USING VIDEO TO DISSEMINATE RESEARCH ON SEAFARERS’ FATIGUE

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In 2006 Cardiff University published the results from a 5 year project on fatigue in seafarers. Through an ESRC knowledge exchange grant, a film was made to disseminate the work on seafarers’ fatigue and explore the methodological and practical implications of using this medium in a research domain. Video can be used as both a valuable research methodology and also as a dissemination tool. In the maritime industry the use of video as a communication tool should be given serious consideration in any strategy aimed at preventing and managing fatigue.*

Introduction

Fatigue at sea is an issue that has seen increased attention from both the maritime and research communities (HORIZON, 2010, Nautical Institute, 2010, International Transport Federation, 2010). Long working hours, unpredictable weather conditions and complex legislative challenges all contribute towards an industry that is susceptible to fatigue and it’s associated consequences - many of which can be disastrous (Marine Accident Investigation Branch, 2004). The 5 year Cardiff University seafarers’ fatigue project (Smith et al., 2006b) used a wide variety of investigative methods including onboard performance testing, questionnaire surveys and logbooks. Four years on from the publication of the study, new ways were sought to disseminate the work that had been completed.

With YouTube and iTunes video launching in 2005 and BBC iPlayer launching at the end of 2007, the expansion of video as a means of communication has expanded significantly - particularly online. In 2006 over 100 million videos were being watched each day on YouTube (Reuters, 2006) . By 2010 this had risen to 2 billion (Shiels, 2010). In addition to the rapid expansion of video as a means of communication, one of the researchers on the original research project had trained in film during the time following publication of the study. A unique opportunity therefore became available to explore the potential use of video as a mean of research dissemination.

The aim of the current project was to present findings from the Cardiff fatigue study alongside expert opinion from the industry and currently active seafarers. Multiple sources of information and opinion were used as a means of presenting a rounded perspective on the

* The final film will be shown as part of the presentation of this paper.
issue of seafarers’ fatigue, and a context for the research findings. Further, it was hoped that by presenting different sides of industry opinion the final video would gain greater acceptance by the maritime community as a reliable reference on the topic.

Below is a summary of key findings from the Cardiff seafarers’ fatigue project that were incorporated into the film (Smith et al., 2008):

- **The potential for fatigue at sea**: In certain conditions there is great potential for fatigue at sea. Factors that may lead to fatigue include long working hours, adverse weather conditions, minimal manning, rapid port turn-arounds, short sea passages and congested traffic conditions. Fatigue needs to be understood in terms of a combination of negative factors coming together.

- **Effects of fatigue on health and safety**: Fatigue needs to be treated as a serious health and safety issue. Not only is fatigue increasingly being recognized as an important contributory factor in many accidents at sea (Marine Accident Investigation Branch, 2004, Raby and McCallum, 1997), but a potential link with longer term ill health has also been suggested (Wadsworth et al., 2008).

- **Working hours and the prevalence of fatigue**: Surveys of the offshore oil industry and short sea and coastal sector showed nearly 50% of seafarers working more than 85 hours a week (Smith et al., 2006a). Working hours are not the only predictor of fatigue, but excessive hours clearly indicate the potential for serious problems.

- **Problems with existing legislation and auditing**: 40% of seafarers in a survey for the Cardiff study indicated at least occasionally under-reporting their working hours in order to comply with legislation (Allen et al., 2006). Such widespread undermining of regulation indicates a serious problem in the industry. Without a reliable means of auditing working hours there is the potential for the prevalence of fatigue to escalate unnoticed.

- **Diversity**: The seafaring industry can be characterised by diversity. Largely multinational crews work in different areas of the world on different types of vessel (e.g. container ships, oil tankers, car carriers, ferries) conducting different types of trade (e.g. short sea and coastal, deep sea, offshore oil support) and with different regulatory bodies (i.e. flags of registration). Whilst seafarers in certain lines of work will not face fatigue as a significant problem, the challenge is to identify those groups for whom this is an extremely serious and potentially life-threatening issue (Allen et al., 2005).

