



Safety and communication initiatives at the Olympic Park

Summary report 2012

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In this document, you'll find a summary of the independent study we commissioned from Loughborough University: 'Talk the talk – walk the walk: an evaluation of Olympic Park safety and communication initiatives'.

The researchers would like to thank all those organisations and individuals that took part in the research, as well as those who facilitated their contact with organisations and individuals.



What's the problem?

Despite a reduction in deaths, injuries and ill health in recent years, the UK construction industry still has high rates of fatal and major injuries compared to other industries. Finding new ways to improve the management of health and safety in construction remains an important aim. How we communicate important health and safety messages is obviously an important factor in the implementation of initiatives.

While the links between management programmes, the communication of health and safety and actual safety performance have been studied extensively, previous research has typically focused on programmes run by single organisations. The London 2012 Olympic and Paralympic Games construction project offered a rare opportunity to investigate the impact of safety and communication initiatives across a range of organisations working side by side at the Olympic Park (OP). It also provided an exciting opportunity to track health and safety messages as they were communicated to the workforce.

We commissioned Dr Alistair Cheyne, Ruth Hartley, Dr Aoife Finneran and Professor Alistair Gibb from Loughborough University to research this issue. We asked them to evaluate the effectiveness of health and safety communication and the impact on workers' awareness attitudes and behaviour, as well as review the transfer of knowledge into and out of the OP.

The project had three key goals:

- to examine the range of health and safety initiatives used at the OP in terms of the messages communicated to workers
- to evaluate workers' awareness, attitude and behaviour
- to evaluate the transfer of knowledge around, and out of, the Park.

What did our researchers do?

The research was based on applying a simple communication model in order to allow a systematic understanding of the communication process at the OP. The communication–human information processing (C–HIP)¹ model is designed specifically to address the communication of health and safety information. The model recognises the importance of attitudes/beliefs, motivation and, ultimately, the impact of communication, on safety behaviour. Safety communication must pass through a number of stages to successfully influence behaviour. The basic stages relate to the source of the communication (eg supervisor), the channel used, and the receiver of the communication. Figure 1 outlines the model and the flow of

¹ Conzola V C and Wogalter M S. A communication–human information processing (C–HIP) approach to warning effectiveness in the workplace. *Journal of Risk Research* 2001; 4 (4): 309–322.

information within it. If information is blocked at any stage, this can have negative consequences for safety behaviour.

The research took a qualitative approach and was carried out in three stages:

- interviews with managers and supervisors, and focus groups with workers
- interviews and focus groups at non-OP comparison sites
- observations of meetings and document reviews.

Data collection was facilitated by the Olympic Delivery Authority (ODA) Learning Legacy team, who were managing an extensive research programme of other Legacy projects. Because of this, as well as the need to minimise disruption to contractors, a number of constraints were placed on the research project. Access to OP personnel and the timetable for data collection were negotiated through the ODA Learning Legacy team. In addition, because of the construction and handover schedule, the research had to be conducted within a specified time period. Data were collected at two stages (Time 1 and Time 2), three months apart.

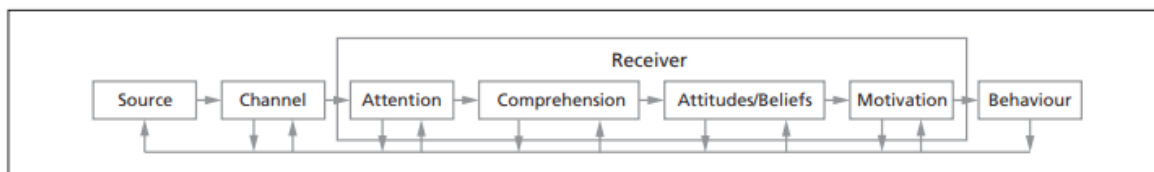


Figure 1
Communication-human information processing model

Interviews

The research team carried out interviews to assess and understand the communication process (specifically addressing the C-HIP stages); gauge knowledge and good practice transfer; and determine the health and safety legacy of the Games. The team also held interviews with managers and supervisors from a range of Games contractors at Times 1 and 2, as well as at comparison non-Olympic sites at Time 2. The Time 1 interviews were held between November and December 2010, while the Time 2 interviews were conducted from March to May 2011. At Time 1, interviews were also carried out with senior managers from the ODA and the delivery partner (CLM – a consortium made up of CH2M Hill, Laing O'Rourke and Mace).

