

Low Level Cycle Signals with an early release – Appendices

Track trial report

This document contains the appendices to accompany the report from the second sub-trial of a larger track trial investigating the reactions of road users to Low Level Cycle Signals (LLCS) with an early release (Trial code: M18).

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Appendix A Table of findings against each research question

Table A-1 summarises the findings against the research questions. These are reproduced from the end of each sub-section in Section 3 of the main report.

Table A-1 – Summary of findings against each of the research questions

Question	ID	Finding
RQ1: Did people understand the LLCS with an early release?	F1.a	Almost all participants (more than 95%) in all road user groups understood that LLCS were traffic signals for cyclists. Compared to the trial without an early release, slightly more participants in each road user group understood what the LLCS meant.
	F1.b	A small minority of cyclists (2%) were initially confused and said they took a while to understand how to use the early release.
	F1.c	There was a small minority (<1%) of cyclists whose explanation about the meaning of the signals indicated that they confused the LLCS with a Toucan crossing, although this was less than in the trial with no early release.
RQ2: Did people notice the early release and what did they think about it?	F2.a	All the car drivers and about 95% of cyclists and motorcyclists said they noticed the early release.
	F2.b	Over 80% in each road user group were positive about the early release with the most common reasons being 'Enabled cyclists to get up to speed first' and 'Enabled cyclists to clear the junction'.
	F2.c	About 15% of cyclists and 5% of car drivers and motorcyclists were negative about the early release with the most common reasons being 'Found the junction to be confusing' and 'Concern that it would delay motorists'.
	F2.d	About three-quarters of cyclists and about half of car drivers did not notice the difference between the shorter and longer early releases. A small proportion of cyclists (12%) and car drivers (18%) said that the difference in duration of the early release affected the way they went through the junction.
RQ3: What attitudes did people have towards the LLCS with an early release?	F3.a	Over 90% of cyclists and motorcyclists and all car drivers thought that cyclists on the road would benefit from LLCS. This was a similar proportion to that in the trial with no early release. The main reasons given were that cyclists would be kept separate from vehicles and that this would give cyclists time to get up to speed.
	F3.b	About 90% of cyclists and car drivers and 75% of motorcyclists were in favour of LLCS. For each road user group this was a significant increase compared with the trial without an early release.
	F3.c	Over three-quarters of the cyclists said that the height of the LLCS was 'about right' and about 60% of cyclists thought the angle was 'about right'. Over a third of cyclists thought the LLCS should point more towards the road; this was a significant increase compared with the trial without an early release. In particular more cyclists described turning right as "difficult" (10% compared with 5%) due to the angle of

Question	ID	Finding
		the LLCS and not being able to see the junction and the signal at the same time.
	F3.d	The most common suggestions for improvements from cyclists were to make the cycle signals more obvious.
	F3.e	About a half of cyclists, a third of motorcyclists and a fifth of drivers said they would be more likely to cycle in busy traffic if more junctions were like this.
RQ4: Did people use the information from the LLCS with an early release?	F4.a	When waiting, cyclists said they looked at the near-side LLCS more than in the trial with no early release, and this was the case for all movements through the junction (90% looked at them when turning left, about 75% when going straight on and 60% when turning right).
	F4.b	Car drivers and motorcyclists said they only used the LLCS in conjunction with the main signals in most cases.
	F4.c	While waiting to turn, cyclists reported relying more on the LLCS if they were positioned conveniently in their line of sight for the manoeuvre they were going to make. The near-side LLCS were described as the most important cue for about 75 – 80% when turning left, 50 – 70% for going straight on and 55% for turning right where there was no off-side LLCS. The off-side LLCS were described as the most important cue for about 40% of those waiting to turn right from the one-way street and by about 12% of those waiting to go straight on in the one-lane approach where the off-side LLCS were in the centre of the road.
RQ5: Did the LLCS with an early release affect compliance: i) whether cyclists stopped at a red light; ii) where people waited?	F5.a	There were no consistent trends in the proportion of cyclists who went through the junction on a red signal for the different early release scenarios.
	F5.b	Compared with the trial with no early release, there was an increase on one junction approach in the proportion of left-turning cyclists who stopped in the left-hand zone. This was supported by a finding from the questionnaire in which there was a small increase in the proportion of cyclists who said they 'sometimes' modified their stopping position so they could see the LLCS.
	F5.c	There was no change in cyclists' longitudinal stopping position compared to the trial with no early release.
RQ6: Did the LLCS with an early release affect how people moved off	F6.a	A large majority of cyclists started moving as the LLCS changed to red and amber. In the 5-second early release scenario, in 95% of observations the cyclist reacted to the LLCS, whereas in 5% of observations the cyclist reacted to the main signals.
	F6.b	The majority of motorists waited for the main traffic signal to change to green before moving; the proportion of observations where the car or motorcycle started moving before the main signals changed to red and amber ranged from 0% to 6% across the different early release

Question	ID	Finding
as the signals changed to green?		scenarios. This proportion was slightly higher in the scenario with the controlled cyclist in front of the participant.
	F6.c	When asked what they would do in the real world, 2% of car drivers and 10% of motorcyclists said they would start moving on the early release while the main signals were still red and 10% of car drivers and 20% of motorcyclists said 'it depends'. Explanations for why they would do this included if they were not concentrating or that they would be tempted to do so if there were no cyclists present. Some motorcyclists said they would do this intentionally because they said they need space and safety.
	F6.d	In the scenario with the controlled cyclist in front, the average Reaction Times of motorists were slightly faster than in the trial with no early release; participants remarked that they noticed the LLCS early release and used it as a cue to get ready, for example by getting in to gear.
	F6.e	The average Entry Times for cyclists were approximately 1.5 to 2 seconds after the LLCS changed to green.
	F6.f	In the car trial, the average Entry Times of the cars were around 5 seconds in most scenarios, i.e. around 3 seconds after the main signals changed to green. There was no difference in the scenarios with longer early releases, suggesting that car drivers did not show the desire to 'make up the lost time'. There were no differences in average Entry Times between the scenario with and without the cyclist in front, suggesting that the cars were not delayed waiting for the cyclists when there was an early release.
	F6.g	Combining the findings from the cyclist trial and car trial suggests that a cyclist would enter the junction 'on average': 3.5 seconds before a car would enter the junction with a 2-second early release; 4.5 seconds ahead with a 3-second early release; 5.5 seconds ahead with a 4-second early release; and 6.5 seconds ahead with a 5-second early release.
	F6.h	In the car trial, with a 2-second early release, in around 80% of observations the controlled cyclist had already entered the junction before the car had started moving; for the longer early release scenarios this proportion was over 95%.
	F6.i	In the car trial, with a 2-second early release, on average the participant car driver did not start moving until 1.5 seconds after the controlled cyclist had already entered the junction; for the longer early release scenarios there was a linear increase up to over 4 seconds in the 5-seconds early release scenario.
	RQ7: Did the LLCS with an early release affect	F7.a
F7.b		The observations where the cyclist turned right in front of the oncoming car did not usually lead to a conflict. In some instances this

Question	ID	Finding
whether right-turning cyclists turned in front of oncoming cars?		was because the car was restricted by the cyclist in front of them on Arm B. Most drivers had begun to move slowly and just a few were forced to slow down (3%); no drivers made an emergency stop.
	F7.c	Cyclists tended to cross the path of the car 3 or 4 seconds after the main lights had changed to red and amber; i.e. 1 or 2 seconds after changing to green.
	F7.d	For most cyclists there was at least 3 seconds between them reaching the conflict point and the car reaching that point.
	F7.e	The shorter early release for cyclists was associated with cyclists crossing the conflict point a longer time (3 or 4 seconds) after the main signals changed to green, a shorter time interval between the cyclist reaching the conflict point and the car passing it, and more instances where the driver had to slow down.
	F7.f	The responses to the questionnaire showed that a larger proportion of cyclists said they had turned in front of the car in the trial with the early release for cyclists, compared to the trial with no early release. The most common explanation was that they thought they had enough time, although a few (5%) thought they had right of way.
	F7.g	Compared with the trial with no early release, the early release also led to a significant increase in the proportion of cyclists who said they considered turning in front of the car but did not do so.
RQ8: Did the LLCS with an early release affect perceived safety?	F8.a	Typically for each second of early release, the average Clearance Time decreased by one second.
	F8.b	Of the cyclists who specifically mentioned the LLCS, a higher proportion of cyclists said the junction was 'safer' or 'much safer' than an ordinary junction in the trial with an early release (about 85%), compared to the trial without an early release (about 50%). There was a complementary decrease in the proportion of cyclists who said the LLCS had no effect on safety. The most common types of comment from cyclists were positive comments about the early release and improving cyclists' confidence.
	F8.c	A small proportion of cyclists (5%) said that the LLCS made the junction either 'more unsafe' or 'much more unsafe' in the trial with an early release, whereas none said so in the trial without an early release. These cyclists were concerned about other road users using the early release and confusion over right of way when turning right.
	F8.d	Drivers and motorcyclists who commented on the safety impacts of LLCS, commented on awareness and visibility of cyclists and the benefits of the early release.