Before working on dissemination of the seafarers’ fatigue work, a small internal grant was applied for and awarded within Cardiff university to use video as a means of bringing together researchers working in the maritime domain. The Cardiff mAritime Research GrOup (CARGO) consisted of five researchers from the schools of psychology, social science and business. The researchers were interviewed on camera about their research history and experience, and current/future research interests. The videos were edited together and uploaded online (http://www.cargonetwork.co.uk/). Using basic video equipment, the project acted as a useful pilot in terms of (1) developing appropriate on-camera interview techniques and (2) demonstrating the importance of production value (e.g. lighting, high quality sound).
in terms of presenting information professionally and in a manner which befits the quality of the source material.

**Funding and Format**

Funding was applied for and granted from the ESRC knowledge exchange small grants scheme pilot (ESRC, 2009). The grant was used to purchase a video camera, lighting, sound equipment and editing facilities. Part of the grant was also assigned for travel expenses associated with filming.

The seafarers’ fatigue film was structured around four key sources of information

1. **Interviews with seafarers** – Interviews were conducted with seafarers describing conditions when working at sea, experiences of fatigue and opinions concerning what should be done to solve the problem.

2. **Interviews with experts** – Interviews were conducted with industry experts including union representatives, maritime legislators, accident investigators and academics.

3. **Onboard visit footage** – Footage was shot onboard ship to edit together with the interviews and provide a visual context for the topics being discussed.

4. **Dissemination of academic findings and papers** – the film was structured around key findings and papers from the Cardiff University Seafarers’ Fatigue project. Once the other sources of footage had been collected, filming took place with the researchers from the fatigue project providing an opportunity to draw the key themes together, and introduce findings from the Cardiff study.

**Interviews**

Expert interviews were arranged through contacts established during the seafarers’ fatigue study. Sourcing serving seafarers presented a greater challenge due to the sensitivity of the subject matter and the potential for jeopardizing employment prospects if employers / legislators / colleagues were incriminated in any way through comments or observations made. All contributors were therefore given the option of anonymity if require – either in the form of face blurring, voice disguise or both. The collection of footage onboard ship also provided an opportunity to show visual images over any audio-only interviews, i.e. where a seafarer requested not to appear on camera.

Through the assistance of Nautilus, the union for maritime professionals in the UK, an advertisement was placed online for members to contact the research team if able to help with the study – particularly if willing to be interviewed. A total 10 seafarers contacted the research team from different parts of the industry and with different experiences of fatigue.

In line with standard practice in the documentary industry, all interviewees were given a consent form to sign confirming their participation in the film and release of any rights to Cardiff University.
A semi-structured approach was taken to both the interviews that were conducted and the final video. Before the start of filming key research findings from the Cardiff fatigue project were identified in order to establish a broad context for discussion. This enabled the researcher conducting the interviews to have an awareness of the boundaries of the research material underpinning the video, and also the images that it would be useful to capture whilst filming onboard ship. The key topics covered in the interviews were as follows:

1. Definition of fatigue
2. The extent of fatigue as a problem in the seafaring industry
3. The identification of factors which might have made the problem of fatigue worse over time.
4. The issue of blame and accountability in terms of fatigue in the industry.
5. The issue of how fatigue might best be addressed.
6. The identification of factors that might lead to fatigue e.g. 6-on / 6-off shift schedules, noise, motion, short sea trade, manning, rapid port turn-arounds.
7. Seafarers’ hours of work and rest, how these are recorded and audited.

Findings

At the point of writing this paper a number of interviews have been conducted with the final video still to be edited. From the interviews that have been conducted lessons have been learnt both concerning the process of making a research dissemination video, and seafarers’ fatigue as a research topic. These findings can be summarised as follows:

Process

- Positive reception to a new approach – where and industry has been campaigning on an issue such as fatigue at sea for a number of years, the use of a new approach such as video is welcomed where other traditional forums for discussion may have yielded little in terms of wider impact and attention.
- Research as well as dissemination - the process of collecting interviews for dissemination purposes generated new ideas and discussion points not explored in the original fatigue study. Using video as a means of dissemination can therefore become a qualitative research tool in it’s own right.