Focus groups

Focus groups were held to obtain the views of a range of workers, determine the effectiveness of health and safety communication and, ultimately, to assess the impact on safety behaviour. Focus groups involved a range of employees from Games contractors and subcontractors at Times 1 and 2, and at comparison sites at Time 2.

Document analysis

To check if the message transfer process was operating effectively, key messages had to be identified. The researchers contacted the ODA Site Communications team in order to identify the 'proactive' monthly campaigns (developed in advance of a likely risk or hazard emerging) that they had run over the preceding 12 months. The issues identified at this stage embodied the start of the communication process, and the measures put in place by contractors and the success of message transfer to workers could be assessed against them. 'Reactive' messages (developed in response to accidents or near misses) were identified through the observation of meetings.

The researchers collected various documents for analysis:

- minutes from the Health, Safety and Environment Forum
- details of the main health and safety campaigns that had been held at the OP over the previous 12 months
- copies of the main posters for each campaign
- information from the document management system and project health and safety plans.

Observation of meetings

Researchers attended meetings in order to observe message transfer and witness the sharing of good practice. Attending meetings also enabled the research team to apply the C-HIP framework and identify sources, channels and feedback mechanisms. Various meetings were attended, including those of the Safety, Health and Environment Leadership team; the Health, Safety and Environment Forum; and those between contractors and their supply chain. The Forum was the primary focus of observations. It occurred monthly, with attendees including: the CLM Assurance team; senior personnel from the ODA and CLM; senior site managers; and contractors' health and safety managers.

The meetings covered:

- health and safety campaigns
- emerging health and safety issues
- lessons learnt - good practice.

At these meetings, the research team obtained field notes and minutes.

What did our researchers find out?

Communication process

The communication process at the Park, both formally and informally, was efficient. Communication was multi-directional and contractors communicated frequently with

each other. This was facilitated by the ODA, who promoted workforce engagement and the development of informal networks across the Park.

Impact on workers

The C–HIP model enabled the various stages of communication to be assessed. Workers demonstrated high levels of safety behaviour. Based on the analysis conducted as part of the research project, this indicates that the communication process at the Park was successful. However, areas for improvement at each stage were found. For example, the comprehension stage could have been improved by informing workers why changes were being implemented, not just what the changes were.

Good practice transfer around the Park

Formal systems were in place (eg multi-contractor meetings, cross-Park visits) to enable contractors to learn from each other and there was evidence that contractors were adopting good practice from other sites. Informal systems also developed over time, with contractors actively sharing information.

Good practice transfer out of the Park

Information was being passed to contractors, clients and the Health and Safety Executive (HSE), among others. This was not always easy to track, but in comparison organisations there was clear evidence that good practice stemming from the Park was being implemented at non-Games sites.

Facilitating and enabling factors

It was evident that without the support of a proactive client, delivery partner and contractors, the communication of safety messages alone would have been ineffective in having an impact on workers' behaviour. Many facilitating and enabling factors were identified which aided the communication of health and safety messages and influenced behaviour, eg visible leaders who engaged with the workforce.

What does the research mean?

Recommendations have been developed to address effective communication in terms of the basic process of communication, as well as the factors that facilitate and enable effective communication. The main recommendations cover:

- reviewing, supporting and co-ordinating communication systems
- the role of the client
- leadership
- appointing a delivery partner
- providing credible communication sources
- setting clear standards

- planning
- selecting appropriate communication channels
- developing key personnel
- improving comprehension
- stimulating change in attitudes and beliefs
- fostering motivation to behave safely
- creating an open, positive safety culture
- rewarding good behaviours.

These recommendations are expanded on overleaf.

Don't forget

The main limitation of this research is that it was conducted towards the end of the construction process. It was not possible to capture data from the people who were involved in important construction phases, ie the enabling works. The research team would have liked to have evaluated the risk assessment and mitigation actions of the designers of the early enabling works to identify residual risks, and then track those risks through the construction process and the different project phases to see how the risks were eventually communicated to the workers at risk. The organisations responsible for these early phases were interviewed, but it was not possible to track these issues from their inception to the completion of the project.

