Left or Right Test

Trial Data complied by Professor D. Withington. School of Biomedical Sciences, Worsley Medical and Dental Building, University of Leeds, Leeds, LS2 9NQ, U.K., and Sound Alert Technology plc, 175 Woodhouse Lane, Leeds, LS2 3AR, U.K.

Method

Participants

162 participants took part in the trial. 81 participants were female and 81 were male. The participants ranged between the ages of 16 and 56 years of age. They were from a variety of occupations, courses and some were unemployed.

Apparatus

The geometry consisted of a room that fed into a left/right corridor (see figure 1). On entering the trial area the participant was 9.4 meters from each exit (see figure 1.). 3 standard visual exit signs were hung according to building regulations: above the two exits (see figure 1. at points A and B) and directly opposite the entrance (see figure 1. at point C). All 3 visual exit signs had the option of light and sound. The dB measurement of the sound beacon was taken at a distance of one meter from the beacon itself. The measurement was 85dB.

A fire alarm was used in every trial, was set at 85dB and the measurement for this was taken at a distance of 1 meter. The fire alarm was at point C (see figure 1).

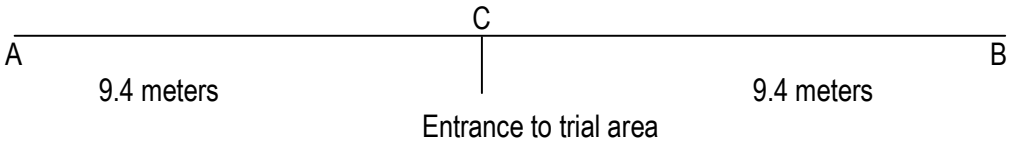

Figure 1: Non target exit at A, target exit at B, cameras situated at points B and C, light and sound units at A,B and C and fire alarm at point C.

Two Talisman K90 C thermal imaging cameras (see figure 1. At points B & C) were used to record the behaviour of the participants at the key decision point on entering the corridor and to record their progress to their destination. Thermal imaging cameras are beneficial to record the participant's behaviour in smoke conditions. The video equipment recorded the details of the decision process and success/failure of the participants in finding their way out.

A JEM ZR-33 High-mass smoke machine and La Maitre Global Mix Smoke Fluids were used to generate the smoke. The smoke density meter was set to allow 1 meter visibility.

On trial 1.3.1 and trial 1.3.2 a tape recorder was used to simulate a PA type system which played a tape saying 'follow the sound to an exit' and the volume could be heard inside the trial area at 85dB.

Materials

A questionnaire was devised which asked about the participant's decisions and awareness throughout the trial. A scripted briefing was used to instruct the participants (see appendix).

Design

This experiment used a between subjects design. The independent variables were environmental conditions (smoke, no smoke, sound beacon, no sound beacon) and levels of instruction (no information, PA system and highly trained).

The dependent variable was time taken to reach the exit (target and non-target).

Procedure

The training briefing was given to the participant and they were blindfolded and guided to the trial area. Depending on the level of instruction received the participant was asked to find their way out of the structure as quickly as possible and was instructed to shout "NOW" when they reached one of the two exits. They were fed in one at a time after the count of "5,4,3,2,1 go" when the relevant egress aids (light and dependent on which trial, the sound beacon) were activated. Active participants were separated from the main group at this time to avoid contamination. They were collected at their chosen exit, led out of the trial area and guided to a separate room to fill in a questionnaire.

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Results

Smoke

Travel Speed

The total travel time was measured from the participant entering the trial area to the time they shouted "NOW" on reaching their chosen exit. The distance traveled i.e. 9.4 meters was divided by total travel time to get travel speed.

Trial Number	N	Mean (meters per second)	Standard Deviation
1.1.2- No sound- no information	**19**	**.43**	**.14**
1.2.2- Sound- no information	**20**	**.53**	**.12**

Table 1. shows the mean travel speeds of the participants who took part in trials 1.1.2 or 1.2.2.

Note: participants were excluded from tables 1 and 2 if they went in more than one direction before deciding on their chosen exit.

Using an unrelated two tailed t-test, the differences between the means regardless of which exit the participants went to, were found to be significant; $t = -2.56$ $p<0.05$. Thus, the participants in the sound- no information group traveled faster than those in the no sound-no information group.