Seafarers’ fatigue findings

- Many interviewees highlighted the ‘can do’ nature of many seafarers. This is an interesting concept and highlights how the problem of fatigue is contributed to from many different angles – including from the attitude of seafarers themselves.
- The 6-on, 6-off shift system was frequently cited as a key problem in terms of fatigue, particularly when combined with frequent port turn-around. This was an observation also highlighted in the Cardiff study (Allen et al., 2005).
- The international nature of the industry was raised, particularly in relation to the process of legislation. The difficulty of one flag state, such as the UK, taking forward plans to address fatigue was highlighted. Without international agreement it is very difficult for critical changes to be made – but finding international consensus is difficult to achieve.
- Interviewees frequently discussed variability in the industry in terms of fatigue being a problem. Fatigue can not be considered a blanket problem, but is specific to certain types of ship, trade and operational area.
The final video will be disseminated by means of a DVD – available free for the industry to request and duplicate, and will also be placed online. By placing the video online it will be possible for organisations to embed the film into their own websites and further expand the impact of the work. If successful, video may be considered a valuable new communication tool to be used in industry strategies aimed at preventing and managing fatigue and other health and safety issues.

**Discussion**

A frequently overlooked dimension of dissemination involves tailoring the content – and means of communicating this content – to the audience (Lomas, 1997). The use of video in research is likely to increase significantly over the next few years in reflection of the increased role of this form of media in society as a whole (Shiels, 2010). The introduction of new digital technology, along with increased broadband internet speeds and mobile video devices, has led to many sources of information now being consumed in a video rather than written form.

The current project aimed to explore the potential of video as means of dissemination using results from a 5 year study into seafarers’ fatigue at Cardiff University. The project was funded by an ESRC knowledge exchange grant.

Through the process of filming interviews for the project it became apparent that certain editorial decisions would have to be made, impacting on the message of the final video. These considerations, as listed below, will have to be addressed by future researchers adopting video as a means of dissemination:

- **Interview structure** – in parallel with the use of interviews for data collection, the degree of structure in an interview, and the questions asked, can significantly determine the responses given (Memon and Bull, 1999).
- **The pressure of being filmed** – the likelihood of bias being introduced from the interviewer is likely to be increased by the presence of a video camera which puts interviewees under greater pressure and may encourage compliance.
- **Editing** – the process of editing is extremely influential in terms of determining the final message that is conveyed. Encouraging discussion and transparency concerning the content that is selected, and why, may help reduce subjectivity in this process (Schuck and Kearney, 2006).
- **Anonymity and confidentiality** - interviewees must be made aware of where the final video will be accessible and given options to protect their identity if required. This is particularly important in sensitive areas where there may be consequences for the individual if seen by certain parties e.g. an employer.

The current project also demonstrated that using video as a means of dissemination can produce new insights into the topic being investigated additional to those found in the source study. In the current study this included insights into the ‘can do’ mindset of seafarers and the challenges faced by individual flag states attempting to address the problem of fatigue at sea in an international context.

If the dissemination of the final video is successful within the industry, video may be considered a valuable new means of communication to be used in industry strategies aimed at preventing and managing fatigue, as well as other health and safety issues. Certainly the use
of a visual presentation format may be particularly suited to the extremely multi-national, and therefore multi-lingual, maritime community. Messages conveyed using video can minimise the need for extensive English language skills (the common language onboard most vessels), or can employ subtitles to present the material in different languages as required. Beyond the seafaring industry, the use of video media may be particular suited to low literacy contexts where conventional written materials are of less value.

Video may therefore prove to be an extremely valuable tool at both ends of the research spectrum, but new advances must be matched by new guidelines and principles for the video age, including transparent discussion surrounding the critical editing process (Schuck and Kearney, 2006).

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References