The research team had no control over who was selected by contractors to take part in subcontractor interviews and focus groups, so it is possible that contractors selected people to take part in the research who were positive about health and safety and communication.

Finally, as is common in qualitative research, and indeed any research with one primary source of evidence, there's a danger that the researcher takes the word of respondents as an accurate representation of the truth. In this research, attempts were made to continuously remain impartial and to 'cross-validate' the analysis of the data between research team members.

Good practice in action: improving on-site communication and safety initiatives

Communication systems

All construction organisations would benefit from a systematic review of their communication process to highlight if the transfer of health and safety messages could be more effective at any stage.

Supporting communication systems

Organisations also need to consider health and safety systems generally.

Communication alone is not enough to manage the health and safety of workers in the construction industry. As research at the OP progressed, it became apparent that communication at the OP was supported by a culture, systems and processes that also influenced its effectiveness. These supporting systems were discussed with respondents. The most important factors are contained in Table 1 and are cross-referenced against the elements of the C–HIP model they affect. Moreover, the applicability to different organisation sizes within the construction industry is also identified. Organisations can investigate which recommendations are most suitable for them and tailor the recommendations to suit their specific situation. However, it should be noted that all aspects of communication are inter-related; therefore, each initiative will affect all parts of the process to some degree.

Recognise significant client role

The role of the client must not be underestimated in any type of project, especially complex ones. In addition to meeting legal requirements, clients have a very significant influence on the overall ‘culture’ of a project. Results from this study indicate that client-led health and safety programmes are particularly effective.

- The role played by the client has a particular influence on the communication source, channels and feedback.

Lead from the top

Leadership is essential on all projects, irrespective of their size or complexity.

Leadership must come from ‘the top’ (including the client) and leaders and managers need to be visible. Leading from the top can be achieved by engaging directly with the workforce and demonstrating commitment to health and safety. The ODA was driven by safety, and they knew exactly what they wanted to achieve in terms of health and safety before construction began. Their initial planning and organisation meant they could provide direction and a key leadership role to contractors and employees.

- Clear leadership from the top has a particular influence on the communication source, channels and feedback.

Appoint a delivery partner

For large and/or complex construction projects with multiple contractors, getting help from a delivery partner (or an overseeing management layer) to facilitate and co-ordinate project delivery should be considered. CLM, the ODA’s delivery partner, was involved in the build and completion of the OP project, and was responsible for providing support, monitoring and assurance.

- A co-ordinating delivery partner has a particular influence on the communication source, channels and feedback.

