Passenger Knowledge of Airline Safety Information

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"The views expressed herein are those of the authors alone and do not necessarily represent those of the Institute"
SUMMARY

Five hundred passengers participated in an investigation into their knowledge of the pre-flight briefing and the safety card information. Although general knowledge was good (78%), a tendency was observed for passengers to overestimate their ability to recall some aspects of the pre-flight briefing and safety card. Males had a higher score on questions regarding safety information than females, although this difference may be due to the fact that the majority of business passengers are male, and that business passengers travel more frequently than any other passenger group. Some aspects of the pre-flight briefing and the safety card information were identified as requiring clarification in order to ensure that all passengers are to utilise the information correctly in an emergency.

Self-reports of attention to safety information were high, with 79.9% of passengers reporting paying attention to the briefing on most flights, and 59.7% reporting reading the card on most flights. However, it is suggested that these percentages are likely to overestimate the actual percentage of passengers who pay attention. Frequent passengers reported paying the least attention to briefings and safety cards, though they also had more knowledge of safety information than less frequent passengers.

To ensure the safety of all passengers, it is important that both frequent and infrequent passengers are motivated to pay more attention to safety information and to increase their knowledge. Included in the report are several suggestions made by passengers regarding methods which they believe, if used, could increase attention.
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Air safety is dependent not only on the skills and training of the air traffic controller, or airline personnel, but also on the ability of passengers to use the safety procedures and equipment quickly and correctly in an emergency. Increased air traffic in Britain's air space makes it more likely that passengers may experience an emergency, and so need to operate safety procedures and equipment. Injury, or time constraints, may mean cabin staff are unable to help some or all of the passengers in an emergency, emphasising the need for passengers to not only assume some responsibility for their own safety (e.g. Johnson, 1984), but also stressing the need for passengers to know and be able to use the safety procedures prior to an emergency situation arising (e.g. Johnson, Blom and Altman 1975; Johnson 1984; and NTSB 1985).

However, although safety information is presented to passengers for their own benefit, (that is, to increase their own survival chances), passengers often appear to pay little attention to either safety briefings or cards. Inattention may be due to a number of reasons. For example, regular travellers may think they know all of the information, or find the regular safety briefings boring; passengers may become complacent, and believe that an accident will not happen to them. Nervous passengers may not want to think about the possibility of being in an accident. It may appear that cabin staff do not think the briefing is important, and this could cause passengers to assume that it is unimportant. Alternatively, some passengers may feel that as long as the cabin staff are well trained, it is not important to pay attention, as they will always be available to help if an emergency arises, (though as noted above, this may not always be the case).

The likelihood of being involved in an accident may be perceived by passengers as very low (as indeed is the case). These perceptions may be influenced by the way briefings are introduced, as they are designed to allay any fears passengers may have about flying, and suggest that an accident is unlikely to happen. However, low stress levels may not be the optimum state for passengers to take in novel information about what to do in an emergency (e.g. Johnson 1971; and Innes 1975). This may have the effect of making passengers more rather than less attentive, as observed by Altman, Blom and Johnson (1970; in NTSB 1985) and make them think it a waste of time to pay attention unless they are in an emergency. In an emergency situation, stress may interact with altitude, memory and task performance, resulting in passengers being less able to recall information when they are in the air than when they are on the ground (e.g. Berkun, Bialek, Kern and Yagi 1962; in Becker 1973).
If passengers feel powerless to influence their own survival, they may feel that it is not worth paying attention to the briefing (e.g., Becker 1973). Alternatively, they may perceive their survival chances as being very low, and so the need to use safety information as redundant. A tendency for passengers to overestimate the seriousness of aircraft accidents was observed by Johnson (1979), and he believes that this is likely to influence passenger perceptions of their survival chances. However, as most accidents occur on takeoff or landing and therefore at relatively low speeds, (e.g., Johnson 1984), the forces which passengers are subject to are often survivable. It is hazards such as smoke and fire occurring after landing that may lead to passengers not surviving, suggesting that if passengers can use safety equipment correctly, their survival chances are likely to increase.

In a 1979 survey of passengers in the United States, Johnson tried to determine who does and does not pay attention to safety briefings. He classified passengers as attenders or non-attenders based on their self-reports of their past, and intended future attentive behaviour towards briefings. He observed that non-attenders were more likely to be male, younger, more educated, fly alone, on business, and have more flying experience than attenders. Attenders were more likely to fly with someone they knew and for pleasure. He also observed that both attenders and non-attenders believed that they already knew all of the safety information before boarding the aircraft, although he suggested that passengers tended to overestimate their knowledge of safety information.

Overestimation of knowledge by passengers is supported by evidence from real life emergencies which has shown that passengers have difficulty in operating safety equipment. For example, Johnson (1984) cites two aircraft decompressions situations where this has occurred. In the first, aboard an aircraft approaching Mexico City in 1974, only one out of 53 passengers managed to put on the oxygen mask and successfully activate the oxygen flow. Similarly, in the second, on a flight from New York to Chicago in 1975, only two out of 180 passengers successfully activated their oxygen supply. The oxygen mask demonstration is one of the most commonly seen parts of the briefing, and could be thought to contain information that most passengers believe they know, yet most of the passengers were unable to use the equipment properly.

Passenger attention to, and knowledge of, safety information may also be influenced by the way it is presented. As safety equipment is similarly located and operated on different aircraft, changing the presentation or content of briefings has been suggested by Hummel and Altman (1966) as a way of encouraging more frequent passengers to pay attention, and to maintain passenger interest in the briefings. This implies that the use of new methods of conveying information, such as videos, or changes in briefing wording or content, may be effective in increasing interest and attention not only for their information content, but also for their novelty effect.
Evidence from real accident situations in which passengers have mentally reviewed what to do in an emergency, have shown the importance of prior knowledge of safety information in increasing survival chances (NTSB 1974, cited in Johnson 1984; Johnson 1984; and Barthelmess 1984). Even seriously injured passengers who had pre-planned their escape, and paid attention to briefings, have been known to survive accidents (McCormick 1984; in NTSB 1985). These reports demonstrate that informed passengers have a better chance of survival, and that at least some passengers are not only able to retain cognitive control during an emergency, but it may also be beneficial to their survival chances if they have a mental strategy of how to escape if an emergency arises.