Appendix B Further details on methodology

This Appendix contains information on the sample size collected in the M18 Trial.

B.1 Sample size

Table B-1 shows the sample size collected for the cycle trial and car trial. There was a target of 40 observations (for each manoeuvre) for cyclists and 25 observations for car drivers.

Table B-1 – Cycle trial and car trial: collected sample size

User group	Vehicles	Arm/Turn	No early release ('Uncovered' in M14)	2 secs	3 secs	4 secs	5 secs	All early release scenarios		
Cyclist	Participant cyclist, no car	A	Left	61	41	38	59	29	167	
			Right	60	39	40	58	28	165	
		B	Left	53	33	40	31	42	146	
			Straight	54	35	40	33	45	153	
		C	Left	61	38	40	43	44	165	
			Right	61	40	41	42	45	168	
		D	Straight	59	33	40	37	42	152	
			Right	58	35	41	40	44	160	
			Total	467	294	320	343	319	1276	
		Participant cyclist, car behind	A	Left	52	42	47	44	38	171
				Right	51	42	47	48	37	174
			B	Left	48	38	48	35	44	165
	Straight			45	39	47	41	46	173	
	C		Left	50	40	48	38	46	172	
			Right	53	44	47	39	46	176	
	D		Straight	49	42	48	38	44	172	
			Right	49	41	47	37	45	170	
		Total	397	328	379	320	346	1373		
Car driver	Participant car driver, no cyclist	A	Right	58	36	30	58	45	169	
			Left	19	18	23	21	23	85	
		B	Straight	22	18	23	20	23	84	
			Left	24	19	24	21	21	85	
		C	Right	23	19	22	21	24	86	
			Straight	24	20	22	21	23	86	
		D	Right	25	17	23	21	23	84	
			Total	195	147	167	183	182	679	
	Participant car driver, cyclist in-front	A	Right	63	41	14	68	44	167	
			Left	20	20	21	20	22	83	
		B	Straight	20	21	23	20	22	86	
			Left	20	22	22	17	23	84	
		C	Right	22	19	22	21	20	82	
			Straight	22	21	22	20	23	86	
		D	Right	19	20	22	20	21	83	
			Total	186	164	146	186	175	671	

Table B-2 shows the sample size collected for the motorcycle trial, which had a target sample size of 25 observations.

Table B-2 – Motorcycle trial: collected sample size

User group	Vehicles	Arm/Turn	No early release	4 secs	
Motorcyclist	Participant motorcyclist, car behind, no cyclist	A	Left	32	28
			Right	31	28
		B	Left	24	28
			Straight	23	28
		C	Left	31	28
			Right	29	28
		D	Straight	31	28
			Right	32	28
			Total	233	224
		Participant motorcyclist, no car, cyclist in-front	A	Left	32
	Right			32	32
	B		Left	32	32
			Straight	31	32
	C		Left	31	32
			Right	30	32
	D		Straight	31	32
			Right	32	32
			Total	251	256

Appendix C Further analysis of video data

C.1 Lateral stopping position

The position that participants stopped at the traffic lights was captured from videos; this included the lateral position (i.e. 'Left Zone', 'Middle Zone' or 'Right Zone') and the longitudinal position (i.e. the position along the road). Figure C-1 shows the lateral stopping position of cyclists who were waiting to go straight on.

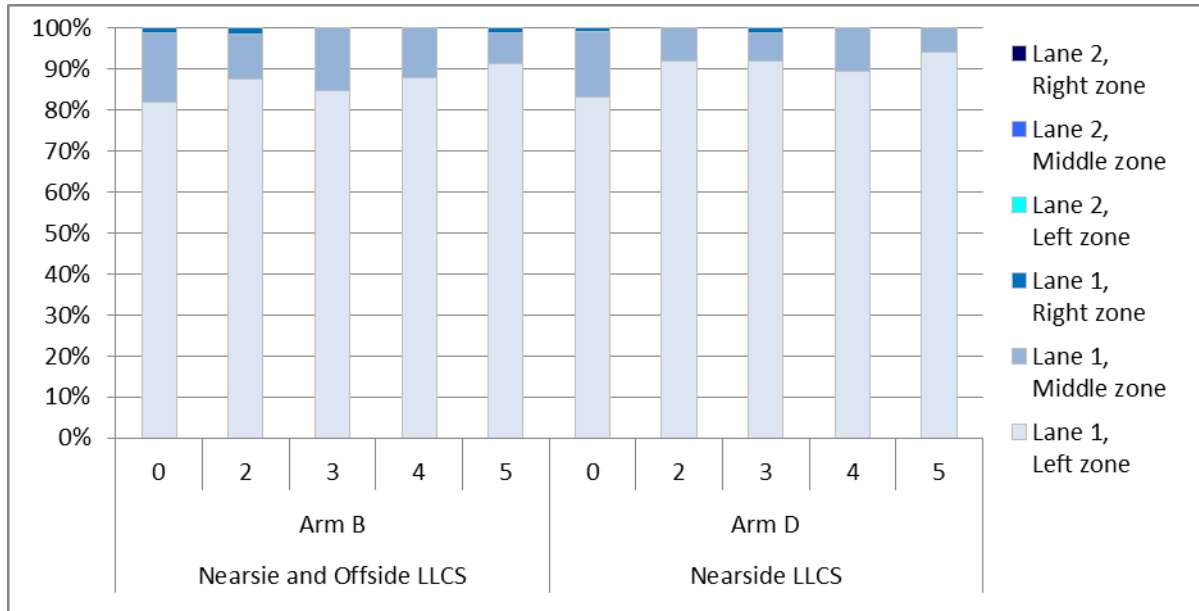


Figure C-1 – Cycle trial: lateral position in lane for cyclists going straight on (video data)

Figure C-2 shows the lateral stopping position of cyclists who were waiting to turn right.

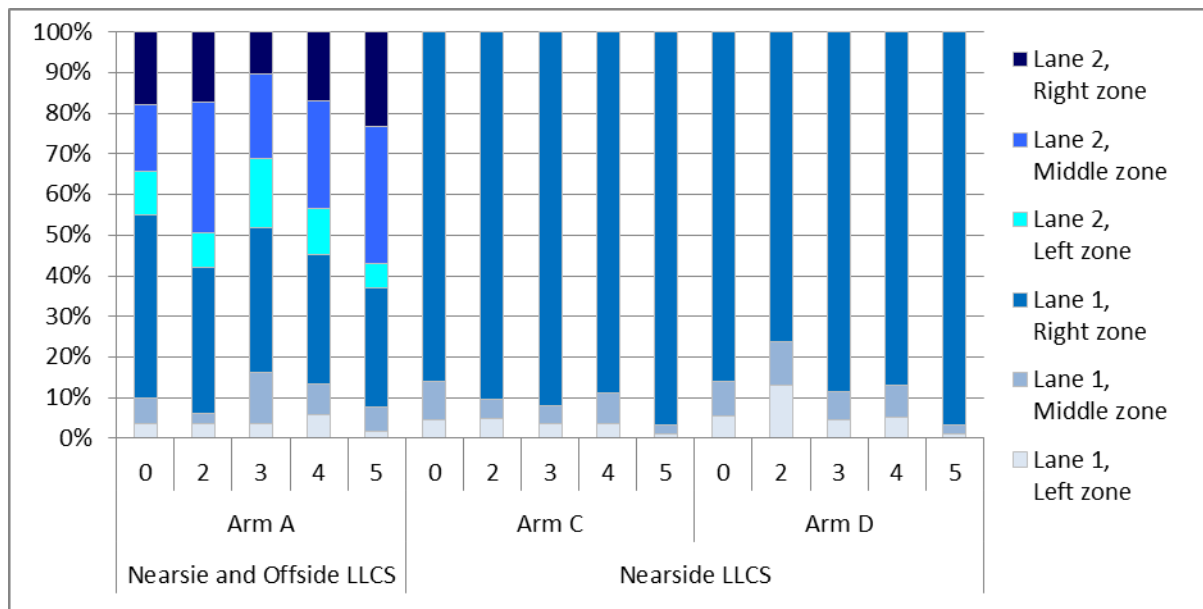


Figure C-2 – Cycle trial: lateral position in lane for cyclists turning right (video data)

Appendix D Further analysis of questionnaire data

D.1 Introduction

This appendix presents further questionnaire analysis and is structured as follows:

- Section D.2 summarises the participant characteristics and level of experience;
- Sections D.3, D.4 and D.5 relate to participants' experiences from the trial;
- Section D.6 relates to their attitudes towards the LLCS.