Trial Number	N	Mean (meters per second)	Standard Deviation
1.2.2- Sound beacon-no information	**20**	**.53**	**.12**
1.3.2- Sound beacon- PA system	**19**	**.40**	**.08**
1.4.2- Sound beacon- highly trained	**20**	**.44**	**.15**

Table 2. shows the mean travel speeds of the participants who took part in trials 1.2.2, 1.3.2 or 1.4.2.

Using a 1 x 3 ANOVA, the differences between the means, regardless of which exit the participants went to, were found to be significant; $F(2,56)=6.66$, $p<0.01$. The Bonferroni test was used to make pairwise comparisons between all means. The trial 1.2.2 differed from 1.3.2 and 1.4.2 ($p<0.05$). The rest of the means were insignificant ($p>0.05$). Thus, there were differences between the no information with sound group and the two groups: PA system and highly trained.

Decision Time

The decision time was measured from the time the participant entered the trial area to when they had taken two steps in the direction of their final chosen exit.

Trial Number	N	Mean (meters per second)	Standard Deviation
1.1.2- No sound- no	**20**	**3.56**	**3.01**

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information			
1.2.2- Sound-no information	**20**	**2.67**	**.98**

Table 3. shows the mean decision time of the participants who took part in trials 1.1.2 or 1.2.2.

Using an unrelated two tailed t-test the difference between the means were found to be non-significant; t =1.26, p>0.05.

Trial Number	**N**	**Mean**	**Std. Deviation**
1.2.2- Sound beacon-no information	**20**	**2.67**	**.98**
1.3.2- Sound beacon- PA system	**20**	**4.54**	**2.31**
1.4.2- Sound beacon- highly trained	**20**	**3.18**	**2.10**

Table 4. shows the mean decision times of the participants who took part in trials 1.2.2, 1.3.2 or 1.4.2.

Using a 1x 3 ANOVA, the differences between the means were found to be significant; $F(2,57)=5.22$, $p<0.01$. The Bonferroni test was used to make pairwise comparisons between all means. The means that differed from other means ($p<0.05$) were the trials 1.2.2 and 1.3.2. The rest of the means were insignificant ($p>0.05$). Thus, there were differences between the no information group and the PA system group.

Travel Time minus Decision Time

Trial Number	**N**	**Mean (meters per second)**	**Standard Deviation**
1.1.2-No sound- no information	**20**	**23.04**	**11.28**
1.2.2- Sound- no information	**20**	**15.98**	**4.51**

Table 5. shows the mean travel time minus decision time for the participants who took part in trials 1.1.2 or 1.2.2.

Using an unrelated two tailed t-test, the differences between the means regardless of which exit the participants went to, were found to be significant; $t =2.60$ $p<0.05$. . Thus, the participants in the sound- no information group traveled faster than those in the no sound-no information group.

Trial Number	**N**	**Mean**	**Std. Deviation**
1.2.2- Sound beacon-no information	**20**	**15.98**	**4.51**
1.3.2- Sound beacon- PA system	**20**	**20.85**	**6.24**
1.4.2- Sound beacon- highly trained	**20**	**20.97**	**7.35**

Table 6. shows the mean travel time minus the mean decision time for trials 1.2.2, 1.3.2 and 1.4.2.

Using a 1 x 3 ANOVA, the differences between the means, regardless of which exit the participants went to, were found to be significant; $F (2,57)=4.30$, $p<0.05$. The Bonferroni test was used to make

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pairwise comparisons between all means. The trial 1.2.2 differed from 1.3.2 and 1.4.2 ($p<0.05$). The rest of the means were insignificant ($p>0.05$). Thus, there were differences between the no information with sound group and the two groups: PA system and highly trained.

Training and sound beacon effects on final destination choice

Key

Target Exit -Right	Non Target Exit -Left, or if the participant went in more than one direction.

Trial Number & description	Exit	N	Exit Choice (%)
1.1.2- Base case- no sound beacon- no info.	**Target**	**11**	**52**
1.1.2	**Non target**	**10**	**48**
1.2.2- Sound beacon-no information	**Target**	**17**	**85**
1.2.2	**Non target**	**3**	**15**
1.3.2- Sound beacon- PA system	**Target**	**18**	**90**
1.3.2	**Non target**	**2**	**10**
1.4.2- Sound beacon- highly trained	**Target**	**19**	**90**
1.4.2	**Non target**	**2**	**10**

Table 7. shows the percentage final exit choice. This is divided into target and non-target exits.