To date, little research has been carried out concerning passenger views on safety information. Therefore, this study was exploratory, with the objective to assess passenger knowledge of the safety information presented to them by airlines. This was to be achieved by finding out what passengers could recall from safety briefing and card information given to them on the flight; and also to identify the variables most strongly associated with knowledge levels. To allow for differences in previous flying experience between passengers (for example, the first time flyer and the very frequent traveller), it was accepted that passengers' cumulative knowledge was being examined. It was hoped that by finding out what passengers could recall, it might be possible to determine whether any areas of safety information were misunderstood by passengers, and therefore in need of clarification.

It was hoped that, using self-report methods, some information regarding how often passengers pay attention to the briefing and read the safety card could be obtained, and that the variables that might be strongly associated with reported attention to the briefing and card could be identified. It was also hoped that reasons for passenger inattention could be ascertained, by asking passengers why they thought they and other passengers might not pay attention to the briefings. These reasons, together with passengers' suggestions as to how briefings could be improved to motivate passengers to pay more attention, might ultimately contribute to recommendations about the optimum design and presentation of briefings.

Finally, it was hoped that information could be obtained about whether passengers thought airlines should encourage passengers to be more safety conscious, if so, how, as this could also have implications for the way briefing and safety card information could possibly be improved. If this was found to be the case, methods by which this might be achieved, for example, more emphasis on important safety aspects or more varied presentations, could be devised, based on the suggestions and information obtained from passengers.
2. **METHOD**

The study was carried out using an interviewer administered questionnaire.

2.1 **Questionnaire Design**

The questionnaire consisted of three sections: information specific to the flight they had just completed and the briefing on that flight; passengers' attitudes towards safety information and whether they normally paid attention; demographic details.

2.1.(i) **Section One - The flight and safety briefing**

Passengers were asked to name the airline which they had just used; the flight number; the type of aircraft; if they were accompanied, and if so, by whom. Questions concerning the briefing asked how long it was since they had seen the briefing; whether it had been presented by cabin staff, or video; if they could hear and see it clearly, and if they understood it. Passengers were asked about the content of the briefing and use and location of oxygen masks, life jackets and exits, and then were asked if they had read the safety card during the flight. If so, they were asked if they felt they could open the exits, or brace themselves for an emergency after looking at the card.

2.1.(ii) **Section Two - Passengers' behaviour and attitudes towards safety briefings and cards**

Passengers were asked how often they paid attention to safety information, and why they thought that other passengers might not pay attention. Passengers' views on safety were sought, and they were asked if they thought that airlines could improve the way in which they present safety information; if airlines should encourage passengers to be more safety conscious; and how worried they were about the risk of being in an accident. Their perceptions of how similarly located the emergency exits were on different aircraft were also sought.

2.1.(iii) **Section Three - Passenger demographic details**

These questions asked passengers their age group, marital status, how often they had flown in the last two years, and the main purpose of their air travel.

It was important to determine how much safety information passengers could recall while it was still fresh in their minds, so passengers needed to be approached as soon as possible after they landed at the airport. Permission was obtained from the British Airports Authority (BAA) for the study to be carried out in the Arrivals Hall at Gatwick airport while passengers waited for their luggage.
2.2 **Pilot Study**

The questionnaire was piloted on 75 subjects, 42 male and 33 female, (to allow for business passengers being more likely to be male than female). The pilot was carried out to ensure there were no problems with question wording or sequence, and to obtain possible answers for the open-ended questions that could be adopted in the form of statements that could be easily categorisable in an interview situation.

2.3 **Main Study**

2.3.1 **Subjects**

Five hundred adult passengers, 238 male (47.6%) and 262 female (52.4%) participated. Every fifth male or female passenger was approached, though overall slightly more females were sampled.

One hundred and seventy seven passengers (35.4%) were from scheduled flights and 323 (64.6%) from charter flights, which approximates to the ratio of scheduled (one third) to charter (two thirds) passengers using Gatwick airport (BAA 1984 statistics; reweighted to 1987).

2.3.2 **Materials**

These included a Questionnaire (see Appendix I) and two cue cards indicating age groups and marital status (also in Appendix I).

2.3.3 **Procedure**

Interviews were carried out over a two week period in the baggage collection area of the Arrivals Hall at Gatwick Airport.

The interviewer approached passengers and explained she was researching into safety briefings given by the airlines and asked passengers if they would mind taking part in the study.

Passengers agreeing to take part were asked two screening questions: 'Are you employed in the aviation industry?'; and 'Which airline have you just flown with?' If subjects were not employed in the aviation industry, and had flown to Gatwick on a British airline, they were eligible for the study, and the interviewer proceeded. Non-eligible passengers were thanked for their time and co-operation, and the interviewer explained that the study was concerned with British airlines only, and with passengers not employed in the aviation industry.

Interviews lasted approximately 4-5 minutes per respondent. On completion, the interviewer thanked each passenger for their time, explained that air safety was important, and expressed the hope they had not been alarmed by any of the questions.
3. RESULTS

Eleven questions were used to assess passengers' general knowledge. These were questions about oxygen masks (12 and 13); life jackets (15, 16, 17 and 18); emergency exits (20, 21 and 22); and the brace position (24 and 25). (Refer to Appendix II for the questions, and percentage of passengers answering each question correctly).

As some passengers were not shown the oxygen mask or life jacket demonstrations, passengers' general knowledge was derived from summing the total number of knowledge questions each passenger correctly answered and expressing these as a percentage of the total number they could have answered correctly from information presented to them on the flight.

Knowledge scores ranged from 22% to 100%, with a mean score of 78% correct. Mean knowledge scores, and standard deviation knowledge scores (a measure of the spread of the scores) are shown below in Table I.

