response
Africa	14%
Asia Pacific	10%
Commonwealth of Independent States	3%
Europe	22%
Latin America and the Caribbean	12%
Middle East and North Africa	9%
North America	27%
North Asia	4%

Note: Based on survey responses from 2,070 airline pilots.  
Source: International Air Transport Association



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