As table 7 shows, the percentage of people who went to the target exit increased with the level of instruction they received. Also, an increase can be seen between trials 1.1.2 and 1.2.2. With exit lights alone and no training, 48% of the people would have found it hard to get out of the building. This drops to only 15% when the sound beacon is introduced and the participants are still naive.

No Smoke

Travel Speed

The total travel time was measured from the participant entering the trial area to the time they shouted "NOW" on reaching their chosen exit. The distance of 9.4 meters was divided by total travel time to get travel speed.

Trial Number	N	Mean (meters per second)	Standard Deviation
1.1.1- No sound-no information	**19**	**1.36**	**.29**
1.2.1-Sound-no information	**20**	**1.45**	**.21**

Table 8. shows the mean travel speed of the participants who took part in trials 1.1.1 or 1.2.1.

Note: participants were excluded from tables 8 and 9 if they went in more than one direction before deciding on their chosen exit.

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Using an unrelated two tailed t-test, the differences between the means regardless of which exit the participants went to, were found to be non-significant; t =-1.02, p>0.05.

Trial Number	N	Mean (meters per second)	Standard Deviation
1.2.1- Sound beacon-no information	20	1.45	.21
1.3.1- Sound beacon- PA system	19	1.23	.32
1.4.1- Sound beacon- highly trained	20	1.41	.38

Table 9. shows the mean travel speeds of the participants for trials 1.2.1, 1.3.1 or 1.4.1.

Using a 1 x 3 ANOVA, the differences between the means, regardless of which exit they went to, were found to be non significant; F(2,56)=2.51, p>0.05.

Decision Times

The decision time was measured from the time they entered the trial area to when they had taken two steps in the direction of their final chosen exit.

Trial Number	N	Mean (meters per second)	Standard Deviation
1.1.1- no sound- no information	20	2.38	3.53
1.2.1-sound- no information	20	1.84	.92

Table 10.shows the mean decision times of the participants for trials 1.1.1 or 1.2.1.

Using an unrelated two tailed t-test, the differences between the means were found to be non-significant; t =.67, p>0.05.

Trial Number	N	Mean	Std. Deviation
1.2.1- Sound beacon-no information	20	1.84	.92
1.3.1- Sound beacon- PA system	20	2.9	1.76
1.4.1- Sound beacon- highly trained	20	1.86	1.72

Table 11. shows the mean decision times of the participants per trial.

Using a 1x 3 ANOVA, the differences between the means were found to be significant; F(2,57)=3.19, p<0.05. The LSD test was used to make pairwise comparisons between all means. The trial 1.3.1 differed from 1.2.1 and 1.4.1 (p<0.05). The rest of the means were insignificant

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(p>0.05). Thus, there were differences between the PA system group and the two groups: no information and highly trained.

Travel Time minus Decision Time

Trial Number	N	Mean (meters per second)	Standard Deviation
1.1.1- No sound- no information	20	5.62	1.17
1.2.1-Sound-no information	20	4.71	1.04

Table 12. shows the mean travel minus decision time of the participants who took part in trials 1.1.1 or 1.2.1.

Using an unrelated two tailed t-test, the differences between the means regardless of which exit the participants went to, were found to be significant; $t = 2.59$, $p < 0.05$. Thus, the participants in the sound- no information group traveled faster than those in the no sound-no information group.

Trial Number	N	Mean	Std. Deviation
1.2.1- Sound beacon-no information	20	4.71	1.04
1.3.1- Sound beacon- PA system	20	5.35	1.44
1.4.1- Sound beacon- highly trained	20	5.39	1.27

Table 13. shows the mean travel time minus the mean decision time for trials 1.2.1, 1.3.1 or 1.4.1.

Using a 1 x 3 ANOVA, the differences between the means were found to be non-significant; $F(2,57)=1.80$, $p>0.05$.

Training and sound beacon effects on final destination choice

Key

Target Exit -Right	Non Target Exit -Left or if the participant went in more than one direction.