Table I Mean and standard deviation knowledge scores in percentages

<table>
<thead>
<tr>
<th></th>
<th>Mean % Correct</th>
<th>Standard % Deviation</th>
<th>Number of Passengers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>78</td>
<td>15.1</td>
<td>483</td>
</tr>
</tbody>
</table>

Analysis of the variables most strongly associated with high knowledge revealed four strongly associated variables and four moderately associated variables. These variables and their proportional strength of association are shown in Table II on the following page.
Table II  Variables strongly associated with high general knowledge levels

<table>
<thead>
<tr>
<th>Major contributors to knowledge</th>
<th>Strength of Association ($r^2$ Unique)</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (male passengers)</td>
<td>.0586</td>
<td>0.001</td>
</tr>
<tr>
<td>Type of briefing (cabin crew)</td>
<td>.0331</td>
<td>0.001</td>
</tr>
<tr>
<td>Passengers flying most often in the last two years</td>
<td>.0216</td>
<td>0.001</td>
</tr>
<tr>
<td>Passengers reporting paying attention most often to briefing</td>
<td>.0180</td>
<td>0.001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Moderate contributors to knowledge</th>
<th>Strength of Association ($r^2$ Unique)</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passengers accompanied by family rather than by friends or colleagues</td>
<td>.0128</td>
<td>0.001</td>
</tr>
<tr>
<td>Complacency</td>
<td>.0110</td>
<td>0.001</td>
</tr>
<tr>
<td>Passengers' knowledge of type of aircraft they had just flown on</td>
<td>.0108</td>
<td>0.001</td>
</tr>
<tr>
<td>Age (younger passengers)</td>
<td>.0086</td>
<td>0.001</td>
</tr>
</tbody>
</table>

The strongest association observed with a good general knowledge of safety information was with male passengers, as mean percentage scores were higher for males (81.5%) than for females (75.2%). The next highest association came from cabin attendant briefings rather than video briefings. Passengers who had flown most often in the last two years were also strongly associated with high knowledge levels; as were passengers who reported paying attention to the briefing most often.

 Associations with general knowledge were also observed with complacency, (reason given for other passengers not paying attention to briefings); knowing the type of aircraft they were flying on; passengers travelling with family rather than with friends or colleagues; and younger passengers.
The strongest association with reported attention to the safety briefings came from passengers having flown most often in last two years who reported low frequency of attention to briefings. Higher passenger knowledge of safety information was also strongly associated with more frequent reported attention to safety briefing. A strong association was also observed between low reported attention to briefings and business passengers. The strength of association of these variables are shown in Table III below.

### Table III Variables associated with reported attention to safety briefing

<table>
<thead>
<tr>
<th>Variables associated with less frequent attention</th>
<th>Strength of Association ($r^2$ Unique)</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passengers flying most often in last two years</td>
<td>.0837*</td>
<td>0.001</td>
</tr>
<tr>
<td>Passengers flying mainly for business reasons</td>
<td>.0145†</td>
<td>0.001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variables associated with more frequent attention</th>
<th>Strength of Association ($r^2$ Unique)</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher knowledge levels of safety information</td>
<td>.0150†</td>
<td>0.001</td>
</tr>
</tbody>
</table>

* major contributor  † moderate contributor

Passengers having flown most often in the last two years were also strongly associated with low reported frequency of reading the safety card. Higher general knowledge was also strongly associated with reading the card. The strength of association of these variables are shown in Table IV.

### Table IV Variables associated with reported reading of safety card

<table>
<thead>
<tr>
<th>Variables associated with reported reading of safety card</th>
<th>Strength of Association ($r^2$ Unique)</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passengers flying most often in last two years</td>
<td>.0713*</td>
<td>0.001</td>
</tr>
<tr>
<td>Higher knowledge levels of safety information</td>
<td>.0091†</td>
<td>0.001</td>
</tr>
</tbody>
</table>

* major contributor  † moderate contributor
4. DISCUSSION

Passengers' mean general knowledge scores were high (78%), implying that passenger knowledge of the safety areas covered in this study is good, although questions could have probed some safety aspects more deeply, for example, by asking passengers how to open emergency exits. It is important to note that passengers were asked to recall information shortly after landing safely, when any anxiety experienced should have dissipated. This does not mean they would necessarily be able to recall as much information, or perform the correct behaviour in an emergency situation as suggested by Berkun et al (1962); and noted by Johnson (1984) in real decompression situations.

The strong association observed between knowledge and males, and also passengers flying most often in the last two years may be partially explained by the fact that passengers flying mainly for business reasons are more likely to be male. Also, business passengers are likely to fly more often than passengers flying mainly for holiday reasons. As increased knowledge was strongly associated with self-reports of more frequent attention to briefings, this suggests that knowledge is acquired cumulatively and that frequent passengers will have more knowledge than infrequent passengers due to increased exposure to information.

Although a strong association was observed between a good general knowledge of safety information and cabin attendant briefings, as only 7% of passengers saw videos, and knowledge is cumulative, this information is based on an extremely small sample.

Associations were also observed between knowledge and passengers who knew what type of aircraft they had flown on, perhaps due to a more interested attitude towards the flight. Passengers flying with family members had more knowledge than those flying alone, or with friends or colleagues, suggesting that passengers may have more concern for safety when flying with relatives. Younger passengers also had a better knowledge of safety information than older passengers, possibly due to younger passengers being more concerned with safety or less fatalistic about their chances of surviving an accident than older passengers.

Finally, some association was observed between knowledge and complacency, as passengers with more knowledge suggested complacency as a reason for other passengers not paying attention. As passengers were asked to say why they thought other passengers might not pay attention in an attempt to gain insight into their own reasons for inattention, this association is implied and not definite. However, it does suggest that increased knowledge may lead to complacency and to passengers thinking that an accident won't happen to them.
Questions about specific aspects of the briefing showed that 82% reported seeing the oxygen mask demonstration. Of these, 67.8% stated correctly that they would place the oxygen mask over their nose and mouth, although only 53% were able to state correctly if they needed to do anything to make the mask work. It is possible that these answers are underestimations of passenger knowledge, for example, passengers may fail to recall everything in an interview situation. However, as Johnson (1984) observed in real decompression situations, passengers have had difficulty activating their oxygen supply; these answers suggest this part of the briefing may well need more emphasis. [Tables 6.3 and 6.4 in Appendix III show percentage of passengers (by main purpose of air travel and type of flight) answering each question correctly out of percentage of passengers eligible to answer each question.]

Most subjects (90.8%) reported having seen the life jackets demonstrated; 89% were able to state correctly where they would look for their life jacket, though only 67.8% stated correctly how they would put it on and fasten it. As some passengers said they could not see how to fasten the life jacket (e.g., due to high seat backs in front of them, or passengers' heads), this is one part of the briefing that could be improved, perhaps by using video on some aircraft (e.g. Johnson 1973).