The following terminology has been used:

- 'M14 Trial' – trials conducted in May and June 2013, where the LLCS changed to green at the same time as the main signals; i.e. no 'early release'. Participants experienced the signals both covered and uncovered. In all graphs this trial is presented as a solid block
- 'M18 Trial' – trials conducted in June and July 2013, where the LLCS changed to green either 2, 3, 4 or 5 seconds earlier than the main signals; i.e. with an 'early release'. In all graphs this trial is presented as diagonal lines.

D.2 The sample

D.2.1 Participant characteristics

D.2.1.1 Age

Most participants were aged 25 to 74. The range of ages was similar between the two trials, with the main exception being that the M18 Trial had more cyclists under 25 and fewer aged 55 to 65. The M18 Trial also had more drivers aged 65 to 74 and fewer aged 25 to 34. Figure D-1 shows this.

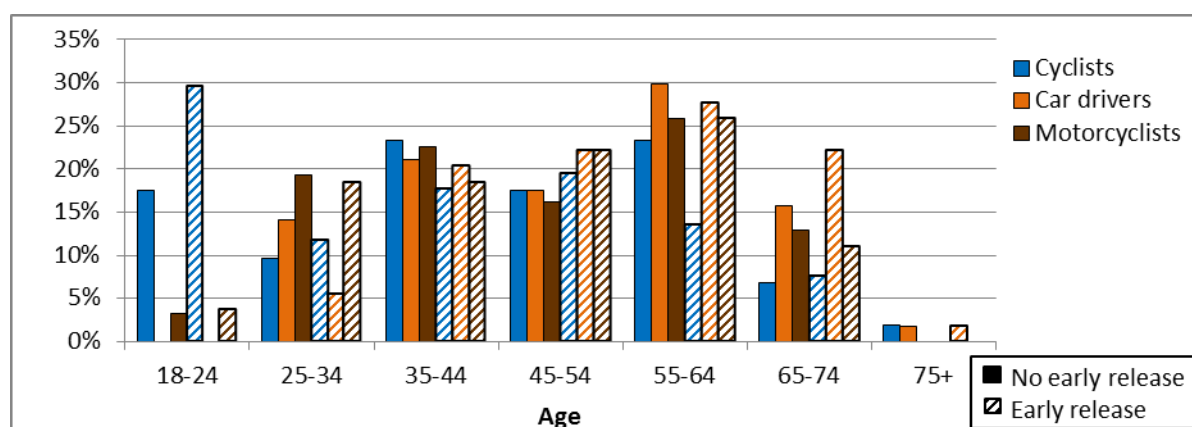


Figure D-1 – Age characteristics

D.2.1.2 Gender

Two-thirds of the cyclists were male, which was higher than in the M14 Trial. As in the M14 Trial, the car drivers were fairly evenly split between men and women while motorcyclists were predominantly male. Figure D-2 shows this.

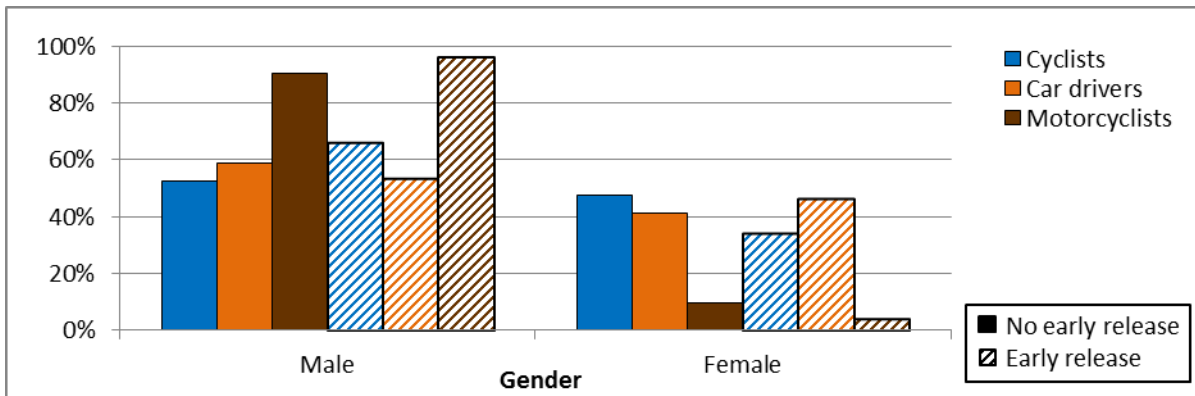


Figure D-2 – Gender characteristics

D.2.1.3 Typical cycling journeys

In the M18 Trial about 40% of cyclist participants usually cycled at least once a week, whereas about half did so in the M14 Trial. The proportion of cyclist participants, who cycled regularly in the past but not currently was about 35% in the M18 Trial compared to about 20% in the M14 Trial. Figure D-3 shows this.

About 40% of motorcyclists and 10% of car drivers usually cycled at least once a week, both of which were slightly higher than in the M14 Trial.

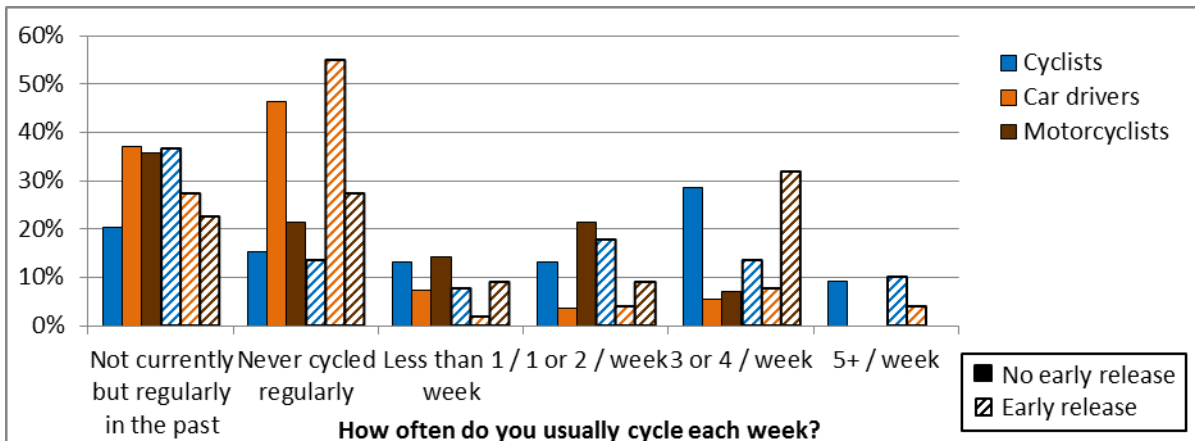


Figure D-3 – Cycling frequency

Compared to the M14 Trial, the types of journeys made by M18 cycling participants were similar in purpose and distance except that more usually cycled on the road. When cycling, leisure journeys were the type of journey made most often by M18 participants; these covered a range of distances, with many being over 5 miles. Of the M18 cyclist participants, two thirds usually cycled “on roads (in traffic)/ cycle lane on road”, 14% usually cycled “on separate cycle paths/ shared paths” and 21% “off road”.

The participant sample consisted largely of residents of the Wokingham/Bracknell area and as such only a small proportion of the participants cycled regularly in London. About one-fifth of cyclist participants cycled in London at least once a month, which was higher than in the M14 Trial. This is shown in Figure D-4.

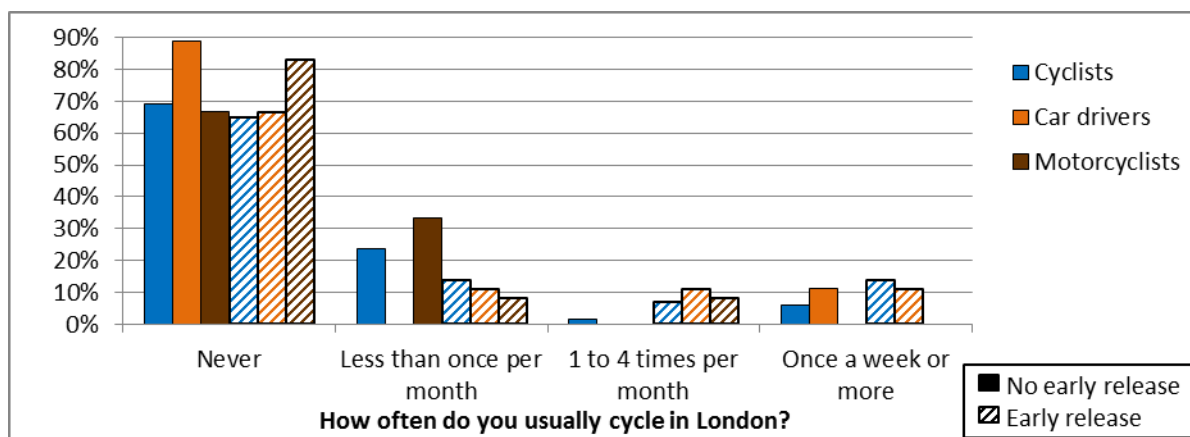


Figure D-4 – Participants’ frequency of cycling in London

The M14 and M18 participants drove a car about the same amount, with most driving at least once a week.