Trial Number	Exit	N	Exit choice (%)
1.1.1- Base case- no sound beacon- no info.	Target	13	65
1.1.1	Non target	7	35
1.2.1- Sound beacon-no information	Target	18	90
1.2.1	Non target	2	10
1.3.1- Sound beacon- PA system	Target	17	85
1.3.1	Non target	3	15
1.4.1- Sound beacon- highly trained	Target	20	100
1.4.1	Non target	0	0

Table 14. shows the percentage final exit choice. This is divided into target and non-target exits.

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As table 14. shows, the percentage of people who went to the target exit increased with the level of training they received with one exception, trial 1.3.1. Also, an increase can be seen between trials 1.1.1 and 1.2.1 i.e. with exit lights alone and no training, 35% of the people would have found it hard to get out of the building. This drops to only 10% when the sound beacon is introduced and the participants are still naive.

Smoke and No Smoke

Travel Speed

The total travel time was measured from the participant entering the trial area to the time they shouted "NOW" on reaching their chosen exit. The distance of 9.4 meters was divided by total travel time to get travel speed.

Trial Number	N	Mean (Meters per second)	Standard Deviation
1.1.2- Base case- no sound beacon- no info.- smoke	**19**	**.43**	**.14**
1.2.2- Sound beacon-no information- smoke	**20**	**.53**	**.12**
1.3.2- Sound beacon- PA system-smoke	**19**	**.40**	**.08**
1.4.2- Sound beacon- highly trained- smoke	**20**	**.44**	**.15**
1.1.1- Base case- no sound beacon- no information- no smoke	**19**	**1.36**	**.29**
1.2.1- Sound beacon-no information- no smoke	**20**	**1.45**	**.21**
1.3.1- Sound beacon- PA system- no smoke	**19**	**1.23**	**.32**
1.4.1- Sound beacon- highly trained- no smoke	**20**	**1.41**	**.38**

Table 15. shows the mean travel speeds of the participants per trial.

Note: participants were excluded from table 15. if they went in more than one direction before deciding on their chosen exit.

Using a 1 x 8 ANOVA, the differences between the means, regardless of which exit they went to, were found to be significant; $F(7,148)=86.0$, $p<0.01$. The Bonferroni test was used to make pairwise comparisons between all means. All means differed from other means ($p<0.01$). Thus, there was an overall difference between the meters per second of participants in smoke to those in no smoke.

Decision Times

The decision time was measured from the time they entered the trial area to when they had taken two steps in the direction of their final chosen exit.

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Trial Number	N	Mean	Std. Deviation
1.1.2- Base case- no sound beacon- no info.- smoke	21	3.56	3.01
1.2.2- Sound beacon-no information- smoke	20	2.67	.98
1.3.2- Sound beacon- PA system-smoke	20	4.54	2.31
1.4.2- Sound beacon- highly trained- smoke	20	3.18	2.10
1.1.1- Base case- no sound beacon- no information- no smoke	20	2.38	3.53
1.2.1- Sound beacon-no information- no smoke	20	1.84	.92
1.3.1- Sound beacon- PA system- no smoke	20	2.9	1.76
1.4.1- Sound beacon- highly trained- no smoke	20	1.86	1.72

Table 16. shows the mean decision times of the participants per trial.

Using a 1 x 8 ANOVA, the differences between the means were found to be non-significant; $F(7,152)=3.33$, $p<0.01$. The Bonferroni test was used to make pairwise comparisons between all means. Trial 1.3.2 differed from 1.2.1 and 1.4.1. the rest of the means were insignificant ($p>0.05$). Thus, there were differences between the PA System (smoke) and two of the no smoke trials i.e. sound beacon no information and sound beacon highly trained.

Travel Time minus Decision Time

Trial Number	N	Mean	Std. Deviation
1.1.2- Base case- no sound beacon- no info.- smoke	20	23.04	11.28
1.2.2- Sound beacon-no information- smoke	20	15.98	4.51
1.3.2- Sound beacon- PA system-smoke	20	20.85	6.24
1.4.2- Sound beacon- highly trained- smoke	20	20.97	7.35
1.1.1- Base case- no sound beacon- no information- no smoke	20	5.62	1.17
1.2.1- Sound beacon-no information- no smoke	20	4.71	1.04
1.3.1- Sound beacon- PA system- no smoke	19	5.37	1.48
1.4.1- Sound beacon- highly trained- no smoke	20	5.39	1.27

Table 17. shows the mean decision times of the participants per trial.