Most passengers (76.2%) correctly answered that they would not inflate their life jacket until they were leaving, or after leaving the aircraft. However, this is another aspect of the briefing that may need greater emphasis as a number of the 15.4% of passengers who answered this question incorrectly appeared unaware that inflation of life jackets inside the aircraft could impede their own evacuation and that of other passengers. The majority of passengers (81.8%) were able to describe the automatic means of inflating their life jackets, and of these 27% also described the manual means of inflation.

Ninety three per cent of passengers said that they saw the exits being pointed out. Of these, 88.6% were able to say how many exits had been pointed out; 87% were able to estimate how many rows of seats they were from their nearest exit; and 84% were able to say whether the nearest exit was in front or behind them.

Emergency exit questions appear to have been answered better than oxygen mask and life jacket questions. It needs to be noted however, that these questions were based on passengers' estimates of what they thought to be the correct answer, and this was not necessarily the correct answer. An objective of the study was to determine whether passengers are able to make estimates of the number and location of the exits, rather than an assessment of the accuracy of these estimates. Subjects were anonymous and their estimates were not checked and could
have been incorrect. It is expected that answers to emergency exit questions would overestimate passengers' knowledge and that the real incidence of passenger knowledge would be less than shown in the data.

Only 43.2% of passengers reported reading the safety card on their flight to Gatwick, although 17% reported reading it on their outward journey. These passengers were also questioned about the card information, making a total of 60.2%. Of these passengers, 30.2% said that they would be able to open the exits in an emergency after reading the card; 50.2% felt they would be able to adopt the brace position in an emergency after looking at the card, though only 46.2% were able to describe one of the appropriate brace positions as depicted on the safety cards.

These results supported Johnson's (1979) findings that passengers tend to overestimate their knowledge of safety information, as passengers overestimated their knowledge of the brace position. Emergency exit knowledge was also likely to be overestimated as passengers were not asked to describe how to open the emergency exits, and only a few volunteered the information. As knowledge of emergency exits and brace position are likely to be the most important aspects of safety information that passengers will need in an emergency, this suggests passengers need to be made more aware of these two aspects of information. The NTSB in 1979 and Johnson in 1984 reported that they were crucial for reducing injuries and increasing passenger survival chances in an accident.

Sixty per cent of passengers reported paying attention to the safety briefing every time they flew and 32% reported reading the safety card every time. When passengers who said that they paid attention on the majority of occasions or at least on the outward journey were included, 79.9% reported paying attention to the briefing; and 59.7% reported reading the card. However, these percentages may include passengers who only pay attention to part of the briefing, or read part of the safety card every time, so this is also likely to be overestimating the percentage of passengers paying attention to safety information.

The strongest association with reported attention to both the briefing and card was the frequency of air travel in the last two years. Passengers flying most often reported paying less attention to both the briefing, as did passengers flying mainly for business reasons (confirming some of Johnson's (1979) findings). Frequent passengers also reported paying less attention to the safety card, but business passengers were not associated with low reported frequency of reading the safety card.
A strong association was also observed between increased knowledge and more frequently reported attention to both the briefing and the card. However, as knowledge was observed to increase and attention decrease with more frequent air travel, a balance is needed between rote learning and understanding of safety information by the passenger, and maintaining passenger interest in the safety information.

When asked why other passengers might not pay attention, the most common reasons given by passengers were that passengers had flown a lot and felt they knew the information (31%), or too frequently (26%); with 8.4% saying that the briefings were boring and all the same. If, as these reasons imply, passengers feel that they already know the information, perhaps as Hummel and Altman (1966) found, they are more likely to be motivated to pay attention if briefings are introduced differently, or presented in a novel format. In support of this view, 2.8% of passengers suggested briefings could be improved by making them more interesting or varied. Passengers might also be encouraged to pay attention by having more cabin staff on each flight give the demonstrations. This would make the demonstrations more visible to passengers, and at the same time make those not paying attention more visible to cabin staff.

Complacency and the belief that an accident wouldn't happen to them, was mentioned by 18.6% of passengers as a reason for inattention; and 4.2% suggested that passengers feel safe. This implies that passengers who are confident about their safety on an aircraft, may experience little stress when flying. Nervousness was only suggested as a reason for inattention by 5.4% of passengers, and only 2.8% thought passengers might not want to think about the possibility of an accident. Drawing passengers' attention to the briefing by emphasising it's importance, (suggested by 13.1% passengers) may increase stress levels slightly but, as Innes (1975) proposed, may also lead to passengers paying more attention to safety information.

The most common improvement suggested by 4% of passengers was to use videos, although 1.2% of passengers thought the videos they had seen could be clearer or improved. In contrast, 2% of passengers thought live demonstrations were better than videos. As videos are a recent innovation, this suggests that the long term effects of using videos may be less beneficial than live demonstrations, and that their popularity may be partly due to their novelty value.

Making the briefings less rushed or routine was suggested by 2.8% of passengers as a way briefings could be improved to increase passenger attention. More authoritative briefings or more personalised briefings, for example, given by the captain, were also suggested as ways in which passenger attention might be increased, as they might make it appear to be more important to pay attention.
Other suggestions made by passengers regarding ways of improving the safety information included providing safety information prior to boarding the aircraft, for example, sending it through the post with tickets, departure lounge demonstrations, allowing passengers to handle safety equipment or participate in demonstrations, handing out the safety card as passengers boarded the aircraft, leaving the card on the seat so it had to be picked up before the passenger sat down, and locating it on the back of the seat in front.

Almost two thirds of passengers (64.2%) agreed that airlines should encourage passengers to be more safety conscious. Suggestions included stressing the importance of the briefing to make passengers pay attention (13.1%); enforcing rules (3.6%), e.g. no smoking (1%), stowing cabin luggage properly and carefully (4%); being more careful about what passengers could bring on board (1%); explaining reasons for safety behaviours more clearly and increasing passenger awareness of safety (2.6%). Recommendations were also made for new rules such as no smoking at all (2.8%), (suggested by a number of smokers), and no drinking or duty free alcohol on board (1%).