The most common car journey purposes for the M14 drivers were to work or education, or for business, with about 20% stating their most common journeys were for leisure. The M18 drivers gave similar responses except that slightly less said education or business and the most common response was for leisure (35%). M18 drivers and M14 drivers drove an even mix of journey lengths, with M18 drivers generally driving shorter distances.

As in the M14 Trial, the M18 motorcyclists were mostly regular motorcyclists riding at least once a week, with the most common journey purpose being for leisure. In both the M18 and M14 Trials the majority of motorbikes were large ‘cruiser’ bikes or sports bikes and there were very few scooters.

D.2.1.4 Summary

In summary, comparing cyclists in the M18 Trial to the M14 Trial, there were:

- More cyclists aged 18 to 24 and fewer aged 55 to 65
- More male cyclists
- Slightly fewer regular cyclists, with more who ‘cycled in the past, but not currently’
- More who regularly cycled in London

Comparing car drivers in the M18 Trial to the M14 Trial, there were:

- More car drivers aged 65 to 74 and fewer aged 25 to 34

There were no differences of note between in the motorcyclist sample between the M18 and M14 Trials

D.2.2 Experience of traffic signal junctions

D.2.2.1 Junctions with traffic signals

Cyclists were asked how often they use junctions with traffic signals when they are cycling. The results are shown in Figure D-5. There was a similar level of experience between the two trials, although the proportion who never cycle through such junctions

was marginally higher and the proportion who cycle through them at least five times a week was slightly lower.

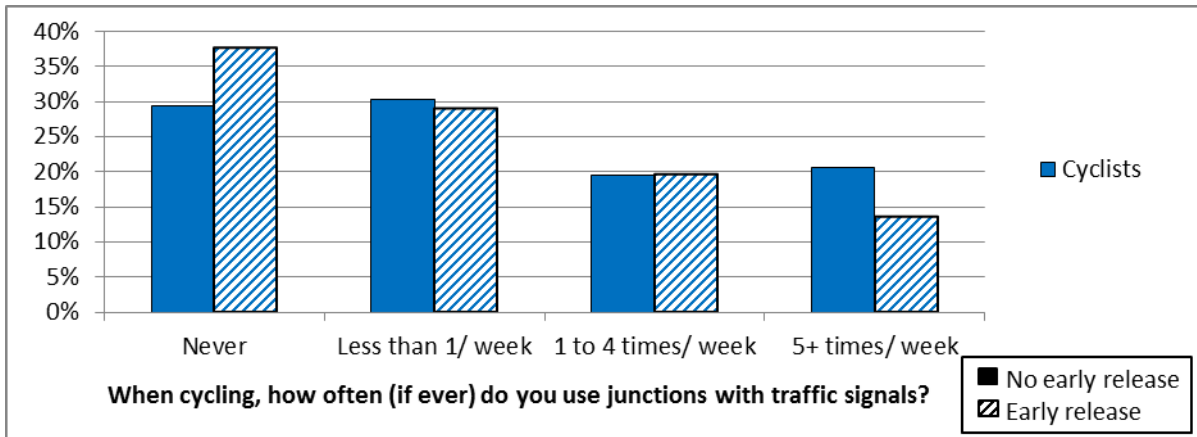


Figure D-5 – Experience of junctions with traffic signals

The cyclists who did say they used junctions with traffic signals were asked how often, if ever, they go through the signals when they are red. About a fifth said either 'rarely' (13%), 'sometimes' (8%) or 'mostly' (1%), which was similar to the proportions in the M14 Trial. Figure D-6 shows this.

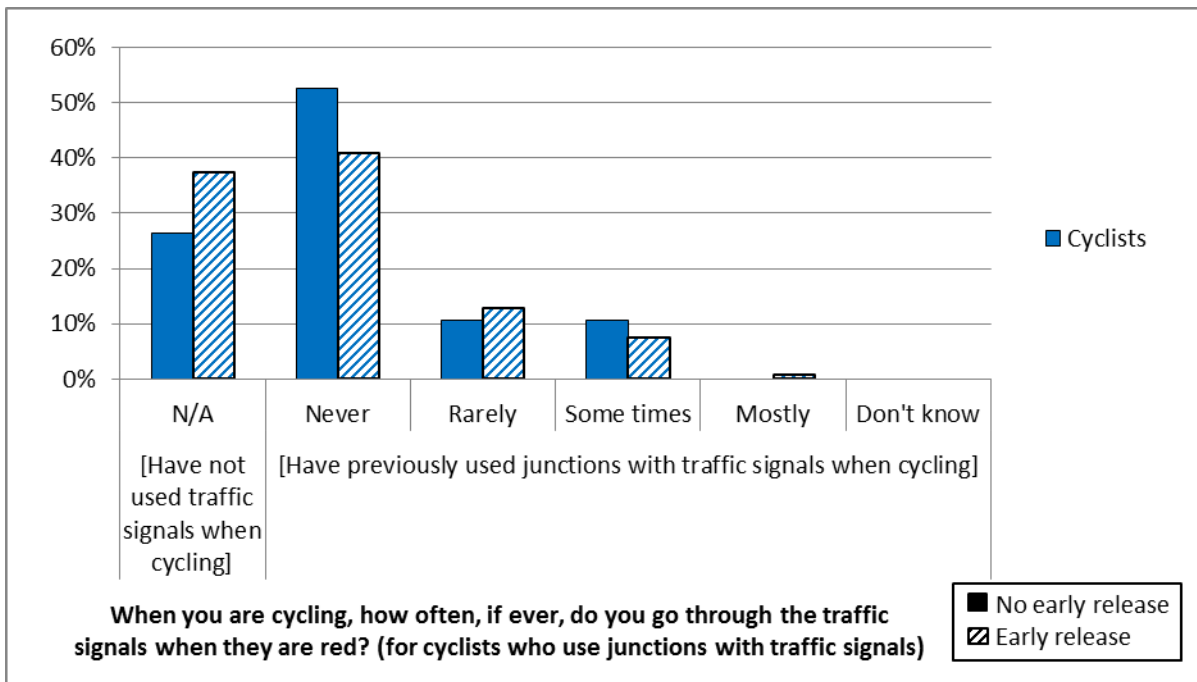


Figure D-6 – Cyclist compliance with red signals

The most common reasons were 'when there was no traffic', 'when the signals have not detected them', 'when turning left' and 'when it's not safe to stop', as shown in Figure D-7

The most common reasons for going through a red and amber signal were 'trying to get ahead of the traffic', as well as 'when there is no traffic', 'when turning left', and 'when the signals are about to change'.

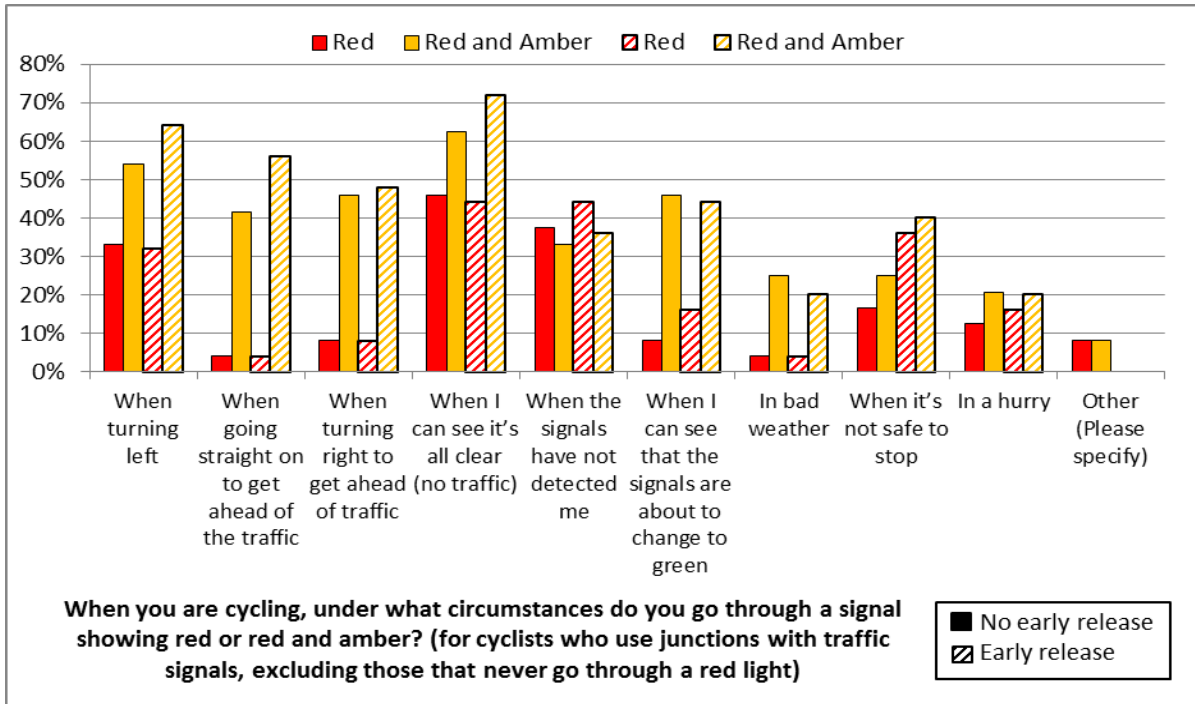


Figure D-7 – Reasons for going through red signals

D.2.2.2 Low Level Cycle Signals

Participants were shown photographs of the Low Level Cycle Signals and were asked whether they had seen or heard of the signals before. The results are shown in Figure D-8.