Using a 1 x 8 ANOVA, the differences between the means, regardless of which exit they went to, were found to be significant; $F(7,152)=43.96$, $p<0.01$. The Bonferroni test was used to make pairwise comparisons between all means. All means differed from other means ($p<0.01$). Thus, there was an overall difference between the meters per second of participants in smoke to those in no smoke.

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Smoke

Section A- Location of Evacuation Aids

	1.1.2 No sound- no information	1.2.2 Sound beacon- No information	1.3.2 Sound beacon-PA system	1.4.2 Sound beacon- Highly Trained
4. Did the sound seem to come from a beacon situated in just one location?	N/A	78% yes, correctly	85% yes, correctly	71% yes, correctly
5. Were the visual exit signs visible in more than one location?	27% yes, correctly	50% yes/no	17% yes, correctly	24% yes, correctly

Section B- Impact of Egress Aids

	1.1.2 No sound- no information	1.2.2 Sound beacon- No information	1.3.2 Sound beacon-PA system	1.4.2 Sound beacon- Highly Trained
1. Did the visual sign(s) help you to locate a suitable exit?	50% yes	72% yes	37% yes	52% yes
2. Did the sound beacon(s) help you to locate a suitable exit?	N/A	78% yes	89% yes	100% yes
3. Was it clear which direction the sound from the beacon(s) was coming from?	N/A	78% yes	85% yes	91% yes
4. Could you hear the sound of the beacon(s) above the sound of the fire alarm?	N/A	83% yes	95% yes	95% yes
5. Did you ever feel unable to find your way to a safe exit?	41% no	89% no	83% no	76% no
7. Were the visual exit sign(s) the most influential factor(s) in determining the direction of travel?	46% yes	60% yes	16% yes	9% yes
8. Were the sound beacon(s) the most influential factor(s) in determining the direction of travel?	N/A	50% yes/no	84% yes	91% yes
9. Was the combination of the visual exit sign(s) and the sound beacon(s) useful?	N/A	78% yes	63% yes	86% yes

Section C- Briefing/Training

	1.1.2 No sound- no information	1.2.2 Sound beacon- No information	1.3.2 Sound beacon-PA system	1.4.2 Sound beacon- Highly Trained
1. Did you understand that the sound beacon(s) would direct you towards an exit?	N/A	83% yes	100% yes	100% yes

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3. Was the purpose of the sound beacon(s) unclear?	N/A	78% no	95% no	95% no
4. Did the briefing provide you with sufficient information to make use of the beacon(s) as an escape aid?	N/A	72% yes	95% yes	95% yes

No Smoke

Section A- Location of Evacuation Aids

	1.1.1 No sound- no information	**1.2.1 Sound beacon- No information**	**1.3.1 Sound beacon-PA system**	**1.4.1 Sound beacon- Highly Trained**
4. Did the sound seem to come from a beacon situated in just one location?	N/A	60% yes, correctly	60% yes, correctly	100% yes, correctly
5. Were the visual exit signs visible in more than one location?	90% yes, correctly	70% yes, correctly	75% yes, correctly	70% yes, correctly

Section B- Impact of Egress Aids

	1.1.1 No sound- no information	**1.2.1 Sound beacon- No information**	**1.3.1 Sound beacon-PA system**	**1.4.1 Sound beacon- Highly Trained**
1. Did the visual sign(s) help you to locate a suitable exit?	90% yes	75% yes	80% yes	80% yes
2. Did the sound beacon(s) help you to locate a suitable exit?	N/A	55% yes	65% yes	100% yes
3. Was it clear which direction the sound from the beacon(s) was coming from?	N/A	50% yes/no	30% yes	95% yes
4. Could you hear the sound of the beacon(s) above the sound of the fire alarm?	N/A	60% yes	60% yes	95% yes
5. Did you ever feel unable to find your way to a safe exit?	95% no	100% no	90% no	100% no
7. Were the visual exit sign(s) the most influential factor(s) in determining the direction of travel?	90% yes	70% yes	55% yes	30% yes
8. Were the sound beacon(s) the most influential factor(s) in determining the direction of travel?	N/A	35% yes	50% yes/no	70% yes
9. Was the combination of the visual exit sign(s) and the sound beacon(s) useful?	N/A	70% yes	80% yes	85% yes

Section C- Briefing/Training

	1.1.1 No sound- no information	**1.2.1 Sound beacon- No**	**1.3.1 Sound beacon-PA**	**1.4.1 Sound beacon-**

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		information	system	Highly Trained
1. Did you understand that the sound beacon(s) would direct you towards an exit?	N/A	90% yes	100% yes	95% yes
3. Was the purpose of the sound beacon(s) was unclear?	N/A	80% no	95% no	100% no
4. Did the briefing provide you with sufficient information to make use of the beacon(s) as an escape aid?	N/A	85% yes	95% yes	100% yes

Appendix

Description of the Trials

Trails no.