A number of passengers believed the responsibility for safety to rest with the airlines. Their suggestions for improving safety included having less seats on aircraft (1.6%); supplying passengers with smoke hoods (1.4%); and using non-inflammable materials and sprinkler systems in aircraft (1%).
5. CONCLUSIONS

Passenger knowledge of safety information was observed to be high in this study, (mean 78% questions correct), but a tendency for passengers to overestimate their knowledge was noted, supporting Johnson's (1979) findings.

Knowledge of safety information was found to be higher among male passengers. However, males tend to fly more often than females, due to the majority of business passengers being male. As knowledge is cumulative, increased frequency of flying is likely to account for many of the differences in knowledge between male and female passengers.

Some aspects of briefing and card information have been identified as needing more emphasis to enable passengers to utilise the information correctly in an emergency. These include activating the oxygen mask supply, location and operation of exits and the correct brace position to adopt.

Self-report measures of frequency of attention to safety information were very high, with 79.9% of passengers reporting frequent attention to briefings, and 59.7% of passengers reporting frequent reading of the safety card. It is suggested that these percentages are likely to overestimate the percentage of passengers who actually do pay attention, as they are likely to include passengers who attend part of the briefing, or just glanced at the card.

Passengers flying most often in the last two years reported paying least attention to briefings and safety cards, but had greater knowledge of safety information than passengers flying less frequently. Knowledge was observed to increase with reported attention to safety information, suggesting that the acquisition of knowledge is cumulative, and that once a certain level of information is acquired, frequent passengers feel they know the information, or find it boring, and cease to pay attention. However, although frequent passengers may have more knowledge than infrequent passengers, they may overestimate their knowledge of safety information and also their ability to use this information in an emergency. It is therefore important to maintain the interest of these passengers in safety issues, as well as increasing the knowledge of less frequent passengers.

For the safety of all passengers, efforts need to be made to motivate both frequent and infrequent passengers to pay more attention to safety information. Passenger suggestions of how to improve presentation of briefings include: modifying the way the briefing is introduced (e.g. more impact, introduced by captain); making the briefing more interesting and varied, and emphasising the importance of information more. This implies that changes in wording, or format of briefings, and explaining why certain aspects of information are important (e.g. brace position, life jacket inflation) are likely to improve attention by making information more interesting, varied, meaningful and relevant.
5.1 Recommendations for future research

1. Further investigations are required in order to determine how the safety card and briefing protocol need to be changed in order to ensure that all passengers obtain the safety information. The card content needs to be assessed to ensure that passengers know that it contains information which is of real importance to them. The information contained must be presented in the optimum way for passengers to be able to use any safety equipment in the correct manner.

2. The determination of which aspects of the safety information passengers feel they need in order to have more control over their own safety. This has implications for how passengers may be motivated to pay more attention to safety information.

3. Comparisons need to be made between passenger recall following video and cabin attendant briefings. Any differences in passenger attention to briefings, or knowledge of safety information, maybe a function of factors such as the presentation format, the novelty value of videos, the personal characteristics of individual members of cabin staff involved, etc.

4. The way briefings are introduced may be of prime importance if passengers are to be motivated to pay more attention. Passenger assessments of the impact of different introductory styles may be an important factor in increasing passenger attention to briefings.

5. It is important to find out what passengers think airlines could do to improve safety, as improved safety standards might lead to passenger perceptions of their survival chances in an accident as being increased. This in turn may motivate passengers to pay more attention to safety information.

6. Passenger perceptions of the likelihood of being in an accident needs to be explored. This appears to be important for the determination of how currently used safety information might be modified to improve knowledge of, and attention to, safety information.
REFERENCES


Johnson, D. A. Behavioural Inaction under Stress Conditions Similar to the Survivable Aircraft Accident, Ninth Annual SAFE Symposium, September, 1971.


National Transportation Safety Board, Safety Study NTSB/SS-85/09 Airline Passenger Safety Education: A Review of Methods Used to Present Safety Information
APPENDIX I

FLIGHT SAFETY BRIEFING QUESTIONNAIRE

Good Morning/Afternoon.

I'm researching into passenger opinion of airline safety briefings.

*(If passenger is unsure explain you mean the briefings given just before takeoff, that is the oxygen mask, life jacket and emergency exit demonstrations.)*

Could you tell me:

Q. Are you employed in the aviation industry in any capacity?

    If yes:

Thank you for your cooperation, but the study is concerned with passengers who are not employed by airlines or by an airport authority.

Q. Can you tell me which airline you flew to Gatwick on?

    If passenger flew on a non-British airline:

Thank you for your cooperation, but the study is looking at safety briefings on British airlines.

Interviewer notes in bold
Date: .................. Respondent No: ..................

Airline: .................. Sex: Male □ Female □

SECTION ONE - THIS FLIGHT AND SAFETY BRIEFING

Q1. WHAT WAS YOUR FLIGHT NUMBER? .................. DON'T KNOW □

Q2. AT WHICH AIRPORT DID YOU BOARD THE AIRCRAFT? ..................

Q3. DO YOU KNOW WHAT TYPE OF AIRCRAFT IT WAS? DON'T KNOW □

YES □ IF YES, WHAT WAS IT? ..................

IF DON'T KNOW, GO TO QUESTION 5)

Q4. WAS IT THE FIRST TIME YOU HAD FLOWN ON THIS TYPE OF AIRCRAFT?

YES □ NO □ DON'T KNOW □

Q5. HOW MANY WERE TRAVELLING IN YOUR IMMEDIATE GROUP? .............

IF MORE THAN ONE: WHO ACCOMPANIED YOU. (Tick as many as apply).

HUSBAND/WIFE □ CHILDREN □ HUSBAND/WIFE + CHILDREN □ OTHER □

HUSBAND/WIFE □ FRIENDS □ BUSINESS COLLEAGUES □ OTHER □

HUSBAND/WIFE □ CHILDREN □ HUSBAND/WIFE + CHILDREN □ OTHER □

OTHER RELATIVES □ FRIENDS □ BUSINESS COLLEAGUES □ OTHER □

Q6. ON YOUR FLIGHT TO GATWICK, WAS THE SAFETY BRIEFING GIVEN BY THE

FLIGHT ATTENDANT ONLY, WAS IT VIDEO OR FLIGHT ATTENDANT AND

VIDEO?