The responses were very similar to the M14 Trial, with almost two-thirds saying they had not seen or heard about them, while about a quarter said they had seen them in another country. Just under a tenth said they had seen them in the UK; these people may have been mistaken or they might have been referring to TfL media coverage about the trials.

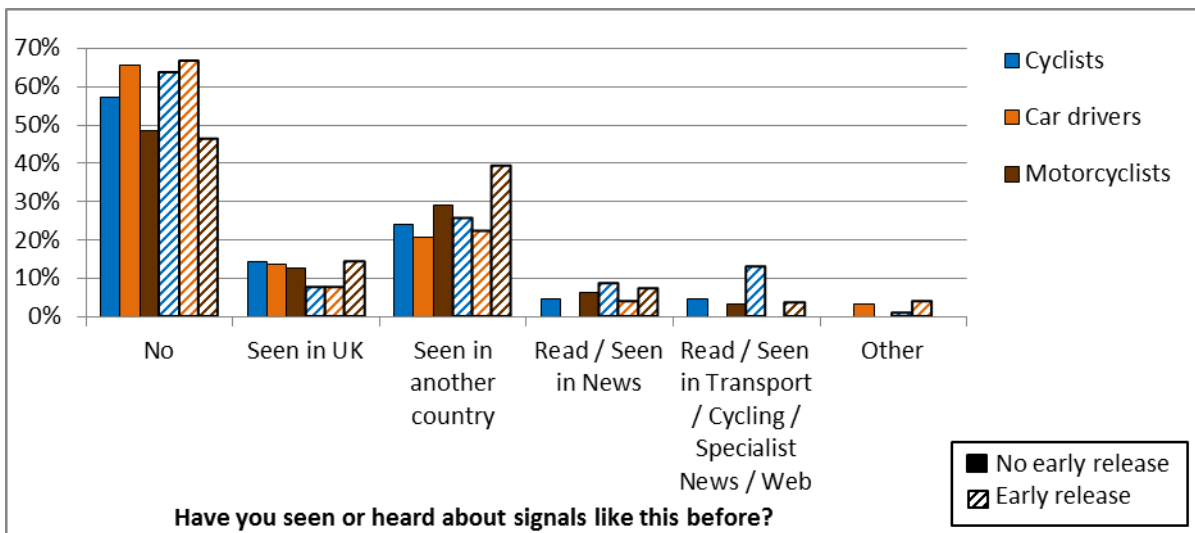


Figure D-8 – Previous experience of LLCS

D.2.2.3 Advanced Stop Lines

Participants were shown photographs of Advanced Stop Lines (ASLs). They were asked whether they had seen such markings before. As in the M14 Trial, about 20% of cyclists and 30% of car drivers said they had not seen them before, whereas almost all motorcyclists had seen them before. Figure D-9 shows this.

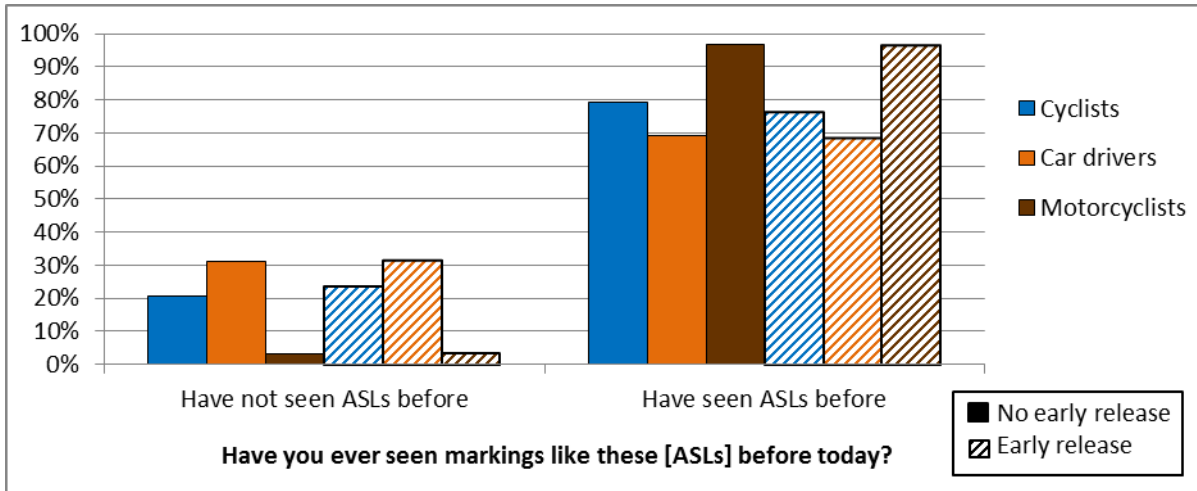


Figure D-9 – Proportion of participants who had seen ASLs before

Of the cyclists who had seen the markings there was little difference in how often they used them between the M14 and M18 Trials (see Figure D-10).

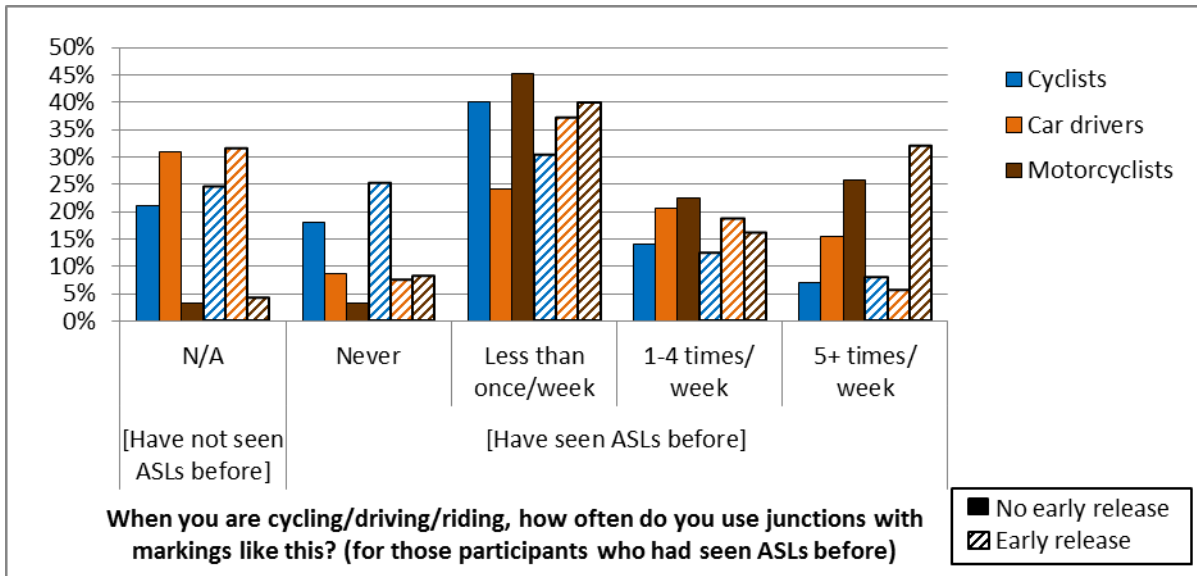


Figure D-10 – How often participants use junctions with ASLs

Cyclists who use ASLs while cycling were then asked how often they enter the area with the cycle symbol while waiting for the signals to change. The responses were very similar to the M14 cyclist responses; over 90% said they waited there 'every time' or 'most times'.

Car drivers and motorcyclists were asked the same question for situations with and without cyclists about, and the responses were similar in the M14 and M18 Trial. However the M18 motorcyclists who often entered the ASL did so whether there were cyclists about or not. This is shown in Figure D-11.