1.1.2 Base case- smoke, no sound beacon, no information and two lights at both exits

1.2.2 Smoke, one sound beacon (target exit), no information and two lights at both exits

1.3.2 Smoke, one sound beacon (target exit), PA System and two lights at both exits

1.4.2 Smoke, one sound beacon (target exit), highly trained and two lights at both exits

1.1.1 Base case- no smoke, no sound beacon, no information and two lights at both exits

1.2.1 No smoke, one sound beacon (target exit), no information and two lights at both exits

1.3.1 No smoke, one sound beacon (target exit), PA system and two lights at both exits

1.4.1 No Smoke, one sound beacon (target exit), highly trained and two lights at both exits

Briefing for Test Personnel

Case 1.1.1 (No smoke, No sound) & Case 1.2.1 (No info- No smoke with sound)

Good morning/afternoon ladies and gentlemen.

Thank you for participating in these trials, your presence here is much appreciated. We hope that the tests we are carrying out will result in safer buildings for everyone.

In a few minutes we will lead you upstairs one by one and you will be met by the trial supervisor. The evacuation will begin with the emergency signal which is a count down of 5, 4, 3, 2, 1, Go. Which will be said by the trial supervisor. On go please enter the trial area and try to get to an available exit ASAP. When you are in the trial area we will be filming your behaviour in order for us to analyse this at a later date.

You will be evacuating in a smoke-less environment. This is to simulate a bomb scare situation. Although we want you to evacuate the trial area ASAP please take extreme care, walk don't run! Once you have reached the exit please remain there until escorted out of the trial area. You will then be requested to go to the departure's room to complete a questionnaire and to get your money. Any Questions?

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Thank you for your co-operation and good luck!

Case 1.3.1 (PA System, No smoke with sound)

Good morning/afternoon ladies and gentlemen.

Thank you for participating in these trials, your presence here is much appreciated. We hope that the tests we are carrying out will result in safer buildings for everyone.

In a few minutes we will lead you upstairs one by one and you will be met by the trial supervisor. The evacuation will begin with the emergency signal which is a count down of 5, 4, 3, 2, 1, Go. This will be said by the trial supervisor and you will also hear a PA System which will tell you to "follow the sound (ch, ch demonstrate the sound) to an exit." On go please enter the trial area and try to get to an available exit ASAP. When you are in the trial area we will be filming your behaviour in order for us to analyse this at a later date.

You will be evacuating in a smoke-less environment. This is to simulate a bomb scare situation. Although we want you to evacuate the trial area ASAP please take extreme care walk don't run! Once you have reached the exit please remain there until escorted out of the trial area. You will then be requested to go to the departure's room to complete a questionnaire and to get your money. Any Questions?

Thank you for your co-operation and good luck!

Case 1.4.1 (Highly Trained, No smoke with sound)

Good morning/afternoon ladies and gentlemen.

Thank you for participating in these trials, your presence here is much appreciated. We hope that the tests we are carrying out will result in safer buildings for everyone.

In a few minutes we will lead you one by one up to the first floor and you will be met by the training supervisor. The evacuation will begin with the emergency signal which is a count down of 5, 4, 3, 2, 1, Go. Which will be said by the training supervisor. On go please enter the trial area and try to get to an available exit ASAP.

On completion of your training you will be led up to a further floor and be met by the trial supervisor. The evacuation will begin with the emergency signal which is a count down of 5, 4, 3, 2,1 Go. On go please enter the trial area and try to get to an available exit ASAP. When you are in the trial area we will be filming your behaviour in order for us to analyse this at a later date.

You will be evacuating in a smoke-less environment. This is to simulate a bomb scare situation. Although we want you to evacuate the training and trial areas ASAP please take extreme care, walk don't run. Once you have reached the exits please remain there until escorted out of the training area and the same applies to the trial area. You will then be requested to go to the departure's room to complete a questionnaire and to get your money. Any Questions?

