Safety briefings to passengers: getting the message across
Overview

• Pre-flight safety briefings
  • Requirement
  • Intent
  • Effectiveness
• Human learning (education)
• Learning environment
• Research
• Conclusion
Pre-flight Safety Briefing

- CASA CAO 20.11
- Passengers adequately briefed about safety information

(CASA, 2014)
Pre-flight Safety Briefing

- Attention to briefing particularly challenging for:
  - Young, educated males (Johnson, 1979)

Plus

- When the information is:
  - Perceived to be boring (Parker, 2006)
  - Presented by a flight attendant who lacks interest (Fennel & Muir, 1992)
  - Perceived to be irrelevant (Parker, 2006)
  - Perceived to be familiar (Parker, 2006)
Pre-flight Safety Briefing

- Retention of key safety messages is ‘poor’
Education not Training

1. Motivated – give them a reason to learn
2. Distraction free – no noise, newspapers, books, electronic devices, etc
3. Key information only – no advertising
4. Actively involved cognitively – not just listen
5. Key points - clear and simple
6. Ability to apply knowledge (feedback) – count seats, use seat belts, etc
Implicit Learning

- On a piece of paper write 1 - 15 down left column
- 15 automated slides will appear in quick succession
- Each side will contain two, four digit numbers
- You need to write whether the numbers are the same
- Simply write ‘y’ or ‘n’ beside each number
- Y = yes, N = no
Learning Styles

1453

1534
Learning Styles
Learning Styles

3401  
3401
Learning Styles

6103  6203
Learning Styles

2939

2938
Learning Styles
Learning Styles
Learning Styles

4023

4043
Learning Styles
Learning Styles

0253

0325
Learning Styles

3694

3794
Learning Styles

6344

3644
Learning Styles

2453

2435
Learning Styles

1309

1039
Learning Styles

3751 3751
Learning Styles

• Count the # of y’s (yes answer) = 3
• There was number in common throughout all combinations, what was this number?
• Implicit vs. Explicit learning
• What is your airline’s implicit message?
• Use this learning style for ‘good’.
More Work - Instructions

1. Write 1 to 4 down left column (or right)
2. Throughout the remainder of the presentation, I will provide 4 mathematical equations.
3. I will not tell you when these will appear.
4. You are to pay attention, and write the answer to each question down.
5. All equations will be presented aurally.
6. Listen, I will provide an example.
Pre-flight Safety Briefings

- Audio vs Video
- With or without live demonstration
- In-flight entertainment system largely dictates medium
Modality Effect

• Pictures plus spoken text > pictures plus written text (Mayer, 2009)
  – Reduces mental effort (Ginns, 2005)

• Combination of audio and visual > only one modality (Appiah, 2006)

BUT

• Aircraft are noisy
In-Cabin Noise Levels

Range of aircraft
- B747
- B737
- A321
- MD80
- ATR
Method Outline (general)

1. Demographics + native language
2. Audio Condition
3. Pre-flight safety briefing
4. Dependent Variable

- English vs. non-native English
- Wideband Noise (65 dB)
- Play briefing
- Recall of Key Safety Messages
Pre-flight Safety Briefing

- Commercial airlines briefing
  - Seatbelts
  - Baggage and electronic items
  - Smoking
  - Exits
  - Escape slides and life rafts
  - Lighting
  - Oxygen
  - Life jackets and flotation devices
Results – Noise and Subtitles

Percentage of Key Safety Messages Recalled Distributed across Noise Condition and Subtitled Condition.

$F (1, 92) = 5.792, p = .018$
Results – Flight Recency

• No differences based on:
  • Number of flights in last 12 months
  • Number of flights in last 5 years

\[ F (1, 120) = 53.39, \ p < .001, \]
Results – Noise (NS vs. Non Native Speaker)

No Headphones

- Native Speaker
- Non Native Speaker

Noise Cancelling Headphones

- Native Speaker
- Non Native Speaker
Results – Mode of Delivery

Percentage of Key Safety Messaged Recalled Distributed across Briefing Style

- No Briefing
- Audio Only
- Video Only
- Video plus Demonstration

\[ F(3, 118) = .550, \ p = .649. \]
Results – Mode of Delivery & Language

Percentage of Key Messages Recalled Distributed across Briefing Style and Language Background

- No Briefing
- Audio Only
- Video Only
- Video plus Demonstration

English • Non Native Speaker

\( F(1, 120) = 53.39, p < .001. \)
Results – Flight Recency

• No differences based on:
  • Number of flights in last 12 months
  • Number of flights in last 5 years

\[ F (1, 120) = 53.39, \ p < .001, \]
Results – Celebrity

Percentage of Key Safety Messages Recalled Distributed across Recognition of Celebrity

- Recognised Celebrity
- Failed to Recognise Celebrity

\[ F(1, 92) = 12.901, \quad p = 0.001. \]
Results – Humour vs. Celebrity

Percentage of Key Messages Recalled Distributed across Briefing Style and Time

- Standard
- Humour
- Celebrity

Post Test
Follow-up Test

$F(1, 39) = 13.601, p < 0.001.$
Results – Eye Gaze

Percentage of Key Safety Messages Recalled

- Control: 
- Humour: *
- Celebrity: 

F(2, 38) = 6.13, p = .005.

# of Times Looked Away during Safety Briefing Distributed across Group

- Control
- Humour: *
- Celebrity

F(2, 38) = 3.46, p = .042.
A Word of Caution

• Humour also has been shown to:
  – Have medicinal benefits (Strean, 2009)
  – Facilitate in classroom learning (Stebbin, 2012)
  – Improve teamwork (Dean & Major, 2008).

• Word of caution – Humour positive in securing attention but may disrupt processing of key information (Chan, 2011)
Results - Humour

Percentage of Key Safety Messages Recalled
Distributed across Group

- Control
- Humour
- Movie Theme

$F(2, 69) = 17.13, p < 0.001.$
Mood and Performance

• Known stressor – mood & emotion
• Positive mood = positive performance
• Negative mood = negative performance
• Mood manipulation simple – praise, humour, or light
System Error
Results - Mood and Performance

Time to Evacuate Aircraft

$F(1, 43) = 43.29, p < .001.$

Number of Errors Committed during Evacuation

$F(1, 43) = 15.64, p < .001.$
Math – The Results

• 23 + 44 = 67  Noise
• 34 + 52 = 86  Cognitive load (mode and language)
• 41 + 56 = 97  Distraction (mobile telephone)
• 26 + 31 = 57  Surprise (system error)
Summary of Results

• Retention of key safety messages is ‘poor’
• On average, 50% of key safety messages
• The environment adversely affects recall – Noise
• Differences based on ‘language background’
• Use of ‘Celebrities’ can improve recall
• ‘Humour’ may also improve recall, but caution needs to be exercised
• Briefings may be used to positively impact mood
• Positive mood = positive performance
Concluding Remarks

- Less marketing, more educational
- Focus on key safety messages (explicit message)
- Careful of implicit message
- Divorce any humour from safety message
- Reconsider value of material
Thank you

Questions?

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Thank you - Laura Mitchell