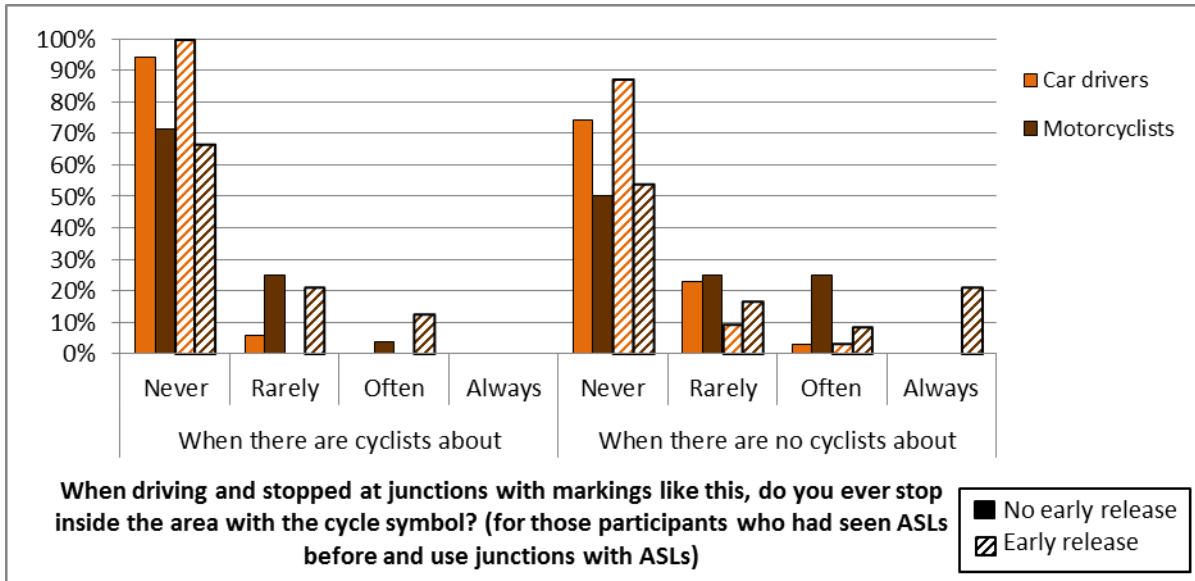


Figure D-11 – Compliance of motorists with ASLs – normal driving

Motorcyclists and car drivers were also asked whether, if they saw a junction with signals and markings like those seen in the trial, they thought they would ever stop within the ASL. Figure D-12 shows the results. More M18 motorcyclists said they would not stop in the ASL than M14 motorcyclists; while responses by car driver were similar in the M14 and M18 Trials.

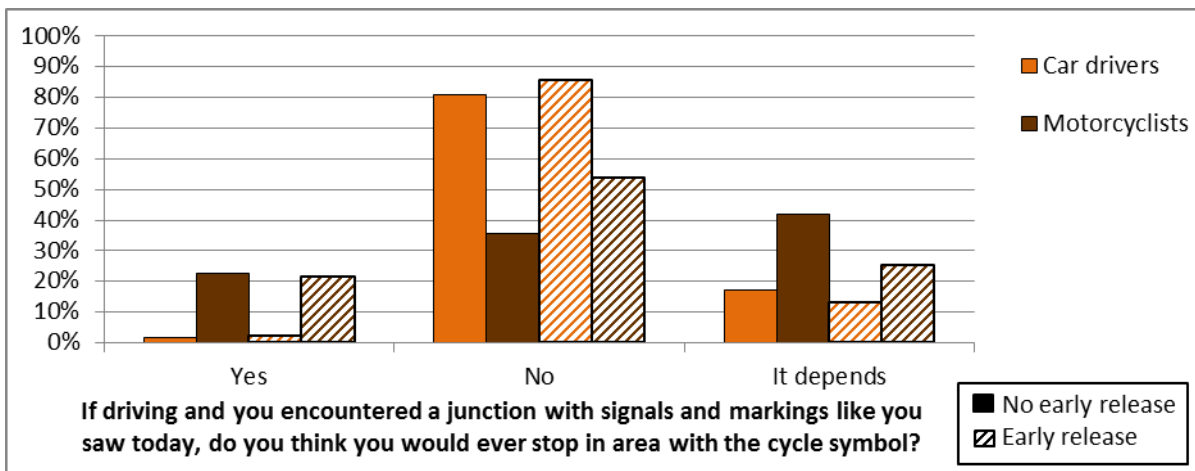


Figure D-12 – Compliance of motorists with ASLs – with markings and signals as in the trial

M14 and M18 Motorcyclists who said they would stop in the ASL gave similar reasons. Those who said they would always stop in the ASL explained this would help them to get ahead of the traffic or make other road users aware of their presence.

"Especially in heavy traffic it is a good safe spot to keep away from traffic moving off and gives you space to stop."

Those who said stopping in the ASL would depend on the situation referred to filtering in heavy traffic and waiting to turn right when the signal was green. Some mentioned stopping in the ASL only if there were no cyclists, but others would stop even if there were cyclists.

"If the box is empty with no one in front then no. If the box is empty with car in front then yes. If more than 2 or 3 cycles then no."

The M14 and M18 drivers who said they might stop in the ASL also gave similar responses, referring to queues (e.g. to turn right), the car in front stopping unexpectedly and when it would be safer to stop there than move forward. One M18 car driver said it would depend on the rules about stopping there.

D.3 Understanding of the signals and the junction

D.3.1 Understanding of Advanced Stop Lines

Participants were asked about the meaning of the ASLs shown in the photographs; participants in both the M14 and M18 Trial both showed a good understanding. In the M18 Trial one cyclist and one motorcyclist thought that motorcyclists were also allowed to use ASLs.

D.3.2 Understanding of Low Level Cycle Signals

The understanding of the LLCS is covered in Section 3.1.1 in the main report.

D.3.3 Views on who would benefit

The views on who would benefit is covered in Section 3.3.1 in the main report.

D.4 Stopping at the signals during the trial

D.4.1 Noticing the ASL

All participants were shown photographs of the ASLs. When asked whether they noticed them when they first approached the junction, almost all participants said that they did; this was also the case in the M14 Trial.

D.4.2 Noticing the LLCS

Participants were asked how many runs through the junction they made before they noticed the LLCS. In the M14 Trial, most participants typically experienced one uncovered session and one covered session so a relative comparison could be made in the M14 report. In the M18 Trial, participants typically experienced three uncovered sessions. As such, it is not possible to make a fair comparison between the M14 Trial and M18 Trial in terms of how noticeable the LLCS were.

D.4.3 Height and angle of the LLCS

Participants were asked what they thought about the height and angle of the LLCS. Responses to the question on height of the signals were similar in the M14 and M18 Trials. However a few more car drivers and motorcyclists said they thought the height was about right in the M18 Trial than in the M14 Trial (see Figure D-13).

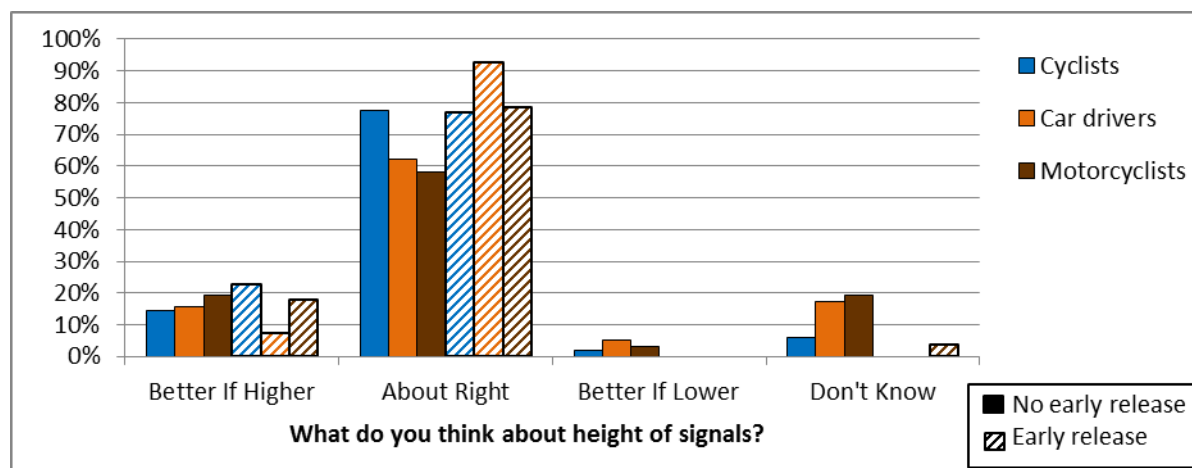


Figure D-13 – Views on the height of the LLCS

Views on the angle of the LLCS are covered in Section 3.3.3 of the main report.

D.4.4 Stopping position relative to the ASL

Participants were asked how often they waited in the area with the cycle symbol while waiting for the signals to change and to explain their answer. Almost all of the car drivers and motorcyclists in both the M14 and M18 Trials said they did not stop in the ASL; they generally explained this was because the area was for cyclists only. One car drivers said they stopped in the ASL every time. Two motorcyclists said they would only enter if cyclists were not there:

"If it's clear and there is space I will always use [the] box. If [there is a] cyclist blocking [the box] then will hold back"

In both the M14 and M18 Trial some cyclists said they would modify their behaviour to cycle more defensively or more cautiously with a car behind them:

"Going straight on I might [modify my behaviour], I took centre lane primary [so] as not to get cut up."