ATTENDANT ONLY □ ATTENDANT AND VIDEO □ DON'T KNOW □

VIDEO □ DON'T KNOW □

Q7. HOW MANY HOURS IS IT SINCE YOU SAW THE BRIEFING? .............

Q8. COULD YOU HEAR THE SAFETY BRIEFING INFORMATION CLEARLY?

YES □ NO □

IF NO, WHY NOT? ..................

Q9. COULD YOU SEE THE SAFETY DEMONSTRATIONS CLEARLY?

YES □ NO □

IF NO, WHY NOT? ..................

Q10. DID YOU FEEL YOU UNDERSTOOD THE DEMONSTRATIONS?

YES □ NO □ DON'T KNOW □

IF NO, WHY NOT? ..................
Q11. DID THEY SHOW HOW TO USE THE OXYGEN MASKS?

YES [1] NO [0] DON'T KNOW [9]

(IF NO, OR DON'T KNOW, GO TO QUESTION 14)

Q12. WHERE DOES THE OXYGEN MASK FIT ON YOUR FACE? (Tick if answer matches those given, otherwise record respondent's answer below)

OVER NOSE [0] OVER NOSE AND MOUTH [2]
OTHER .........................................................

Q13. DO YOU NEED TO DO ANYTHING TO MAKE THE MASK WORK?

AUTOMATIC [0] PULL MASK [2]
OTHER .........................................................

Q14. DID THEY SHOW YOU HOW TO PUT ON THE LIFE JACKETS?

YES [1] NO [0] DON'T KNOW [9]

(IF NO, OR DON'T KNOW, GO TO QUESTION 19)

Q15. WHERE WOULD YOU LOOK FOR YOUR LIFE JACKET? DON'T KNOW [9]

UNDER SEAT [0] OTHER ...........................................

Q16. HOW WOULD YOU PUT IT ON? DON'T KNOW [9]

OVER HEAD [0] OVER HEAD AND SHOULDERS [1]
OVER HEAD AND SHOULDERS AND TIE AROUND WAIST [2]
OTHER .........................................................

Q17. WHEN WOULD YOU INFLATE IT? DON'T KNOW [9]

BEFORE LEAVING AIRCRAFT [0] IN WATER [3]
AFTER LEAVING AIRCRAFT [2]
OTHER .........................................................

Q18. HOW WOULD YOU INFLATE IT? DON'T KNOW [9]

OTHER .........................................................

Q19. DID THE BRIEFING SHOW WHERE THE EMERGENCY EXITS WERE?

YES [1] NO [0] DON'T KNOW [9]

(IF NO, OR DON'T KNOW, GO TO QUESTION 22)

Q20. HOW MANY EXITS WERE POINTED OUT? ........... DON'T KNOW [9]
Q21. HOW MANY ROWS OF SEATS WERE YOU FROM YOUR NEAREST EXIT?

NUMBER: .......... SAME [ ] 00 DON'T KNOW [ ] 99
(IF SAME, GO TO QUESTION 23)

Q22. WAS THIS EXIT IN FRONT OR BEHIND YOU? DON'T KNOW [ ] 9
FRONT [ ] 0 BEHIND [ ] 1 MIDDLE [ ] 2

Q23. ON THIS FLIGHT DID YOU PICK UP AND READ THE SAFETY CARD?

YES [ ] 1 YES ON WAY OUT [ ] 2 NO [ ] 0
(IF NO, GO TO QUESTION 26)

Q24. FROM LOOKING AT THE CARD, COULD YOU OPEN THE EXITS IN AN EMERGENCY?

YES [ ] 1 NO [ ] 0 TRY [ ] 2 DON'T KNOW [ ] 9

Q25. FROM LOOKING AT THE CARD COULD YOU ADOPT THE BRACE POSITION IN AN EMERGENCY?

YES [ ] 1 NO [ ] 0 DON'T KNOW [ ] 9

IF YES, WHICH BRACE POSITION WOULD YOU ADOPT? DON'T KNOW [ ] 9
ARMS ON BACK OF SEAT IN FRONT [ ] 0 HEAD DOWN, BENT FORWARD [ ] 2
ARMS ROUND KNEES, HEAD DOWN [ ] 1 OTHER [ ] 3

SECTION TWO - PASSENGER'S BEHAVIOUR AND ATTITUDES

Q26. DO YOU THINK AIRLINES COULD IMPROVE THE WAY THEY PRESENT SAFETY INFORMATION TO PASSENGERS?

YES [ ] 1 NO [ ] 0 DON'T KNOW [ ] 9

IF YES, COULD YOU SUGGEST HOW?
VIDEOS [ ] 0 MAKE PASSENGERS PAY ATTENTION [ ] 4
DEPARTURE LOUNGE DEMOS [ ] 1 SAFETY INFORMATION BEFORE BOARDING [ ] 5
LESS RUSHED/Routine [ ] 2 MAKE BRIEFING MORE INTERESTING [ ] 6
LANGUAGE [ ] 3 OTHER [ ] 7

Q27. MANY PEOPLE DON'T PAY ATTENTION TO THE BRIEFINGS?

WHY DO YOU THINK THIS MIGHT BE? (Tick as many as apply)
TOO FREQUENT FLYER [ ] 0 SEEN/HEARD ALL BEFORE [ ] 3
BORING/ALL THE SAME [ ] 1 TOO MANY DISTRACTIONS [ ] 4
COMPLACENCY [ ] 2 TOO TIRED [ ] 5
OTHER [ ] 6 (specify)

Q28. HOW OFTEN DO YOU PAY ATTENTION TO THE SAFETY BRIEFING?
(prompt with possible answers if needed)
EVERY TIME [ ] 0 SELDOM [ ] 4
MOST TIMES [ ] 1 FIRST TIME ON AN AIRCRAFT [ ] 5
1 IN 2 TIMES [ ] 2 NEVER [ ] 6
OCCASIONALLY [ ] 3 OTHER [ ] 7 (specify)

Q29. HOW OFTEN DO YOU PICK UP AND READ THE SAFETY CARD?
(prompt with possible answers if needed)
EVERY TIME [ ] 0 SELDOM [ ] 4
Q30. HOW SIMILAR ARE THE EMERGENCY EXIT LOCATIONS ON DIFFERENT AIRCRAFT?