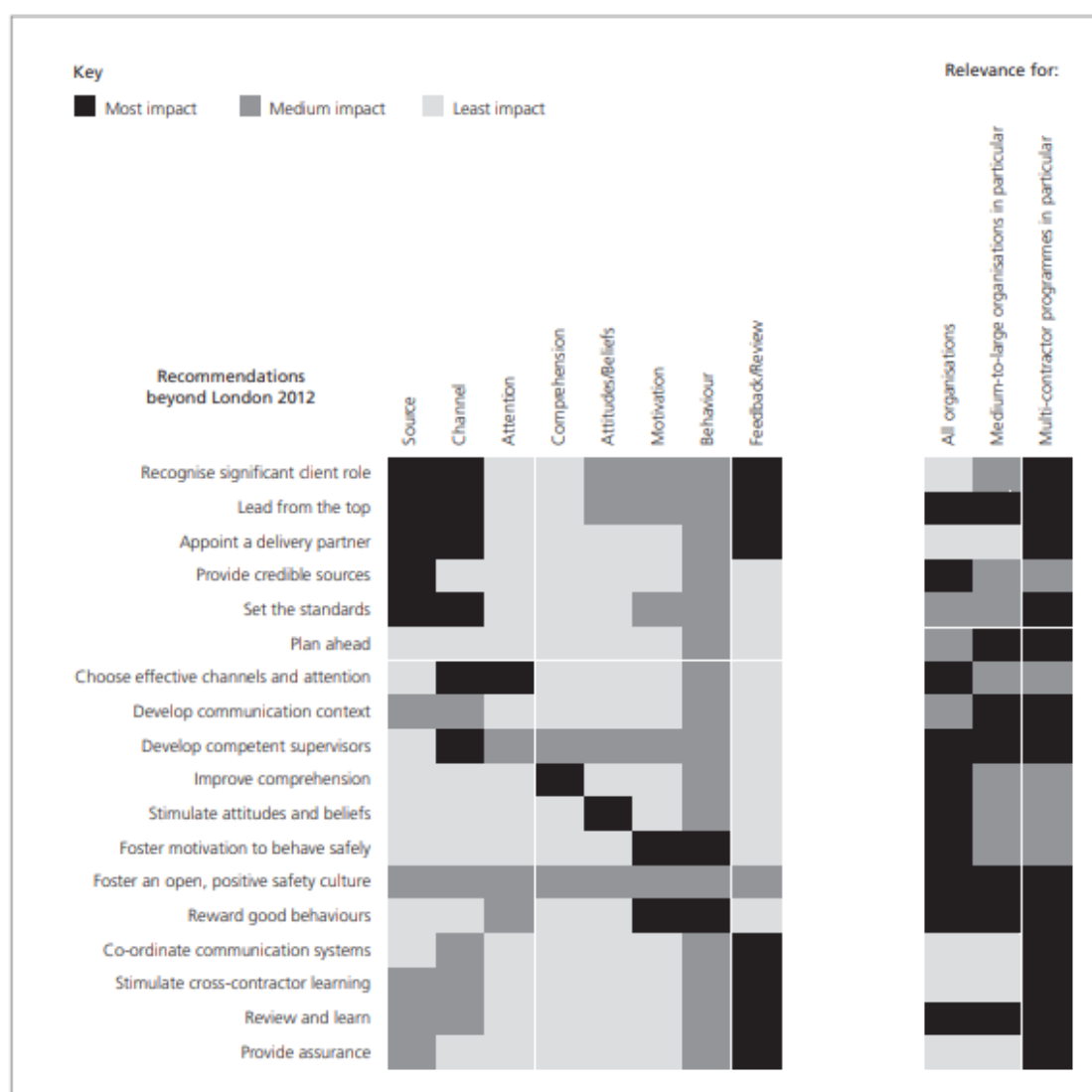


Table 1
Summary recommendations relating to communications and users

Provide credible sources

On projects of all sizes, communicators should be competent and have credibility, especially in the eyes of their audience, to ensure messages are delivered effectively. This can be enhanced in a number of ways. In this context, experience of the construction industry is helpful but not essential. Health and safety managers at the ODA achieved credibility through the relationships they established with the workforce. Credibility grows as the workforce is engaged (they are listened to and then see actions being taken).

- The credibility of those delivering the message has a particular influence on the communication source.

Set the standards

The client can influence health and safety practice significantly on any project by clearly stating their expectations before the project starts. This can be achieved from the procurement process and by making contractors contractually obliged to maintain high levels of health and safety. At the Park, detailed health and safety requirements acted as clear guidance for contractors. Guidance ensured that contractors were immersed in the ODA's way of thinking and that the collective drive for health and safety was not just taken at face value.

- Stating clear expectations has a particular influence on the communication source and channels.

Plan ahead

Planning ahead has important implications for health and safety on a number of levels. Organisational and project planning enables: risks to be designed out; health and safety communication strategies to be developed in advance; and the correct materials and equipment to be available when needed. Planning also allows risks to be identified and communication campaigns to be developed which can address them. Well-planned activities are easier to communicate effectively through the use of the most appropriate communication channels. Developing systems which encourage subcontractors and supervisors to plan and co-ordinate their work is also beneficial. These points apply to all projects, particularly large and complex ones.

- Planning ahead generally influences the channel and context for communication.

Choose effective channels and attention

On any project, using different channels is an effective way of getting people's attention. Ideally, a number of channels ought to be used to reinforce a message, but the primary channel of communication with workers should be verbal. Care should be taken not to communicate too much information at one time. It's important to keep messages fresh by delivering information in new ways and making it task-relevant. The person delivering the message should be trained and have the competences needed to communicate effectively.

- Delivering information in different ways has a particular influence on communication channels and receivers' attention

Develop competent supervisors

On all types of project, supervisors are important people in the communication process and it's essential that they have the necessary technical and communication

skills. Where supervisors are competent in such skills, the effectiveness and impact of health and safety messages is likely to increase.