D.4.5 Effect of LLCS on stopping position

The effect of LLCS on stopping position is covered in Section 3.5.2.2 in the main report

D.4.6 Whether motorists would react to an early release

Whether motorists would react to an early release is covered in Section 3.6.1.2 in the main report

D.5 Using the Low Level Cycle Signals during the trial

Section 3.4.1 of the main report summarised to what extent participants said they looked at the LLCS, pooled across all junction approaches. This information is presented in Figure D-14 for each individual approach.

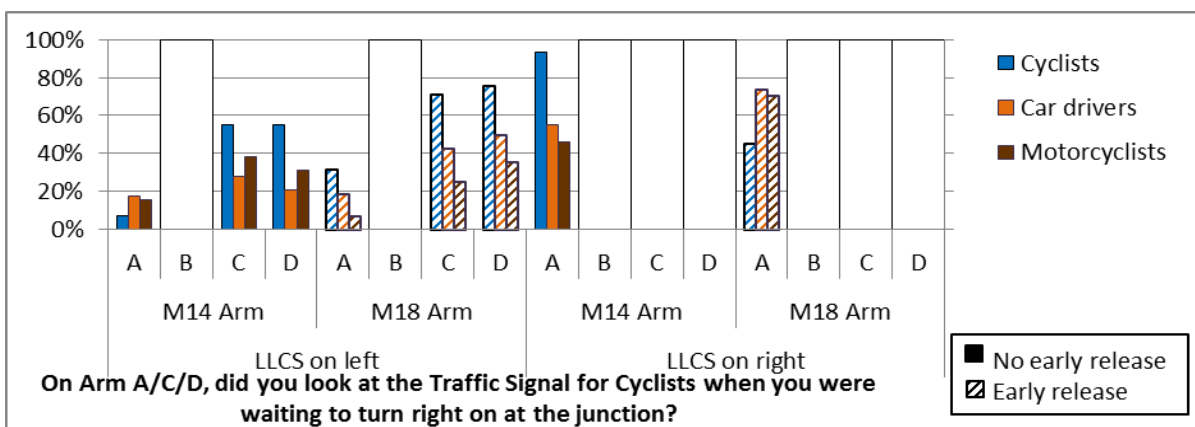
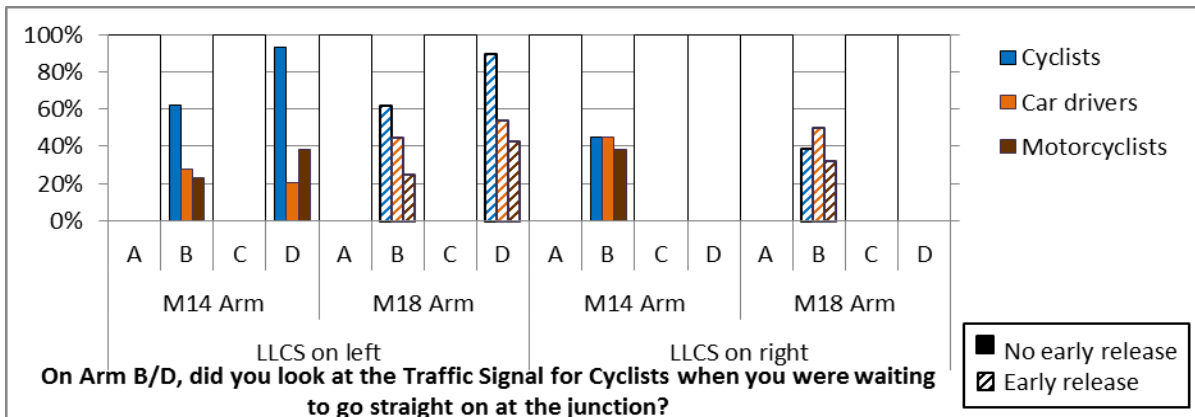
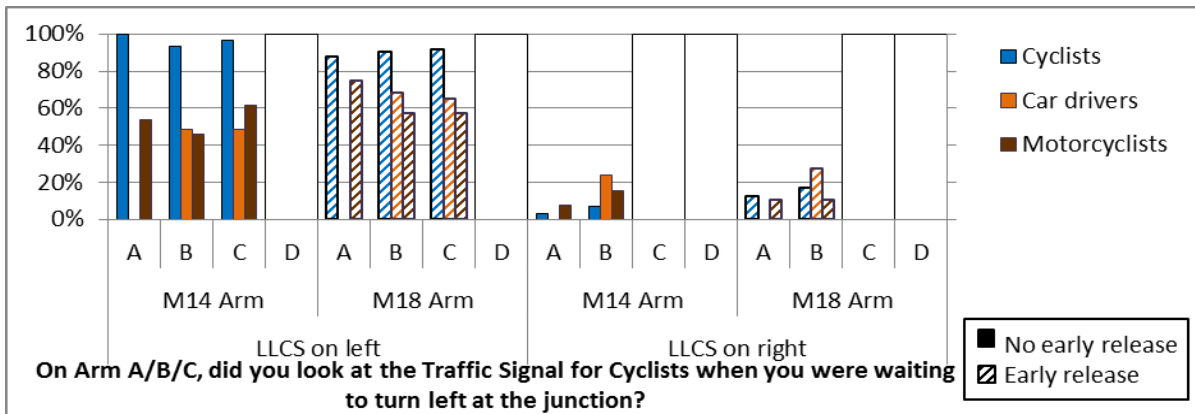
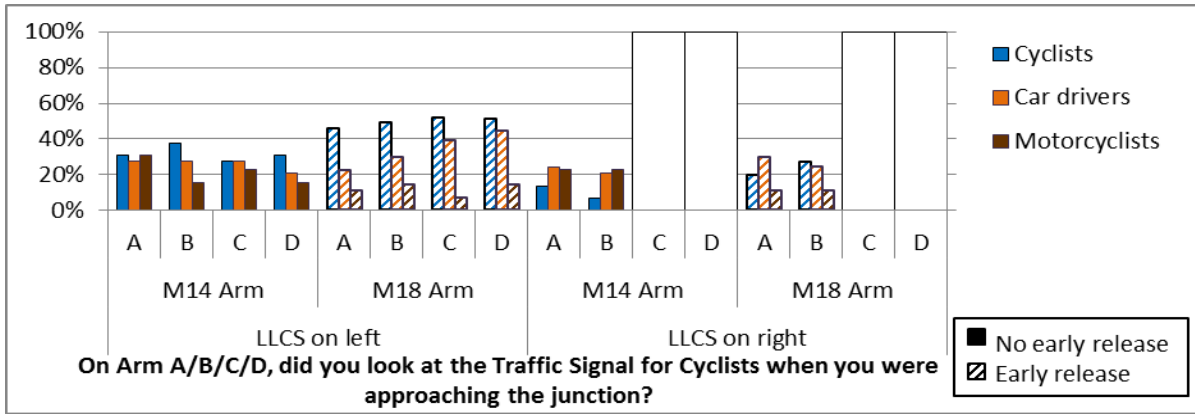


Figure D-14 – Proportion of participants who said they looked at the LLCS when approaching and waiting at the junction to go left, straight on or right.

D.6 Attitudes

D.6.1 How easy it was to use each junction approach

After identifying which signals they looked at when approaching and waiting at the junction, the participants were then asked about how easy it was to make each of the turns they had made at each arm of the junction.

D.6.1.1 Cyclists

Cyclists in the M14 and the M18 Trials gave very similar responses for all the manoeuvres. Generally they found turning left slightly easier; in the M14 Trial about 60% to 70% found turning left easy and on the M18 Trial about 70% to 80% found turning left easy. M14 and M18 participants gave very similar responses for going straight on and turning right.

D.6.1.2 Car drivers

Car drivers in the M14 and the M18 Trials gave very similar responses for all the manoeuvres. There were very few comments relating to the early release or cyclists on most arms; most comments were about the geometry of the junction or how normal it was. However, one participant suggested that turning right on Arm C was easy because they did not have to think about cyclists:

"[The] cyclist was gone already so I had a free run".

D.6.1.3 Motorcyclists

Motorcyclists in the M14 and the M18 Trials gave very similar responses for all the manoeuvres. On all manoeuvres the proportion of motorcyclists who found it 'very easy' or 'easy' rose slightly on the M18 Trial. Almost all of the comments, including those that found the junction 'difficult', related to the geometry of the road.

D.6.2 Cyclists turning right in front of oncoming cars

Section 3.7.2 of the main report presented results on the proportion of cyclists who said they turned right in front of the oncoming car on Arm D. In the M18 Trial cyclists either faced 2 and 4 second early releases or 3 and 5 second early releases. Cyclists who faced the longer early releases were less likely say they 'considered but did not turn' with 22% considering the turn compared to 32%, although this is not a significant difference. This is shown in Figure D-15.