Professor D. Withington. School of Biomedical Sciences, Worsley Medical and Dental Building, University of Leeds, Leeds, LS2 9NQ, U.K., and Sound Alert Technology plc, 175 Woodhouse Lane, Leeds, LS2 3AR, U.K.

This building is fitted with directional sound beacons over each exit. The directional sound beacons will be activated in the event of an emergency and will sound over available exits. They sound like this (play sound). Please follow this sound to safety.

Thank you for your co-operation and good luck!

Case 1.1.2 (Smoke, No Sound) & Case 1.2.2 (No info. Smoke and sound)

Good morning/afternoon ladies and gentlemen.

Thank you for participating in these trials, your presence here is much appreciated. We hope that the tests we are carrying out will result in safer buildings for everyone.

In a few minutes we will lead you upstairs one by one and you will be met by the trial supervisor. The evacuation will begin with the emergency signal which is a count down of 5, 4, 3, 2, 1, Go. This will be said by the trial supervisor. On go please enter the trial area and try to get to an available exit ASAP. When you are in the trial area we will be filming your behaviour in order for us to analyse this at a later date.

As I am sure you have been briefed, you will be evacuating through dense smoke. The smoke is theatrical and harmless but you should have difficulty seeing. You will not experience the toxic effects of real smoke such as coughing and choking nor will it cause the extreme visual disability that real smoke would have. However, we ask you to take extreme care, walk don't run! Once you have reached the exit please remain there until escorted out of the trial area. You will then be requested to go to the departure's room to complete a questionnaire and to get your money. Any Questions?

Thank you for your co-operation and good luck!

Case 1.3.2 (PA System, Smoke and Sound)

Good morning/afternoon ladies and gentlemen.

Thank you for participating in these trials, your presence here is much appreciated. We hope that the tests we are carrying out will result in safer buildings for everyone.

In a few minutes we will lead you one by one upstairs and you will be met by the trial supervisor. The evacuation will begin with the emergency signal which is a count down of 5, 4, 3, 2, 1, Go. This will be said by the trial supervisor and you will also hear a PA System which will tell you to "follow the sound (ch, ch demonstrate the sound) to an exit." On go please enter the trial area and try to get out of this area ASAP. When you are in the trial area we will be filming your behaviour in order for us to analyse this at a later date.

As I am sure you have been briefed, you will be evacuating through dense smoke. The smoke is theatrical and harmless but you should have difficulty seeing. You will not experience the toxic effects of real smoke such as coughing and choking nor will it cause the extreme visual disability that real smoke would have. However, we ask you to take extreme care, walk don't run! Once you have reached the exit please remain there until escorted out of the trial area. You will then be requested to go to the departure's room to complete a questionnaire and to get your money. Any Questions?

Thank you for your co-operation and good luck!

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Case 1.4.2 (Highly Trained, smoke and sound)

Good morning/afternoon ladies and gentlemen.

Thank you for participating in these trials, your presence here is much appreciated. We hope that the tests we are carrying out will result in safer buildings for everyone.

In a few minutes we will lead you one by one up to the first floor and you will be met by the training supervisor. The evacuation will begin with the emergency signal which is a count down of 5, 4, 3, 2, 1, Go. This will be said by the training supervisor. On go please enter the trial area and try to get to an available exit ASAP.

On completion of your training you will be led up to a further floor and be met by the trial supervisor. The evacuation will begin with the emergency signal which is a count down of 5, 4, 3, 2,1 Go. On go please enter the trial area and try to get to an available exit ASAP. When you are in the trial area we will be filming your behaviour in order for us to analyse this at a later date.

As I am sure you have been briefed, you will be evacuating through dense smoke. The smoke is theatrical and harmless but you should have difficulty seeing. You will not experience the toxic effects of real smoke such as coughing and choking nor will it cause the extreme visual disability that real smoke would have. However, we ask you to take extreme care, walk don't run! Once you have reached the exit please remain there until escorted out of the trial area. You will then be requested to go to the departure's room to complete a questionnaire and to get your money. Any Questions?

This building is fitted with directional sound beacons over each exit. The directional sound beacons will be activated in the event of an emergency and will sound over available exits. They sound like this (play sound). Please follow this sound to safety.

Thank you for your co-operation and good luck!

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