- Supervisors are often the main channel for communication and can have a strong influence on receivers' attention, comprehension and response.

Improve comprehension

Typically, health and safety information is not difficult to understand. However, it's also important that people understand the why as well as the what – why a rule, practice, procedure or initiative is in place, as well as what it is. Resources need to be devoted to ensure full understanding. Comprehension can be improved through the use of pictures, films and physical demonstrations. For people who have little or no understanding of the language used on site, additional effort needs to be made to ensure comprehension.

- Devoting resources to explaining the meaning of messages has a particular influence on receivers' comprehension.

Stimulate attitudes and beliefs

On any site, it's important to understand the attitudes and beliefs of the workforce if you want to influence them. For example, if people believe that safety glasses damage their vision and they try to avoid wearing them, steps should be taken to challenge this belief. Beliefs and attitudes are likely to vary between workers.

- Understanding the range of attitudes and beliefs held by workers is necessary to effect a change in behaviour.

Foster motivation to behave safely

Motivators for safe and unsafe behaviour should be evaluated and addressed. On all projects, particular attention should be paid to:

- the time incurred by procedures and practices
- effective planning and site organisation, so that the correct materials or equipment are available at the appropriate time and location
- how people are paid (eg in the construction environment, someone paid on the basis of 'piece work' is more likely to cut corners than someone paid 'day rates')
- the pressure that people are put under to meet deadlines (this can be mediated by good management and supervision).

It's also important to recognise that people have different motivators in relation to safe behaviour. Most are motivated to behave safely by a desire for self-preservation; others may be motivated to behave unsafely if the cost implications of safety initiatives (for them personally) are high, eg the time taken to obtain the correct

equipment. Alternatively, some people may have underlying beliefs which motivate them to behave unsafely ('I've always done it this way and I've never had an accident'). It's important, therefore, to determine individual motivation for safe/unsafe behaviour and address it in the communication process.

- Addressing individual drivers will have a particular influence on receivers' motivation.

Foster an open, positive safety culture

It's important to create an open, positive safety culture in which workers feel able to communicate problems without fear of retribution. For all organisations, good practice can be implemented in terms of dealing with the workforce. The workforce is more likely to get involved with the health and safety process if they're engaged and feel that management cares for their wellbeing. It's also important that, when workers raise issues, they receive feedback on what has been done to address them. Managing unsafe behaviour can be problematic. When unsafe behaviour is observed, it's better to talk to the worker directly at the time, rather than report it for reprimand at a later date. Workers resent it if they're reported without being spoken to. Where this occurs, it can cause problems, appearing to lead to 'us versus them' cultures and less engagement.

- On all projects, the culture will influence every stage of communication.

Reward good behaviours

Reward systems can be useful, particularly for promoting behaviours such as near-miss reporting. The use of rewards also reinforces the message that safety is important. While rewarding good behaviour is applicable to all projects, the type of reward must be chosen carefully to avoid negative outcomes.

- If applied carefully, rewards can influence receivers' motivation and behaviour.

Co-ordinate communication systems

A co-ordinated system of communication and fostering an appropriate culture for good practice sharing are essential for efficient construction, especially on large and complex projects. Such a system enables contractors to learn from each other and allows efficient dissemination of information in a complex organisational structure. Procedures for informational cascade, within which all contractors and subcontractors take responsibility for passing on information, are necessary for fast and efficient communication. To foster the sharing of good practice, specific channels are needed to encourage all participating contractors to continuously improve.

- A co-ordinated approach will influence all aspects of communication, particularly feedback and review.

Review and learn

A continuous process of reviewing and learning is an essential process of reducing risk and tackling recurring problems. This involves a number of activities, such as investigating accidents and incidents; developing near-miss reporting systems from which patterns can be discerned; and disseminating the information to others in the organisation. This process of constant review and learning can be used to create a virtuous circle of continuous improvement.

- A continuous process of reviewing and learning will influence all aspects of communication, particularly feedback and review, leading to improved messages, sources and channels for future communication.

More information

For more information on communication, see our 'Getting the message?' guide – just search for 'IOSH getting the message'.

Our summary gives you the major findings of the independent project report by Loughborough University. If you want to read about the study in more depth, you can download the full report at [iosh.com/research](https://www.iosh.com/research).

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