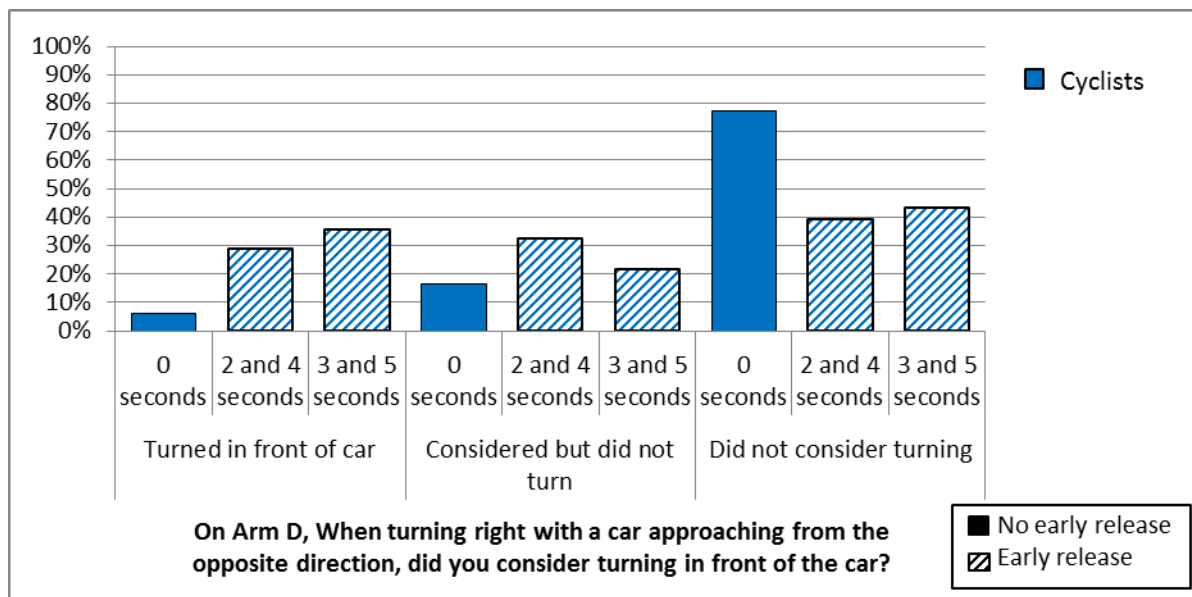


Figure D-15 – Effect of the early release on right turning across oncoming traffic

The comments from those who experienced the longer and shorter early releases were similar, mostly basing the decision on the speed of the vehicle, although some did suggest that they were confused about who had right of way.

Right-turning behaviour is covered further in the Section 3.7 of the main report

D.6.3 Overall comparisons with an ordinary junction

At the end of the questionnaire, participants were asked how easy overall it would be to use the junction compared with an ordinary one; cyclists were asked about cycling, car drivers about driving and motorcyclists about motorcycling.

In the M18 Trial there was a significant increase in the proportion of cyclists stating that the junction was 'much easier'. There was also a significant increase in the proportion of car drivers and motorcyclists stating that the junction was 'easier'. Results are shown in Figure D-16.

In the M18 Trial less than 2% of cyclists and car drivers and no motorcyclists said it was 'more difficult' or 'much more difficult'. There was also little difference in attitudes towards the LLCS between regular, on road cyclists and non-regular cyclists.

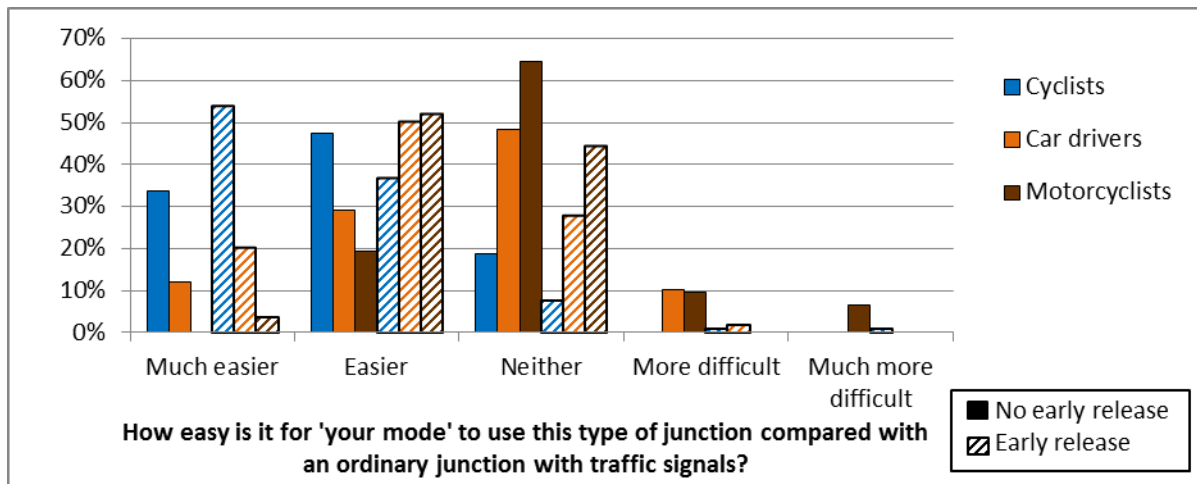


Figure D-16 – How easy the junction was to use compared with an ordinary junction

The car driver who said it would be more difficult was concerned about congestion. Of the cyclists who said it was more, or much more difficult one was negative about the LLCS as a concept. The other was a cyclist who was unsure about the right turn priority:

"Only more difficult when turning right as priority isn't clear"

The comments made by those who said it was easier or much easier were different between the M14 and M18 Trial; many of the cyclists' comments alluded to the early release being a factor explaining why they felt the junction was easier:

"Gives [cyclists] extra time to join traffic without having to worry about the cars behind ... too much"

Many car drivers and motorcyclists suggested that being separated from cyclists and being able to see cyclists made it easy for them. Some went on to say that it made them more aware of cyclists at the junction more generally:

"It makes it more apparent to give space to and check mirrors for existing or approaching cyclists"

However one car driver suggested that he would be less likely to look for cyclists at the junction:

"It's clear and a good size [so] it saves having to look for wayward cyclists"

D.6.4 Perceptions of safety

The perception of safety is covered in Section 3.8.2 of the main report.

D.6.5 Influence on willingness to cycle

Section 3.3.5 of the main report summarised the results on the effect of the LLCS on willingness to cycle. Figure D-17 shows the results for each road user group.

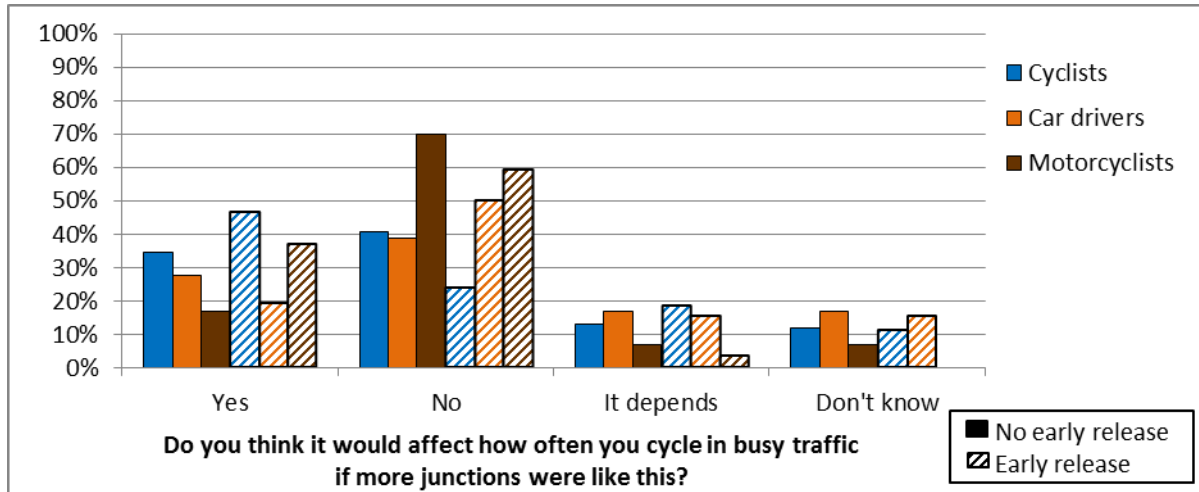


Figure D-17 – Willingness to cycle in busy traffic if more junctions were like this

Influence on willingness to cycle is covered further in Section 3.3.5 of the main report

D.6.6 Suggestions for improvements

Suggestions for improvements are covered in Section 3.3.4 of the main report