EXACTLY THE SAME 0  NOT VERY SIMILAR 3
VERY SIMILAR 1  COMPLETELY DIFFERENT 4
FAIRLY SIMILAR 2

Q31. SHOULD AIRLINES ENCOURAGE PASSENGERS TO BE MORE SAFETY CONSCIOUS?
(e.g. pay more attention to safety)

YES 1  NO 0  DON'T KNOW 9

IF YES, HOW DO YOU THINK THEY COULD DO THIS?

SAFETY INFORMATION AT HOME 0  ENFORCE RULES 3
PRE-BOARDING BRIEFING 1  VARY PRESENTATION 4
EMPHASISE IMPORTANCE TO 2  VIDEOS 5
GAIN PASSENGER ATTENTION
OTHER (specify) 6

Q32. ALTHOUGH THEY ARE RARE, HOW WORRIED ARE YOU ABOUT THE RISK OF BEING IN AN ACCIDENT? ARE YOU EXTREMELY WORRIED, VERY WORRIED, FAIRLY WORRIED, SLIGHTLY WORRIED OR NOT AT ALL WORRIED?

EXTREMELY WORRIED 0  SLIGHTLY WORRIED 3
VERY WORRIED 1  NOT AT ALL WORRIED 4
FAIRLY WORRIED 2

SECTION THREE - PASSENGER DEMOGRAPHIC DETAILS

Q33. HOW MANY TIMES HAVE YOU FLOWN IN THE LAST TWO YEARS?
(prompt - a round trip counts as once)

1-2 0  3-4 1  5-6 2
7-8 3  9-10 4  More than 10 5

Q34. WHAT IS THE MAIN PURPOSE OF YOUR AIR TRAVEL?

BUSINESS/PROFESSIONAL 0  VISITING RELATIVES 1
HOLIDAY 2  OTHER .............. 3
(specify)

SHOW CUE CARD

Q35. COULD YOU INDICATE YOUR MARITAL STATUS?

SINGLE 0  DIVORCED/SEPARATED 3
MARRIED/LIVING TOGETHER 1  OTHER 4
WIDOW/WIDOWER 2

SHOW CUE CARD

Q36. COULD YOU INDICATE YOUR AGE GROUP?

UNDER 18 1  18-24 2  25-34 3  35-44 4
45-54 5  55-64 6  OVER 65 7

HAVE YOU ANY OTHER COMMENTS YOU WOULD LIKE TO MAKE ABOUT THE BRIEFINGS? THANK YOU FOR TAKING PART IN THE STUDY. SAFETY IS AN IMPORTANT ISSUE, ALTHOUGH ACCIDENTS ARE VERY RARE.
Cue cards used in Questionnaire

1. Marital Status

   Single
   Married/Living Together
   Widow/Widower
   Divorced/Separated
   Other

2. Age Cue card

   Under 18
   18 - 24
   25 - 34
   35 - 44
   45 - 54
   Over 65
## APPENDIX II

Table 6.1 The knowledge questions and the frequencies and percentages of passengers scoring correct answers

<table>
<thead>
<tr>
<th>Question</th>
<th>Subs Correct</th>
<th>% Correct</th>
<th>% Other</th>
<th>No of Missing Values</th>
<th>% Missing Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where does the oxygen mask fit on your face?</td>
<td>339</td>
<td>67.8</td>
<td>81</td>
<td>80</td>
<td>16.0</td>
</tr>
<tr>
<td>Do you need to do anything to make the mask work?</td>
<td>265</td>
<td>53.0</td>
<td>155</td>
<td>80</td>
<td>16.0</td>
</tr>
<tr>
<td>Where would you look for your life jacket?</td>
<td>445</td>
<td>89.0</td>
<td>16</td>
<td>39</td>
<td>7.8</td>
</tr>
<tr>
<td>How would you put it on? (the life jacket)</td>
<td>339</td>
<td>67.8</td>
<td>122</td>
<td>39</td>
<td>7.8</td>
</tr>
<tr>
<td>When would you inflate it?</td>
<td>381</td>
<td>76.2</td>
<td>77</td>
<td>42</td>
<td>8.4</td>
</tr>
<tr>
<td>How would you inflate it? (pull tag or cord)</td>
<td>409</td>
<td>81.8</td>
<td>50</td>
<td>41</td>
<td>8.2</td>
</tr>
<tr>
<td>How would you inflate it? (those answering blow up as well as pull tag or cord)</td>
<td>135</td>
<td>27.0</td>
<td>324</td>
<td>41</td>
<td>8.2</td>
</tr>
<tr>
<td>How many exits were pointed out?</td>
<td>443</td>
<td>88.6</td>
<td>31</td>
<td>26</td>
<td>5.2</td>
</tr>
<tr>
<td>How many rows of seats were you from your nearest exit?</td>
<td>435</td>
<td>87.0</td>
<td>56</td>
<td>9</td>
<td>1.8</td>
</tr>
<tr>
<td>Was this exit in front or behind you?</td>
<td>421</td>
<td>84.2</td>
<td>10</td>
<td>69</td>
<td>13.8</td>
</tr>
<tr>
<td>From looking at the card, could you open the exits in an emergency?</td>
<td>151</td>
<td>30.2</td>
<td>167</td>
<td>182</td>
<td>36.4</td>
</tr>
<tr>
<td>From looking at the card, could you adopt the brace position in an emergency?</td>
<td>251</td>
<td>50.2</td>
<td>66</td>
<td>183</td>
<td>36.6</td>
</tr>
<tr>
<td>If yes, which brace position would you adopt?</td>
<td>231</td>
<td>46.2</td>
<td>22</td>
<td>247</td>
<td>49.4</td>
</tr>
</tbody>
</table>
APPENDIX II (cont)

Table 6.2 Frequency of passengers having seen oxygen mask, life jacket and emergency exit demonstrations; and those reading safety card.

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>% Yes</th>
<th>No or Don't Know</th>
<th>% No or Don't Know</th>
<th>Missing</th>
<th>% Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did they show how to use the oxygen masks?</td>
<td>410</td>
<td>82.0</td>
<td>86</td>
<td>17.2</td>
<td>4</td>
<td>.8</td>
</tr>
<tr>
<td>Did they show you how to put on the life jackets?</td>
<td>454</td>
<td>90.8</td>
<td>41</td>
<td>8.2</td>
<td>5</td>
<td>1.0</td>
</tr>
<tr>
<td>Did the briefing show were the emergency exits were?</td>
<td>465</td>
<td>93.0</td>
<td>27</td>
<td>5.4</td>
<td>8</td>
<td>1.6</td>
</tr>
<tr>
<td>On this flight did you pick up and read the safety card?*</td>
<td>301</td>
<td>60.2</td>
<td>189</td>
<td>37.8</td>
<td>10</td>
<td>2.0</td>
</tr>
</tbody>
</table>

* Frequency of those reading card includes 85 (17.0%) reading card on outward journey and not on return journey.
### APPENDIX III

Table 6.3 Percentage of knowledge questions correctly answered by main purpose of air travel (business or holiday - those eligible only)

<table>
<thead>
<tr>
<th>Question</th>
<th>Business</th>
<th>Holiday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where does the oxygen mask fit on your face?</td>
<td>62</td>
<td>267</td>
</tr>
<tr>
<td>% of Passengers</td>
<td>86.1</td>
<td>80.7</td>
</tr>
<tr>
<td>Do you need to do anything to make the mask work?</td>
<td>49</td>
<td>207</td>
</tr>
<tr>
<td>% of Passengers</td>
<td>68.1</td>
<td>62.5</td>
</tr>
<tr>
<td>Where would you look for your life jacket?</td>
<td>84</td>
<td>346</td>
</tr>
<tr>
<td>% of Passengers</td>
<td>96.6</td>
<td>96.4</td>
</tr>
<tr>
<td>How would you put it on? (life jacket)</td>
<td>60</td>
<td>273</td>
</tr>
<tr>
<td>% of Passengers</td>
<td>69.8</td>
<td>76.0</td>
</tr>
<tr>
<td>When would you inflate it?</td>
<td>71</td>
<td>298</td>
</tr>
<tr>
<td>% of Passengers</td>
<td>82.6</td>
<td>83.2</td>
</tr>
<tr>
<td>How would you inflate it? (cord or tag)</td>
<td>82</td>
<td>315</td>
</tr>
<tr>
<td>% of Passengers</td>
<td>95.4</td>
<td>87.7</td>
</tr>
<tr>
<td>How would you inflate it? (blow up)</td>
<td>28</td>
<td>106</td>
</tr>
<tr>
<td>% of Passengers</td>
<td>32.6</td>
<td>29.5</td>
</tr>
<tr>
<td>How many exits were pointed out?</td>
<td>84</td>
<td>345</td>
</tr>
<tr>
<td>% of Passengers</td>
<td>87.5</td>
<td>94.8</td>
</tr>
<tr>
<td>How many rows of seats were you from your nearest exit?</td>
<td>91</td>
<td>336</td>
</tr>
<tr>
<td>% of Passengers</td>
<td>88.4</td>
<td>89.6</td>
</tr>
<tr>
<td>Was this exit in front or behind you?</td>
<td>84</td>
<td>324</td>
</tr>
<tr>
<td>% of Passengers</td>
<td>94.4</td>
<td>98.5</td>
</tr>
<tr>
<td>From looking at the card, could you open the exits in an emergency?</td>
<td>33</td>
<td>116</td>
</tr>
<tr>
<td>% of Passengers</td>
<td>61.1</td>
<td>45.1</td>
</tr>
<tr>
<td>From looking at the card, could you adopt the brace position in an emergency?</td>
<td>44</td>
<td>202</td>
</tr>
<tr>
<td>% of Passengers</td>
<td>81.5</td>
<td>78.6</td>
</tr>
<tr>
<td>Which brace position would you adopt?</td>
<td>39</td>
<td>187</td>
</tr>
<tr>
<td>% of Passengers</td>
<td>88.6</td>
<td>91.7</td>
</tr>
</tbody>
</table>
APPENDIX III (CONT)

Table 6.4 Percentage of knowledge questions correctly answered by type of flight (scheduled or charter - those eligible only)

<table>
<thead>
<tr>
<th>Question</th>
<th>Scheduled No. of Passengers</th>
<th>% of Passengers</th>
<th>Charter No. of Passengers</th>
<th>% of Passengers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where does the oxygen mask fit on your face?</td>
<td>95</td>
<td>82.6</td>
<td>244</td>
<td>80.0</td>
</tr>
<tr>
<td>Do you need to do anything to make the mask work?</td>
<td>61</td>
<td>53.0</td>
<td>204</td>
<td>66.9</td>
</tr>
<tr>
<td>Where would you look for your life jacket?</td>
<td>144</td>
<td>97.3</td>
<td>301</td>
<td>96.2</td>
</tr>
<tr>
<td>How would you put it on? (life jacket)</td>
<td>97</td>
<td>66.0</td>
<td>242</td>
<td>77.1</td>
</tr>
<tr>
<td>When would you inflate it?</td>
<td>110</td>
<td>74.3</td>
<td>271</td>
<td>87.4</td>
</tr>
<tr>
<td>How would you inflate it? (card or tag)</td>
<td>134</td>
<td>90.5</td>
<td>275</td>
<td>88.4</td>
</tr>
<tr>
<td>How would you inflate it? (blow up)</td>
<td>62</td>
<td>41.9</td>
<td>73</td>
<td>23.5</td>
</tr>
<tr>
<td>How many exits were pointed out?</td>
<td>148</td>
<td>91.4</td>
<td>295</td>
<td>94.6</td>
</tr>
<tr>
<td>How many rows of seats were you from your nearest exit?</td>
<td>154</td>
<td>88.5</td>
<td>281</td>
<td>88.6</td>
</tr>
<tr>
<td>Was this exit in front or behind you?</td>
<td>143</td>
<td>96.6</td>
<td>278</td>
<td>98.2</td>
</tr>
<tr>
<td>From looking at the card, could you open the exits in an emergency?</td>
<td>63</td>
<td>60.0</td>
<td>88</td>
<td>41.3</td>
</tr>
<tr>
<td>From looking at the card, could you adopt the brace position in an emergency?</td>
<td>88</td>
<td>83.8</td>
<td>163</td>
<td>76.9</td>
</tr>
<tr>
<td>Which brace position would you adopt?</td>
<td>85</td>
<td>96.6</td>
<td>146</td>
<td>88.5</td>
</tr>
</tbody>
</table>